INDIVIDUAL AND ORGANISATIONAL FACTORS OF WORKPLACE BULLYING AMONG JUNIOR DOCTORS IN MALAYSIA

ELY ZARINA BINTI SAMSUDIN

FACULTY OF MEDICINE UNIVERSITY OF MALAYA KUALA LUMPUR

2019

INDIVIDUAL AND ORGANISATIONAL FACTORS OF WORKPLACE BULLYING AMONG JUNIOR DOCTORS IN MALAYSIA

ELY ZARINA BINTI SAMSUDIN

THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF DOCTOR OF PUBLIC HEALTH

FACULTY OF MEDICINE UNIVERSITY OF MALAYA KUALA LUMPUR

2019

UNIVERSITY OF MALAYA

ORIGINAL LITERARY WORK DECLARATION

Name of Candidate: <u>Ely Zarina binti Samsudin</u> Matric No: <u>MWA160014</u> Name of Degree: <u>Doctor of Public Health</u> Title of Thesis ("this Work"): <u>Individual and organisational factors of workplace</u> bullying among junior doctors in Malaysia

Field of Study: **Public Health**

I do solemnly and sincerely declare that:

(1) I am the sole author/writer of this Work;

(2) This Work is original;

(3) Any use of any work in which copyright exists was done by way of fair dealing and for permitted purposes and any excerpt or extract from, or reference to or reproduction of any copyright work has been disclosed expressly and sufficiently and the title of the Work and its authorship have been acknowledged in this Work;

(4) I do not have any actual knowledge nor do I ought reasonably to know that the making of this work constitutes an infringement of any copyright work;

(5) I hereby assign all and every rights in the copyright to this Work to the University of Malaya ("UM"), who henceforth shall be owner of the copyright in this Work and that any reproduction or use in any form or by any means whatsoever is prohibited without the written consent of UM having been first had and obtained;

(6) I am fully aware that if in the course of making this Work I have infringed any copyright whether intentionally or otherwise, I may be subject to legal action or any other action as may be determined by UM.

Candidate's Signature: _	 Date:

Subscribed and solemnly declared before,

Witness's Signature: Date:

Name: _____

Designation:

INDIVIDUAL AND ORGANISATIONAL FACTORS OF WORKPLACE BULLYING AMONG JUNIOR DOCTORS IN MALAYSIA

ABSTRACT

Introduction: Junior doctors' experience of workplace bullying may affect their training and hamper the delivery of quality healthcare, yet no evidence on the prevalence and factors associated with workplace bullying among Southeast Asian junior doctors currently exist.

Objectives: The aim of this study is five-fold. Firstly, it aims to systematically assess the prevalence, factors and outcomes of workplace bullying among junior doctors. Secondly, it intends to validate the psychometric properties of study instruments. Thirdly and fourthly, it aims to determine the association of individual traits and organisational characteristics with workplace bullying among junior doctors. Finally, it aims to produce a policy brief outlining policy recommendations based on associated factors.

Materials and Methods: A systematic review was performed. A multicentre crosssectional study was then conducted in twelve government hospitals located within central zone of Malaysia, sampling a total of 1,074 junior doctors. A self-administered questionnaire comprising of several instruments was used to examine workplace bullying and associated factors. Post-hoc validation of instruments was performed using polychoric factor analysis with varimax rotation and assessing intraclass correlation coefficient and Cronbach's alpha. The associations of factors of workplace bullying were modeled using mixed effects logistic regression. An objective policy brief was then prepared. **Results:** Post-hoc validation suggested that study instruments were psychometrically sound. The overall six-month prevalence of workplace bullying among included junior doctors was 13%. After adjusting for potential confounders, individual traits such as moderate (AOR 4.40, 95% CI 2.20-8.77) and high (AOR 13.69, 95% CI 6.46-29.02) degree of negative affect, and high degree of neuroticism (AOR 2.99, 95% CI 1.71-5.21), as well as organisational characteristics such as neutral (AOR 0.35, 95% CI 0.20-0.62) and positive (AOR 0.33, 95% CI 0.11-0.98) organisational climate, moderate (AOR 0.39, 95% CI 0.25-0.59) and high (AOR 0.33, 95% CI 0.17-0.63) degree of clan culture, moderate (AOR 0.36, 95% CI 0.23-0.57) and high (AOR 0.42, 95% CI 0.24-0.74) degree of adhocracy culture, moderate degree of hierarchy culture (AOR 0.64, 95% CI 0.41-0.98), moderate degree of production and achievement-oriented leadership style (AOR 0.36, 95% CI 0.17-0.76), moderate (AOR 0.49, 95% CI 0.30-0.80) and high (AOR 0.12, 95% CI 0.03-0.42) degree of organisational support, moderate degree of procedural justice (AOR 0.56, 95% CI 0.35-0.88), moderate (AOR 0.27, 95% CI 0.17-0.42) and high (AOR 0.06, 95% CI 0.02-0.19) degree of interactional justice, and high degree of distributive justice (AOR 0.37, 95% CI 0.18-0.76) were significantly associated with workplace bullying among junior doctors.

Discussion and Conclusion: The systematic review indicated that junior doctors worldwide commonly experience workplace bullying, which is multi-causal and linked to ill health and adverse work outcomes. Correspondingly, the present study demonstrated that workplace bullying is a significant issue for Malaysian junior doctors, and is related to both individual traits and organisational characteristics. Targeted policy recommendations to manage workplace bullying among junior doctors include primary interventions such as education, anti-bullying policy, cognitive training, and measures to improve workplace aspects, secondary interventions such as resource-enhancement

building, conflict management skills training, and conflict mediators, and tertiary interventions such as counselling.

Keywords: Workplace bullying, junior doctors, associated factors, individual traits, organisational characteristics

university

FAKTOR INDIVIDU DAN ORGANISASI YANG BERKAITAN DENGAN PEMBULIAN DI TEMPAT KERJA DIKALANGAN DOKTOR JUNIOR DI MALAYSIA

ABSTRAK

Pendahuluan: Pengalaman buli di tempat kerja yang dialami oleh doktor junior boleh menjejaskan latihan mereka dan menghalang penyampaian perkhidmatan perubatan yang berkualiti, namun tiada bukti mengenai kelaziman dan faktor-faktor yang berkaitan dengan pembulian di tempat kerja di kalangan doktor junior di Asia Tenggara wujud pada masa ini.

Objektif: Terdapat lima matlamat kajian ini. Pertama, ia bertujuan untuk menilai secara sistematik kelaziman, faktor dan kesan pembulian di tempat kerja di kalangan doktor junior. Kedua, ia bertujuan untuk mengesahkan sifat psikometrik instrumen kajian. Ketiga dan keempat, ia bertujuan untuk menentukan hubungan ciri-ciri individu dan organisasi dengan pembulian di tempat kerja di kalangan junior doktor. Akhirnya, ia bertujuan untuk menghasilkan ringkasan dasar yang menggariskan cadangan dasar berlandaskan faktor yang berkaitan.

Bahan dan Kaedah: Kajian ulasan sistematik dilaksanakan. Kajian keratan rentas berbilang pusat kemudian dijalankan di dua belas hospital kerajaan yang terletak di zon tengah Malaysia, yang mensampel 1,074 doktor junior. Soal selidik yang ditadbir secara kendiri yang terdiri daripada beberapa instrumen digunakan untuk menyelidik pembulian di tempat kerja dan faktor-faktor yang berkaitan. Pengesahan instrumen kajian secara post-hoc dilakukan dengan mengunakan analisis faktor polychoric dengan putaran varimax dan menilai pekali korelasi intra-kelas dan Cronbach's alpha. Hubungan antara ciri-ciri individu dan organisasi dengan pembulian di tempat kerja

dimodelkan mengunakan regresi logistik kesan bercampur. Ringasan dasar bersifat objektif kemudian disediakan.

Keputusan: Pengesahan instrumen secara post-hoc membayangkan bahawa psikometri instrumen kajian bersifat utuh. Kelaziman enam-bulan pembulian di tempat kerja di kalangan doktor junior yang termasuk dalam kajian ini adalah 13%. Selepas pelasaran faktor-faktor yang berpotensi berkait, ciri-ciri individu seperti afektif negatif yang bertahap sederhana (AOR 4.40, 95% CI 2.20-8.77) dan tinggi (AOR 13.69, 95% CI 6.46-29.02), dan sifat neurotik yang bertahap tinggi (AOR 2.99, 95% CI 1.71-5.21), dan juga ciri-ciri organisasi seperti iklim organisasi yang neutral (AOR 0.35, 95% CI 0.20-0.62) dan positif (AOR 0.33, 95% CI 0.11-0.98), budaya puak yang bertahap sederhana (AOR 0.39, 95% CI 0.25-0.59) dan tinggi (AOR 0.33, 95% CI 0.17-0.63), budaya adhokrasi yang bertahap sederhana (AOR 0.36, 95% CI 0.23-0.57) dan tinggi (AOR 0.42, 95% CI 0.24-0.74), budaya hierarki yang bertahap sederhana (AOR 0.64, 95% CI 0.41-0.98), gaya kepimpinan yang berorientasikan penghasilan dan pencapaian yang bertahap sederhana (AOR 0.36, 95% CI 0.17-0.76), sokongan organisasi yang bertahap sederhana (AOR 0.49, 95% CI 0.30-0.80) dan tinggi (AOR 0.12, 95% CI 0.03-0.42), keadilan prosedur yang bertahap sederhana (AOR 0.56, 95% CI 0.35-0.88), keadilan interaksi yang bertahap sederhana (AOR 0.27, 95% CI 0.17-0.42) dan tinggi (AOR 0.06, 95% CI 0.02-0.19), dan keadilan pengedaran yang bertahap tinggi (AOR 0.37, 95% CI 0.18-0.76) dikaitkan secara signifikan dengan pembulian di tempat kerja di kalangan doktor junior.

Diskusi dan Kesimpulan: Kajian ulasan sistematik menunjukkan bahawa doktor junior di seluruh dunia sering mengalami pembulian di tempat kerja, yang pelbagai sebab dan berhubungkait dengan penjejasan kesihatan dan kesan kerja yang buruk. Berhubungan itu, kajian ini menunjukkan bahawa pembulian di tempat kerja adalah suatu isu yang penting bagi doktor junior di Malaysia, dan adalah berkaitan dengan kedua-dua ciri-ciri individu dan organisasi. Cadangan dasar yang disasarkan untuk menguruskan pembulian di tempat kerja dikalangan doktor junior termasuk intervensi peringkat pertama seperti pendidikan, polisi anti-pembulian, latihan kognitif, dan langkah-langkah untuk menambah baik aspek tempat kerja, intervensi peringkat kedua seperti penambahbaikan daya diri, latihan kemahiran pengurusan konflik, dan pengantara konflik, dan intervensi peringkat ketiga seperti kaunseling.

Kata Kunci: Pembulian di tempat kerja, doktor junior, faktor-faktor yang berkaitan, ciri-ciri individu, ciri-ciri organisasi

ACKNOWLEDGMENTS

My sincerest gratitude to my supervisors Assoc. Prof. Dr. Marzuki Isahak and Prof. Dr. Sanjay Rampal Lekhraj Rampal for their guidance and continuous support in the completion of my DrPH study, and for their utmost patience, enthusiasm, and knowledge. I would also like to thank my fellow colleagues who continually provided moral support. I am also grateful to all of those with whom I have had the pleasure to liaise with during the data collection process, including the head of the OSHE unit of MOH, hospital administration and human resource officers, OSHE officers, and junior doctors who agreed to participate in this study, especially the team leaders who assisted me in distributing the study questionnaire. Last but not least, I would like to thank my supportive husband, Adha Azlan, and my loving daughter, Arya Adha, for encouraging and comforting me throughout the process of completing this study, which has made this journey possible. This thesis is dedicated to the memory of my late mother, Prof. Dr. Sharifah Bee O.A. Abd Hamid, who has always inspired me to be diligent and strive towards bettering myself, both professionally and personally.

TABLE OF CONTENTS

Original Literary Work Declaration	iii
Abstract	iv
Abstrak	vii
Acknowledgments	х
Table of Contents	xi
List of Figures	xviii
List of Tables	xix
List of Symbols and Abbreviations	xxiii
List of Appendices	XXV
CHAPTER 1: GENERAL INTRODUCTION	1
1.1 Statement of the Problem	1
1.2 Rationale of the Study	7
1.3 Conceptual Framework	8
1.4 Hypothesis	11
1.5 Purpose of the Study	11
1.6 Research Questions	11
1.7 Significance of the Study	12
1.8 Scope of the Study	13
CHAPTER 2: LITERATURE REVIEW	14
2.1 Junior Doctors	14
2.1.1 Terminology and Definition of Junior Doctor	14
2.1.2 Medical Training in Malaysia	14
2.1.3 Medical Training in Other Parts of the World	18
2.2 Workplace Bullying	20
2.2.1 Definition of Workplace Bullying	20
2.2.2 Distinctions Between Workplace Bullying and Other Closely Related Terms	24
2.2.3 Classification of Workplace Bullying	25
2.2.4 Prevalence of Workplace Bullying	27
2.2.5 Factors Associated with Workplace Bullying	28
2.2.5.1 Individual Factors	28

2.2.5.2 Organisational Factors	32
2.2.5.3 Institutional Factors	37
2.2.5.4 Societal Factors	38
2.2.6 Outcomes Associated with Workplace Bullying	39
2.2.6.1 Individual Outcomes	39
2.2.6.2 Organisational Outcomes	40
2.3 Systematic Review of Previous Studies of Workplace Bullying Among Junior Doctors	43
2.3.1 Rationale and Objective of the Systematic Review	43
2.3.2 Methodology of the Systematic Review	45
2.3.3 Results of the Systematic Review	48
2.3.3.1 Methodological Quality of Included Studies	58
2.3.3.2 Terms, Definitions, and Methodology Employed by Previous Studies	60
2.3.3.3 Prevalence of Workplace Bullying Among Junior Doctors	69
2.3.3.4 Individual Factors of Workplace Bullying Among Junior Doctors	71
2.3.3.5 Organisational Factors of Workplace Bullying Among Junior Doctors	72
2.3.3.6 Individual Outcomes of Workplace Bullying Among Junior Doctors	72
2.3.3.7 Organisational Outcomes of Workplace Bullying Among Junior Doctors	73
2.3.4 Strengths and Limitations of Current Evidence	73
2.3.5 Current Research Gaps	75
CHAPTER 3: METHODS AND MATERIALS	76
3.1 Study Design	76
3.2 Study Setting	76
3.3 Study Population	78
3.3.1 Inclusion Criteria	78
3.3.2 Exclusion Criteria	78
3.4 Sample Size	79

3.4.1 Sample Size Calculation Based on Prevalence	79
3.4.2 Sample Size Calculation Based on Risk Factors	79
3.5 Sampling Procedure	80
3.6 Study Instrument	83
3.6.1 Single-item Questions for Sociodemographic and Employment Characteristics	84
3.6.2 Negative Affect Subscale of the Affect Balance Scale (ABS-NA)	85
3.6.3 Short Version of the Big Five Inventory (BFI-10)	85
3.6.4 Single Item Self-Esteem Scale (SISES)	86
3.6.5 Short Version of the CLIOR Scale (CLIOR-Short)	86
3.6.6 Competing Values Framework Questionnaire (CVFQ)	87
3.6.7 Short Version of the Survey of Perceived Organisational Support (SPOS-Short)	88
3.6.8 Short Measure of Colquitt's Organisational Justice Scale (OJS-Short)	89
3.6.9 Revised Version of the Negative Acts Questionnaire (NAQ-R)	89
3.7 Study Variables	
3.7.1 Sociodemographic Characteristics	90
3.7.1.1 Operational Definition	90
3.7.1.2 Scales of Measurement	91
3.7.2 Employment Characteristics	91
3.7.2.1. Operational Definition	91
3.7.2.2. Scales of Measurement	92
3.7.3 Individual Traits	92
3.7.3.1. Operational Definition	92
3.7.3.2. Scales of Measurement	93
3.7.4 Organisational Characteristics	93
3.7.4.1. Operational Definition	93
3.7.4.2. Scales of Measurement	94
3.7.5 Workplace Bullying	94
3.7.5.1. Operational Definition	95

3.7.5.2. Scales of Measurement	96
3.8 Dependent and Independent Variables	96
3.9 Confounders	96
3.9.1 Confounders of the Relationship between Negative Affect and Workplace Bullying	98
3.9.2 Confounders of the Relationship between Personality Traits and Workplace Bullying	98
3.9.3 Confounders of the Relationship between Self-Esteem and Workplace Bullying	99
3.9.4 Confounders of the Relationship between Organisational Climate and Workplace Bullying	100
3.9.5 Confounders of the Relationship between Organisational Culture and Workplace Bullying	102
3.9.6 Confounders of the Relationship between Organisational Leadership and Workplace Bullying	102
3.9.7 Confounders of the Relationship between Organisational Support and Workplace Bullying	104
3.9.8 Confounders of the Relationship between Organisational Justice and Workplace Bullying	105
3.10 Data Processing and Data Safety and Integrity	107
3.11 Treatment of Data	107
3.11.1 Scoring of Data	107
3.11.2 Categorization of Data	108
3.12 Initial Data Analysis	109
3.12.1 Missingness	109
3.12.2 Outliers, Leverage and Influence	109
3.12.3 Response Distribution	110
3.12.4 Multicollinearity	110
3.12.5 Model Checking for Factor Analysis	110
3.12.5.1 Interval Level Data Structure	110
3.12.5.2 Multivariate Normality	110
3.12.5.3 Factorability	111
3.12.5.4 Adequate Sample Size	111
3.12.6 Model Checking for Mixed Effects Logistic Regression	111

3.12.6.1 Dependent Variable Structure	112
3.12.6.2 Absence of Multicollinearity	112
3.12.6.3 Linearity in the Transformed Expectation	112
3.13 Statistical Analysis	112
3.13.1 Validation Study	112
3.13.1.1. Construct Validity	113
13.13.1.2 Reliability	114
3.13.2 Descriptive Statistics	115
3.13.3 Analytical Statistics	115
3.14 Ethical Consideration	117
3.15 Policy Brief	117
CHAPTER 4: RESULTS	118
4.1 Validation of Study Instruments	122
4.1.1 ABS-NA	123
4.1.2 BFI-10	124
4.1.3 SISES	126
4.1.4 CLIOR-Short	126
4.1.5 CVFQ	128
4.1.6 SPOS-Short	130
4.1.7 OJS-Short	131
4.1.8 NAQ-R	133
4.2 Prevalence and Experience of Workplace Bullying Among Junior Doctors	136
4.2.1 Response Rate	136
4.2.1 Response Rate 4.2.2 Characteristics of Participants	130
-	
4.2.3 Prevalence of Workplace Bullying	140
4.2.4 Types of Bullying Experienced	141
4.2.5 Sources of Workplace Bullying	142
4.3 Association between Individual Traits and Workplace Bullying	143
4.3.1 Association between Negative Affect and Workplace Bullying	143

4.3.2 Association between Personality Traits and Workplace Bullying	147
4.3.2.1 Association of Extraversion with Workplace Bullying	147
4.3.2.2 Association of Agreeableness and Conscientiousness with Workplace Bullying	150
4.3.2.3 Association of Neuroticism with Workplace Bullying	153
4.3.2.4 Association of Openness with Workplace Bullying	156
4.3.3 Association between Self-Esteem and Workplace Bullying	159
Association between Organisational Characteristics and Workplace ying	163
4.4.1 Association between Organisational Climate and Workplace Bullying	163
4.4.2 Association between Organisational Culture and Workplace Bullying	170
4.4.2.1 Association of Clan Culture with Workplace Bullying	170
4.4.2.2 Association of Adhocracy Culture with Workplace Bullying	174
4.4.2.3 Association of Hierarchy Culture with Workplace Bullying	178
4.4.2.4 Association of Market Culture with Workplace Bullying	182
4.4.3 Association between Organisational Leadership and Workplace Bullying	186
4.4.3.1 Association of Mentor or Facilitator Leadership Style with Workplace Bullying	186
4.4.3.2 Association of Innovator or Entrepreneur Leadership Style with Workplace Bullying	192
4.4.3.3 Association of Administrator or Organizer Leadership Style with Workplace Bullying	197
4.4.3.4 Association of Production and Achievement-Oriented Leadership Style with Workplace Bullying	203
4.4.4 Association between Organisational Support and Workplace Bullying	208
4.4.5 Association between Organisational Justice and Workplace Bullying	214
4.4.5.1 Association of Procedural Justice with Workplace Bullying	214

4.4.5.2 Association of Interactional Justice with Workplace Bullying	219
4.4.5.3 Association of Distributive Justice with Workplace Bullying	224
4.5 Graphical Representation of the Associations of Individual and Organisational Factors with Workplace Bullying Among Junior Doctors	229
CHAPTER 5: DISCUSSION	231
5.1 The Prevalence and Experience of Workplace Bullying Among Junior Doctors	231
5.2 Individual Traits Associated with Workplace Bullying Among Junior Doctors	234
5.2.1 Negative Affect	235
5.2.2 Neuroticism	239
5.2.3 Extraversion, Conscientiousness, Agreeableness, Openness and Self-Esteem	242
5.3 Organisational Factors Associated with Workplace Bullying Among Junior Doctors	245
5.3.1 Organisational Climate	245
5.3.2 Organisational Culture	250
5.3.3 Organisational Leadership	255
5.3.4 Organisational Support	259
5.3.5 Organisational Justice	262
CHAPTER 6: CONCLUSION	268
6.1 Summary of Key Study Findings	268
6.2 Implications for Theory	268
6.3 Implications for Policy and Practice	274
6.4 Methodological Reflection	283
6.5 Directions for Future Research	290
6.6 Concluding Remarks	291
REFERENCES	293
LIST OF PUBLICATIONS AND PAPERS PRESENTED	335
APPENDICES	337

LIST OF FIGURES

(adapted from S. L. Johnson, 2011)	10
Figure 2.3.3: Flow diagram of systematic review based on the PRISMA statement	49
Figure 3.9: Graphical presentation of confounding in Directed Acyclic Graphs	97
Figure 4.5.1: Individual traits associated with workplace bullying among junior	
doctors	229
Figure 4.5.2.1: Organisational characteristics associated with workplace bullying	
among junior doctors (part I)	230
Figure 4.5.2.2: Organisational characteristics associated with workplace bullying	
among junior doctors (part II)	230
Figure 6.3.1: Policy brief (page 1)	281

LIST OF TABLES

Table 2.2.1: Terms and definitions used to describe psychological aggression at	
work by previous studies	21
Table 2.2.2: Distinctions between workplace bullying and closely related terms	24
Table 2.2.3: Rayner and Hoel (1997) classification of workplace bullying	26
Table 2.3.3: Summary of previous studies assessing workplace bullying among	
junior doctors	50
Table 2.3.3.1: Summary of the quality of studies included in the systematic	
review	59
Table 2.3.3.2: Summary of terms, definitions and instruments used by previous	
studies, and prevalence of workplace bullying reported	65
Table 3.2: List of accredited hospitals for housemanship training according to	
zones, 2017 (Medical Development Division, MOH Malaysia)	77
Table 3.4.2: Sample size calculation based on factors of workplace bullying	80
Table 4.1: Summary of number of factors suggested for extraction based on	
different extraction criterion	122
Table 4.1.1.1: Factor loadings and communalities for ABS-NA	123
Table 4.1.1.2: ICC and Cronbach's alpha for ABS-NA	123
Table 4.1.2.1: Factor loadings and communalities for BFI-10	124
Table 4.1.2.2: ICC and Cronbach's alpha for BFI-10	125
Table 4.1.4.1: Factor loadings and communalities for CLIOR-Short	126
Table 4.1.4.2: ICC and Cronbach's alpha for CLIOR-Short	127
Table 4.1.5.1: Factor loadings and communalities for CVFQ	128
Table 4.1.5.2: ICC and Cronbach's alpha for CVFQ	129
Table 4.1.6.1: Factor loadings and communalities for SPOS-Short	130
Table 4.1.6.2: ICC and Cronbach's alpha for SPOS-Short	131
Table 4.1.7.1: Factor loadings and communalities for OJS-Short	131
Table 4.1.7.2: ICC and Cronbach's alpha for OJS-Short	132
Table 4.1.8.1: Factor loadings and communalities for NAQ-R	133
Table 4.1.8.2: ICC and Cronbach's alpha for NAQ-R	135
Table 4.2.1: Response rate by hospital and data collection method	136
Table 4.2.2: Characteristics of participants (N=1,074)	138
Table 4.2.3: Prevalence of workplace bullying among participants (N=1,074)	140
Table 4.2.5: Commonest perpetrators of negative actions reported by	
participants (N=1,074)	142
Table 4.3.1.1: Characteristics of participants by negative affect	143

Table 4.3.1.2: Individual traits of participants by negative affect	144
Table 4.3.1.3: Bullied participants by degree of negative affect	145
Table 4.3.1.4: Association of negative affect with workplace bullying	145
Table 4.3.2.1.1: Characteristics of participants by extraversion	147
Table 4.3.2.1.2: Bullied participants by degree of extraversion	148
Table 4.3.2.1.3: Association of extraversion with workplace bullying	148
Table 4.3.2.2.1: Characteristics of participants by agreeableness and	
conscientiousness	150
Table 4.3.2.2.2: Bullied participants by degree of agreeableness and	
conscientiousness	151
Table 4.3.2.2.3: Association of agreeableness and conscientiousness with	
workplace bullying	152
Table 4.3.2.3.1: Characteristics of participants by neuroticism	153
Table 4.3.2.3.2: Bullied participants by degree of neuroticism	154
Table 4.3.2.3.3: Association of neuroticism with workplace bullying	154
Table 4.3.2.4.1: Characteristics of participants by openness	156
Table 4.3.2.4.2: Bullied participants by degree of openness	157
Table 4.3.2.4.3: Association of openness with workplace bullying	157
Table 4.3.3.1: Characteristics of participants by self-esteem	159
Table 4.3.3.2: Individual traits of participants by self-esteem	160
Table 4.3.3.3: Bullied participants by degree of self-esteem	161
Table 4.3.3.4: Association of self-esteem with workplace bullying	161
Table 4.4.1.1: Characteristics of participants by organisational climate	163
Table 4.4.1.2: Individual traits of participants by organisational climate	164
Table 4.4.1.3: Organisational characteristics of departments by organisational	
climate	165
Table 4.4.1.4: Bullied participants by type of organisational climate	167
Table 4.4.1.5: Association of organisational climate with workplace bullying	168
Table 4.4.2.1.1: Characteristics of participants by clan culture	170
Table 4.4.2.1.2: Individual traits of participants by clan culture	171
Table 4.4.2.1.3: Bullied participants by degree of clan culture	172
Table 4.4.2.1.4: Association of clan culture with workplace bullying	172
Table 4.4.2.2.1: Characteristics of participants by adhocracy culture	174
Table 4.4.2.2.2: Individual traits of participants by adhocracy culture	175
Table 4.4.2.2.3: Bullied participants by degree of adhocracy culture	176
Table 4.4.2.2.4: Association of adhocracy culture with workplace bullying	176
Table 4.4.2.3.1: Characteristics of participants by hierarchy culture	178
Table 4.4.2.3.2: Individual traits of participants by hierarchy culture	179

Table 4.4.2.3.3: Bullied participants by degree of hierarchy culture	180
Table 4.4.2.3.4: Association of hierarchy culture with workplace bullying	180
Table 4.4.2.4.1: Characteristics of participants by market culture	182
Table 4.4.2.4.2: Individual traits of participants by market culture	183
Table 4.4.2.4.3: Bullied participants by degree of market culture	183
Table 4.4.2.4.4: Association of market culture with workplace bullying	184
Table 4.4.3.1.1: Characteristics of participants by mentor or facilitator	
leadership style	186
Table 4.4.3.1.2: Individual traits of participants by mentor or facilitator	
leadership style	188
Table 4.4.3.1.3: Organisational characteristics of departments by mentor or	
facilitator leadership style	189
Table 4.4.3.1.4: Bullied participants by degree of mentor or facilitator leadership	
style	189
Table 4.4.3.1.5: Association of mentor or facilitator leadership style with	
workplace bullying	190
Table 4.4.3.2.1: Characteristics of participants by innovator or entrepreneur	
leadership style	192
Table 4.4.3.2.2: Individual traits of participants by innovator or entrepreneur	
leadership style	193
Table 4.4.3.1.3: Organisational characteristics of departments by innovator or	
entrepreneur leadership style	194
Table 4.4.3.1.4: Bullied participants by degree of innovator or entrepreneur	
leadership style	194
Table 4.4.3.1.5: Association of innovator or entrepreneur leadership style with	
workplace bullying	195
Table 4.4.3.3.1: Characteristics of participants by administrator or organizer	
leadership style	197
Table 4.4.3.3.2: Individual traits of participants by administrator or organizer	
leadership style	199
Table 4.4.3.3.3: Organisational characteristics of departments by administrator	
or organizer leadership style	200
Table 4.4.3.3.4: Bullied participants by degree of administrator or organizer	
leadership style	200
Table 4.4.3.3.5: Association of administrator or organizer leadership style with	
workplace bullying	201
Table 4.4.3.4.1: Characteristics of participants by production and achievement-	
oriented leadership style	203

Table 4.4.3.4.2: Individual traits of participants by production and achievement-	
oriented leadership style	204
Table 4.4.3.4.3: Organisational characteristics of departments by production and	
achievement-oriented leadership style	205
Table 4.4.3.4.4: Bullied participants by degree of production and achievement-	
oriented leadership style	206
Table 4.4.3.4.5: Association of production and achievement-oriented leadership	
style with workplace bullying	206
Table 4.4.4.1: Characteristics of participants by organisational support	208
Table 4.4.4.2: Individual traits of participants by organisational support	209
Table 4.4.1.3: Organisational characteristics of departments by organisational	
support	210
Table 4.4.1.4: Bullied participants by degree of organisational support	211
Table 4.4.1.5: Association of organisational support with workplace bullying	212
Table 4.4.5.1.1: Characteristics of participants by procedural justice	214
Table 4.4.5.1.2: Individual traits of participants by procedural justice	215
Table 4.4.5.1.3: Organisational characteristics of departments by procedural	
justice	216
Table 4.4.5.1.4: Bullied participants by degree of procedural justice	217
Table 4.4.5.1.5: Association of procedural justice with workplace bullying	217
Table 4.4.5.2.1: Characteristics of participants by interactional justice	219
Table 4.4.5.2.2: Individual traits of participants by interactional justice	220
Table 4.4.5.2.3: Organisational characteristics of departments by interactional	
justice	221
Table 4.4.5.2.4: Bullied participants by degree of interactional justice	222
Table 4.4.5.2.5: Association of interactional justice with workplace bullying	222
Table 4.4.5.3.1: Characteristics of participants by distributive justice	224
Table 4.4.5.3.2: Individual traits of participants by distributive justice	225
Table 4.4.5.3.3: Organisational characteristics of departments by distributive	
justice	226
Table 4.4.5.3.4: Bullied participants by degree of distributive justice	227
Table 4.4.5.3.5: Association of distributive justice with workplace bullying	227

LIST OF SYMBOLS AND ABBREVIATIONS

ABS-NA	:	Affect Balance Scale, negative affect subscale
AET	:	Affective events theory
AOR	:	Adjusted odds ratio
BTS	:	Bartlett's Test of Sphericity
BFI-10	:	Big Five Inventory, short version
CATS	:	Cognitive activation theory of stress
CCHMC	:	Cincinnati Children's Hospital Medical Center
CI		Confidence interval
COR	:	Crude odds ratio
CVFQ	:	Competing Values Framework Questionnaire
EFA	:	Exploratory factor analysis
НО	:	House officers
ICC	:	Intraclass correlation coefficient
КМО	:	Kaiser-Meyer-Olkin
LIPT	•	Leymann's Inventory of Psychological Terror
МАР	:	Minimum average partials
MCAR	:	Missing completely at random
MINAP	:	Minimum average partial correlation procedure
MMC	:	Malaysian Medical Council
МО	:	Medical officers
МОН	:	Ministry of Health
MOHE	:	Ministry of Higher Education
MREC	:	Medical Research and Ethics Committee
NAQ-R	:	Negative Acts Questionnaire, revised
NIH	:	National Institute of Health

NMMR	:	National Medical Research Register
NOS	:	Newcastle Ottawa Scale
O&G	:	Obstetrics and gynaecology
OJS	:	Organisational Justice Scale
OJS-Short	:	Organisational Justice Scale, short version
OR	:	Odds ratio
PARA	:	Parallel analysis
POS	:	Perceived organisational support
PRISMA	:	Preferred Reporting Items for Systematic Reviews and Meta- Analyses
Q-Q	:	Quantile-quantile
RSES	:	Rosenberg self-esteem scale
SISES	:	Single item self-esteem scale
SEA	:	Southeast Asian
SPOS	:	Survey of Perceived Organisational Support
SPOS-Short	:	Survey of Perceived Organisational Support, short version
STATA	>	Software for Statistics and Data Science
TL	:	Team leader
UKM	:	Universiti Kebangsaan Malaysia
UMMC	:	University Malaya Medical Centre
VIF	:	Variance inflation factor

LIST OF APPENDICES

APPENDIX A. Table of Evidence Levels from Cincinnati Children's Hospital	
Medical Center	337
APPENDIX B. Adapted Newcastle-Ottawa Scale (NOS)	338
APPENDIX C. Study Questionnaire	339
APPENDIX D. Participant Information Sheet and Informed Consent Form	345
APPENDIX E. Missingness	347
APPENDIX F. Outliers, Leverage and Influence	348
APPENDIX G. Distribution of Responses	349
APPENDIX H. Multicollinearity	350
APPENDIX I. Model Diagnostics for Factor Analysis	351
APPENDIX J. Model Diagnostics for Mixed Effects Logistic Regression	352
APPENDIX K. Sensitivity Analysis	353
APPENDIX L. Types of Bullying Experienced by Participants	354

CHAPTER 1: GENERAL INTRODUCTION

1.1 Statement of the Problem

For many organisations, the advent of globalisation, changing markets, and performance-based reward systems has blurred the line between achieving optimal operational efficiency and inadvertently submitting to abuses of interpersonal power, making the workplace fertile ground for bullying behaviours. Of recent years, workplace bullying has emerged as a newly recognised, though long existent, workplace health and safety problem. Bullying (Einarsen & Skogstad, 1996; Hoel & Cooper, 2000; O'Moore, Seigne, McGuire, & Smith, 1998; Vartia, 1996), mobbing (Leymann, 1996; Yildirim & Yildirim, 2007; Zapf, Knorz, & Kulla, 1996), emotional abuse (Keashly, 1998), aggression (Neuman & Baron, 1998), harassment (Björkqvist, Österman, & Hjelt-Bäck, 1994; Brodsky, 1976), and victimisation (Aquino, Grover, Bradfield, & Allen, 1999; Einarsen & Raknes, 1997) are terms that have been used by researchers in different parts of the world to describe this phenomenon (Aquino & Lamertz, 2004; Bowling & Beehr, 2006; Branch, 2008; Einarsen, 1999; Einarsen, Hoel, Zapf, & Cooper, 2003). Although there is no clear consensus on what constitutes as workplace bullying (Quine, 1999), it can be defined as:

"A situation in which one or several individuals persistently, and over a period of time, perceive themselves as being on the receiving end of negative actions from superiors or coworkers, and where the target of the bullying finds it difficult to defend him or herself against these actions" (Nielsen & Einarsen, 2012, p. 309).

Empirically, these negative actions have been differentiated into five categories, i.e. threat to professional status, threat to personal standing, isolation, overwork, and

destabilization, and includes behaviours such as abusive language, belittling opinions, making unreasonable work demands, withholding information, and repeatedly reminding one's past mistakes (Rayner & Hoel, 1997). Taken in isolation, such behaviours may be perceived by the bullying target to be mildly offensive or tolerable, however, cumulatively over time, it can be considered highly distressing to the individual (Nielsen & Einarsen, 2012; Salin, 2003).

Indeed, workplace bullying has been described as a more crippling problem for workers than all other kinds of work-related stressors put together (Einarsen et al., 2003). The consequences of workplace bullying are not only limited to targets of bullying, but extends to organisations as well. In terms of individual outcomes, existing literature has indicated that exposure to bullying is strongly related to mental and physical health disorders, somatic problems, irritability, symptoms of post-traumatic stress, burnout, and sleep difficulties (Kivimaki, Elovainio, & Vahtera, 2000; Kivimaki et al., 2003; Moayed, Daraiseh, Shell, & Salem, 2006; Nielsen & Einarsen, 2012; Theorell et al., 2015). In terms of organisational outcomes, workplace bullying has been shown to lead to job dissatisfaction, high rates of absenteeism and staff turnover, reduced productivity, increase in compensation claims, and reduced organisational commitment (Kivimaki et al., 2000; Nielsen, Einarsen, Notelaers, & Nielsen, 2016; M. Sheehan, 2001).

Considering its ramifications, it is important to identify workers who are at elevated risk of exposure to workplace bullying. Among all professions, healthcare workers are one of the occupational groups that have high likelihood of being exposed to this work hazard. The body of literature on workplace bullying has indicated that the health sector showed greater prevalence of workplace bullying compared to other sectors (Einarsen et al., 2003; Leymann & Gustafsson, 1996; Niedl, 1995; Vartia, 1996), with healthcare workers having a seven-fold risk of being bullied (Einarsen et al., 2003; Zapf, 1999a). According to Rowell (2005), workplace bullying among healthcare workers has become a continually increasing occurrence within healthcare organisations, such that it is quadruple the occurrence of sexual harassment. In particular, junior doctors, who are defined as "qualified doctors in clinical training" ("Doctors' titles: Explained," 2017, p. 4), may be highly susceptible to bullying behaviours due to inherent contextual factors. First and foremost, the medical hierarchy culture is such that power is strictly and directly related to rank, especially in hospitals (Al-Shafaee et al., 2013; Leisy & Ahmad, 2016). This difference in power may lead to situations where power is used negatively by higher ranking doctors, which goes unchallenged as junior doctors are conditioned not to question the underlying power relations and rules of engagement at their workplace (Angoff, Duncan, Roxas, & Hansen, 2016; Crowe, Brugha, & Clarke, 2017). Indeed, many cases of bullying were reported to be enacted by other doctors in a pecking order of seniority (Leisy & Ahmad, 2016; Paice, Aitken, Houghton, & Firth-Cozens, 2004). Additionally, doctors are highly skilled workers, requiring years of intensive competency training in order to progress in their careers, and "teaching by humiliation" in order to "toughen up" the young is considered by some to be an accepted and deeply ingrained practice in the medical culture (K. M. Scott, Caldwell, Barnes, & Barrett, 2015). This was evidenced by the study published by K. M. Scott et al. (2015) who observed that 74.5% trainee doctors reported experiencing teaching by humiliation, and 83.6% reported witnessing it. Moreover, those bullied seldom lodge formal reports due to fear of retaliation and negative repercussions to their careers (Al-Shafaee et al., 2013; Leisy & Ahmad, 2016). According to Nagata-Kobayashi, Maeno, Yoshizu, and Shimbo (2009), only 12% of junior doctors reported experiences of abuse to a superior. This allows the abusive behaviours to perpetuate and persist as a taught behaviour, and resulting in a legacy of abuse (Leisy & Ahmad, 2016).

Congruently, the prevalence of workplace bullying among junior doctors are reported to be high worldwide (Leisy & Ahmad, 2016). In the United States and Canada, the prevalence of abuse and harassment among junior doctors have been reported to range from 45% to 70% (Crutcher, Szafran, Woloschuk, Chatur, & Hansen, 2011; Shinsako, Richman, & Rospenda, 2001). In Europe, studies conducted in Ireland, United Kingdom, and Turkey have indicated that 30% to 84% of junior doctors identified themselves as being bullied (Acik et al., 2008; Aykut et al., 2016; Cheema, Ahmad, Giri, Kaliaperumal, & Naqvi, 2005; Farley, Coyne, Sprigg, Axtell, & Subramanian, 2015; Quine, 2002). In Australia and New Zealand, 50% to 92% junior doctors can be classified as being bullied at work (Ling, Young, Shepherd, Mak, & Saw, 2016; J. Scott, Blanshard, & Child, 2008). In Asia, studies conducted in India, Oman, Saudi Arabia, and Japan have shown that 84% to 97% of junior doctors have reported being mistreated and abused at their workplace (Al-Shafaee et al., 2013; Bairy et al., 2007; Fnais et al., 2013; Nagata-Kobayashi et al., 2009). As can be observed, the prevalence of workplace bullying differs between junior doctors in different parts of the world. A part of this could be attributed to the lack of homogeneity in methodologies used to measure said construct, however it may perhaps also be explained by differences in societal culture, as societal culture has been shown to affect the prevalence of workplace bullying (Kemp, 2014; Kwan, Tuckey, & Dollard, 2014; Moayed et al., 2006). In addition, junior doctors in different parts of the world are subject to varying resident duty hours, environment for training, and amount of clinical supervision, and the differences are observed both between and within the health systems of different countries (Temple, 2014). Unfortunately, considering that there is substantial evidence of workplace bullying among junior doctors in many parts of the world, no literature on workplace bullying among Southeast Asian (SEA) junior doctors has been published to date. As there is evidence of cross-cultural differences between countries within and across a region (Greenwood et al., 2016), studies of workplace bullying among junior doctors within local contexts are important.

Furthermore, studies on workplace bullying among junior doctors have focused on investigating the perpetrators of bullying (Imran, Jawaid, Haider, & Masood, 2010; Li et al., 2010; McNamara, Whitley, Sanders, & Andrew, 1995; Nagata-Kobayashi et al., 2009; Paice et al., 2004), the effects of workplace bullying in terms of health (Farley et al., 2015; McNamara et al., 1995; Nagata-Kobayashi et al., 2009; Quine, 1999) and work outcomes (Daugherty, Baldwin, & Rowley, 1998; Dikmetas, Top, & Ergin, 2011; Farley et al., 2015; Nagata-Kobayashi et al., 2009; Quine, 1999), and factors of workplace bullying such as gender, age, position, and clinical specialty (Al-Shafaee et al., 2013; Aykut et al., 2016; Bairy et al., 2007; Chadaga, Villines, & Krikorian, 2016; Crutcher et al., 2011; Dikmetas et al., 2011; Fnais et al., 2013; Hills, Joyce, & Humphreys, 2012; Ling et al., 2016; McNamara et al., 1995; Nagata-Kobayashi et al., 2009; J. Scott et al., 2008). In contrast, little is known with regards to individual traits and organisational factors influencing the prevalence of workplace bullying among junior doctors. There is evidence that bullied individuals have different disposition compared with non-bullied individuals (Nielsen, Glasø, & Einarsen, 2017), and there is growing recognition that workplace characteristics may contribute towards the occurrence of workplace bullying. Studies conducted among other workers have indicated that organisational climate (Agervold, 2009; Baillien, Neyens, & De Witte, 2008; Giorgi et al., 2013; Law, Dollard, Tuckey, & Dormann, 2011; Magerøy, Lau, Riise, & Moen, 2009; Vartia, 1996), organisational culture (An & Kang, 2016; Baillien et al., 2008; Hutchinson, Wilkes, Jackson, & Vickers, 2010; Pilch & Turska, 2015), organisational justice (Aquino, Lewis, & Bradfield, 1999; Baillien et al., 2008; Magerøy et al., 2009; Oxenstierna, Elofsson, Gjerde, Magnusson, & Theorell, 2012), organisational leadership (Agervold & Mikkelsen, 2004; Baillien et al., 2008; Hauge et al., 2011; Magerøy et al., 2009; Nielsen, 2013; Oxenstierna et al., 2012; Skogstad, Einarsen, Torsheim, Aasland, & Hetland, 2007), and organisational support (Djurkovic, McCormack, & Casimir, 2008; Gardner et al., 2016; Naseer, Raja, & Donia, 2016; Salahieh, 2015) influence the prevalence of workplace bullying. However, it is unclear whether these factors affect junior doctors similarly.

All in all, considering the extensive effects of workplace bullying both on junior doctors and healthcare organisations, and the paucity of literature on the burden and predictors of workplace bullying among SEA junior doctors, examining the prevalence and individual and organisational factors of workplace bullying among Malaysian junior doctors is pertinent. To summarise, the problem under consideration is "What is the prevalence of workplace bullying among junior doctors in Malaysia, and to which individual and organisational factors could it be attributed to?". The question is propositioned on the premise that recognising the preponderance and antecedents of workplace bullying among Malaysian junior doctors provides crucial information to guide healthcare planning and aid the development of appropriate legislation, policies, and procedures that can prevent and mitigate this phenomenon, in order to prevent its negative consequences.

6

1.2 Rationale of the Study

As described earlier, workplace bullying has been shown to be detrimental to workers' health and costly to organisations (Hodgins & McNamara, 2014; Kemp, 2014; Kivimaki et al., 2000; Kivimaki et al., 2003; Moayed et al., 2006; Nielsen & Einarsen, 2012; Nielsen, Indregard, & Overland, 2016). In Malaysia, workplace bullying has been investigated among workers of the hospitality industry (Patah, Abdullah, Naba, Zahari, & Radzi, 2010), plastics manufacturing company (Yahaya et al., 2012), several private and public establishments (Al Bir & Hassan, 2014; Kwan et al., 2014), a public service agency (Omar, Mokhtar, & Hamzah, 2015), and hospitals (Chang, Su, & Mizanur, 2018), and a prevalence of 21-83% of workplace bullying among Malaysian workers has been reported, depending on how it was operationalized (Chang et al., 2018; Omar et al., 2015). However, though there are newspaper articles reporting cases of junior doctor being bullied and suffering depression (Loh, Lim, Arlina, & Ho, 2012; Teh, 2018), no studies investigating workplace bullying among Malaysian junior doctors have been published to date. Considering the pervasiveness of workplace bullying among local populations, and given that junior doctors are particularly at risk of exposure to workplace bullying (Leisy & Ahmad, 2016), examining workplace bullying among junior doctors within local context is pertinent. Furthermore, as described earlier, the influence of individual traits and organisational characteristics on the prevalence of workplace bullying has not been established among junior doctors. Thus, in view of its occupational health significance, there is an urgent and expanding need to assess the prevalence and individual and organisational factors associated with workplace bullying among Malaysian junior doctors. A multicentre cross-sectional study would be able to fill this niche, in view of its relative ease of conduct, wide reach, and associated low costs compared to a multicentre cohort study. Considering their high-risk profile, junior doctors represent important candidates for health promotion and protection initiatives, and the results of this study could be used to improve the occupational health and safety status of this vulnerable group.

1.3 Conceptual Framework

The framework for this study is adapted from the ecological model of workplace bullying as suggested by S. L. Johnson (2011), which is based on Brofenbrenner (1979) ecological systems theory. This theory proposes that human development is shaped by factors in a nested layer of hierarchical systems, which include the microsystem (interpersonal relationships, roles and activities), the mesosystem (the connections of different groups, such as family and work), the exosystem (the broader structures that indirectly affects individuals, such as the government), and the macrosystem (societal values, beliefs and culture). Brofenbrenner (1979) stressed that it is only through an appraisal of these systems can the intricacy of human behaviour be fully understood. In the healthcare setting, the hierarchical systems would include society at the macrosystem level, the healthcare institution at the exosystem level, the department at the mesosystem level, and finally, the bully and target at the microsystem level. According to the ecological model, factors streaming from the macrosystem through the inner systems are said to act as antecedents to bullying behaviours, creating a working environment that is conducive to bullying. Therefore, workplace bullying can be thought of as the product of societal, institutional, organisational, and individual factors (S. L. Johnson, 2011).

At the lowest level, the microsystem is comprised of the bully and the target (S. L. Johnson, 2011), and as such is hypothesized to be concerned with individual-level

factors including sociodemographic characteristics such as age, gender, ethnicity, education background and language proficiency, individual traits such as personality, affect, and self-esteem, and employment characteristics such as working duration, clinical specialty, and type of hospital in this study (Akbulut, Sahin, & Eristi, 2010; Aquino, Grover, et al., 1999; Ariza-Montes, Muniz, Montero-Simó, & Araque-Padilla, 2013; Chadaga et al., 2016; Coyne, Seigne, & Randall, 2000; S. Harvey & Keashly, 2003; Hoel & Cooper, 2000; Keuskamp, Ziersch, Baum, & Lamontagne, 2012). Above this level, the mesosystem encompasses the department (S. L. Johnson, 2011), and as such are assumed to be related to organisational-level constructs such as organisational climate, organisational culture, organisational justice, organisational leadership, and organisational support (Baillien et al., 2008; Einarsen, Raknes, & Matthiesen, 1994; Gardner et al., 2016; Magerøy et al., 2009). The exosystem, which is the layer above the mesosystem, is consisted of the healthcare institution as a whole (S. L. Johnson, 2011), and as such are thought to be embody institutional-level factors including organisational size, organisational structure, and organisational change (Baillien et al., 2008; Moayed et al., 2006). Lastly, at the uppermost level, the macrosystem is consisted of society (S. L. Johnson, 2011), and as such are theorized to be linked to societal factors such as cultural norms, and laws and policies governing workplace bullying (Samnani & Singh, 2012).

The ecological model described, as well as factors identified from the relevant scientific literature, have laid the foundation to the conceptual framework from which this study proceeds, which was specifically adapted to the healthcare industry by conceptualizing the hierarchical systems according to healthcare settings. The conceptual framework for this study is illustrated in Figure 1.3.

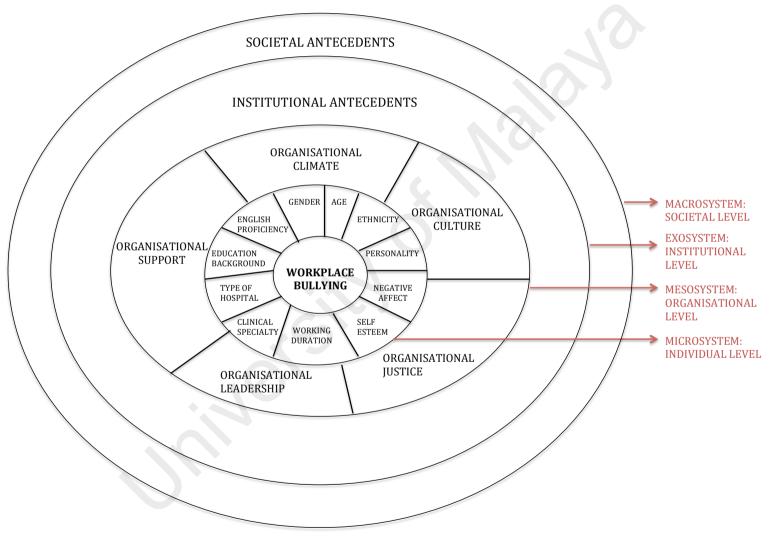


Figure 1.3: Multilevel framework of workplace bullying among junior doctors (adapted from S. L. Johnson, 2011)

1.4 Hypothesis

The hypothesis that is tested in this study, based on the conceptual framework given, is the relationship between individual and organisational factors and workplace bullying among junior doctors.

1.5 Purpose of the Study

The general objectives of this study are to assess the prevalence and individual and organisational factors of workplace bullying among junior doctors in Malaysia, and to outline policy recommendations based on associated factors. The specific objectives of this study include the following:

- To systematically review the prevalence, factors and outcomes of workplace bullying among junior doctors.
- To validate the psychometric properties of the Brief Individual Traits Questionnaire, the Brief Organisational Environment Scale, and the Negative Acts Questionnaire-Revised.
- 3. To determine the association between individual traits and workplace bullying among junior doctors in Malaysia.
- 4. To determine the association between organisational characteristics and workplace bullying among junior doctors in Malaysia.
 - To prepare a policy brief outlining study findings and policy recommendations based on factors of workplace bullying identified.

1.6 Research Questions

1. Among junior doctors, what are the prevalence, factors and outcomes of workplace bullying?

11

- 2. Among Malaysian junior doctors, what is the prevalence of workplace bullying, what type of bullying is experienced, and who are the commonest perpetrators of negative actions?
- 3. Among Malaysian junior doctors, are individual traits including negative affect, personality, and self-esteem related to workplace bullying?
- 4. Among Malaysian junior doctors, are organisational characteristics including organisational climate, organisational culture, organisational leadership, organisational support and organisational justice related to workplace bullying?
- 5. Among Malaysian junior doctors, what are the policy recommendations that could be made based on associated individual and organisational factors of workplace bullying?

1.7 Significance of the Study

In view of the occupational health significance of workplace bullying among junior doctors, and the current dearth of research done in this area within the local setting, this study timely fills an urgent gap in the existing body of literature. It is hoped that this study will shed some light onto the burden and individual and organisational factors of workplace bullying among Malaysian junior doctors, and subsequently pave the way for the development of evidence-based legislation, policies and procedures to prevent and mitigate workplace bullying among Malaysian junior doctors. This is especially important as despite the upsurge of workplace bullying internationally, anti-bullying legislations and organisational remediation are still lacking at the present moment (Al-Daraji, 2009). Currently, only some parts of Europe (Sweden, the Netherlands, Norway, Denmark, Finland, Belgium, France, United Kingdom, Ireland, Greece, Estonia, Hungary, Lithuania, Germany, and Spain), some provinces in Canada and United

States, Chile, Brazil, Australia, and Japan have adopted specific laws, code of conduct or procedures to deal with workplace bullying (Lippel, 2010; Serafeimidou & Dimou, 2016). It is therefore essential that evidence pertaining to this occupational hazard be gathered to prompt policy making that will enhance health promotion and protective intiatives for all Malaysian junior doctors.

1.8 Scope of the Study

This study is limited to factors at the microsystem or individual level, and mesosystem or organisational level. It does not investigate factors at the exosystem or institutional level, nor the macrosystem or societal level. Additionally, it does not focus on the characteristics and perceptions of bullying perpetrators, but rather characteristics and perceptions of targets of bullying only. Consequences of workplace bullying in terms of individual health, affect and behaviour, as well as organisational outcomes are not included in this study.

CHAPTER 2: LITERATURE REVIEW

2.1 Junior Doctors

2.1.1 Terminology and Definition of Junior Doctor

The terminology used to describe junior doctors is varied across the globe, and includes the terms "intern" (McDougall, 2009), "house officer" (Shahruddin et al., 2016), "foundation doctor" (McDougall, 2009), "resident" (McDougall, 2009), "trainee doctor" (Farley et al., 2015), and "doctor in training" (Paice et al., 2004). For the purpose of this study, the term junior doctor will be used throughout to represent house officer (HO), which is the terminology given to junior doctors working in the Malaysian healthcare system. A junior doctor is operationally defined as "qualified doctors in clinical training" ("Doctors' titles: Explained," 2017, p. 4).

2.1.2 Medical Training in Malaysia

In Malaysia, new medical graduates are obliged to undergo a two-year housemanship training in a government or teaching hospital, which is comprised of four-monthly rotations in six major clinical postings, i.e. Internal Medicine, General Surgery, Paediatrics, Obstetrics and Gynaecology (O&G), Orthopaedic Surgery, and Emergency Medicine or Anaesthesiology. This is in accordance to the Medical Act 1971 preceding registration with the Malaysian Medical Council (MMC) (Shahruddin et al., 2016). During this time, they are known as HO, are provisionally registered with MMC, and are expected to apply the medical knowledge they have accumulated during undergraduate training and to develop procedural skills during daily assignments under the supervision of attending senior doctors (Al-Dubai, Ganasegeran, Perianayagam, &

Rampal, 2013). The aim is to transform the academically qualified medical student into a competent medical practitioner who is fully accustomed to handling the daily duties and workload that is required of medical doctors in clinical practice. Some of their daily assignments include clerking patients' medical history, performing physical examinations, forming provisional diagnoses and initial management plans, carrying out appropriate investigations, attending ward rounds and presenting each patient's history and clinical details to attending senior doctors, executing reviewed management plans, and keeping the medical team up to date with the progress of the patients. Successful completion of housemanship training entails receiving satisfactory reports from the supervising consultants and heads of departments of each clinical posting to indicate that the HO is now competent enough to serve independently in various health sectors (Shahruddin et al., 2016). Upon successful completion of housemanship training, HO are granted full registration with the MMC and promoted to the position of medical officers (MO), and are required to serve an additional two years of compulsory service in government hospitals (Rampal, 2013). Those who wish to become specialists then go on to enter master programmes or undertake professional exams such as the Membership of the Royal Colleges of Physicians. HO are considered as junior doctors, whereas those higher up in the career pathway, i.e. MO, specialists, and consultants, are known as senior doctors.

Climbing up the career ladder, the medical training that junior doctors must successfully complete is believed to be highly demanding and arduous, physically, psychologically and emotionally (Al-Dubai et al., 2013). Throughout their journey, junior doctors must learn to juggle and balance varied facets of work life, including providing patient care, dealing with deaths and grievance, fulfilling demands made from attending senior doctors, attaining continuous learning, managing hectic schedules and enduring lack of respite, along with fulfilling obligations of personal and family life (Al-Dubai et al., 2013; Vivekanandan et al., 2015; Yusoff, Tan, & Esa, 2011). Although deemed a steep learning curve that is vital towards producing fully competent, professional and patient-orientated doctors (Shahruddin et al., 2016), many junior doctors have claimed that their training have been fraught with mistreatment by attending senior doctors. In studies conducted to examine stress among HO, they asserted that MO taught them in an abusive manner, instead of correcting their mistakes or guiding them in an suitable manner (Vivekanandan et al., 2015). Being severely rebuked over mistakes, being on the receiving end of humiliating remarks, and being shouted at by attending senior doctors were reported to occur even in the presence of patients, with detrimental consequences to HO' confidence and abilities to perform their duties effectively (Abu Bakar, 2017; Vivekanandan et al., 2015). Moreover, attending senior doctors have been reported to not adequately specify HO' extent of responsibilities, allow them autonomy in choosing their own methods of working, and give them credit for the accomplishment of good work (Vivekanandan et al., 2015). In addition to that, there have been reports of HO claiming that they were being overburdened with work and having poor work life balance due to the high work demands and expectations from senior attending doctors (Abu Bakar, 2017; Al-Dubai et al., 2013; Vivekanandan et al., 2015; Yusoff et al., 2011). Although this situation should have been improved with the restriction of working hours to a maximum of 60 hours per week and obligatory two days leave per week after the introduction of the Flexi Hours Shift System in 2011 (Annual Report 2013 Ministry of Health Malaysia, 2013), there have been claims by HO of having to work more than 70 hours rather than the 60 hours stipulated (Vivekanandan et al., 2015) and working 28 days straight with no leave ("Another houseman stressed from working long hours," 2013), invoking concerns over the implementation of this new system. Finally, there have also been assertions that HO were intimidated by threats of clinical posting extensions from attending senior doctors (Bedi & Azizan, 2008), resulting in them not daring to question any ill treatment that they may perceive. Indeed, in a study examining stress, anxiety and depression among HO, 30.8% were reported to perceive themselves as being bullied (Shahruddin et al., 2016).

Conversely, there were some healthcare professionals that argued that there are other reasons for junior doctors to complain about being victimised at work. Some have termed junior doctors of this generation as "strawberry generation" (i.e. bruise as easily as strawberries), and asserted that they are spoiled, sluggish, and cannot withstand the pressure and the harsh realities of medical training ("Strawberry generation," n.d.). They claimed that many of these junior doctors have idealistic expectations about the medical profession and balk when they discover the highly stressful and less glamorous aspects of becoming a doctor (Yeoh, 2016). There were also those that believed that the lack of junior doctors' ability to cope with medical training is due to pursuing medicine for the wrong reasons, such as fulfilling parental demands despite not having personal interest and passion for medicine, and desiring the prestige associated with becoming a doctor (Yeoh, 2016). Many of those that argued against allegations of junior doctors being bullied at work believe that the rigorous training serves a noble purpose of benefiting patients, and is for the own good of junior doctors (Yeoh, 2016).

2.1.3 Medical Training in Other Parts of the World

The medical training for junior doctors across the globe is generally similar to the one described for Malaysia. Termed internship, housemanship, residency or foundation programme, this training period commonly entails clinical rotations in core clinical specialties and ranges from one to two years (Condon et al., 2013; Wijnen-Meijer, Burdick, Alofs, Burgers, & Cate, 2013). Junior doctors globally are granted provisional registration and must satisfactorily complete their internship to be granted full registration by the medical boards and council of respective countries (McDougall, 2009), by meeting the level of competence, conduct and care that is deemed appropriate for safe practice (Giri & Parhar, 2012). In general, their modus operandi and daily assignments are similar to those of Malaysian junior doctors, that is, to be the directly responsible for patients' care and work in the context of hierarchically organised medical teams. Following successful completion of their training, junior doctors may progress to specialty training or continue working in primary care or hospitals.

Similarly to the medical training in Malaysia, the medical training in other parts of the world have also been described as gruelling and permeated by frequent occurrences of senior doctors' mistreatment, suggesting that the severe culture of medical training is not unique to Malaysia, but is endemic, deeply rooted, and ingrained within health systems across the globe (Musselman, MacRae, Reznick, & Lingard, 2005). In the United States, cited as chief causes for dissatisfaction among residents in relation to their training are numerous night calls, lack of rest, and excessive "scut" work (Schwartz, Black, Goldstein, Jozefowicz, & Emmings, 1987). Aside from the hefty workload, residents have also claimed to be subjected to belittlement and public humiliation, being given tasks as punishments, receiving threats about one's reputation and career, and being denied opportunities by attending senior doctors (Daugherty et al., 1998). Similarly, in the United Kingdom, junior doctors have reported being exposed to persistent belittlement, demoralisation, unjustified criticism, excessive monitoring, and public humiliation (Quine, 2002). In Ireland, there have been reports of senior doctors ignoring, pushing around, verbally assaulting, and humiliating junior doctors in front of other staffs and patients (Cheema et al., 2005). In South Africa, issues of lack of supervision have cropped up, with 33% of junior doctors claiming that they had performed a clinical procedure for the first time without guidance or supervision from the start to end on more than one occasion, and not receiving help from senior doctors when it was required (Bola, Trollip, & Parkinson, 2015). Additionally, many junior doctors reported having to work outside of contracted hours due to understaffing and heavy workload and worked shifts exceeding 30 hours in duration (Bola et al., 2015). In India, the role and job description of medical interns was described as undefined, leading to interns having to complete work that do not achieve internship aims (Giri & Parhar, 2012). Additionally, medical interns were reported to not be given the next day off after completing a night shift and given the day leave that they were entitled to (Giri & Parhar, 2012). Indian interns have also been said to be overlooked in terms of clinical teaching, due to consultants' focus on residents undergoing masters programmes (Giri & Parhar, 2012). In Australia, working hours remained a problem despite the introduction of a national voluntary code of practice by the Australian Medical Association (McDougall, 2009), and in New Zealand, unjustified criticism and undermining one's work by senior doctors were reported to be frequent occurrences among junior doctors (J. Scott et al., 2008). Indeed, a systematic review to assess depression among residents in United States programmes have indicated that residents

19

are mostly likely to be depressed during junior residency year (Joules, Wiliams, & Thompson, 2014).

Conversely, and similarly to the situation in Malaysia, there were some healthcare professionals who argued that junior doctors are not mistreated, and that the gruelling manner in which junior doctors are being trained is justifiably an effective tool to push residents into performing well in their clinical practice (Musselman et al., 2005). Even some juniors doctors themselves found such behaviours to be acceptable, believing that they needed to have stronger motivations to function well and to be "scared into doing things", and as long as the intention was to educate so that patient care and safety is optimal, they did not mind being given a hard time (Musselman et al., 2005). Others claimed that it is a matter of misinterpretation by junior doctors, as medical training is a product of a hierarchical and high-pressure environment where differences in knowledge habitually lead to power imbalances, and as such, any attempts to correct or "teach" junior doctors may be misconstrued as bullying rather than attempts to better performance (Musselman et al., 2005). Many have acknowledged that, while not ideal, the harsh training of junior doctors are appropriate and of utility given the high-risk setting of clinical practice (Musselman et al., 2005).

2.2 Workplace Bullying

2.2.1 Definition of Workplace Bullying

Despite four decades of research into workplace bullying, it appears that at present there is no universal term and definition for what is constituted as bullying at work. From the literature review, researchers in different parts of the world have used a plethora of terms to conceptualise psychological aggression at work (Nielsen & Einarsen, 2018). In the United Kingdom (Hoel & Cooper, 2000; Rayner, 1997), Ireland (O'Moore et al., 1998), Norway (Einarsen & Skogstad, 1996), Finland (Salin, 2001; Vartia, 1996), and Australia (M. Sheehan, 2001), the term "bullying" have been used, in Sweden (Leymann, 1996), Germany (Zapf, 1999b), the Netherlands (Hubert & van Veldhoven, 2001), and Turkey (Yildirim & Yildirim, 2007) the term utilised was "mobbing", while in North America, numerous terms have been employed, including "harassment" (Brodsky, 1976), "workplace trauma" (Wilson, 1991), "emotional abuse" (Keashly, 1998), "workplace deviance" (Robinson & Bennett, 1995) "aggression" (Neuman & Baron, 1998), "counterproductive work behavior" (Fox & Spector, 1999), "incivility" (Andersson & Pearson, 1999; Cortina, Magley, Williams, & Langhout, 2001) "victimization" (Aquino, Grover, et al., 1999; Einarsen & Raknes, 1997), "social undermining" (Duffy, Ganster, & Pagon, 2002), and "antisocial workplace behaviour" (Aquino & Douglas, 2003). In addition, the term "scapegoating" has also been used by Thylefors (1987). Table 2.2.1 outlines the different terms used and their definitions.

Author (Year)	Term	Definition
Brodsky (1976)	Workplace	"Repeated and persistent attempts by one person to torment,
	harassment	wear down, frustrate. It is treatment that persistently
		provokes, pressures, frightens, intimidates, or otherwise
		discomforts another person" (p. 2)
Thylefors	Scapegoating	"One or more persons during a period of time are exposed to
(1987)		negative and repeated actions from one or more other
		persons" (in Einarsen, 2000, p. 382)
Wilson (1991)	Workplace	"The disintegration of an employee's fundamental self,
	trauma	resulting from employer's or a supervisor's perceived or real
		continual and deliberate malicious treatment" (p. 47)
Keashly, Trott,	Emotional	"Hostile verbal and nonverbal behaviours nonphysical
and MacLean	abuse	behaviors directed by one or more persons towards another.
(1994)		The primary aim is to undermine the other to ensure
		compliance" (p. 341)

 Table 2.2.1: Terms and definitions used to describe psychological aggression at work by previous studies

		,
Author (Year)	Term	Definition
Björkqvist, Österman, and Hjelt-Bäck (1994)	Workplace harassment	"Repeated activities, with the aim of bringing mental (but sometimes also physical) pain and directed towards one or more individuals who, for one reason or another, are not able to defend themselves" (p. 173)
Robinson and Bennett (1995)	Workplace deviance	"Voluntary behaviour that violates significant organisational norms and, in so doing, threatens the well-being of the organisation or its members, or both" (p. 556)
Leymann (1996)	Mobbing	"Social interaction through which one individual is attacked by one or more individuals almost on a daily basis and for periods of many months, bringing the person into an almost helpless position with potentially high risk of expulsion" (p. 168)
Einarsen and Skogstad (1996)	Workplace bullying	"Situations where a worker or a supervisor is systematically mistreated and victimized by fellow workers or supervisors through repeated negative acts. However, to be a victim of such bullying one must also feel inferiority in defending oneself in the actual situation" (p. 185)
Baron and Neuman (1996)	Workplace aggression	"Efforts by individuals to harm others with whom they work, or have worked or the organisations in which they are employed" (p. 161)
Fox and Spector (1999)	Counter- productive work behaviors	"Serious and minor deviance directed at organizational and personal targets" (p. 915)
Zapf (1999a)	Mobbing	"Mobbing at work means harassing, bullying, offending, social excluding someone or assigning offending work tasks to someone in the course of which the person confronted ends up in an inferior position" (p. 73)
Andersson and Pearson (1999)	Workplace incivility	"Low-intensity deviant behaviour with ambiguous intent to harm the target, in violation of workplace norms for mutual respect" (p. 457)
Hoel and Cooper (2000)	Workplace bullying	"A situation where one or several individuals persistently, over a period of time, perceive to be on the receiving end of negative actions from on or several persons, in a situation where a target of bullying has difficulty in defending him/ herself against these actions. We will not refer to one set-off incidents as bullying" (p. 6)
Salin (2001)	Workplace bullying	"Repeated and persistent negative acts that are directed towards one or several individuals, and which create a hostile work environment. In bullying the targeted person has difficulties in defending herself; it is therefore not a conflict between parties of equal strength" (p. 431)
Duffy et al. (2002)	Social undermining	"Behaviour intended to hinder, over time, the ability to establish and maintain positive interpersonal relationships, work-related success, and favourable reputation" (p. 332)
Aquino and Douglas (2003)	Antisocial workplace behaviour	"Actions directed towards other employees or the organization that have the potential for producing physical, economic, psychological, or emotional harm" (p. 195)

Table 2.2.1, continued

Author (Year)	Term	Definition
Aquino and	Workplace	"An employee's perception of having been the target, either
Lamertz (2004)	victimization	momentarily or over time, of emotionally, psychologically,
		or physically injurious actions by another organisational
		member with whom the target has an ongoing relationship"
		(p. 1023)
Einarsen, Hoel,	Workplace	"Situations where an employee is persistently exposed to
and Notelaers	bullying	negative and aggressive behaviours at work primarily of a
(2009)		psychological nature, with the effect of humiliating,
		intimidating, frightening or punishing the target" (p. 25)

Table 2.2.1, continued

From the list of terms included, it can be perceived that they are all concepts used to describe exposure to persistent workplace victimisation. Indeed, according to Einarsen (1999), Einarsen et al. (2003), Aquino and Lamertz (2004), and Bowling and Beehr (2006), research on hostile workplace behaviour appears under different labels and in different disciplines, but overall each label refer to the same overall construct. The evident heterogeneity in the terms used to refer to bullying at work may stem from the construct encompassing aggressive and harassing behaviours (Fox & Stallworth, 2005). In North America, Matthiesen and Einarsen (2010) described the terms "workplace harassment" and "emotional abuse" to be seemingly used as synonyms for bullying, and Branch (2008) has stated that researchers in North America often embody bullying actions in the term "emotional abuse" which is often depicted as a continual and relentless form of "workplace aggression". In this regard, though there are researchers who argued that the different terms represent constructs with meaningful theoretical differences (Tepper & Henle, 2011), some argued that the plethora of terms has led to confusion in the conceptualisation of workplace bullying (Hershcovis, 2011; Spector & Fox, 2005).

Nevertheless, the general consensus is that workplace bullying is characterised by a phenomena in which an employee becomes the target of persistent negative actions that

produces harm, for an enduring period of time, against which the target is powerless to defend him or herself, thus rendering the target a victim in the process (Chirila & Constantin, 2013; Nielsen & Einarsen, 2018; Saunders, Huynh, & Goodman-Delahunty, 2007). In addition, the persistency of negative actions has been operationalised as enduring for at least six months and occurring at least once a week (Leymann, 1996; Mikkelsen & Einarsen, 2001). The definition of workplace bullying that will be used throughout this study, which is widely used by researchers in many parts of the world, is "situations where an employee is persistently exposed to negative and aggressive behaviours at work primarily of a psychological nature, with the effect of humiliating, intimidating, frightening or punishing the target" (Einarsen et al., 2009, p. 25).

2.2.2 Distinctions Between Workplace Bullying and Other Closely Related Terms

As shown previously, previous studies have employed various terms to conceptualise psychological aggression at work. Because definitional precision is a critical precondition for investigating, rectifying, and averting workplace bullying (Branch, 2008), it may be useful to examine the distinctions between workplace bullying and other closely related terms by evaluating whether the features of the terms meet the hallmark criteria of workplace bullying outlined earlier, and highlighting other important differences. The differences are illustrated in Table 2.2.2.

Key Criteria of Workplace Bullying	Term	How Term Differs from Workplace Bullying
Actions perceived as negative and harmful	Interpersonal conflicts	May be perceived as a normal and neutral feature of work life, and may not result in negative impacts on health and productivity (Salin, 2003)
-	Social undermining	Assumes particular outcomes, i.e. hinder positive interpersonal relationships, work-related success and reputation (Hershcovis, 2011)

Table 2.2.2: Distinctions between workplace bullying and closely related terms

Key Criteria of Workplace Bullying	Term	How Term Differs from Workplace Bullying
Actions that are primarily psychological in nature	Workplace violence	May have more emphasis on physical acts (Salin & Hoel, 2013)
Actions directed at one or more individuals, i.e. interpersonal in nature	Deviant, counterproductive and antisocial workplace behaviour	Includes negative acts directed towards the organisation (Hershcovis, 2011; Robinson & Bennett, 1995), and may result in economic harm as well (Aquino & Douglas, 2003)
Actions occur persistently for an enduring period of time	Incivility	Defined as low intensity behaviour; whereas bullying is assumed to be of higher intensity because of its frequency and persistence (Hershcovis, 2011)
Power imbalance between perpetrator and target	Interpersonal conflicts	Does not necessarily reflect imbalance in power; may refer to events where the two parties in conflict are equal in strength (Einarsen & Skogstad, 1996; Vartia, 1996)
Involving either superiors, coworkers or subordinates	Abusive supervision	Only refers to negative actions from superiors (Zapf, Escartin, Einarsen, Hoel, & Vartia, 2011)

Table 2.2.2, continued

In addition to the terms included in Table 2.2.2, specific forms of workplace harassment focusing on certain characteristics of the target as the main focus of action, such as sexual and racial harassment should also be made distinct from workplace bullying. This is because workplace bullying is said to be "status-blind", and does not tend to focus on specific attributes of the target (Branch, 2008).

2.2.3 Classification of Workplace Bullying

There is no definitive list of what is considered bullying behaviours, but researchers have attempted to group workplace bullying into several empirical classes. Leymann (1986) categorized bullying behaviours into five categories; i.e. humiliating behaviours, isolating behaviours, negative communications, frequent changes of tasks to punish a person, and violence or threats of violence. Vartia (1993) described six types of bullying behaviours, i.e. threatening or criticizing, slander, giving a person overly simple or too

few tasks, social isolation, insinuations about one's mental health, and physical violence or threat of violence. Niedl (1995) classified bullying behaviours into seven types, i.e. isolation, sanction by certain tasks, attacking one's integrity, attacking one's private sphere, direct and indirect critique, sexual encroachment, and threats. Zapf et al. (1996) identified seven types of bullying behaviours, i.e. attacking one's attitudes, attacking one's private life, social isolation, rumours, verbal aggression, mobbing by organisational measures, and physical violence. Finally, Rayner and Hoel (1997) differentiated bullying behaviours into five types, i.e. threat to professional status, threat to personal standing, isolation, overwork and destabilization. Other types of bullying behaviours include 'relational bullying', in which the perpetrator tries to damage the target's social networks (Crick & Grotpeter, 1995). Table 2.2.2 outlines examples of negative actions according to the classification of workplace bullying by Rayner and Hoel (1997), which include concepts that are generally covered by instruments measuring workplace bullying (Cowie, Naylor, Rivers, Smith, & Pereira, 2002).

Types of Workplace Bullying	Examples of Negative Actions
Threat to professional status	Belittling opinion
	Public professional humiliation
	Accusation regarding lack of effort
Threat to personal standing	Name-calling and insults
	Intimidation
	Devaluing with reference to age
Isolation	Preventing access to opportunities
	Physical or social isolation
	Withholding of information
Overwork	Undue pressure
	Impossible deadline
	Unnecessary disruptions
Destabilization	Failure to give credit when due
	Assigning meaningless tasks
	Removal of responsibilities
	Repeated reminders of blunders
	Setting up one to fail

Table 2.2.3: Rayner and Hoel (1997) classification of workplace bullying

2.2.4 Prevalence of Workplace Bullying

Assessments of the prevalence of workplace bullying have largely been problematic due to the lack of consensus on what constitutes as workplace bullying (Ouine, 1999), and as a result, the field of study is characterised by heterogeneity in relation to the terms, definitions, and measurement methods utilised (Nielsen, Matthiesen, & Einarsen, 2010). An overlap in responses to items assessing verbal abuse, humiliation, threats, and bullying has been observed and the overlap ranges from 34% to 79% (Hodgins & McNamara, 2014). Using the same study population, a study has shown that differences in methods used to measure workplace bullying result in different prevalence estimates (Salin, 2001). Nevertheless, though the wide range of prevalence reported may reflect the lack of standardised definition and study methodology, it may perhaps also be attributed to differences in organisational, institutional and societal context. Differences in prevalence estimates observed in studies reinforces the argument that bullying at work has different meanings in different populations, institutions and even occupations (Moayed et al., 2006), and according to a substantial body of literature, societal culture has been shown to affect the prevalence of workplace bullying (Kemp, 2014; Kwan et al., 2014; Moayed et al., 2006).

Overall, pooling results from a wide selection of studies and taking into consideration measurement complexities of workplace bullying, Zapf et al. (2011) estimated that between 10% to 15% of employees have been exposed to occasional bullying, and between 3% to 4% of workers have experienced serious bullying at work (Zapf et al., 2011). Studies conducted in many countries suggest that workplace bullying is widespread across all sectors, but occurs at the highest frequencies in the health, education, public service, and financial sectors (Ariza-Montes et al., 2013).

27

2.2.5 Factors Associated with Workplace Bullying

Conventionally, workplace bullying was viewed as a dyadic problem between individuals, i.e. perpetrator and target of negative actions (S. L. Johnson, 2011). Over time, it became more apparent that the workplace environment play an important role in influencing the prevalence of workplace bullying (Hodgins & McNamara, 2014). Drawing on the findings of numerous studies, workplace bullying can be thought of as a product of individual, organisational, institutional, and societal elements (S. L. Johnson, 2011).

2.2.5.1 Individual Factors

Individual factors that have been associated with workplace bullying include demographic characteristics (i.e. age, gender, and ethnicity), individual traits (i.e. personality, affect, self-esteem, social skills, coping skills, and problem-solving skills), and employment characteristics (i.e. job position and type of employment).

In relation to demographic characteristics, findings of studies have largely been inconsistent (Hoel, Cooper, & Faragher, 2001). Some studies have reported that female employees experienced more workplace bullying compared to male employees (Aquino & Bradfield, 2000; Björkqvist, Österman, & Lagerspetz, 1994; Hoel & Cooper, 2000), while some studies observed that both genders are equally prone to being bullied at work (Einarsen & Skogstad, 1996; Kivimaki et al., 2000; Rayner, 1997; Vartia & Hyyti, 2002; Zapf, Einarsen, Hoel, & Vartia, 2003). Gender differences in the prevalence of bullying have been suggested to be due to men inclining to perceive bullying as a particular management style within the context of their organisation, whereas women tend to perceive certain behaviours as threatening or bullying in nature (Simpson & Cohen, 2004). Others believe that women perceive themselves as having less power and therefore are reluctant to confront bullies through direct action, taking longer to initiate action and consequently allowing the bullying to worsen (Barling, 1996). Additionally, according to some authors (Babcock & Laschever, 2003; Gilbert, 2013), women are permitted a narrower band of acceptable behaviour compared to men due to traditional gender roles, and as such, any deviation from traditional roles will submit them to be negatively evaluated and potentially bullied. In relation to age, some studies have described vounger workers as being more likely to experience bullving (Hoel & Cooper, 2000), whereas the opposite has been said to be the case in other studies (Einarsen & Skogstad, 1996), and in some studies, no differences in relation to age were observed (Kivimaki et al., 2000). One possible reason for this could be that those who are older are more likely to be in higher ranked positions compared to their younger counterparts, and therefore less prone to be in a position of less power. Conversely, older employees may perceive certain behaviours that are considered to be "horseplay" by younger employees as offensive (Einarsen et al., 1994; Einarsen & Skogstad, 1996). Similarly, in relation to ethnicity, some studies have reported differences in the prevalence of workplace bullying among workers of different ethnicity groups (Gardner et al., 2013; Hoel & Cooper, 2000; Lewis & Gunn, 2007), while some have observed no difference (Steadman, Quine, Jack, Felix, & Waumsley, 2009). This may be due to the disparities in personal and social vulnerabilities among workers of different ethnicity groups that are inherent in certain cultures (Sabri et al., 2015).

In relation to individual traits, a commonly researched factor is personality trait, which consist of five broad domains, extraversion, i.e. "an individual's proneness to positive emotions and sociability", agreeableness, i.e. "individual's interpersonal relationships and strategies", conscientiousness, i.e. "the control of impulses as well as the ability to plan, organize, and complete behavioural tasks", neuroticism, i.e. "emotional adjustment and stability", and finally openness, i.e. "individual's interest in culture, and the preference and interest in experiencing and exploring new activities, ideas, and emotions" (Lynam, Miller, & Derefinko, 2018, p. 261). According to previous studies, there have been observations that perpetrators of bullying tend to be more narcissistic, domineering, and inclined to displace anger and blame on surrounding workers (Braithwaite, Ahmed, & Braithwaite, 2008; Glasø, Nielsen, & Einarsen, 2009), whereas targets of bullying have been described as being conscientious (Coyne et al., 2000), disagreeable (Bowling & Beehr, 2006), neurotic (Coyne et al., 2000; Einarsen et al., 1994; Vartia, 1996), introverted (Coyne et al., 2000) and unconventional (Thylefors, 1987). In this respect, the following reasons have been suggested to explain why certain individuals are bullied (Mathisen, 2012); those who are conscientious may annoy coworkers due to being perceived as overly perfectionist, stuffy and boring, those who are disagreeable are easily disliked and are natural targets for aggression, those who are neurotic appear insecure and react to teasing negatively, those who are introverted are deemed easy targets due to their quiet nature, and finally, those who are unconventional may seem threatening to others. In addition, negative affect, which has been defined as "a unidimensional, pervasive disposition to experience high levels of distressing emotions such as anger, hostility, fear, or anxiety" (Aquino & Bradfield, 2000, p. 528), as well as self-esteem, which can be defined as "an individual's subjective evaluation of his or her worth as a person" (Bleidorn et al., 2016, p. 396) have also been shown to be associated with bullying at work. According to numerous studies, individuals with negative affect and low self-esteem were frequent targets of bullying (Aquino & Bradfield, 2000; Aquino & Thau, 2009; Chang et al.,

30

2018; Einarsen et al., 1994; Matthiesen & Einarsen, 2001), due to displaying "victimlike" characteristics such as fear and anxiety (Aquino, Grover, et al., 1999; M. Harvey et al., 2007) and causing others to identify them as weak and vulnerable (Coyne et al., 2000; Vartia, 1996). In the same instance, some authors have also suggested that individuals with poor self-esteem may become inflammatory and provocative towards others in order to compensate for their inferiority complex (Einarsen, Hoel, Zapf, & Cooper, 2011). Other than that, studies have demonstrated that workers with poor social and coping skills are also more likely to experience workplace bullying (Coyne et al., 2000; Einarsen et al., 1994; Glasø et al., 2009; Rammsayer, Stahl, & Schmiga, 2006; Van den Brande et al., 2017; Zapf, 1999b; Zapf et al., 2003), which may be due to their inability to communicate and resolve conflicts adequately, allowing conflicts to escalate into bullying. In contrast, problem-solving has been shown to correlate inversely with workplace bullying (Baillien & De Witte, 2010).

In relation to employment characteristics, studies have consistently demonstrated that workplace bullying occur from positions of power where superiors were the main instigators (Björkqvist, Österman, & Hjelt-Bäck, 1994; Einarsen et al., 2003; Hoel & Cooper, 2000). Other employment characteristics that have been implicated with workplace bullying include type of employment, i.e. permanent or contract basis (Keuskamp et al., 2012). The prevalence of workplace bullying have been observed to differ among permanent and contract staff, with some studies reporting that workplace bullying was more common among contract staff (Tsuno et al., 2015), while the opposite have been observed in other studies (Keuskamp et al., 2012). This may be because in some cases, contract staffs fear dismissals and non-renewal of contracts if they were to defend themselves during conflicts and bullying (Neuman & Baron, 1998),

whereas in other cases, permanent staffs do not move to another job despite being subjected to prolonged bullying, due to being incentivized by their permanent post and fixed pay (De Cuyper, Notelaers, & De Witte, 2009).

2.2.5.2 Organisational Factors

Organisational factors that have been implicated with workplace bullying include factors related to the work itself, such as work demand, role ambiguity or conflict, job control, and working conditions, and factors related to the work group, such as organisational climate, organisational culture, organisational justice, organisational leadership and organisational support.

Factors relating to the nature of the job such as work overload and time pressure (Baillien, Cuyper, & De Witte, 2011; Einarsen et al., 1994; Hoel & Cooper, 2000), role conflict and ambiguity (Agervold & Mikkelsen, 2004; Aquino & Thau, 2009; Einarsen et al., 1994; Salin & Hoel, 2011; Zapf, 1999b), lack of job control and autonomy (Aquino & Thau, 2009; Baillien et al., 2011; Einarsen et al., 1994; Salin & Hoel, 2011; Vartia, 1996; Zapf, 1999b; Zapf et al., 1996), lack of clear goals (Vartia, 1996), and undesirable physical work environments such as noise, extreme temperatures, and overcrowding (O'Leary-Kelly, Griffin, & Glew, 1996) have been associated with bullying at work. This may be because ensuing high levels of stress from these work factors often lead to workers feeling overwhelmed and dissatisfied with work, becoming irritable, less tolerant towards others, and prone to aggression (O'Leary-Kelly et al., 1996). These situations are compounded by the fact that time pressured and hectic working environments do not allow for time-consuming conflict resolution processes to take place (Salin, 2003). Furthermore, in cases where there is role ambiguity,

individuals may take advantage of the uncertainties to engage in bullying behaviours while deflecting blame from themselves (Notelaers, De Witte, & Einarsen, 2010). Studies have shown that bullying is far more prevalent when workloads were high, when there were insufficient resources to accomplish tasks, and when there were conflicting role demands (Agervold & Mikkelsen, 2004; Einarsen et al., 1994; Hoel & Cooper, 2000; Notelaers et al., 2010).

Factors relating to the work group such as organisational climate have also been implicated with workplace bullying. Organisational climate can be defined as "the shared perceptions of and the meaning attached to the policies, practices, and procedures employees experience and the behaviours they observe getting rewarded and that are supported and expected" (Schneider, Ehrhart, & Macey, 2013, p. 9.2). Previous studies have reported that bullying victims tended to describe their organisational climate as being exceedingly stressful, competitive, and lacking a supportive, friendly and directive atmosphere (O'Moore et al., 1998). This may be due to the fact that competitive workplace environments with limited resources, politicized climates, and certain practices of reward system may lead to circumstances where it is rewarding for perpetrators of bullying to abuse others in the workplace, leading to both horizontal and vertical bullying (Salin, 2003). Additionally, studies have shown that organisational climate can affect how targets respond to workplace bullying, such as passivity and allowing it to perpetuate, rather than lodging a complaint (Tedeschi & Felson, 1994). Consequently, organisational climates in which working environments are competitive and socially unaccommodating have been identified as a common antecedent of workplace bullying (Wheeler, Halbesleben, & Shanine, 2010).

Organisational culture, another factor related to workplace bullying, can be defined as the "shared basic assumptions, values, and beliefs that characterise a setting and are taught to newcomers as the proper way to think and feel" (Schneider et al., 2013, p. 9.2). Four distinct culture types have been outlined by Quinn and Rohrbaugh (1981) and Cameron and Quinn (1999) taxonomy of organisational culture, i.e. clan culture, adhocracy culture, hierarchy culture, and market culture, that focalizes values of teamwork and cohesion, growth and creativity, control and stability, and competitiveness respectively. As these values affect how bullying is defined, interpreted and recognised as a problem, organisational culture may elicit or inhibit the occurrence of workplace bullying. Indeed, in organisations where aspects of organisational culture support the dehumanisation of employees or a non-perception of the harm of workplace bullying (Simpson & Cohen, 2004), it is unlikely to be challenged by employees of said organisation, and what is more, they may learn to believe that such behaviours are acceptable and even rewarded (Salin, 2003). As a result, bullying becomes normalised, and targets of bullying are unwilling to confront workplace bullying, believing that their claims will be ignored and that the perpetrators will go unpunished (Lewis, 2006). There is evidence to suggest that targets of bullying are slow to recognise it (Lewis, 2004), feel remorse and embarrassment (Hallberg & Strandmark, 2006; Lewis, 2004), and can construe their experience as a shameful experience or even one that is justified and deserved. In other instances, an organisational culture with a predominant focus on productivity can produce work environments in which there is intense competition among employees to attain scarce resources and limited rewards, such that they may be inclined to treat bullying as an effective method of accomplishing tasks (Hearn & Parkin, 2001; Salin, 2003; Samnani & Singh, 2014).

Another factor that have been associated with workplace bullying is organisational justice, which is defined as "the extent to which employees perceive workplace procedures, interactions and outcomes to be fair in nature" (Baldwin, 2006, p. 1). Perceptions of organisational injustice stemming from employees perceiving themselves to be unfairly benefited or disadvantaged due to experiencing layoffs and denial of career promotion opportunities and wage increases, may result in employees feeling bullied (Matthiesen, 2006). At the same time, studies have reported that employees who felt that they have been treated unfairly were also more likely to engage in workplace aggression compared to those who do not (Neuman & Baron, 2003). This may be due to employees perceiving injustice as a legitimate reason to pursue retribution and target those whom they believe is the cause of their experiences of distress (Branch, Ramsay, & Barker, 2007). The desire to reciprocate perceived injustice consequently may result in a spiral of bullying behaviours (Andersson & Pearson, 1999). On the other hand, where management is perceived to be fair, employees have been observed to be more open in their relationships and more amenable to change (Cowie et al., 2002).

Another organisational factor, leadership style, has been studied to some degree by researchers investigating workplace bullying. Defined as "the behaviour of an individual when directing the activities of a group towards a shared goal" (Al-Sawai, 2013, p. 285), for this construct, the literature generally refers to autocratic and laissez-faire leadership (Agervold & Mikkelsen, 2004; Hoel, Glasø, Hetland, Cooper, & Einarsen, 2010; Magerøy et al., 2009; Skogstad et al., 2007; Tsuno & Kawakami, 2015). According to studies, bullying is prevalent in organisations practicing autocratic leadership as such leadership style has been described as inhibiting, threatening, and a source of bullying in itself (Hoel et al., 2010; Keashly & Neuman, 2010). "Insecure"

leadership, such as laissez-faire leadership, has also been observed to be a predisposing factor for workplace bullying (Hoel et al., 2010; Leymann, 1990; Tsuno & Kawakami, 2015). This may be because leaders provide the means and social systems that enhance good employee relations and reduce interpersonal conflicts and bullying, and when leaders abdicate responsibility and do not interfere in cases of bullying, bullying flourishes (Pilch & Turska, 2015). Indeed, Tsuno and Kawakami (2015) reported that employees who worked under supervisors who are higher in laissez-faire leadership had a 4.3 risk of exposure to workplace bullying. On the other hand, certain leadership styles such as participative leadership (Hoel et al., 2010), transformational leadership (Nielsen, 2013), authentic leadership (H. K. S. Laschinger & Fida, 2014a; Nielsen, 2013), and ethical leadership (Stouten et al., 2010) foster favourable work environments, discourage bullying behaviours, and have been shown to be negatively correlated with bullying at work.

Finally, perceived organisational support (POS), which is defined as "employees' global beliefs concerning the extent to which the organisation values their contributions and care about their well-being" (Eisenberger & Huntington, 1986, p. 500), has been suggested to be also predictive of workplace bullying. This has been supported by findings of Salahieh (2015), Naseer et al. (2016), Gardner et al. (2016), and Djurkovic et al. (2008), who observed a negative correlation between POS and workplace bullying. This has been suggested to be due to employees feeling reluctant to report experiences of bullying when they perceive low organisational support, allowing the behaviours to continue, and resulting in prolonged states of victimisation and exhaustion of coping skills (Leymann & Gustafsson, 1996; Matthiesen, Aasen, Holst, Wie, & Einarsen, 2003). In addition, Salahieh (2015) suggested that targets of bullying

may be inclined to associate the bully with the entire organisation, and fault the organisation for failing to avert the bullying from occurring. Therefore, they may be more likely to direct bullying behaviours towards agents of organisation (i.e. superiors) in order to vindicate any feelings of anger and frustration, which may result in vertical bullying.

2.2.5.3 Institutional Factors

Institutional factors that have been associated with workplace bullying include size and structure of institution, organisational change, and organisational policies.

In relation to the size and structure of an institution, workplace bullying has been reported to occur more frequently in large (Einarsen & Skogstad, 1996) and bureaucratic institutions (Thylefors, 1987). This may be because in these types of institution, the scale, length and formality of decision-making processes often result in individuals being less noticeable, which decreases the risk of bullying perpetrators to be identified, disciplined, or socially condemned (Einarsen & Skogstad, 1996). In addition, workplace bullying is especially rife in total institutions such as military institutions and prisons, where there are hierarchical structures and stringent rules and procedures, and where authority and dominance are deeply ingrained within the culture of the institution (Vartia, 2001).

In relation to organisational change, it has been proposed that organisational change can create conditions that can lead to conflicts among employees of the organisation (M. Sheehan, 1996). Evidence from studies has demonstrated that downsizing and restructuring of organisations often trigger bullying to occur due to diminished promotional opportunities, rising workload, internal competition, and reduced job security (Baron & Neuman, 1996; Hoel & Cooper, 2000; McCarthy, 1996; M. Sheehan, 1996). Additionally, because of the competitive and insecure environment brought about by organisational changes, employees may feel vindicated in engaging in bullying to achieve their means (Samnani & Singh, 2014). In countries such as Sweden, studies have reported that widespread downsizing and restructuring of institutions have led to an increase in the occurrence of workplace bullying (Hoel & Einarsen, 2010).

In relation to organisational policies, the presence of anti-bullying policy has been observed to moderate and reduce the incidence of workplace bullying (Hoel & Einarsen, 2010). This may be because it sends a message to employees that bullying is not tolerated and will be met with disciplinary actions, which will highly discourage would-be perpetrators (Lippel, 2010). In contrast, a lack of policy against bullying may be interpreted by employees as an indication that the institution is tolerant of bullying behaviours, allowing workplace bullying to perpetuate and persist (Salin, 2003). In addition, anti-bullying policy may ensure a more effective implementation of active measures to prevent and alleviate bullying at the workplace (Lippel, 2010).

2.2.5.4 Societal Factors

Societal factors that have been implicated with workplace bullying include societal culture and national laws. Societal culture set the standards and norms for any social interaction, including workplace interactions (S. L. Johnson, 2011), and as such, has been shown to affect the prevalence of workplace bullying (Kemp, 2014; Kwan et al., 2014; Moayed et al., 2006). In this day and age, societal forces such as globalisation, liberalising markets, and resultant demand for greater efficiency and implementation of

performance-related reward systems may lead to increased tolerance for bullying behaviours and subsequent rise in the occurrence of workplace bullying (McCarthy, 1996; M. Sheehan, 1996). In Sweden for example, the rise in workplace bullying has been attributed to a change in culture from the 1990s onwards (Hoel & Einarsen, 2010). National laws governing workplace bullying have also been suggested to be predictive of workplace bullying, as they have been reported to act as a powerful inhibitors of workplace bullying (S. L. Johnson, 2011).

2.2.6 Outcomes Associated with Workplace Bullying

Strong empirical evidence supports the negative effects of workplace bullying for both individuals and organisations. In fact, workplace bullying has been said to be a more crippling problem for employees than all work stressors put together (Zapf et al., 2003).

2.2.6.1 Individual Outcomes

At the individual level, the literature has consistently reported negative psychological effects such as irritability (O'Moore et al., 1998), anxiety and depression (Chang et al., 2018; Einarsen & Nielsen, 2015; Finne, Knardahl, & Lau, 2011; Hansen et al., 2006; Hauge, Skogstad, & Einarsen, 2010; Kivimaki et al., 2003; Mikkelsen & Einarsen, 2002; Nielsen & Einarsen, 2012; Verkuil, Atasayi, & Molendijk, 2015), negative core self-evaluation (Mikkelsen & Einarsen, 2002), post-traumatic stress disorder (Leymann & Gustafsson, 1996; Matthiesen & Einarsen, 2004), sleep difficulties (Hansen, Hogh, Garde, & Persson, 2014; Nielsen & Einarsen, 2012) and suicidal ideation (Meek, 2004; Nielsen, Einarsen, et al., 2016; Nielsen, Nielsen, Notelaers, & Einarsen, 2015) among those experiencing bullying at work. Indeed, according to Kivimaki et al. (2003),

employees who were bullied had 4.2 odds of depression, and this association has been found to be reliable over time (Nielsen & Einarsen, 2012; Nielsen, Magerøy, Gjerstad, & Einarsen, 2014). The literature has also indicated physical effects of being bullied such as general physical ill health (Hoobler, Rospenda, Lemmon, & Rosa, 2010), musculoskeletal problems (Hogh, Mikkelsen, & Hansen, 2011; Kääriä, Laaksonen, Rahkonen, Lahelma, & Leino-Arjas, 2012; Kivimaki et al., 2004), cardiovascular problems (Kivimaki et al., 2003), psychosomatic complaints (Mikkelsen & Einarsen, 2002), and chronic diseases such as asthma, rheumatoid arthritis, and diabetes (Kivimaki et al., 2000). According to studies, employees exposed to workplace bullying have 1.77 odds of experiencing somatic symptoms (Nielsen et al., 2014), and 2.3 odds of developing cardiovascular disease (Kivimaki et al., 2003). These outcomes may be explained by Ursin and Eriksen (2004) cognitive activation theory of stress (CATS). According to Einarsen, Raknes, Matthiesen, and Hellesøy (1996), in the initial stages of bullying, target of bullying frequently experienced reactions such as apprehension, distress, hopelessness, desolation, and confusion. Applying the CATS, chronic activation from persistently experiencing these reactions will lead to sustained high stress levels, which subsequently manifests as psychological and physical ill health through pathophysiological process (Ursin & Eriksen, 2004). Moreover, the effects of workplace bullying have even been suggested to lead to increased substance use (Vartia, 2001) and spillover into family life (Namie, 2007).

2.2.6.2 Organisational Outcomes

In terms of organisational outcomes, studies have shown that workplace bullying is significantly associated with burnout (Einarsen, Matthiesen, & Skogstad, 1998; H. K. S. Laschinger, Grau, Finegan, & Wilk, 2010; Nielsen & Einarsen, 2012), job satisfaction

(Askew et al., 2012; Carter et al., 2013; Einarsen et al., 1998; Hauge et al., 2010; Nielsen & Einarsen, 2012; Quine, 1999, 2003), job performance (Judge, Thoreson, Bono, & Patton, 2001), employee engagement (McKay, Arnold, Fratzl, & Thomas, 2008; Rodríguez-Muñoz, Baillien, De Witte, Moreno-Jiménez, & Pastor, 2009), organisational commitment (Nielsen & Einarsen, 2012), absenteeism (Askew et al., 2012; Hauge et al., 2010; Kivimaki et al., 2000; Moayed et al., 2006; Nielsen & Einarsen, 2012; Nielsen, Indregard, et al., 2016), intent to leave (Carter et al., 2013; Nielsen & Einarsen, 2012), and turnover (Hogh, Hoel, & Carneiro, 2011; McKay et al., 2008). These may be explained using Ursin and Eriksen (2004) CATS and Weiss and Cropanzano (1996) affective events theory (AET). Extending the CATS (Ursin & Eriksen, 2004), high levels of chronic stress and discomfort one experiences having been exposed to workplace bullying leads not only to physical and mental ill health, but also to burnout, which is characterised by emotional exhaustion, depersonalisation, and reduced sense of personal accomplishment. This in turn results in diminished interest and reduced satisfaction in a job that was previously enjoyed (Thomas, 2004), which consequently leads to reduced work performance (Judge et al., 2001). Indeed, according to M. Sheehan (2001), workplace bullying was observed to be related to declines in work quality, increased error margins and unsafe workplaces.

Additionally, according to the AET (Weiss & Cropanzano, 1996), bullying can trigger emotional reactions in the form of frustration and resentment with the organisation, which over time can translate into a negative work-related state of mind, impaired work commitment and reduced sense of organisational citizenship. This may be because bullied employees perceived their experience of bullying as a result of lack of protective organisational measures and organisational support, therefore becoming disheartened and resentful of not only the perpetrator of bullying, but with the organisation as well (Willness, Steep, & Lee, 2007). Building on to this, employees may even feel vindicated in disengaging or withdrawing from their work groups (Nielsen & Einarsen, 2012). As such, employees experiencing bullying have been reported to have a change of interest in work (McKay et al., 2008), reduced employee engagement (McKay et al., 2008; Rodríguez-Muñoz et al., 2009), and increased intent to leave (Nielsen & Einarsen, 2012). Indeed, according to Nielsen and Einarsen (2012), roughly half of those experiencing bullying have stated their intention to leave. In addition, workplace bullying have been associated with increased absenteeism, due to ill health and diminished work abilities, or due to the utilisation of absenteeism as a form of escapism and coping strategy used to shield bullied employees from experiencing further bullying (Nielsen, Indregard, et al., 2016). Indeed, according to Nielsen, Indregard, et al. (2016), employees who were exposed to workplace bullying have 1.58 odds of sickness absenteeism. In fact, they reported that workplace bullying was more strongly predictive of absence compared to other work stressors such as high job demand, low decision latitude, low job control, and perceived unfairness at work (Nielsen, Indregard, et al., 2016).

All the adverse organisational outcomes mentioned above have come at a great cost to organisations, due to lost workdays from absenteeism, upsurge in health insurance and workers' compensation from chronic and psychological illnesses, reduced productivity and quality of work as a result of job dissatisfaction and reduced employee engagement, and high human resource management costs due to high rates of turnovers and having to train new employees (Moayed et al., 2006). In fact, each case of bullying have been estimated to result in a loss of AU\$ 16,977 in Australia, despite using very

conservative figures (M. Sheehan, 2001). In the healthcare settings, studies have shown that medical trainees who were frequently subjected to bullying were less inclined to complete clinical duties and provide optimal patient care (Ekici & Beder, 2014; Feudtner, Christakis, & Christakis, 1994; Leape et al., 2012; Leisy & Ahmad, 2016; K. H. Sheehan, Sheehan, White, Leibowitz, & Baldwin, 1990), and more likely to have made serious or potentially serious medical errors (Leisy & Ahmad, 2016; Paice & Smith, 2009), which may compromise the delivery of quality healthcare.

2.3 Systematic Review of Previous Studies of Workplace Bullying Among Junior Doctors

2.3.1 Rationale and Objective of the Systematic Review

In relation to junior doctors, there are two published reviews on the mistreatment experienced by junior doctors, including the systematic review and meta-analysis on harassment and discrimination in medical training by Fnais et al. (2014), and the systematic review on prevalence, causes, sequalae and potential interventions of bullying among medical residents by Leisy and Ahmad (2016). Fnais et al. (2014) found that 59.4% of medical trainees had been exposed to at least one form of harassment and discrimination during medical training, and that female trainees, non-white trainees, and surgical residents had higher prevalence of harassment and discrimination compared to their counterparts. On the other hand, Leisy and Ahmad (2016) reported that key thematic causes of resident bullying included hierarchy, silence, incognizance, fear, acceptance or denial, and a legacy of abuse, and that bullying had led to numerous adverse outcomes, including individual outcomes such as poor mental health, burnout, substance abuse, and work life interferences among those bullied, and organisational

outcomes such as increase in medical errors, reduced quality of care and compromised patient safety. Though both studies were effective in augmenting our understanding of workplace bullying among junior doctors, a study of the correlates of workplace bullying and utilising empirical findings to conceptualize a framework has not been attempted, as Fnais et al. (2014) considered factors for hostile work behaviours that cannot be construed as workplace bullying, such as sexual harassment, racial and gender discrimination, while Leisy and Ahmad (2016) conducted a qualitative investigation of the factors and outcomes of workplace bullying.

In addition, fundamental to a greater understanding of workplace bullying in general is improved comprehension into how bullying is termed, defined, operationalized and measured. Despite intensified research into workplace bullying in recent years, it remains a difficult phenomenon to evaluate due to the use of various terms to describe it, no consensus on how it is operationalized, as well as lack of a standardized methodology to measure it (Cowie et al., 2002; Einarsen et al., 2011; Quine, 1999; Zapf et al., 2011). Researchers use different methods to measure workplace bullying including the behavioural experience method, in which participants rate the frequency of negative actions experienced according to an instrument such as the Negative Acts Questionnaire Revised (NAQ-R) or Leymann's Inventory of Psychological Terror (LIPT), and/or the self-labelling method, in which participants rate a single-item question asking whether they were exposed to bullying within a specific time frame. Additionally, even when researchers use the same study instrument, they vary in using either the Leymann criterion, in which at least one negative action are experienced on a weekly basis over a period of six months (Leymann, 1996), the Mikkelsen and Einarsen (2001) criterion, in which at least two negative actions are experienced on a weekly basis over a period of six months, or using a fixed cut-off point for raw sum scores (Notalaers & Einarsen, 2013; Zapf et al., 2011).

Therefore, a synthesis of the prevalence, factors and outcomes of workplace bullying among junior doctors, as well as an in-depth analysis of the terms, definitions, operationalization and methods used to examine workplace bullying among junior doctors was attempted, to better understand its significance, implications and factors that may be potential points of focus for mitigative and preventive strategies, as well as informing current research approaches of examining workplace bullying and highlighting potential avenues for improvement.

2.3.2 Methodology of the Systematic Review

This review was conducted in accordance to the Meta-analyses of Observational Studies in Epidemiology guidelines (Stroup et al., 2000). Online searches of the database Medline, Scopus, Web of Science, PsycINFO (PsycARTICLES) and Cochrane Library were performed. Boolean search was performed on each database using the search term: (mobbing OR bullying OR victimisation OR victimization OR harassment OR "emotional abuse" OR aggression) AND (prevalence OR factor OR cause OR risk OR "risk factor" OR relationship OR antecedent OR effect OR outcome OR consequence) AND ("junior doctor" OR intern OR "house officer" OR "foundation doctor" OR "trainee doctor" OR "doctors in training" OR resident). The terms included in the Boolean search were chosen after thorough deliberation of terms identified from literature review, in view of the variation in terms used by researchers to portray bullying behaviours at work and variation in terms used to describe junior doctors in different parts of the world. The search was performed to include abstracts (Medline

and PsycINFO), titles, abstracts and keywords (Scopus, Cochrane Library), and topics (Web of Science), without restriction to date or publication but with restriction to English articles. All searches were concluded by March 5, 2017.

After the searches were performed, studies were organised and duplicates were identified and excluded. Two reviewers then independently evaluated studies for eligibility based on title and abstract. Any primary studies assessing the prevalence, risk factors and/or outcomes of workplace bullying among junior doctors were included. In this context, workplace bullying was specified based on Einarsen et al. (2009) definition, i.e. "situations where an employee is persistently exposed to negative and aggressive behaviours at work from superiors, colleagues and subordinates that are primarily of a psychological nature with the effect of humiliating, intimidating, frightening or punishing the target" (p. 25). Therefore, studies examining constructs representing hostile work behaviours that cannot be construed as workplace bullying such as workplace violence, racial, sexual and gender-based harassment, and studies examining abuse from patients and patients' families, were excluded. Similarly, nonhuman studies, non-primary studies, studies examining workplace bullying among workers other than junior doctors and studies focusing on variables other than prevalence, factors and/or outcomes were excluded. The basis for study exclusion was recorded. The study selection process was cross-validated to assess for disagreements. Where present, consensus was sought, and if that were not possible, a third reviewer was assigned. The inter-rater reliability indices were as follows: 98.3% and 0.88 for percent agreement and Cohen's kappa respectively. Only full-text articles were included to enable quality assessment.

Following study selection, data on author, year of publication, location of study, study design, number of subjects included, study variables included, study instruments utilised, prevalence of workplace bullying, associated factors, associated outcomes, and study conclusion were obtained. Prevalence was reported in percentages, and associated factors and outcomes were reported in terms of significant differences or odds ratio (OR). For studies that assessed broader constructs such as abuse, prevalence was obtained for study components that could be classified as workplace bullying, such as verbal abuse, academic abuse, and physical threat. Similarly, for studies that included data on both senior and junior doctors, only data related to junior doctors were obtained. In addition, for each study the following were explored further: the bullying-related term used, the definitions of term provided by authors, the study instrument utilised, the psychometric properties of the study instrument, and the prevalence of workplace bullying reported. Qualitative synthesis of data was conducted due to the heterogeneity of studies included in the systematic review, and meta-analysis was not attempted.

Finally, the assessment of the methodological quality of included studies was performed by examining the level of evidence according to the Table of Evidence Levels from Cincinnati Children's Hospital Medical Center (CCHMC) (Appendix A) ("Cincinnati Children's Hospital Medical Center Table of Evidence Levels ", 2012) and quality of study according to the Newcastle-Ottawa Scale (NOS) that was developed by Wells et al. (2000) and modified for use in cross-sectional studies by Herzog et al. (2013) (Appendix 2). For this study, Herzog's NOS was further modified in two areas; a) for ascertainment of exposure, two stars was apportioned for validated measurement tool, one star for non-validated measurement tool, and no star for no description of the measurement tool, as this study focused on workplace bullying which is measured via questionnaires instead of clinical data, and b) ascertainment of exposure was included under "Exposure, outcome and analysis" rather than "Selection". The CCHMC's Table of Level of Evidence categorizes level of evidence for studies according to domain, study design, and quality, ranging from level 1 (i.e. strongest evidence) to level 5 (i.e. weakest evidence). On top of that, studies were further subcategorised into "a" or "b" according to the adapted NOS, which signifies good and lesser methodological quality respectively. The adapted NOS has seven items that are classified into three criterions, i.e. selection of study groups (three items), comparability of study groups (one item), and ascertainment of exposure and outcome and statistical analysis (three items). For each item, a string of response options was specified, and a star was awarded according to the quality criterion defined by the NOS (Appendix B). The final quality rating was given as following: 1 to 3 stars "poor", 4 to 5 stars "average", 6 to 7 stars "good" and 8 to 10 stars "excellent", and studies rated as "good" or "excellent" were categorised as "a", whereas studies rated as "poor" or "average" as "b". The quality assessment process was performed independently by two reviewers, and cross-validated to assess for disagreements. When present, consensus was sought, and if that were not possible, a third reviewer was assigned.

2.3.3 Results of the Systematic Review

A total of 4,067 titles were initially identified, and after filtering for duplicates, 2,401 records were screened. 2,383 articles did not meet the inclusion criteria, and a total of 18 articles were finally included in this review. The flow chart of the study search and selection is illustrated in Figure 2.2.3, using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) format.

The 18 articles reported on a total of 9,597 junior doctors. They were published from 1995 to 2016 from studies conducted in North America (Canada and United States), Europe (Ireland, United Kingdom, and Turkey), Asia (Oman, Saudi Arabia, India, Pakistan, Japan), and Australia and New Zealand. The summary of the studies included in the systematic review is outlined in Table 2.3.3.

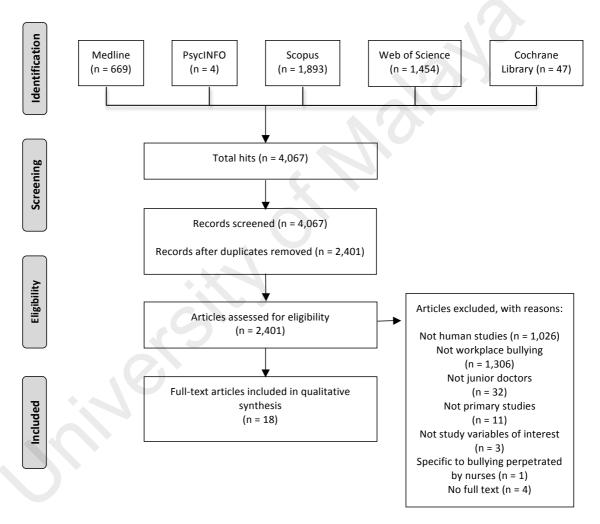


Figure 2.3.3: Flow diagram of systematic review based on the PRISMA statement Figure 1: Flow Diagram of Systematic Review Based On the PRISMA Statement

Popu- lation esident in EM rogram across	Loca- tion United States	Design Cross-	Size (n)		Variables	Prevalence	Associated Factor	Associated	Conclusion
in EM rogram			1 774					Outcome	<i>»</i> • • • • • • • • • • • • • • • • •
United States		sectional	1,774	SAQ based on literature review and pilot testing	VA, PA, SH, GD, RD, age, gender, race, marital status, year of training, sources of incidents and whether resident chose to file formal complaints	Overall, 98% residents reported ≥1 episode of abuse or harassment during their residency program	Female residents reported higher level of being belittled or humiliated (p=0.011) whereas male residents reported higher rate of being sworn or cursed at (p=0.035)	Female residents more likely to be affected emotionally (p=0.003), seek professional help or counselling (p=0.008), question decision to be a physician and EM physician (p<0.001), whereas male residents are more likely to increase use of alcohol or other substances (p=0.02) after episodes of abuse or harassment	Residents frequently encounter abuse or harassment, and report adverse consequences from these episodes
Resi- dents vorking n four ospitals who were nrolled a 7 resi- dency rogram s	Canada	Cross- sectional	186	SAQ based on focus group and semi- structured interview findings, literature review, and pilot testing	PCA, PA, GD, SOD, SH, age, gender, year of residency, specialty program	Overall, 93% residents reported experiencing PCA during their residency program	Not studied	Not studied	PCA is commonly experienced by residents in training programs
	Resi- lents orking n four spitals who were rolled 7 resi- lency ogram	Resi- Canada lents orking n four spitals who were trolled 7 resi- lency ogram	Resi- Canada Cross- lents sectional orking n four spitals who were trolled 7 resi- lency ogram	Resi- Canada Cross- 186 lents sectional orking n four spitals who were trolled 7 resi- lency ogram	Resi- Canada Cross- 186 SAQ based lents sectional on focus porking group and n four semi- spitals structured who interview were findings, rolled literature 7 resi- lency pilot testing ogram	Anited Batates year of training, sources of incidents and whether resident chose to file formal complaints Resi- Canada Cross- lents sectional on focus prking n four spitals who were findings, program SH, age, gender, year of residency, specialty program spitals	Inited tates year of during their residency program sources of incidents and whether resident chose to file formal complaints Resi- Canada Cross- lents sectional on focus orking of the sectional on focus group and to fur spitals sectional sectional on focus semi- spitals sectional sectional sectional of residency, residents reported semi- spitals sectional sectional sectional of residency, residents reported semi- spitals sectional sectional sectional sectional sectional orking their resident chose to file formal complaints SH, age, there were sectional section focus sectional sectional sectional sectional sectional sectional section focus section foc	inited thates th	inited tates tates in terms in the set of training, sources of incidents and whether residency program sources of incidents and whether resident chose to file formal complaints incomplaints incomplain

 Table 2.3.3: Summary of previous studies assessing workplace bullying among junior doctors

						Table 2.3.3,	continued			
Author	Study	Study	Study	Sample	Study Tool	Study		Study Findings		Study
(Year)	Popu- lation	Loca- tion	Design	Size (n)		Variables	Prevalence	Associated Factor	Associated Outcome	Conclusion
Daugher ty et al. (1998)	2 nd year residents from Ame- rican Medical Assoc- iation database	United States	Cross- sectional	1,277	SAQ based on previous studies (Baldwin, 1991)	Mistreatment, SH, contri- butor to learning, satisfaction with resi- dency, sleep deprivation, observation of unprofes- sional or unethical conduct	Overall, 93% residents reported ≥1 experience of mistreatment during their first year residency	Not studied	Mistreatment including belittlement or humiliation (p<0.001), threats to residents' career (p<0.003) and being assigned tasks for punishment (p<0.01) associated with overall satisfaction with residency	Residents report significant mistreatment during their internship. Satisfaction with internship is enhanced by positive learning experience and lack of mistreatment
Cheema et al. (2005)	JD working in south & western Ireland	Ireland	Cross- sectional	483	SAQ based on previous studies (Quine, 2002; Paice, 2003)	Bullying, age, gender, job grade, ethnic origin, effect on home life and produc- tivity of work	Overall, 30% JD reported to be subjected to ≥1 bullying behaviour during their postings	Doctors from EU report less rate of bullying compared to non-EU doctors (p<0.001)	Not studied	Bullying is a common problem in the Irish health system
Bairy et al. (2007)	HO/PG students in a Govern- ment Medical College across Tamil Nadu	India	Cross- sectional	174	SAQ based on previous studies (Hicks, 2000)	Bullying, occupational group, gender, age, psychometric test based on Myers-Briggs type indicator, job satisfaction	Overall, 89.8% HO and 31.3% PG students report being bullied during their postings	Those under 30 years of age were more likely to be bullied (p<0.001)	Bullying not significantly associated with job satisfaction	Workplace bullying is common among trainee doctors and usually goes unreported

						Table 2.3.3,	continued			
Author	Study	Study	Study	Sample	Study Tool	Study		Study Findings		Study
(Year)	Popu- lation	Loca- tion	Design	Size (n)		Variables	Prevalence	Associated Factor	Associated Outcome	Conclusion
J. Scott et al. (2008)	HO and regis- trars at a tertiary hospital	New Zealand	Cross- sectional	123	SAQ	Bullying, age, gender, PGY, country of training, ethnicity, medical or surgical run	Overall, 50% of JD report ≥1 episode of bullying behaviour in past 3-6 months	Registered MO under 25 years of age reported bullying more frequently than those above 25 years of age (p=0.024)	Not studied	Workplace bullying is a significant issue with JD
Nagata- Kobayas hi et al. (2009)	Resident of 37 hospitals across Japan	Japan	Cross- sectional	355	SAQ based on literature review and pilot testing	VA, PA, AA, SH, GH, AAH, gender, age, residency, reporting of episodes, psychological effects of the experiences	Overall, 84.8% residents reported experiencing ≥1 episode of abuse or harassment during their residency	Female residents report more abuse than male residents in internal medicine, surgery and emergency medicine rotations (p<0.01)	Not studied	Mistreatment during residency is a universal phenomenon
Imran et al. (2010)	HO, PG residents in Year 1 to Year 4, resident MO in 3 tertiary care hospitals	Pakistan	Cross- sectional	654	SAQ based on previous studies (Hicks, 2000) and Quine's 20 bullying behaviours scale	Bullying, age, gender, education status, specialty	Overall, 63.8% participants reported experiencing ≥1 type of bullying in past 12 months	Not reported	Not studied	Bullying is faced by a fairly large proportion of JD in Pakistan

						Table 2.3.3	, continued			
Author	Study	Study	Study	Sample	Study Tool	Study		Study Findings		Study
(Year)	Popu- lation	Loca- tion	Design	Size (n)		Variables	Prevalence	Associated Factor	Associated Outcome	Conclusion
Li et al. (2010)	EM residents from 10 EM resi- dency program	United States	Cross- sectional	196	SAQ based on literature review	Abuse and harassment, age, gender, race, PGY level (1-4), abuse source	Overall, 91% of residents experienced some type of abuse or harassment during their residency program	Senior residents (PGY 3-4) more likely to encounter verbal abuse (p=0.01), verbal threats (p<0.01), physical threats (p=0.001)	Not studied	Abuse and harassment during EM residency continues to be commonplace and is underreported
Crutcher et al. (2011)	FM residents from two uni- versities	Canada	Retro- spective cross- sectional	377	Retrospective mailed questionnaire based on two previous questionnaire s used to survey FM graduates and pilot testing	IHD, gender, age, marital status, which medical school graduate	Overall, 44.7% FM graduates reported that they had experienced IHD during their residency program	Those reporting IHD were younger than those not (p=0.034). Odds of IHD were 0.76 (95% CI 0.59- 0.98) with each unit increment in age category	Not studied	Perceived IHD during residency are prevalent among FM graduates
Dikmeta s et al. (2011)	Resident doctors at a uni- versity hospital	Turkey	Cross- sectional	270	MBI, LIPT	Mobbing, gender, medical branch, age, marital status, working duration, burnout	Mean mobbing level of residents is 1.87 ± 0.66	Mobbing vary in terms of medical branch (p=0.001), but not according to gender	Mobbing correlated with burnout [emotional exhaustion (r 0.505, p=0.001), depersonalization (r 0.447, p<0.001) and personal accomplishment (r - 0.345, p=0.001)]	There is a relationship between mobbing and occupational burnout

Т	able	2.3.3.	continue
	ant	4.0.0	continue

Author	Study	Study	Study	Sample	Study Tool	Study		Study Findings		Study
(Year)	Popu- lation	Loca- tion	Design	Size (n)		Variables	Prevalence	Associated Factor	Associated Outcome	Conclusion
Hills et al. (2012)	Medical prac- titioners from Medical Direc- tory of Australia database (incl. special- ist in training)	Australia	Cross- sectional	888	SAQ based on pilot testing	VAG, WAG, PAG, gender, age, doctor type, IMG status, location, years elapsed since medical graduation	Overall, approx. 43% specialists in training exposed to infrequent VAG or WAG from coworkers in past 12 months, and 15% exposed to occasional to frequent VAG or WAG from coworkers in past 12 months	More female, IMG and hospital-based clinicians experienced workplace aggression (p<0.001). Age and PG experience negatively associated (p<0.001) with aggression exposure	Not studied	Workplace aggression are particular risks for younger and more junior hospital-based clinicians, and for IMG in general practice
Al- Shafaee et al. (2013)	First year medical residents attend- ing a research work- shop	Oman	Cross- sectional	58	SAQ based on previous studies (Sheehan, 1990; Bald- win, 1991; Uhari, 1994)	VA, PA, AA, SH, age, sex, year of residency, marital status, current specialty	Overall, 96.6% residents perceived mistreatment during their internship year	Men reported higher levels of AA (p≤0.004). All mistreatment indices were higher during medical rotation than in paediatric or surgical rotations (p=0.005)	Not studied	Data suggest that medical trainees in Oman perceived bullying behaviours as common

Table	2.3.3.	continue
Lanc	4.0.0,	commute

udy signSample Size (n)Study Tooloss- tional213SAQ based previous studies (Nagata- Kobayashi, 2009; Cook, 1996) and pilot testing	Study Variables VH, AH, SH, PH, GD, RED, PAD, gender, age, residency year, nationality, region of	Prevalence Overall, 83.6% residents reported experiencing ≥1 type of harassment and discrimination during their residency program	Study Findings Associated Factor Significantly more female residents report VH (p=0.0003) and AH (p=0.0017)	Associated Outcome Not studied	Study Conclusion Harassment and discrimination of Saudi residents common with more than three
tional previous studies (Nagata- Kobayashi, 2009; Cook, 1996) and	PH, GD, RED, PAD, gender, age, residency year, nationality, region of	residents reported experiencing ≥1 type of harassment and discrimination during their	female residents report VH (p=0.0003) and AH	Not studied	discrimination of Saudi residents common with
	origin, whe- ther sought professional help or want to pursue another career				quarters reporting having had such experience
oss- tional 158 SAQ inclu- ding CNAQ, Hershcovis 2010 & Groth 2002 BA item, PANAS scale, Bies & Moag 1986 IJ scale, Scar- pello 1983 job satis- faction item, GHQ-12, pressure	Cyber- bullying, age, gender, general job stress, BA, state negative affect, IJ, job satisfaction, mental strain	Overall, 46.2% trainee doctors have experienced ≥1 cyberbullying act during their foundation program	Not reported	Cyberbullying correlated with job satisfaction (r -0.29, p<0.05) and mental strain (r 0.36, p<0.001)	Cyberbullying acts were experienced by nearly half of the sample during their training and were found to be significantly related to ill health and job satisfaction
	Moag 1986 IJ scale, Scar- pello 1983 job satis- faction item,	Moag 1986 IJ satisfaction, scale, Scar- pello 1983 job satis- faction item, GHQ-12, pressure subscale of	Moag 1986 IJ satisfaction, scale, Scar- pello 1983 job satis- faction item, GHQ-12, pressure subscale of	Moag 1986 IJ satisfaction, scale, Scar- mental strain pello 1983 job satis- faction item, GHQ-12, pressure subscale of	Moag 1986 IJ satisfaction, scale, Scar- pello 1983 job satis- faction item, GHQ-12, pressure subscale of

Table 2.3.3, continued

Author	Study	Study	Study	Sample	Study Tool	Study		Study Findings		Study
(Year)	Popu- lation	Loca- tion	Design	Size (n)		Variables	Prevalence	Associated Factor	Associated Outcome	Conclusion
Aykut et al. (2016)	Anaes- thesio- logy residents from 7 insti- tutions	Turkey	Cross- sectional	101	SAQ	Mobbing, type of institution, gender, marital status, age, psycho- somatic conditions, burnout syndrome	Overall, 69.3% residents reported experiencing mobbing once or more during their residency program.	Significant difference between those exposed to mobbing and those not according to gender (p=0.041)	Significant difference between those exposed to mobbing and those not in terms of psychosomatic conditions: temper and anger attacks (p=0.001), gaining or losing excessive weight (p=0.01), increase in frequency of accidents (p=0.03), tendency of violence to others (p=0.008), job dissatisfaction (p=0.04), and burnout syndrome (p<0.001)	Mobbing is common among anaesthesiology residents
Chadaga et al. (2016)	Resi- dents and fellows in graduate medical edu- cation system	United States	Cross- sectional	2,158	SAQ based on Quine's 20 bullying behaviours scale & stem question based on Lyon, 1995 bullying definition	Bullying, age, gender, ethnicity, medical school, residency status, PGY, sexual orientation, height, BMI	Overall, 95% residents and fellows reported experiencing ≥1 bullying behaviour and 48% reported having been bullied in past year	Bullying more frequently reported by female ($p \le 0.01$), ≤ 30 years old age group ($p \le 0.01$), non- white ($p \le 0.05$), and participants shorter than 5'8 ($p \le 0.01$)	Not studied	Many trainees report experiencing bullying in the United States graduate medical education programs

						Table 2.3.3	, continued			
Author	Study	Study	Study	Sample	Study Tool	Study		Study Findings		Study
(Year)	Popu- lation	Loca- tion	Design	Size (n)		Variables	Prevalence	Associated Factor	Associated Outcome	Conclusion
Ling et al. (2016)	Mem- bers of GS Australia (incl. trainees)	Australia	Cross- sectional	152	Online SAQ using NAQ-R and Einarsen, 2009 definition of workplace bullying	Bullying, gender, age, type of employment, position, level and region of training, barriers and outcomes of formal reporting of bullying	Using NAQ-R, 92% trainees experienced ≥ one bullying behaviours in the last 12 months Using Einarsen's definition of workplace bullying, 64% trainees reported being bullied monthly, now and then, weekly or daily over the last 12 months, and 14% trainees report being bullied weekly or daily over the last 12 months,	Prevalence of bullying higher among female participants (p=0.006)	Not studied	Workplace bullying remains a significant problem within GS in Australia

Table 2.3.3, continu	ued
----------------------	-----

Note: AA = Academic abuse; AH = Academic harassment; AAH = Alcohol-associated harassment; BA = Blame attribution; BMI = Body Mass Index; CNAQ = Cyber Negative Acts Questionnaire; ED = Emergency department; EM = Emergency medicine; EU = Europe; FM = Family medicine; GD = Gender discrimination; GH = Gender harassment; GHQ = General Health Questionnaire; GS = General Surgery; HCW = Healthcare workers; HO = House officer; IHD = Intimidation, harassment and discrimination; IJ = Interactional justice; IMG = International medical graduate; JD = Junior doctors; LIPT = Leymann Inventory of Psychological Terror; MBI = Maslach Burnout Inventory; MO = Medical officer; NAQ-R = Negative Acts Questionnaire Revised; PA = Physical abuse; PAD = Physical appearance discrimination; PAG = Physical aggression; PANAS = Positive and Negative Affect Schedule; PCA = Psychological abuse; PG = postgraduate; PH = Physical harassment; PGY = postgraduate year; RD = Racial discrimination; RED = Regional discrimination; SAQ = Self-administered questionnaire; SH = Sexual harassment; SIG = Stress In General; SOD = Sexual orientation discrimination; VA = Verbal abuse; VAG = Verbal aggression; VH = Verbal harassment; WA = Written abuse; WAG = Written aggression

2.3.3.1 Methodological Quality of Included Studies

All studies included in the systematic review were assigned level 4 according to the CCHMC's Table of Evidence, as they are cross-sectional in design. On the whole, in terms of methodology quality according to the adapted NOS, one study (6%) was rated as excellent, two studies (11%) were rated as good, three studies (17%) were rated as poor, and the vast majority of studies (66%) were rated as average. For the bulk of the studies (83%), selection of the study groups was fair as studies utilised samples that were representative of the average in the target population. In addition, most studies (72%) achieved adequate response rates. However, none of the studies justified their sample size with *a priori* sample size analysis. Comparability in terms of study groups was also deficient, as only two studies (11%) controlled for confounders. In relation to ascertainment of outcome, majority (72%) of the studies employed non-validated study instruments that were either self-constructed by the researchers, or based on literature review, qualitative findings or previous studies, with the exception of five studies (28%) that utilised study instruments with published psychometric properties, such as the LIPT, the NAQ-R, the Cyber Negative Acts Questionnaire, and Quine's 20 bullying behaviours. Finally, statistical analysis was adequate in 78% studies. Overall, studies were of modest quality according to the adapted NOS, with the exception of the studies published by Farley et al. (2015), Dikmetas et al. (2011), and Chadaga et al. (2016). A summary of the quality of studies is outlined in Table 2.3.3.1.

Author (Year)	Study	LOE		Selection		Comparability	Exposur	e/Outcome and	Analysis	Overall
	Design		Q1	Q1 Q2		Q1	Q1	Q2	Q3	Quality
McNamara et al. (1995)	CS	4b	*		*		*	*	*	***** (A)
D. J. Cook et al. (1996)	CS	4b	*		*	*		*		**** (A)
Daugherty et al. (1998)	CS	4b	*		*		*	*	*	***** (A)
Cheema et al. (2005)	CS	4b	*		*		*	*		**** (A)
Bairy et al. (2007)	CS	4b	*				*	*	*	**** (A)
J. Scott et al. (2008)	CS	4b					*		*	** (P)
Nagata-Kobayashi et al. (2009)	CS	4b	*		*		*	*	*	***** (A)
Imran et al. (2010)	CS	4b	*		*		*	**		***** (A)
Li et al. (2010)	CS	4b	*		*		*	*	*	***** (A)
Crutcher et al. (2011)	CS	4b	*		*		*	*	*	***** (A)
Dikmetas et al. (2011)	CS	4a			*		**	**	*	***** (G)
Hills et al. (2012)	CS	4b	*		*		*	*	*	***** (A)
Al-Shafaee et al. (2013)	CS	4b			*		*	*		*** (P)
Fnais et al. (2013)	CS	4b	*		*		*	*	*	***** (A)
Farley et al. (2015)	CS	4a	*			**	**	**	*	******* (E)
Aykut et al. (2016)	CS	4b	*				*		*	*** (P)
Chadaga et al. (2016)	CS	4a	*		*		*	**	*	***** (G)
Ling et al. (2016)	CS	4b	*				*	**	*	***** (A)

Table 2.3.3.1: Summary of the quality of studies included in the systematic review

Note: LOE = Level of evidence; CS = Cross-sectional; Maximum score for Newcastle-Ottawa Scale is 10 stars: 1-3 stars (P) "poor", 4-5 stars (A) "average", 6-7 stars (G) "good" and 8-10 stars (E) "excellent"

2.3.3.2 Terms, Definitions, and Methodology Employed by Previous Studies

Various terms have been used to describe hostile workplace behaviours experienced by junior doctors. This includes broader terms such as mistreatment, harassment, discrimination and abuse that not only encompass behaviours that can be construed as workplace bullying but also include behaviours that represent distinct constructs such as sexual harassment. Previous studies using terms such as these include those published by McNamara et al. (1995), D. J. Cook et al. (1996), Daugherty et al. (1998), Nagata-Kobayashi et al. (2009), Li et al. (2010), Crutcher et al. (2011), Hills et al. (2012), Al-Shafaee et al. (2013), and Fnais et al. (2013). Mistreatment was the umbrella term used to define any form of negative interactions at work by Daugherty et al. (1998), including being assigned tasks for punishment rather than for learning, being publicly belittled or humiliated, receiving threats to one's career, and physical abuse. Equally, Crutcher et al. (2011) did not distinguish between intimidation, harassment and discrimination and defined it as "remarks, actions or behaviours that are perceived to be unwanted, hurtful, upsetting or coercive in nature" (p. 1196). Conversely, D. J. Cook et al. (1996), Fnais et al. (2013), Li et al. (2010), McNamara et al. (1995), and Nagata-Kobayashi et al. (2009) expressed negative interactions junior doctors encountered as abuse (i.e. verbal, written, academic and physical), harassment (i.e. verbal, academic, racial, gender, sexual and physical), as well as discrimination (i.e. sexual orientation, regional orientation, physical appearance and gender), whereas Hills et al. (2012) defined negative interactions in terms of aggression, which they classified into written, verbal and physical abuse.

In contrast, narrower terms including bullying, cyberbullying and mobbing were employed by previous studies published by Cheema et al. (2005), Bairy et al. (2007), J. Scott et al. (2008), Imran et al. (2010), Dikmetas et al. (2011), Farley et al. (2015), Aykut et al. (2016), Chadaga et al. (2016) and Ling et al. (2016). Despite utilizing the same term, Cheema et al. (2005), Imran et al. (2010) and Chadaga et al. (2016) defined bullying as "persistent, offensive, abusive, intimidating, malicious or insulting behaviour, abuse of power or unfair penal sanctions which make the recipient feel upset, threatened, humiliated or vulnerable, which undermines their self-confidence and which may cause them to suffer stress" (p. 274, p. 592, p. 2), Bairy et al. (2007) as "repeated pattern of aggressive behaviour that escalates over time and causes victimization in the subject unable to defend himself or herself" (p. 87), whereas Ling et al. (2016) as "situations where an employee is persistently exposed to negative and aggressive behaviours at work primarily of a psychological nature with the effect of humiliating, intimidating, frightening or punishing the target" (p. 2561). Similarly, Dikmetas et al. (2011) and Aykut et al. (2016) used the term mobbing, but it was defined as "systematic subjection, by one or more individuals, of an individual to emotionally disturbing behaviour every day over several months" (p. 138) by Dikmetas et al. (2011) and as "situation in which tough and daunting attitudes in communication leads to resignation" (p. 185) by Aykut et al. (2016).

In general, it is apparent that there is an absence of common terminology and universal definition for the concept of workplace bullying according to previous studies included in this review. This is well documented by current literature on workplace bullying (Dzurec & Bromley, 2012; Einarsen, 2000; Hodgins & McNamara, 2014; Kemp, 2014; Salin, 2003). Overall, the terms "mistreatment", "abuse", "harassment" and "discrimination" appear to be the preferred term for researchers in North America, Middle East, and Japan, the term "mobbing" by researchers in Turkey, and the term "bullying" by researchers in Europe, Asia, Australia and New Zealand. This is similar to the findings reported by Chirila and Constantin (2013), who conducted a literature review on the concepts used to describe workplace bullying. The heterogeneity in the terms used to describe bullying experienced by junior doctors could have arisen from the construct itself involving aggressive, harassing, and violent behaviours (Fox & Stallworth, 2005). Despite the heterogeneity, keener analysis of the definitions of terms used by researchers of the studies included in the systematic review comparably described what can be construed as workplace bullying, i.e. "negative and aggressive behaviours at work primarily of a psychological nature with the effect of humiliating, intimidating, frightening or punishing the target" (Einarsen et al., 2009, p. 25). Therefore, it can be supposed that the studies were reliably assessing workplace bullying among junior doctors, and that the terms "bullying", "mobbing", "harassment", "victimization", "emotional abuse" and "workplace aggression" utilised by the researchers synonymously describe the phenomenon, in keeping with the school of thought of prominent researchers in the field (Einarsen, 2000).

Nonetheless, despite the general synonymity of the terms used to describe workplace bullying, it was apparent that operational definition issues still exist. Persistence of negative interactions was highlighted in the definition of bullying and mobbing given by authors of included studies, however, aside from Ling et al. (2016) who reported exposure to bullying in terms of occurring "weekly" or "daily", and Dikmetas et al. (2011) who assessed exposure to mobbing every day over some months, it was not reflected in the frequency and duration of negative interactions experienced by junior doctors as reported by included studies. The bulk of the studies reported prevalence in terms of occurring at least once during past three to six months (J. Scott et al., 2008), at least once during past year (Chadaga et al., 2016; Imran et al., 2010), or at least once during posting or residency (Aykut et al., 2016; Bairy et al., 2007; Cheema et al., 2005; Farley et al., 2015). Similarly, persistency of experiencing negative interactions was not explicitly stated in the definitions given for the terms mistreatment, abuse, harassment, discrimination, and aggression, nor measured as such. Authors of previous studies reported the frequency of experiencing such interactions in terms of a few times in past twelve months or a few times each six months up to once or more each week (Hills et al., 2012), or occurring at least once during past year (Al-Shafaee et al., 2013; Daugherty et al., 1998) or during posting or residency (D. J. Cook et al., 1996; Crutcher et al., 2011; Fnais et al., 2013; Li et al., 2010; McNamara et al., 1995; Nagata-Kobayashi et al., 2009). This is consistent with the findings of Keashly and Jagatic (2011) and Matthiesen and Einarsen (2010), who noted that hostile workplace behaviours including bullying, mobbing, harassment, and aggression all quantify repetitive negative interactions, but though the aspect of duration is included in their definitions, it has been overlooked from a measurement perspective in literature. They contend that duration appears mainly as a time frame (e.g. one year) for which participants rate the frequency of their experience, without anchoring the frequency scales to exact time referents such as daily, weekly, or monthly (Keashly & Jagatic, 2011).

In addition to that, the study methodologies employed by previous studies to measure negative interactions also differed. Most of the studies utilised self-administered questionnaires that were constructed by the authors (Aykut et al., 2016; Hills et al., 2012; J. Scott et al., 2008), based on literature review (Li et al., 2010; McNamara et al., 1995; Nagata-Kobayashi et al., 2009), based on qualitative findings including semistructured interviews and focus groups (D. J. Cook et al., 1996; Crutcher et al., 2011), or based on methods used by existing studies (Al-Shafaee et al., 2013; Bairy et al., 2007; Cheema et al., 2005; Daugherty et al., 1998; Fnais et al., 2013). Few authors (28%) employed instruments with established psychometric properties, such as the NAQ-R (Ling et al., 2016), the LIPT (Dikmetas et al., 2011), the Cyber Negative Acts Questionnaire (Farley et al., 2015), and Quine's 20 type of bullying scale (Chadaga et al., 2016; Imran et al., 2010). A summary of the terminologies, definitions, and study tools utilised by previous studies is outlined in Table 2.3.3.2.

Author Bullying		Definitions of Bullying-Related Terms Given by	Study Tool ^Ŧ	Validity and	Prevalence of Workplace Bullying Reported				
()	-Related Terms	Authors		Reliability of ⁻ Study Tool	≥1 episode during residency or posting	≥ 1 episode during past one year	≥ 1 episode during past 6 months	≥ 1 episode daily or weekly for past 12 months	
McNam ara et al. (1995)	Verbal abuse, physical threat	No definition given	1b	Not described	94.1%				
D. J. Cook et al. (1996)	Psycho- logical abuse	"Behaviour that made people feel hurt, devalued, or incompetent, including shouting, uttering insults, ignoring or making disrespectful comments" (p. 1659)	1d	Not described	93.4%				
Daugher ty et al. (1998)	Mis- treat- ment	"Include being publicly belittled or humiliated, experiencing sexual and racial harassment or discrimination, being assigned tasks for punishment rather than for learning, receiving threats to one's career, and physical abuse" (p. 1195)	1c	Not described		86.4%			
Cheema et al. (2005)	Bullying	"Persistent, offensive, abusive, intimidating, malicious or insulting behaviour, abuse of power or unfair penal sanctions which make the recipient feel upset, threatened, humiliated or vulnerable, which undermines their self-confidence and which may cause them to suffer stress" (p. 274)	1c	Not described	30%				
Bairy et al. (2007)	Bullying	"Repeated pattern of aggressive behaviour that escalates over time and causes victimization in the subject unable to defend himself or herself" (p. 87)	2	Not described	89.8% HO 31.3% PGS				
J. Scott et al. (2008)	Bullying	No definition given	1a	Not described			50%		

Table 2.3.3.2: Summar	ry of terms, definitions a	and instruments used by p	revious studies, and pre	valence of wor	kplace bullying reported

	Table 2.3.3.2, continued							
Author	Bullying	Definitions of Bullying-Related Terms Given by	Study	Validity and	Prev	alence of Workpl	ace Bullying Repo	rted
(Year)	-Related Terms	Authors	Tool ^Ŧ	Reliability of Study Tool	≥1 episode during residency or posting	≥ 1 episode during past one year	≥ 1 episode during past 6 months	≥ 1 episode daily or weekly for past 12 months
Nagata- Kobayas hi et al. (2009)	Verbal & aca- demic abuse	No definition given	1b	Not described	72.1%			
Imran et al. (2010)	Bullying	"Persistent, offensive, abusive, intimidating, malicious or insulting behaviour, abuse of power or unfair penal sanctions, which makes the recipients feel upset, threatened, humiliated or vulnerable and undermines their self confidence and may cause them to suffer stress" (p. 592)	2 and 3	α 0.81 (Quine's scale)		63.8%		
Li et al. (2010)	Verbal abuse, verbal & physical threat	No definition given	1b	Not described	86%			
Crutcher et al. (2011)	IHD	"Remarks, actions or behaviours that are perceived to be unwanted, hurtful, upsetting or coercive in nature" (p. 3)	1c	Not described	44.7%			
Dikmeta s et al. (2011)	Mobbing	"Systematic subjection, by one or more individuals, of an individual to emotionally disturbing behaviour every day over several months" (p. 138)	3	α 0.91, FA adequate (LIPT)		Mean mobbing level (1.87 ± 0.66)		
Hills et al. (2012)	Verbal & written abuse	No definition given	1b	Not described		43% (in- frequent) 15% (occasion- nal to frequent)		

Author	Dulluir a	Definitions of Dullying Delated Tours Circa by	Stud	Validity and	Duary	alongo of Worler	lago Dullying Dana	rtad
Author (Year)	Bullying -Related Terms	Definitions of Bullying-Related Terms Given by Authors	Study Tool [†]	Validity and _ Reliability of Study Tool	≥1 episode during residency or posting	≥ 1 episode during past one year	<u>lace Bullying Repo</u> ≥ 1 episode during past 6 months	rted ≥ 1 episode daily or weekly for past 12 months
Al- Shafaee et al. (2013)	Verbal & aca- demic abuse, physical threat	Physical abuse: "Threat that, if executed, would likely cause physical harm" (p. 2) Academic abuse: "Being coerced into carrying out personal services unrelated to the expected role of interns, and being excluded from reasonable learning opportunities offered to others, or threatened with failure or poor evaluations for reasons unrelated to academic performance" (p. 2)	1c	Not described		87.9%		
Fnais et al. (2013)	Verbal & aca- demic harass- ment	Verbal harassment: "Behavior that made people feel hurt, devalued or incompetent, such as yelling or shouting, if the content was inappropriately nasty, rude, hostile, belittling or humiliating" (p. 135) Academic harassment: "Assignment of undesirable tasks as punishment, threats to fail residents unfairly, unfair competition with residents, and negative remarks about residents' prospects of becoming a doctor or of pursuing a career in medicine" (p. 135)	1c	Not described	61.5%			
Farley et al. (2015)	Cyber- bullying	"An aggressive, intentional act carried out by a group or individual, using electronic forms of contact, repeatedly and over time against a victim who cannot easily defend him or herself" (p. 437)	3	α 0.88, content & construct validity (CNAQ)	46.2%			
Aykut et al. (2016)	Mobbing	"Situation in which tough and daunting attitudes in communication (especially in superior-subordinate communication) lead to resignations" (p. 185)	1a	Not described	69.3%			

Table 2.3.3.2, continued

Author	Bullying	Definitions of Bullying-Related Terms Given by	Study	Validity and	Prevalence of Workplace Bullying Reported				
(Year)	-Related Terms	Authors	Tool ^Ŧ	Reliability of Study Tool	≥1 episode during residency or posting	≥ 1 episode during past one year	≥ 1 episode during past 6 months	\geq 1 episode daily or weekly for past 12 months	
Chadaga et al. (2016)	Bullying	"Persistent, offensive, abusive, intimidating, malicious or insulting behaviour, abuse of power or unfair penal sanctions which makes the recipient feel upset, threatened, humiliated or vulnerable which undermines their self-confidence and which may cause them to suffer stress" (p. 2)	3	α 0.81 (Quine's scale)		95% (Quine's scale) 48% (definition)			
Ling et al. (2016)	Bullying	"Situations where an employee is persistently exposed to negative and aggressive behaviours at work primarily of a psychological nature with the effect of humiliating, intimidating, frightening or punishing the target" (p. 2561)	3	FA adequate, α 0.90, criterion validity (NAQ-R)		92% (NAQ-R) 64% (definition)		14% (definition)	

Table 2.3.3.2, continued

Note: CNAQ = Cyber Negative Acts Questionnaire; $\alpha = Cronbach's$ alpha; HO = House officer; IHD = Intimidation, harassment and discrimination; FA = Factor analysis; LIPT = Leymann Inventory of Psychological Terror; LISTREL = Linear structural relations; PGS = Postgraduate student; ^T 1a: Self-administered questionnaire; 1b: Self-administered questionnaire based on literature review and pilot testing; 1c: Self-administered questionnaire based on previous studies; 1d: Self-administered questionnaire based on focus group and semi-structured interview findings, literature review, and pilot testing; 2: Stem question on bullying based on Hicks (2000) or Lyons (1995) definition; 3: Validated tools, including LIPT, NAQR, Quine's 20 bullying behaviour scale, CNAQ

2.3.3.3 Prevalence of Workplace Bullying Among Junior Doctors

The prevalence of workplace bullying reported by previous studies ranged widely, depending on how negative interactions was operationalized and measured. To make a fairer comparison, the prevalence of workplace bullying was categorised into four groups, i.e. one or more episode during posting or residency, during past year, during past six months, or weekly or daily for past year. For time reference, the duration of medical residency programmes ranges from two to five years, while the duration of medical posting is unspecified. For the ten studies reporting on junior doctors' exposure to one or more episode of negative interaction during posting or residency, the prevalence of workplace bullying reported ranged from 30% to 94.1%. Six studies reported on junior doctors' exposure to one or more episode of negative interaction during past year, for which the prevalence of workplace bullying ranged from 43% to 95%. For the one study reporting on junior doctors' exposure to one or more episode of negative interaction during past six months, the prevalence of workplace bullying reported was 50%. Finally, one study examined exposure to one or more episode of negative interaction weekly or daily for past year and reported a prevalence of workplace bullying of 14%. These findings are similar to the prevalence of workplace bullying reported by the review published by Leisy and Ahmad (2016).

As observed in this review and other studies (Matthiesen & Einarsen, 2010), the prevalence of workplace bullying reported was highly dependent on the research strategy applied by previous authors. It appears that as the operationalization of workplace bullying became more conservative, the prevalence of workplace bullying deflated. Indeed, according to Martino, Hoel, and Cooper (2003) and Zapf et al. (2003), when bullying is measured according to a precise definition, i.e. one or more negative

interactions weekly or daily for past six months, less than 5% of the study population is bullied. Therefore, despite the challenge in estimating the true prevalence of workplace bullying due to absence of common terms and methodology, we can assume that 14% of junior doctors experience workplace bullying, which is substantially higher compared to the findings of previous authors (Martino et al., 2003; Zapf et al., 2003).

Besides that, it was noted that the prevalence of workplace bullying reported also differed according to behavioural experience and self-labelling method. Chadaga et al. (2016) reported that 39% junior doctors claimed to have experienced one or more bullying behaviours in past year, though they did not perceive themselves to be bullied. Similarly, Ling et al. (2016) reported that 38% junior doctors stated that they were exposed to one or more negative interactions in past year, yet only 7% of them perceived themselves to be bullied. These findings are consistent with the findings of a meta-analysis published by Nielsen (2009), who found that the behavioural experience method produced higher prevalence figures compared to the self-labelling method based on a bullying definition. This may be because the behavioural experience method measures a participants' exposure to bullying behaviours but does not consider whether the participant perceived him or herself to be victimised by such exposure, whereas the self-labelling method may exclude participants with high tolerance to bullying behaviours (Barmes, 2016).

Finally, differences in the prevalence reported according to geographical regions were also noted. For example, the prevalence of abusive and harassing behaviour occurring at least once during training has been reported to be 83% in Saudi Arabia (Fnais et al., 2013) and 98% in United States (McNamara et al., 1995). Similarly, the

prevalence of bullying occurring at least once during one year of training has been reported to be 64% in Pakistan (Imran et al., 2010), and 92% in Australia (Ling et al., 2016). Whether these differences are attributed to differences in terms, definitions, and methods used to measure workplace bullying, or represent true differences attributed to societal and systemic factors remains unknown. The summary of the terms, definitions, study tools and prevalence of workplace bullying reported by previous studies is outlined in Table 2.3.3.2.

2.3.3.4 Individual Factors of Workplace Bullying Among Junior Doctors

From the systematic review, individual factors that were found to be associated with workplace bullying among junior doctors include sociodemographic characteristics such as gender, age, ethnicity, nationality, and height, and employment characteristics such as clinical specialty.

In relation to sociodemographic characteristics, Hills et al. (2012), Fnais et al. (2013), Aykut et al. (2016), Chadaga et al. (2016), and Ling et al. (2016) reported that more female junior doctors experience workplace bullying compared to male junior doctors. However, Dikmetas et al. (2011) observed no significance difference in those experiencing mobbing according to gender. In relation to age, Bairy et al. (2007), J. Scott et al. (2008), Crutcher et al. (2011), Hills et al. (2012) and Chadaga et al. (2016) consistently found that younger junior doctors had higher prevalence of workplace bullying compared to older junior doctors. According to Crutcher et al. (2011), junior doctors' odds of experiencing intimating, harassing and discriminating behaviours was 0.76 (95% CI 0.59 to 0.98) with each unit increment in age. Besides gender and age, differences in relation to ethnicity was reported by Chadaga et al. (2016), who observed

a significantly higher proportion of non-whites participants experiencing workplace bullying compared to white participants. The prevalence of workplace bullying also differed according to nationality according to the study published by Cheema et al. (2005), who reported that non-European junior doctors experienced more bullying compared to European junior doctors among those who were working in Ireland, and the study published by Hills et al. (2012), who observed a significantly higher proportion of international medical graduates experiencing workplace aggression compared to local graduates. Finally, Chadaga et al. (2016) reported a significant association between height and workplace bullying, with participants shorter than 5'8 being more frequently bullied compared to their taller counterparts.

In relation to employment characteristics, there was a significant association between clinical specialty and workplace bullying, though the specialty with higher prevalence of bullying was not consistent. Al-Shafaee et al. (2013) observed higher levels of mistreatment during medical rotation compared to surgical or pediatric rotation, conversely, Dikmetas et al. (2011) reported the highest mean mobbing level for junior doctors in surgical medicine, followed by internal medicine and basic medicine.

2.3.3.5 Organisational Factors of Workplace Bullying Among Junior Doctors

From the systematic review, organisational factors related to workplace bullying have not been investigated among junior doctors.

2.3.3.6 Individual Outcomes of Workplace Bullying Among Junior Doctors

From the systematic review, individual outcomes that were significantly associated with workplace bullying among junior doctors include poor mental health and negative affect. A significant association between mental strain and cyberbullying was reported by Farley et al. (2015), and Aykut et al. (2016) reported that those experiencing mobbing were significantly more prone to displaying temper and anger attacks.

2.3.3.7 Organisational Outcomes of Workplace Bullying Among Junior Doctors

From the systematic review, organisational outcomes that have been implicated with workplace bullying among junior doctors include job dissatisfaction, burnout, and an increase in the frequency of accidents at work. In terms of job satisfaction, Aykut et al. (2016), Daugherty et al. (1998) and Farley et al. (2015) reported a significant association between workplace bullying and job dissatisfaction, however no association was observed in the study published by Bairy et al. (2007). Dikmetas et al. (2011) and Aykut et al. (2016) reported a significant relationship between workplace bullying and job burnout. In addition, Aykut et al. (2016) observed a significant increase in the frequency of accident at work among junior doctors experiencing bullying (p=0.03).

2.3.4 Strengths and Limitations of Current Evidence

Previous studies assessing workplace bullying among junior doctors have both strengths and limitations. The strengths include that almost all studies (83%) chose study population that adequately represent the average in the target population. Additionally, majority (72%) of previous studies achieved adequate response rates (i.e. more than 50%) in their studies. Previous studies also took efforts to ensure confidentiality and anonymity of participants' responses, which is especially pertinent considering the sensitive nature of the study topic.

However, there are limitations to previous studies. All previous studies examining workplace bullying were observational studies that were cross-sectional in design, which are categorised as level 4 evidence for assessing risk factors and prevalence or incidence according to the Table of Evidence published by CCHMC. Studies of higher level of evidence (i.e. randomised controlled trials, prospective cohort, case control studies) have not been published to date. Cross-sectional studies are particularly liable to limitations such as temporal ambiguity and misclassification bias. In addition, *a priori* sample size calculation was not performed for any studies. This may not be a problem for large studies such as the ones published by McNamara et al. (1995) (n=1,774), Daugherty et al. (1998) (n=1,277), and Chadaga et al. (2016) (n=2,158), but smaller sample sizes may have resulted in the observation of weak or non-significant associations. This may have been the case for Bairy et al. (2007) (n=174), who observed no association between workplace bullying and job satisfaction, which was not the case for the three other studies examining the relationship between job satisfaction and bullying (Aykut et al., 2016; Daugherty et al., 1998; Farley et al., 2015).

Furthermore, all previous studies relied on the use of self-administered questionnaires, which are prone to self-reporting bias and recall bias. On top of that, only a handful of previous studies utilised self-administered questionnaires with established psychometric properties. Thus, the results from studies not employing reliable study instruments should be treated with caution. In addition, none of the studies beside the one published by Farley et al. (2015) and D. J. Cook et al. (1996) attempted to control for potential confounders, which may have resulted in biased observations.

2.3.5 Current Research Gaps

From the systematic review performed, previous studies have examined junior doctor populations in North America (Canada and United States), Europe (Ireland, United Kingdom, and Turkey), Asia (Oman, Saudi Arabia, India, Pakistan, Japan), and Australia and New Zealand. As such, no studies assessing workplace bullying among junior doctors in SEA have been published to date. In addition, there were no published studies that evaluated individual traits such as negative affect, personality, and selfesteem, as well as organisational factors such as organisational climate, organisational culture, organisational justice, organisational leadership, and organisational support. Therefore, a research gap has been identified in the existing body of scientific evidence, and a primary study examining the prevalence and individual and organisational factors of workplace bullying among Malaysian junior doctors is justified.

CHAPTER 3: METHODS AND MATERIALS

3.1 Study Design

This is a multi-centre cross-sectional study among junior doctors in Malaysia. Junior doctors here are defined as "qualified doctors in clinical training" ("Doctors' titles: Explained," 2017, p. 4), and include HO.

3.2 Study Setting

This study was conducted in government hospitals accredited for housemanship training within the Central Zone of Malaysia. The rationale for this is to enable the sampling of HO, as only selected hospitals in Malaysia are certified to employ and train HO. As of 2013, 39 hospitals under the Ministry of Health (MOH) and three hospitals under the Ministry of Higher Education (MOHE) have been accredited for housemanship training (*Annual Report 2013 Ministry of Health Malaysia*, 2013). By 2017, the number of hospitals accredited for housemanship training totalled to 47 with the addition of four hospitals under MOH and one hospital under Ministry of Defence. The list of accredited hospitals for housemanship training is listed in Table 3.2. Within the Central Zone, there are 16 hospitals, including three state hospitals, ten major specialist hospitals, two university hospitals and one military hospital. The study was conducted from 27th November 2017 until 17th May 2018.

NO	RTH		CENTRAL			SOUTH			SOUTH			EAST		SA	BAH	SAR	AWAK
SH	MaSH	SH	MaSH	UH	RMH	SH	MaSH	MiSH	SH	MaSH	UH	SH	MaSH	SH	MaSH		
HTF	HSAH	HKL	HP	PPUM	HATTM	HMel	HPSF	HKlu	HRPZ	НКК	HUSM	HQE	HTaw	HUS	HSib		
HSB	HKul	HTAR	HSel	PPUKM		HSAm	HSNI		HSNZ	НТМ			HDK		HMir		
HPP	HSJ	HTJ	HKaj				HSI		HTAA	HKem					HB		
HRPB	HTaip		HSer				HSeg			HSHAS							
			HA				-										
			HSB														
			HTAN														
			HTI														
			HSM														
			HSAI														

Table 3.2: List of accredited hospitals for housemanship training according to zones, 2017 (Medical Development Division, MOH Malaysia)

Note: SH State Hospital; MaSH Major Specialist Hospital; MiSH Minor Specialist Hospital; UH University Hospital; RMH Royal Military Hospital; HTF Hospital Tunku Fauziah; HSB Hospital Sultanah Bahiyah; HPP Hospital Pulau Pinang; HRPB Hospital Raja Permaisuri Bainun; HSAH Hospital Sultan Abdul Halim; HKul Hospital Kulim; HSJ Hospital Seberang Jaya; HTaip Hospital Taiping; HKL Hospital Kuala Lumpur; HTAR Hospital Tengku Ampuan Rahimah; HTJ Hospital Tuanku Jaafar; HP Hospital Putrajaya; HSel Hospital Selayang; HKaj Hospital Shah Alam; PPUM Pusat Perubatan Universiti Malaya; PPUKM Pusat Perubatan Universiti Kebangsaan Malaysia; HATTM Hospital Angkatan Tentera Tuanku Mizan; HKel Hospital Melaka; HSAm Hospital Sultanah Aminah; HPSF Hospital Pakar Sultanah Fatimah; HTAA Hospital Sultanah Nora Ismail; HSI Hospital Sultan Ismail; HSeg Hospital Segamat; HKlu Hospital Kluang; HRPZ Hospital Raja Perempuan Zainah II; HSNZ Hospital Sultanah Nur Zahirah; HTAA Hospital Tengku Ampuan Afzan; HKK Hospital Kuala Krai; HTM Hospital Tanah Merah; HKem Hospital Kemaman; HSHAS Hospital Sultan Haji Ahmad Shah; HUSM Hospital Universiti Sains Malaysia; HQE Hospital Queen Elizabeth; HTaw Hospital Tawau; HDK Hospital Duchess of Kent; HUS Hospital Umum Sarawak; HSib Hospital Sibu; HMir Hospital Tawau; HDK Hospital Bintulu

3.3 Study Population

The study population of this study were HO working in general medicine, general surgery, orthopaedic surgery, paediatrics, O&G, emergency medicine or anaesthesiology departments of government hospitals accredited for housemanship training located within the Central Zone of Malaysia. The rationale for selecting those clinical departments was to select specialties that were compulsory rotations for housemanship training, which consequently enabled the sampling of HO.

3.3.1 Inclusion Criteria

Study subjects included were Malaysian HO that at the time of data collection were working in a government hospital accredited for housemanship training located within the Central Zone of Malaysia and working in general medicine, general surgery, orthopaedic surgery, paediatrics, O&G, emergency medicine or anaesthesiology department. They had to have at least six months of clinical working experience and be willing to participate in the study. A six-month working duration cut off was deemed suitable given that workplace bullying is an enduring phenomenon; one in which exposure to negative actions has been described as having had to occur for at least six months (Leymann, 1996; Nielsen, 2009).

3.3.2 Exclusion Criteria

Subjects did not return their study questionnaires or were on end of posting, medical or maternity leave were excluded.

3.4 Sample Size

The sample size required for this study was 900 participants. The sample size calculation was based on both prevalence and risk factors using the OpenEpi source calculator (Version 3).

3.4.1 Sample Size Calculation Based on Prevalence

The sample size calculated for this study based on the prevalence of workplace bullying among junior doctors was 215 participants. This was based on an estimated 4,991 population of house officers in Malaysia (*Annual Report 2013 Ministry of Health Malaysia*, 2013), and an estimated 14% of workplace bullying among junior doctors that was identified from previous studies (Ling et al., 2016). The sample size was calculated with anticipated proportion (p) of 0.14 at a 95% confidence level and design effect of 1, and of the figure obtained, an additional 20% was added to account for non-response. The number was rounded up to the nearest larger integer.

3.4.2 Sample Size Calculation Based on Risk Factors

The sample size calculated for this study based on risk factors of workplace bullying among junior doctors was 900. This was based on the OR of factors taken from previous studies examining workplace bullying among other professions, due to the absence of previous studies examining organisational factors among junior doctors. The confidence level was kept at 95%, power at 80%, and ratio of unexposed to exposed 1.0 for all calculations. Of the figure obtained, an additional 20% was added to account for non-response. The numbers were rounded up to the nearest larger integer. The result of sample size calculation according to risk factors is illustrated in Table 3.4.2.

Author (Year)	Risk Factor	Odds Ratio	% of unexposed with outcome	95% CI	n (plus 20% non-response)
An and Kang (2016)	Organisational Culture	2.58 [Hierarchy- oriented culture]	38.9%	146	176
Oxenstierna et al. (2012)	Organisational Justice	1.54 [Lack of procedural justice]	30% ⁺	750	900
Oxenstierna et al. (2012)	Organisational Leadership	1.79 [Dictatorial leadership]	30% [†]	406	488
Oxenstierna et al. (2012)	Organisational Support	1.61 [Lack of humanity]	30% [†]	614	737

Table 3.4.2: Sam	ple size calculation	on based on factors	s of workplace bullying

Note: 30%^T based on estimates as data not available. Sample size calculation based on 95% confidence level, 80% power, and ratio of unexposed to exposed 1.0 for all risk factors

3.5 Sampling Procedure

Sampling was conducted via universal sampling. Ethical approval from the Medical Research and Ethics Committee (MREC), MOH Malaysia and the medical research ethics committee of University Malaya Medical Centre (UMMC) and Universiti Kebangsaan Malaysia (UKM) Medical Centre, as well as permission to conduct the study from the Director of Medical Development Division, MOH Malaysia, Director of Health Service Department of Ministry of Defence, and respective hospital directors were sought. Permission was obtained from twelve out of sixteen hospitals located within the Central Zone, including ten out of thirteen MOH hospitals and two MOHE hospitals. All HO working in seven clinical specialties, i.e. general medicine, general surgery, orthopaedic surgery, paediatrics, O&G, emergency medicine or anaesthesiology department in those twelve hospitals were eligible for study inclusion, with the exception of one hospital in which permission to conduct the study in the orthopaedic surgery and emergency medicine departments was not granted by the respective heads of department. Data collection was done in stages, with the involvement of one hospital at a time. At the first study site, data was initially collected from both HO and MO via email survey. The rationale for this was the ease of administration, wide coverage and flexibility in choosing when to complete the study questionnaire. However, due to the poor response rate of the email survey and the different mechanisms to approach HO and MO, for the remaining study sites, the data collection method was modified to a self-administered paper questionnaire, and the study was refocused to include only HO due to limitations in resources. Thus, MO were only included in the validation study. The sampling and study procedures are described in more details as following:

Study Site I

The lists of HO and MO working in the seven departments were retrieved from each department administrative officers. The list included contact information in the form of email addresses. The study questionnaire was recast in Google Form, and a participant information sheet and electronic consent section was added to the first part of the Google form. The study questionnaire was designed such that participants were anonymous and did not have to fill in any identifying information such as name and identification numbers, and this was emphasized to study participants to encourage participation. Additionally, the items in the study questionnaire were designed not to be mandatory and participants had the option of abstaining from each question. Participants were also made aware that they were not obliged to participate in the study and were free to withdraw from the study at any time without penalty. After the Google form and mailing lists were finalized, all HO and MO listed in the mailing list were emailed an invitation to participate in the study by the study site coordinator. The email included a confidential hyperlink to the Google form. After one week, reminders to complete the study questionnaire were carried out in several ways: email reminders, verbal reminders via group supervisors, and individual text reminders via text messaging. No emails were reported to bounce back, and the response rate was calculated in percentages.

Concurrently at study site I, the study questionnaire was printed on paper. Again, the study questionnaire was designed such that participants were anonymous and did not have to fill in any identifying information such as name and identification numbers. A set comprising of two copies of the study questionnaire and a participant information sheet and consent form were placed in a brown, opaque envelope and were passed to team leaders (TL) of five clinical departments for test retest reliability testing. The TL were asked to each recruit 10 participants, including HO and MO, that were willing to participate in the study and complete the study questionnaire twice at an interval of two weeks. A convenience sampling method was selected to encourage completion of questionnaires at an interval of two weeks whilst preserving the need for participant anonymity, whereas an interval of two weeks was selected because a two-week time period between administrations was assumed to be long enough to prevent learning, carry-over effects or recall, as well as minimizing variability in the outcome being measured (M. J. Allen & Yen, 1979). The completed study questionnaires were placed into the brown envelopes and then amassed by the TL of each department. The principal investigator would then collect the completed study questionnaires from each TL.

Study Site II-XII

The study questionnaire was printed on paper. Again, the study questionnaire was designed such that participants were anonymous and did not have to fill in any identifying information such as name and identification numbers. A set of one copy of the study questionnaire and a participant information sheet and consent form were

placed in a brown, opaque envelope. The lists of HO working in the seven departments were retrieved from the head of human resource department of each hospital. Information on the occurrence of meetings involving HO including hospital briefing or continuous medical education was obtained from each study site occupational safety and health officer. Data was collected in two stages. In the first stage, the principal investigator invited all HO who were present at the meeting to participate in the study, and made notes of all those in attendance in the list. Those who consented were asked to complete the study questionnaire and return it to the principal investigator by the end of the meeting. HO that were not present at the meeting were identified and recorded in a new list. In the second stage, the new list was given to the HO TL of each department, and they were requested by the principal investigator to help distribute the study questionnaire to their colleagues and once completed to help amass the study questionnaires. They were also told that those on the list who were on end of posting, medical or maternity leave were to be marked on the list and omitted from study questionnaire distribution. In addition, the participant information sheet and consent form were asked to be kept separately from the completed questionnaire to ensure anonymity of participants. The principal investigator would then collect the completed study questionnaires from each TL after two weeks. Similar to study site I, study participants were informed that their participation was voluntary, and reassured of study confidentiality and participant anonymity. The response rate was calculated in percentages.

3.6 Study Instrument

The method for data collection was a self-administered questionnaire (Appendix C). There were eight original instruments that were utilized to collect data for this study, and permission to use the instruments was sought from the authors before commencement of data collection. All instruments were combined into one questionnaire that was comprised of four parts. Part A assessed sociodemographic and employment characteristics, Part B examined individual traits and was named the Brief Individual Traits Questionnaire, Part C evaluated organisational characteristics and was named the Brief Organisational Environment Scale, and finally Part D measured workplace bullying. Due to the vast amount of data that was collected in this study and limitation in terms of resources, each variable was assessed using short versions of validated instruments where possible, provided that it had adequate psychometric properties. This was to enable the assessment of numerous study variables without inducing respondent fatigue (Rolstad, Adler, & Rydén, 2011). Original instruments were modified to a 5-point Likert scale where applicable to standardize the study instrument. A description of instruments included in the questionnaire, the variables measured, as well as how the variables were scored is outlined below.

3.6.1 Single-item Questions for Sociodemographic and Employment Characteristics

Sociodemographic characteristics (i.e. age, gender, ethnicity, educational background and English proficiency) and employment characteristic (i.e. job position, duration working and clinical specialty) were assessed using single items in Part A of the selfadministered questionnaire. English proficiency was assessed using a self-reported item "How well do you think you speak English?" with participants choosing from options ranging from "poor", "fair", "good" and "excellent".

3.6.2 Negative Affect Subscale of the Affect Balance Scale (ABS-NA)

Negative affect was assessed using the 5-item negative subscale of the Affect Balance Scale (ABS). The ABS, which is also known as the Bradburn Scale of Psychological Well-Being, was devised by Bradburn in 1969 and is a 10-item questionnaire consisting of questions that examines positive and negative affect (Bradburn, 1969). The ABS has been widely used as a measure of psychological well-being (Macintosh, 1998). The items can be answered yes or no, with a score of 1 for every "yes", and the total score ranges from 0 to 5. According to Bradburn, the ABS is psychometrically adequate, with a test-retest reliability for the Negative Affect subscale of 0.81, internal consistency reliability ranging between 0.61 and 0.73, and factor analysis showing distinct orthogonal dimensions and supporting a two-factor structure for the ABS (Bradburn, 1969). Item 1 to 5 in Part B of the questionnaire corresponds to items in the ABS-NA.

3.6.3 Short Version of the Big Five Inventory (BFI-10)

The BFI-10 was used to assess personality. This instrument was constructed by Rammstedt and John (2007), based on the 44-item Big Five Inventory by John, Donahue, and Kentle (1991). It contains 10 short-phrase items, rated on a 5-point Likert scale from 1 "disagree strongly" to 5 "agree strongly" for five scales, i.e. extraversion, agreeableness, conscientiousness, neuroticism, and openness (Rammstedt & John, 2007). The BFI-10 has been widely used for the assessment of personality in various cultures (Kim et al., 2010). According to the authors, the BFI-10 exhibited adequate psychometric properties as indicated by the following: clear five-factor structure demonstrated by common-factor analysis, retest reliabilities average of 0.75, discriminant validity of 0.11, and good external validity coefficients (r = 0.44) (Rammstedt & John, 2007). For the purpose of this study, we modified the 5-point Likert scale to 1 "strongly disagree" to 5 "strongly agree" to standardise the study instrument and reduce respondent fatigue and non-response bias, with permission from the authors. Item 6 to 15 in Part B of the questionnaire corresponds to items in the BFI-10.

3.6.4 Single Item Self-Esteem Scale (SISES)

Self-esteem was assessed using the SISES by Robins, Hendin, and Trzesniewski (2001). It is as suggested by its name, a one-item measure of global self-esteem, which is answered on a 5-point Likert scale from 1 "not very true of me" to 5 "very true of me". According to the authors, the scale has strong convergent validity and similar predictive validity as the Rosenberg Self-Esteem Scale (RSES), the most widely used self-esteem measure in social science research (Tinakon & Nahathai, 2012). Thus, the SISES was employed as a shorter alternative to the 10-item RSES. For the purpose of this study, we modified the 5-point Likert scale to 1 "strongly disagree" to 5 "strongly agree" to standardise the study instrument and reduce respondent fatigue and non-response bias, with permission from the authors. Item 16 in Part B of the questionnaire corresponds to item in the SISES.

3.6.5 Short Version of the CLIOR Scale (CLIOR-Short)

Organisational climate was measured using the CLIOR-Short, which was constructed by Peña-Suárez, Muñiz, Campillo-Alvarez, Fonseca-Pedrero, and Garcia-Cueto (2013) to provide a global indicator of organisational climate. This one-dimensional scale was chosen because it is a brief and validated measure that exhaustively considered all organisational climate dimensions proposed by previous climate authors (Peña-Suárez et al., 2013). The 15-item CLIOR-Short comprises of indicators of cooperation, work organisation, relations, innovation, participation and attachment to the job, measured on a 5-point Likert-type scale that ranges from 1 "strongly disagree" to 5 "strongly agree". According to the authors, the instrument is valid and reliable, with discrimination indexes higher than 0.40, Cronbach's alpha coefficient of 0.94, and a clear one-dimensional structure demonstrated by factor analysis (Peña-Suárez et al., 2013). Item 1 to 15 in Part C of the questionnaire corresponds to items in the CLIOR-Short.

3.6.6 Competing Values Framework Questionnaire (CVFQ)

Organisational culture and organisational leadership were measured using Cameron and Freeman (1991) CVFQ, which is based on the competing values framework by Quinn and Rohrbaugh (1981) that form the basis of a typology of organisational culture widely used in health service research (Helfrich, Li, Mohr, Meterko, & Sales, 2007). The set of domains selected for evaluation of organisational culture include the dominant characteristics or values, the dominant style of leadership, the basis for bonding, and the organisational strategic emphasis (Cameron & Freeman, 1991). The original CVFQ includes four questions, each comprising of four brief scenarios that describe the dominant characteristics of four culture types (i.e. clan culture, adhocracy culture, market culture and hierarchy culture), and a Q-sort scale is employed with participants dividing 100 points among the four scenarios, depending on how similar they perceive each scenario was to their own organisation (Cameron & Freeman, 1991). Kalliath, Bluedorn, and Gillepsie (1999) have conducted a validation study of the CVFQ in the healthcare setting by applying a 16-item, 7-point Likert scale version of the original CVFQ and demonstrated adequate psychometric properties with structural equation modelling supporting the four-factor structure of the CVFO and observation of excellent internal consistency indices (Cronbach's alpha 0.80 to 0.90). For the purpose of this study, the Q-sort scale in Cameron and Freeman's CVFQ was adapted to a 5-point Likert scale, similar to the version published by Kalliath and colleagues. Additionally, on the 5-point Likert scale, 1 indicated "strongly disagree" and 5 "strongly agree" to standardise the study instrument and reduce respondent fatigue and non-response bias, with permission from the authors. Item 16 to 31 in Part C of the questionnaire corresponds to items in the CVFQ.

3.6.7 Short Version of the Survey of Perceived Organisational Support (SPOS-Short)

Organisational support was measured using Eisenberger and Huntington (1986) SPOS-Short, which measures employees' global beliefs regarding the extent to which organisations value their inputs and care about their well-being. The Survey of Perceived Organisational Support (SPOS) is a widely used, 36-item scale measured on a 7-point Likert scale of 1 "strongly disagree" to 7 "strongly agree". It was found to exhibit satisfactory psychometric properties, with factor analysis demonstrating a clear one-factor structure and the scale possessing excellent internal consistency (Cronbach's alpha of 0.97) (Eisenberger & Huntington, 1986). An 8-item version of the SPOS (SPOS-Short) was chosen for this study as validation study indicated that it is just as effective as the 36-item SPOS but even more efficient (Worley, Fuqua, & Hellman, 2009). For the purpose of this study, we modified the 7-point Likert scale to a 5-point Likert scale, with 1 indicating "strongly disagree" and 5 indicating "strongly agree" to standardise the study instrument and reduce respondent fatigue and non-response bias, with permission from the authors. Item 32 to 39 in Part C of the questionnaire corresponds to items in the SPOS-Short.

3.6.8 Short Measure of Colquitt's Organisational Justice Scale (OJS-Short)

Organisational justice was measured using Elovainio et al. (2010) OJS-Short, based on Colquitt (2001) Organisational Justice Scale (OJS). The OJS is a popular, 20-item instrument designed to measure four dimension of organisational justice, i.e. procedural justice, distributive justice, interpersonal justice, and informational justice, using a 5point Likert scale with anchors of 1 "to a small extent" and 5 "to a large extent". In this study, the OJS-Short was utilised as Elovainio and colleagues developed and tested a short version of the OJS on a sample of healthcare professionals, and reported that the 8-item SPOS-Short assessing procedural justice, interactional justice and distributive justice demonstrated adequate psychometric properties, with good model fit, clear threefactor structure with confirmatory factor analysis, satisfactory internal consistency, and criterion validity (Elovainio et al., 2010). For the purpose of this study, the 5-point Likert scale was modified to 1 "very small extent" and 5 "very large extent", to standardise the study instrument and reduce respondent fatigue and non-response bias, with permission from the authors. Item 40 to 47 in Part C of the questionnaire corresponds to items in the OJS-Short.

3.6.9 Revised Version of the Negative Acts Questionnaire (NAQ-R)

The experience of workplace bullying was measured using the NAQ-R that was devised by Einarsen et al. (2009) to measure exposure to negative actions in the workplace. This instrument is a 22-item scale measuring exposure to items that encompasses work-related bullying, person-related bullying and physical intimidation within the past six months, with participants selecting between the response alternatives "Never", "Now and then", "Monthly", "Weekly", and "Daily" (Einarsen et al., 2009). The NAQ-R has been widely used and demonstrated by Einarsen et al. (2009) to have

satisfactory psychometric properties, with LISREL confirming a three-factor structure, although the authors reported that the instrument may also be used as a single factor measure. In addition, the instrument was described as having excellent internal consistency (Cronbach's alpha 0.90) and good criterion validity (Einarsen et al., 2009). The NAQ-R is a form of behavioural experience method used to measure workplace bullying. Item 1 to 22 in Part D of the questionnaire corresponds to items in the NAQ-R. The NAQ-R is followed up with a stem question based on the definition of workplace bullying, in which participants indicate whether they perceive themselves to be a victim of workplace bullying according to the definition given by selecting between the response alternatives "Never", "Now and then", "Monthly", "Weekly", and "Daily". The stem question is a form of self-labelling with a definition method used to measure workplace bullying. Additionally, a single item question asked participants to select the commonest perpetrators of negative actions.

3.7 Study Variables

3.7.1 Sociodemographic Characteristics

3.7.1.1 Operational Definition

The sociodemographic characteristics that were included in this study comprise of age, gender, ethnicity, educational background (i.e. graduate of which country), and communication skills (i.e. English proficiency). For the purpose of this study, age was operationally defined as the number of years that a person has lived according to birth date stated on the participant's MyKad (i.e. Malaysian identity card). Gender was operationally defined as the classification of male and female based on the subject's

MyKad. Ethnicity is operationally defined as the classification of Malay, Chinese, Indian, or Others (i.e. "lain-lain") according to the participant's birth certificate. Educational background was operationally defined as the country from which the participant was awarded his or her undergraduate medical degree. Finally, English proficiency was operationally defined as how well the participant perceive him or herself to speak in the English language, according to the scoring on the self-reported item measuring English proficiency in the study instrument.

3.7.1.2 Scales of Measurement

Age was measured in years along a ratio scale. English proficiency was classified on an ordinal scale with four subcategories of "excellent", "good", "fair" and "poor". Gender, ethnicity and educational background were classified on a nominal scale, with two subcategories of "male" and "female" for gender, four subcategories of "Malay", "Chinese", "Indian" and "Others" for ethnicity, and open-ended category for educational background.

3.7.2 Employment Characteristics

3.7.2.1. Operational Definition

Employment characteristics that were included in this study comprise of working duration, clinical specialty, and type of hospital. For the purpose of this study, working duration was operationally defined as the number of months the subject has been employed in clinical service. Clinical specialty was operationally defined as the clinical department to which the subject was currently posted in. Finally, type of hospital was operationally defined as to whether the hospital was a university hospital, state hospital, or major specialist hospital.

3.7.2.2. Scales of Measurement

Clinical specialty and type of hospital were measured on a nominal scale, whereas working duration was measured in months along a ratio scale. Clinical specialty was measured on a nominal scale with multiple categories of "general medicine", "general surgery", "paediatrics", "obstetrics and gynaecology", "orthopaedic surgery", "emergency medicine" and "anaesthesiology", whereas type of hospital was measured on a nominal scale, with three subcategories of "university hospital", "state hospital" and "major specialist hospital".

3.7.3 Individual Traits

3.7.3.1. Operational Definition

Individual traits that were included in this study comprise of negative affect, personality, and self-esteem. For the purpose of this study, negative affect was operationally defined as the degree of negative affect based on the ABS-NA (Bradburn, 1969). Personality was operationally defined as the degree of extraversion, agreeableness, conscientiousness, neuroticism, and openness according to the BFI-10 (Rammstedt & John, 2007). Self-esteem was operationally defined as the degree of self-esteem based on the SISES (Robins et al., 2001).

3.7.3.2. Scales of Measurement

All three variables under individual traits were measured on the ordinal scale. Negative affect was measured on an ordinal scale, with three subcategories of "high", "mod" or "low" negative affect. Similarly, personality was measured on an ordinal scale, with three subcategories of "high", "mod" or "low" for each dimension of personality (i.e. extraversion, agreeableness, conscientiousness, neuroticism, and openness). Finally, self-esteem was measured on an ordinal scale, with three subcategories of "high", "mid" and "low" self-esteem.

3.7.4 Organisational Characteristics

3.7.4.1. Operational Definition

Organisational characteristics that were included in this study comprise of organisational climate, organisational culture, organisational leadership, organisational support, and organisational justice. For the purpose of this study, organisational climate was operationally defined as the perception of the general work climate as indicated by the CLIOR-Short (Peña-Suárez et al., 2013). Organisational culture was operationally defined as the perception of shared values and assumptions between members of the organisation as reflected by the CVFQ (Cameron & Freeman, 1991). Organisational leadership was operationally defined as the perception of leadership style as reflected by the CVFQ leadership style items (Cameron & Freeman, 1991). Organisational support was operationally defined as the perception of organisational support, as indicated by SPOS-Short (Eisenberger & Huntington, 1986). Finally, organisational justice was operationally defined as perception of the extent to which employees are treated with

procedural justice, interactional justice, and distributive justice in their workplace, as measured by OJS-Short (Elovainio et al., 2010).

3.7.4.2. Scales of Measurement

Organisational organisational culture, organisational leadership, climate, organisational support and organisational justice were all measured on an ordinal scale. Organisational climate was measured on an ordinal scale, with three subcategories of "positive", "neutral" or "negative" climate. Organisational culture was measured on an ordinal scale, with three subcategories of "high", "mod" or "low" for each type of culture, which included clan culture which is a culture characterised by cohesiveness, teamwork, participation, and a sense of family, adhocracy culture which is a culture characterised by flexibility, adaptability, and entrepreneurship, hierarchy culture which is a culture characterised by order, rules and regulations, and control, and market culture which is a culture predominantly focused on production and goals achievement (Cameron & Freeman, 1991). Organisational leadership was measured on an ordinal scale, with three subcategories of "high", "mod" or "low" for each type of leadership style, i.e. mentor or facilitator, innovator or entrepreneur, administrator or organizer, and production and achievement-oriented leadership style. Organisational support was measured on an ordinal scale, with three subcategories of "high", "mod" or "low" organisational support. Finally, organisational justice was measured on an ordinal scale, with three subcategories of "high", "mod" or "low" for each domain of justice, i.e. procedural, interactional, and distributive justice.

3.7.5 Workplace Bullying

3.7.5.1. Operational Definition

For the purpose of this study, a bullied participant was operationally defined as scoring more than 45 on the NAQ-R and perceiving to be bullied weekly or daily according to the stem question based on Einarsen et al. (2009) definition of workplace bullying. This combination approach, in which both the behavioural experience method (i.e. NAQ-R) and self-labelling with a definition method (i.e. stem question based on given definition) were combined to measure workplace bullying, was deemed the best methodology to investigate the extent of bullying without overestimating or underestimating the phenomenon, as advocated by prominent researchers in the field of workplace bullying (Nielsen, 2009; Zapf et al., 2011). This is because in the context of workplace bullying, a bullied individual is a person who is not only continuously exposed to persistent negative actions, but a person who identifies him or herself as being victimized by such behaviour, as opposed to targets of bullying who may not necessarily label him or herself as being victimised (Nielsen, 2009). This distinction between cases and targets of bullying is in keeping with the literature which asserted that workplace bullying is a gradually evolving process (Einarsen et al., 2003; Leymann, 1990; Zapf & Gross, 2001), one in which targets may be exposed to indirect and discrete negative actions which progressively intensifies to a stage involving more direct acts, which may result in the development of a sense of victimization. Therefore, the combination method adequately manages to capture both aspects of the workplace bullying definition, i.e. the persistency of negative actions experienced by participants, and participants' subjective interpretation of being victimized (Mikkelsen & Einarsen, 2001; Nielsen, 2009). In addition to that, for the NAQ-R, the raw sum score approach with a threshold sum score cut-off point of 45 was used to indicate that a participant is a case of workplace bullying, which compared to the dichotomous sum score approach leads to a better trade-off between true negatives and true positives, and reduces false positives (Notalaers & Einarsen, 2013). The commonest perpetrator of negative actions was operationally defined as the group of workers who the participant perceived to be the most frequent source of negative actions.

3.7.5.2. Scales of Measurement

Workplace bullying was measured on a nominal scale, with two subcategories of "bullied" and "not bullied". Commonest perpetrator of negative actions was also measured on a nominal scale, with five subcategories of "consultants and specialists", "medical officers", "house officers", "nursing and support staff", and "administrative and non-clinical staff".

3.8 Dependent and Independent Variables

The dependent variable for this study was workplace bullying, and the independent variables were sociodemographic characteristics, employment characteristics, individual traits, and organisational characteristics. The interaction between dependent variable and independent variables were hypothesized to have a causal effect relationship.

3.9 Confounders

Potential confounders that could distort the relationships between study variables of interest and workplace bullying are outlined in Figure 3.9. This list of potential confounders is not exhaustive but capture important confounders that were identified from the literature.

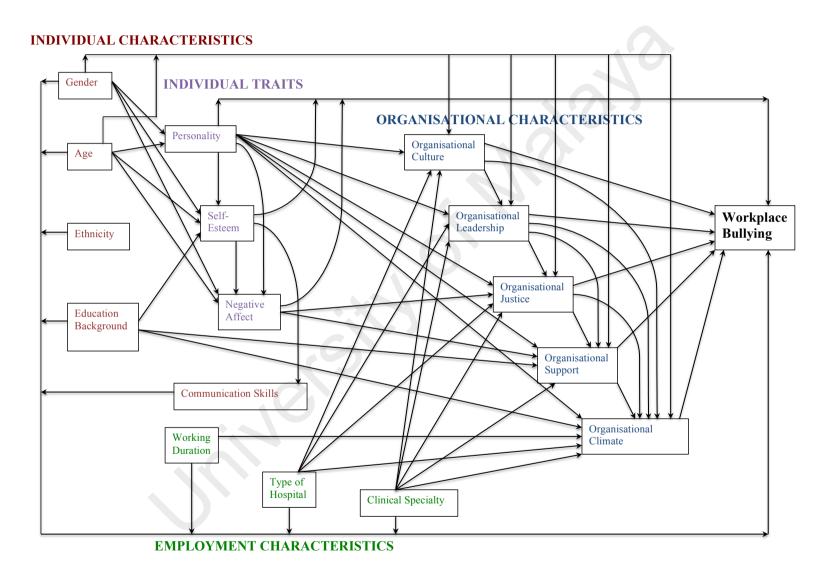


Figure 3.9: Graphical presentation of confounding in Directed Acyclic Graphs

3.9.1 Confounders of the Relationship between Negative Affect and Workplace Bullying

Potential confounders of the relationship between negative affect and workplace bullying include sociodemographic characteristics such as age and gender, and individual traits such as personality and self-esteem. In relation to age, according to the study by Charles, Reynolds, and Gatz (2001) who studied age-related differences in negative affect in a longitudinal sample spanning 23 years, negative affect decreased with age for all generations. In relation to gender, according to a study by Fujita, Diener, and Sandvik (1991), women reported more negative affect compared to men. As for personality, meta-analyses by DeNeve and Cooper (1998) and Steel, Schmidt, and Shultz (2008) as well as a study published by Zanon, Bastianello, Pacico, and Hutz (2013) all found neuroticism to be an important predictor of negative affect. Finally, in relation to self-esteem, a study by Lorr and Wunderlich (1988) reported that participants low in confidence had significantly greater negative affect compared to participants high in confidence.

3.9.2 Confounders of the Relationship between Personality Traits and Workplace Bullying

Potential confounders of the relationship between personality traits and workplace bullying include sociodemographic characteristics such as age and gender. In relation to age, Goldberg, Sweeney, Merenda, and Hughes Jr (1998) sampled individuals representative of United States working adults and found that older persons tended to describe themselves as more conscientiousness compared to younger persons, whereas the large national datasets from Britain and Germany published by Donnellan and Lucas (2008) indicated that agreeableness was positively associated with age while extraversion and openness were negatively associated with age. As for gender, according to the study published by Weisberg, DeYoung, and Hirsh (2011), female participants reported higher extraversion, agreeableness and neuroticism compared to male participants. This was found to be true across cultures according to Costa, Terracciano, and McCrae (2001), who conducted secondary analyses of data from 26 cultures and observed that women reported higher neuroticism and agreeableness compared to men.

3.9.3 Confounders of the Relationship between Self-Esteem and Workplace Bullying

Potential confounders of the relationship between self-esteem and workplace bullying include sociodemographic characteristics such as age, gender, and education background, as well as individual traits such as personality. In relation to age and gender, Bleidorn et al. (2016) studied a large Internet sample and found that across 48 nations, self-esteem increased with age and males reported higher self-esteem compared to females. As for education background, according to Gozu, Kern, and Wright (2009), international medical graduates had three times the odds of higher self-esteem compared to United States medical graduates. Finally, in relation to personality, Amirazodi and Amirazodi (2011) studied the relationship between personality traits and self-esteem and found that extraversion, agreeableness, conscientiousness and openness were significant positive predictors of self-esteem while neuroticism was a significant negative predictor of self-esteem.

3.9.4 Confounders of the Relationship between Organisational Climate and Workplace Bullying

Potential confounders of the relationship between organisational climate and workplace bullying include sociodemographic characteristics such as age, gender, and education background, employment characteristics such as duration working, clinical specialty, and type of hospital, individual traits such as personality, and organisational characteristics such as organisational culture, organisational leadership, organisational support and organisational justice.

In relation to age, education background and duration working, Al-Shammari (1994) and Iqbal (2011) studied the differences in climate perceptions according to employees' demographic and organisational background in the Jordanian and Pakistani industrial organisations respectively, and observed that there were significant differences in the perception of organisational climate according to age, education level, and length of service. According to both studies, older employees, employees with higher education levels, and employees who had longer tenure had significantly lower perception or more moderate opinions of organisational climate domains than their counterparts. In relation to gender, Seghieri, Rojas, and Nuti (2015) examined managers and professionals in the Tuscan healthcare system and reported significant gender differences in the perception of organisational climate dimensions, with women consistently reporting higher scores compared to men. As for type of hospital, Shalmani, Qadimi, Praveena, and Moslem (2015) explored teachers' perception of organisational climate and found that there were significant differences according to type of institution in terms of how "open" or "closed" the organisational climate was perceived. In terms of clinical specialty, according to the study published by Muñiz et al. (2014) who examined personnel working in Spanish healthcare services, the working climate was perceived to be better in primary care compared to specialist care. Finally, in relation to individual traits, a study by Berman (1989) found that personality was an important determinant of the perception workers have of their general working environment.

In terms of organisational culture, a study by Wallace, Hunt, and Richards (1999) examined the relationship between organisational culture, climate and managerial values of a large Australian public sector agency and observed significant correlation between dimensions of organisational culture (i.e. power distance and uncertainty avoidance) and dimensions of organisational climate (i.e. conflict and ambiguity and mutual trust). Similarly, Speroff et al. (2010) studied organisational culture across 40 American hospitals and concluded that group culture hospitals had significantly higher safety climate scores compared to hierarchical culture hospitals. As for organisational leadership, studies by Koene, Vogelaar, and Soeters (2002), Eustace and Martins (2014) and Holloway (2012) examined the effect of different leadership styles on organisational climate in supermarket stores of a large supermarket chain, a South African organisation and a non-profit organisation in southeast Georgia respectively, and reported a clear relationship between leadership style and organisational climate. In terms of organisational justice, Alikhani and Lebadi (2014) observed significant correlation between organisational climate and organisational justice. Finally, in relation to organisational justice, Gyekye and colleagues reported that workers with positive perception of organisational justice (Gyekye & Haybatollahi, 2014) and organisational support (Gyekye & Salminen, 2007) similarly had positive views concerning psychosocial safety climate compared to their counterparts.

3.9.5 Confounders of the Relationship between Organisational Culture and Workplace Bullying

Potential confounders of the relationship between organisational culture and workplace bullying include sociodemographic characteristics such as age and gender, employment characteristics such as clinical specialty, and type of hospital, and individual traits such as personality. In relation to age, gender, and clinical specialty, Helms and Stern (2001) examined employees of 33 organisations in the Life Care Centers of America, and reported significant variation in employees' perceptions of organisational culture according to age, gender, and organisational units. As for type of hospital, Acar and Acar (2014) examined organisational culture of 99 hospitals in large cities in Turkey and reported that there were significant in variances in organisational culture between public and private hospitals. Finally, in relation to personality, Aidla (2003) studied Estonian school employees and reported that employees with high extraversion, agreeableness, and conscientiousness, and low neuroticism gave higher ratings of organisational culture orientations compared to their counterparts.

3.9.6 Confounders of the Relationship between Organisational Leadership and Workplace Bullying

Potential confounders of the relationship between organisational leadership and workplace bullying include sociodemographic characteristics such as age and gender, employment characteristics such as clinical specialty, and type of hospital, individual traits such as personality, and organisational characteristics such as organisational culture.

In relation to age and gender, Haber (2012) examined undergraduate students drawn from the national United States sample and observed significant thematic differences in the perception of leadership according to age and gender. She reported that older participants were more likely to include a focus on a shared goal in their definitions of leadership and less likely to view leadership as involving modelling compared to younger participants, and female participants were more likely to include a focus on collaboration, admirable personal qualities, and positive differences in their definition of leadership compared to male participants. Similarly, Chow (2005) explored gender differences in perceived leadership effectiveness among Hong Kong middle managers in telecommunications and financial services, and concluded that female participants projected a more favourable image of leaders compared to male participants. In relation to clinical specialty, Davis (2011) conducted a study among personnel in the U.S. armed forces and observed significant differences in ratings of leadership styles of senior enlisted leaders according to organisational unit. As for type of hospital, Al-Mailam (2004) conducted a study among employees working at four hospitals in Kuwait, and found that employees in private hospitals were more likely to view their leaders as transformational compared to those working in public hospitals.

In terms of personality, Hautala (2005) explored the effects of subordinates' personality traits on the assessment of transformational leadership, and reported that extraverted and feeling subordinates gave higher ratings of leadership compared to introverted and thinking subordinates. Finally, in relation to organisational culture, Tsai (2011) conducted a cross-sectional study among hospital nurses in Taiwan and reported significant positive correlation between organisational culture and leadership behaviour. Similarly, Chapman, Johnson, and Kilner (2014) conducted a mixed method study

among medical leaders in acute hospital trusts in the United Kingdom and reported that organisational culture appeared during inductive analysis as an essential factor in determining the use of leadership style by medical leaders.

3.9.7 Confounders of the Relationship between Organisational Support and Workplace Bullying

Potential confounders of the relationship between organisational support and workplace bullying include sociodemographic characteristics such as age, gender and education background, employment characteristics such as clinical specialty and type of hospital, individual traits such as personality and negative affect, and organisational characteristics such as organisational culture, organisational leadership, and organisational justice.

In relation to age and education background, Gorji, Etemadi, and Hoseini (2014) studied emergency nurses in General Hospitals of Qom, Iran and observed significant associations between age and education and POS, such that POS increased as age increased, and higher POS was found among nurses with diploma degrees compared to those with associate or bachelor degrees. As for gender, Amason and Allen (1997) examined employees' perceptions of POS among workers in a university and two engineering firms and found that male and female employees perceived organisational support differently. In relation to employment characteristics, no evidence to support clinical specialty and type of hospital as confounders of the relationship between organisational support and workplace bullying was found. However, they are hypothesized to act as confounders in said relationship because different clinical specialties and types of hospital have important differences in organisational structure

and services provided, which may affect job characteristics such as career mentoring and work exhaustion, which in turn has been reported to significantly affect how employees perceived support according to the study by M. W. Allen, Armstrong, Reid, and Riemenscheider (2008).

In relation to negative affect, Bajaj and Krishnan (2014) conducted a study among employees of a large Indian manufacturing space organisation, and observed that POS was negatively associated to negative affect. In terms of personality, Treglown, Zivkov, Zarola, and Furnham (2018) conducted a study among ambulance personnel and found that employees that rated high on excitable, sceptical, reserved and leisurely but low on dutiful and diligent personality traits had lower POS compared to their counterparts. In relation to organisational culture, Santos and Gonçalves (2014) conducted a study on workers of Portuguese Public Universities and Higher Education institutions, and concluded by structural equation modelling that organisational culture was a predictor of POS. Finally, as for organisational leadership and organisational justice, Kurtessis et al. (2015) performed a meta-analysis of the Organisational Support Theory using the results of 558 studies, and concluded that organisational leadership and fairness were significant factors of POS. According to their study, transformation leadership rather than transactional leadership was more strongly related to POS, and procedural justice, interactional justice, and distributive justice were all strongly related to POS.

3.9.8 Confounders of the Relationship between Organisational Justice and Workplace Bullying

Potential confounders of the relationship between organisational justice and workplace bullying include sociodemographic characteristics such as age and gender, employment characteristics such as clinical specialty and type of hospital, individual traits such as personality and negative affect, and organisational characteristics such as organisational leadership.

In relation to age, Al-Zu'bi (2010) studied employees of electrical companies and observed a signification association between age and perceived organisational justice. As for gender, Bahrami, Gazar, Montazeralfaraj, and Tafti (2013) conducted a cross-sectional study in a teaching hospital in Yazd, Iran and found that gender was significantly associated with perceived organisational justice, with male participants rating perceived organisational justice more favourably compared to female participants. In relation to clinical specialty and type of hospital, Hatam, Fardid, and Kavosi (2013) examined perception of organisational justice among nurses in teaching hospitals of Shiraz University of Medical Sciences, Iran, and reported that perceived organisational justice was significantly higher among nurses working in specialty hospitals compared to those working in general hospitals, and that perception of justice were significantly different between nurses working in surgical wards and nurses working in other specialties including emergency, critical care, oncology, burn and transplant units.

In relation to negative affect, Barsky and Kaplan (2007) performed a meta-analysis to examine the relationship between state affect, trait affect, and organisational justice, and reported that state and trait negative affect showed significant associations with perceptions of procedural, interactional and distributive justice in the predicted direction. As for personality, Törnroos et al. (2019) conducted a study among cohorts of the population register of the Social Insurance Institution of Finland, and found that

high neuroticism was related to low procedural, interactional and distributive justice, high agreeableness was related to high procedural and interactional justice, whereas high openness was related to high distributive justice. Finally, in terms of organisational leadership, Armagen and Erzen (2015) conducted a meta-analysis involving 27 studies, and concluded that leadership had a positive effect on organisational justice.

3.10 Data Processing and Data Safety and Integrity

In order to preserve study confidentiality and participant anonymity, no identifying information had to be filled in the study questionnaire and participants were asked to keep their completed questionnaires in a sealed brown opaque envelope which only the principal investigator had access to. In addition, the participant information sheet and consent forms were asked to be kept separately from the completed study questionnaire to preserve anonymity. Submitted study questionnaires were checked for completeness. Before data entry was commenced, coding of data was performed. Data was then entered into Microsoft Excel files, which were organized by hospitals. Data entry for all files was double-checked for error to minimize misclassification error in the data entry process and improve data quality. Data files were kept on a secure computer that was equipped with a safety password login.

3.11 Treatment of Data

3.11.1 Scoring of Data

Negative items were reverse scored whenever applicable, and scores were tallied for each study instrument.

3.11.2 Categorization of Data

As factors of workplace bullying were of interest in this study, it was useful to categorise scores from study instruments into meaningful categories. The main statistical advantage in using artificial categorization is to ease interpretations of variables, analyses, and presentation of the results from a study, as well as simplifying clinical decision-making (DeCoster, Galluci, & Iselin, 2011; Farrington & Loeber, 2000). Although some authors argue that the costs of transforming a continuous variable into a categorical variable include loss of statistical power and reduced accuracy of estimated relations (Cohen, Cohen, West, & Aiken, 2003; MacCallum, Zhang, Preacher, & Rucker, 2002), some maintain that the costs in terms of power is relatively small compared to the gains of improved interpretability (Farrington & Loeber, 2000). For this study, the extreme group analysis was chosen to categorise variables of interest into categories via selecting the upper and lower quarters cut offs to indicate high and low groups, and selecting the middle two quarters to indicate the moderate group. The benefit of this method is that it retains the variability within the upper and lower parts of the distribution and increases the power of tests (DeCoster et al., 2011). Therefore, for the individual traits and organisational characteristics domains and subdomains of interest in this study, tallied scores that are less than the Quartile 1 score were categorized as "low", tallied scores that fall on or between Quartile 1 and Quartile 3 were categorized as "mod", and tallied scores that are more than the Quartile 3 score were categorized as "high", with the exception of organisational climate which was categorized into "negative" for tallied scores that are less than the Quartile 1 score, "neutral" for tallied scores falling on or between Quartile 1 and Quartile 3, and "positive" for tallied scores that are more than the Quartile 3 score.

3.12 Initial Data Analysis

All statistical analysis was performed using Software for Statistics and Data Science (STATA) Version 14.0. Microsoft Excel file for each hospital was combined into one main excel file and imported into STATA.

3.12.1 Missingness

The percentage of missingness for each item in the study instrument was calculated, and the Little's Missing Completely At Random (MCAR) test was performed to test the mechanism of missingness. Missingness was regarded as inconsequential if the missing data percentage was less than 5% (Schafer, 1999). Data was regarded as missing completely at random if the Little's MCAR test resulted in a p value of more than 0.05.

3.12.2 Outliers, Leverage and Influence

To identify influential observations, summary statistics for outliers, leverage and influence including r (studentized residual), hat value (leverage) and D (Cook's distance) were calculated. An r with an absolute value greater than 3 was deemed a potential outlier (Stevens, 1984; "A strategy for dealing with problematic data points," 2018). A hat value of greater than 3p/n where p is the number of predictors and n is the number of observation was considered to be large ("A strategy for dealing with problematic data points," 2018). Finally, a D with a value greater than 1 was deemed to be an indication of an influential case (R. D. Cook & Weisberg, 1982; "A strategy for dealing with problematic data points," 2018).

3.12.3 Response Distribution

To assess the normality of data distribution, standardized residuals were calculated and a quantile-quantile (Q-Q) plot was examined. Under the normal distribution, points were expected to align with the diagonal line, and systematic deviations or outlying observations would have indicated a departure from this distribution (Dobson, 2002).

3.12.4 Multicollinearity

The tolerance and variance inflation factor (VIF) were calculated to assess for multicollinearity, and a tolerance of less than 0.1 and VIF of greater than 10 were taken as indication of serious multicollinearity (Marquardt, 1970).

3.12.5 Model Checking for Factor Analysis

3.12.5.1 Interval Level Data Structure

Factor analysis requires the data to be interval or approximate interval level data (Walker & Maddan, 2008). As the study instrument data was collected using binary responses or Likert-type scale responses, the data fulfilled this assumption.

3.12.5.2 Multivariate Normality

Factor analysis assumes multivariate normality (Walker & Maddan, 2008). Multivariate normality was assessed using the Doornik-Hansen, Henze-Zikler, and Mardia's kurtosis and skewness test. The null hypothesis that data has multivariate normality was rejected if p was less than 0.05.

3.12.5.3 Factorability

Factor analysis assumes that there are some correlations among variables such that coherent factors can be identified (Walker & Maddan, 2008). The feasibility of factor analysis was assessed using Bartlett's Test of Sphericity (BTS) and Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy. The BTS tests the null hypothesis that a set of measures is unrelated and therefore unsuitable for structure detection, whereas the KMO is a measure of the proportion of variance among variables that might be caused by underlying factors and assesses the sampling adequacy for each variable in the model and for the complete model (Elliot & Woodward, 2014). A statistical significance of less than 0.05 for the BTS test and KMO index of more or equal to 0.50 were deemed to be acceptable for factor analysis (Hair, Anderson, Tatham, & Black, 1995; Tabachnick & Fiddell, 2007).

3.12.5.4 Adequate Sample Size

Factor analysis requires sufficient sample size to enable reliable estimates of correlation among variables (Walker & Maddan, 2008). The general rule of thumb for sample size follows those of Hatcher (1994), who argues that sample size should be at least 100 or 5 times the number of variables to be included in the analysis. For this study, the number of items that was included in the factor analysis was 84, thus the minimum sample size was 420. The study sample size for factor analysis was 1,119; therefore, this assumption was met.

3.12.6 Model Checking for Mixed Effects Logistic Regression

3.12.6.1 Dependent Variable Structure

One of the main assumptions of logistic regression is the appropriate structure of the dependent variable (Schreiber-Gregory, 2018). The dependent variable is workplace bullying, which is a binary variable. Therefore, this assumption was fulfilled.

3.12.6.2 Absence of Multicollinearity

Logistic regression assumes that there is little or no multicollinearity among the independent variables (Schreiber-Gregory, 2018). This was assessed using tolerance and VIF. A tolerance of less than 0.1 and VIF of greater than 10 was taken as indication of serious multicollinearity (Marquardt, 1970).

3.12.6.3 Linearity in the Transformed Expectation

Logistic regression requires independent variables to be linearly related to log odds (Schreiber-Gregory, 2018). To assess linearity of the transformed expectation, a residual-versus-fitted plot was produced and examined. This assumption was met if the points fell randomly on both sides of 0.

3.13 Statistical Analysis

3.13.1 Validation Study

To assess the psychometric properties of the study instrument, the construct validity, internal consistency reliability, and test retest reliability of each instrument included in the study questionnaire were examined. Post-hoc validation was performed due to limitations in resources after accounting for the minimum sample size required for validation according the number of items in the study questionnaire as well the minimum sample size for the main study. Construct validity and internal consistency reliability were conducted using data collected from all participants, including HO and MO (n=1,119), whereas test reliability was conducted using data from HO and MO who completed the study instruments twice at an interval of two weeks (n=50).

3.13.1.1. Construct Validity

Construct validity was assessed via exploratory factor analysis (EFA), which was used to identify the optimal factor structure based on observed data. Polychoric factor analysis was performed to extract factors instead of conventional factor analysis as the study data included ordinal variables collected via Likert-type scale responses and was non-normal in distribution, and in these instances polychoric factor solution produces more accurate solutions for factor analysis compared to Pearson correlations (Holgado-Tello, Chacón-Moscoco, Barbero-García, & Vila-Abad, 2010). The criteria for determining the number of components to be extracted from factor analysis include the following: Kaiser's criterion (Kaiser, 1960), the Cattell's Scree test (Cattell, 1966), Horn's parallel analysis (PARA) (Horn, 1965), and Velicer's minimum average partial correlation procedure (MINAP) (Velicer, 1976). Kaiser's criterion recommends retaining all components with eigenvalues of more than 1.0 (Kaiser, 1960). The Scree test involves visually examining the graph of the eigenvalues and locating the break point or natural bend in the data where the curve flattens out, and choosing the number of factors to retain by the number of data points above the break point (Cattell, 1966). PARA compares actual eigenvalues with random order eigenvalues and states that common factor eigenvalues which are greater than their respective common factor parallel analysis with eigenvalues from the random data would be retained (Horn, 1965). Finally, MINAP is based on the average partial correlations between the variables after successively removing the effects of the factors, and the number of factors which minimizes the average partial correlations should be retained (Velicer, 1976). The order of extraction criterion taken into consideration when deciding how many factors were to be extracted were as following: PARA, followed by minimum average partials (MAP), scree test, and lastly Kaiser's criterion. This is in keeping with the order of criteria's efficacy based on the literature on previous Monte Carlo simulation (Pearson, Mundfrom, & Piccone, 2013; Stellefson & Hanik, 2008; Velicer, Eaton, & Fava, 2000; Zwick & Velicer, 1986). The total variance explained by the factors extracted was examined. For the interpretation of the factor(s), varimax rotation was applied. The factor solution was examined by observing the factor loadings between observed indicators and extracted components, considering factor loadings with absolute values of 0.50 or above. In cases where there were conflicting results between the different criteria, to decide on how many factors to retain, the following was applied: the factors extracted should account for at least 50% of the total variance explained (Mooi, Sarstedt, & Mooi-Reci, 2018), the factor loadings should be at least 0.50 or above, and the factors interpretation should correlate with the factors in the original instruments. Finally, the factors were named and defined.

13.13.1.2 Reliability

Internal consistency reliability was assessed using Cronbach's alpha. Cronbach's alpha values less than 0.5 were considered to indicate unacceptable reliability, values between 0.5 and 0.75 moderate reliability, and values above 0.75 high reliability (Hinton, Brownlow, McMurray, & Cozens, 2004). Test retest reliability was assessed using intraclass correlation coefficient (ICC). The ICC quantifies the strength and direction of the relationship between test-retest scores by estimating their linear

relationship (Koo & Li, 2016). ICC values less than 0.40 were deemed to indicate poor reliability, values between 0.40 and 0.59 fair reliability, values between 0.60 and 0.74 good reliability, and values between 0.75 and 1.00 excellent reliability (Cicchetti, 1994).

3.13.2 Descriptive Statistics

Data from all participating HO were included (n=1,074) for data analysis. Descriptive statistics was performed, which included mean and standard deviation for continuous data, and frequencies and percentage for categorical data. The prevalence, type of negative actions experienced, and commonest perpetrators of workplace bullying were numerated in percentages. For the prevalence of workplace bullying, prevalence using different methods as discussed in Chapter 2 was shown, i.e. behavioural experience method with cut-off score, behavioural experience method with Leymann criterion, behavioural experience method, and combination method.

3.13.3 Analytical Statistics

Comparison of groups was performed to explore participants' sociodemographic characteristics, employment characteristics, and individual traits, as well as departments' organisational characteristics for each individual trait and organisational characteristic of interest, and enable the identification of significant confounders. This was performed using independent t-test for continuous data and Chi-square for categorical data. All p values were two-tailed, and a p value of less than 0.05 was taken as the threshold for significance.

To examine factors of workplace bullying, workplace bullying was modelled using mixed effects logistic regression. This technique was appropriate due to the hierarchical nature of the data, i.e. HO nested within clinical departments. In the models, the fixed effects (measures of association) estimated the association between workplace bullying and the individual and organisational level factors, and were expressed as OR with their 95% confidence intervals (CI). The random effects were the measures of variation in workplace bullying across clinical departments, and were expressed as ICC. Bivariable mixed effects logistic regression was first performed to estimate the crude odds ratios (COR) at 95% CI. Then, variables that were previously identified as significant confounders were considered, and multivariable mixed effects logistic regression was conducted to estimate the adjusted odds ratio (AOR) at 95% CI. In addition, trend analysis was conducted to test for trend across ordered groups, with statistical significance set at p value of less than 0.05. The variance of the random intercept and ICC for each model was calculated to evaluate whether the variation in workplace bullying was primarily within or between departments. The ICC may range from 0 to 1, with an ICC of 0 indicating that the odds of bullying does not differ from one clinical department to another (i.e. no between departments variation), and an ICC of 1 indicating that the odds of bullying only vary between clinical departments (i.e. no within department variation) (Sommet & Morselli, 2017). Additionally, the model fitness was assessed using the log likelihood and the Wald chi-square test. The log likelihood was used to examine the difference between the models, and higher log likelihood indicated better model fit. The Wald test was used to assess whether the covariates in the model created statistically significant improvement in the fit of the model, with a p value of less than 0.05 considered as statistically significant.

3.14 Ethical Consideration

Before the commencement of the study, ethical clearance was sought from the National Institute of Health, MOH Malaysia via the National Medical Research Register, as well as the medical research ethics committee of the two university hospitals sampled in this study. Upon ethical approval, permission to conduct the study was sought from the Director of the Medical Development Division, MOH, Director of the Health Service Department, Ministry of Defence, as well as the hospital directors of all government hospitals accredited for housemanship training within the Central Zone. Study confidentiality and participant anonymity were observed, considering the sensitivity of the subject matter. Participation in this study was also based on voluntary basis, and informed consent was taken before enrolling participants into this study. Additionally, data collected was secured and classified, to preserve study confidentiality.

3.15 Policy Brief

A policy brief titled "Workplace bullying among junior doctors: What can be done?" was prepared to present study findings and policy recommendations based on significant factors. The policy brief was an objective brief. It included the following subsections: definition and examples of workplace bullying, importance of the problem, study findings, and policy recommendations.

CHAPTER 4: RESULTS

Chapter Summary:

Initial data analysis included an evaluation of missingness, influential data points, response distribution, collinearity issues, and model diagnostics (Appendix E-J). In relation to missingness, results showed that missingness for study instrument items were less than 5% and MCAR in nature, thus ignorable.

First, the psychometric properties of the ABS-NA, BFI-10, SISES, CLIOR-Short, CVFQ, SPOS-Short, OJS-Short and NAQ-R were examined in Chapter 4.1. Post-hoc EFA was performed using polychoric factor analysis with varimax rotation, and factors from each instrument were extracted and defined. Test retest reliability and internal consistency reliability were both assessed using ICC and Cronbach's alpha respectively. Results indicated that all study instruments had fair to excellent test retest reliability, and moderate to high internal consistency reliability.

Second, the prevalence and experience of workplace bullying among junior doctors were assessed in Chapter 4.2. The total response rate for this study was 62%. Sensitivity analysis revealed no significant difference in the prevalence of bullying according to data collection method or hospital (Appendix K). The overall prevalence of workplace bullying among participants was 13%. The most frequent type of bullying experienced by participants were mainly in the category of work-related bullying and person-related bullying, though physically intimidating bullying such as "being shouted at or being target of spontaneous anger" were reported to be experienced by 11% of participants on a weekly basis. The commonest perpetrators of negative actions were reported to be medical officers, followed by nurses and support staff.

Third, the association of individual traits and organisational characteristics with workplace bullying among junior doctors were determined in Chapter 4.3 and 4.4. The associations of individual traits and organisational characteristics with workplace bullying were modelled using mixed effects logistic regression. In relation to individual traits, after adjusting for confounders, negative affect and neuroticism were significant factors of workplace bullying among junior doctors. In relation to organisational characteristics, after adjusting for confounders, organisational climate, clan culture, adhocracy culture, hierarchy culture, production and achievement-oriented leadership style, organisational support, procedural justice, interactional justice, and distributive justice were significant factors of workplace bullying among junior doctors. There was a significant evidence of trend in the odds of workplace bullying among junior doctors with increasing degree of negative affect, neuroticism, clan culture, adhocracy culture, organisational support, procedural justice, interactional justice, distributive justice, and more positive organisational climate. In terms of random effects, there was no significant variability in the odds of workplace bullying between departments. The graphical presentation of factors significantly associated with workplace bullying among junior doctors was illustrated in Chapter 4.5.

The individual traits significantly associated with workplace bullying among junior doctors are summarised as follows:

 Participants with moderate degree of negative affect had 4.40 times the odds (AOR = 4.40, 95% CI = 2.20 - 8.77) and participants with high degree of negative affect had 13.69 times the odds (AOR = 13.69, 95% CI = 6.46 - 29.02) of being bullied compared with participants with low degree of negative affect. Participants with high degree of neuroticism had 2.99 times the odds (AOR = 2.99, 95% CI = 1.71 – 5.21) of being bullied compared with participants with low degree of neuroticism.

The organisational characteristics significantly associated with workplace bullying among junior doctors are summarised as follows:

- Participants working in departments with neutral climate had 0.35 times the odds (AOR = 0.35, 95% CI = 0.20 0.62) and participants working in departments with positive climate had 0.33 times the odds (AOR = 0.33, 95% CI = 0.11 0.98) of being bullied compared with participants working in departments with negative climate.
- Participants working in departments with moderate degree of clan culture had 0.39 times the odds (AOR = 0.39, 95% CI = 0.25 0.59) and participants working in departments with high degree of clan culture had 0.33 times the odds (AOR = 0.33, 95% CI = 0.17 0.63) of being bullied compared with participants working in departments with low degree of clan culture.
- Participants working in departments with a moderate degree of adhocracy culture had 0.36 times the odds (AOR = 0.36, 95% CI = 0.23 - 0.57) and participants working in departments with high degree of adhocracy culture had 0.42 times the odds (AOR = 0.42, 95% CI = 0.24 - 0.74) of being bullied compared with participants working in departments with low degree of adhocracy culture.
- Participants working in departments with moderate degree of hierarchy culture had 0.64 times the odds (AOR = 0.64, 95% CI = 0.41 0.98) of being bullied compared with participants working in departments with low degree of hierarchy culture.

- Participants working in departments with moderate degree of production and achievement-oriented leadership style had 0.36 times the odds (AOR = 0.36, 95% CI = 0.17 0.76) of being bullied compared with participants working in departments with low degree of production and achievement-oriented leadership style.
- Participants working in departments with moderate degree of organisational support had 0.49 times the odds (AOR = 0.49, 95% CI = 0.30 0.80) and participants working in departments with high degree of organisational support had 0.12 times the odds (AOR = 0.12, 95% CI = 0.03 0.42) of being bullied compared with participants working in departments with low degree of organisational support.
- Participants working in departments with moderate degree of procedural justice had 0.56 times the odds (AOR = 0.56, 95% CI = 0.35 - 0.88) of being bullied compared with participants working in departments with low degree of procedural justice.
- Participants working in departments with moderate degree of interactional justice had 0.27 times the odds (AOR = 0.27, 95% CI = 0.17 - 0.42) and participants working in departments with high degree of interactional justice had 0.06 times the odds (AOR = 0.06, 95% CI = 0.02 - 0.19) of being bullied compared with participants working in departments with low degree of interactional justice.
- Participants working in departments with high degree of distributive justice had
 0.37 times the odds (AOR = 0.37, 95% CI = 0.18 0.76) of being bullied compared with participants working in departments with low degree of distributive justice.

4.1 Validation of Study Instruments

Data from all study participants were included in the post-hoc EFA and internal consistency reliability (N=1,119) as well as the test retest reliability (N=50).

Table 4.1: Summary of number of factors suggested for extraction based on
different extraction criterion

Instrument		Extraction	n Criterion	
	Parallel Analysis	Minimum Average Partials	Scree Test	Kaiser's Criterion (Eigen > 1)
ABS-NA	1	1		1
BFI-10	3	1	4	4
CLIOR-Short	2	1	3	3
CVFQ	3	3	4	4
SPOS-Short	2	2	2	2
OJS-Short	2	3	2	2
NAQ-R	2	3	2	2

Four extraction criteria were examined during EFA. Where there were conflicting results between the different criteria, the number of factor(s) extracted was determined according to whether the factors extracted accounted for at least 50% of the total variance, whether the factor loadings were all 0.50 and above, and whether the factors extracted correlated with factors in the original instruments. The order in which extraction criterion were considered during factor solution derivation process was PARA, followed by MAP, scree test, and finally Kaiser's criterion.

4.1.1 ABS-NA

Factor 1 0.72 0.86	0.51 0.75
0.86	0.75
	0.75
0.69	0.47
0.86	0.74
0.72	0.52
3.0	
59.8	
	0.86 0.72 3.0

Table 4.1.1.1: Factor loadings and communalities for ABS-NA

Note: Using polychoric factor analysis with varimax rotation

For ABS-NA, the extraction criteria consistently suggested that one factor should be extracted. Based on the observed data, a one-factor solution was derived from the 5 items. The factor was defined as 'negative affect'. The factor "negative affect" described 59.8% of the variance among the items.

ABS-NA	ICC (%)	Cronbach's a
Items		
Item 1	62.0	0.66
Item 2	60.3	0.60
Item 3	62.7	0.67
Item 4	54.0	0.59
Item 5	64.6	0.65
Total score	60.9	
Overall Scale		0.69

Table 4.1.1.2: ICC and Cronbach's alpha for ABS-NA

Based on the observed data, the ICC for the ABS-NA items ranged from 54.0% to 64.6%, and the ICC for total score was 60.9%. Thus, the ABS-NA items had fair to good test retest reliability, and the ABS-NA overall had good test retest reliability. The Cronbach's alpha for the ABS-NA items ranged from 0.59 to 0.67, and the Cronbach's alpha for the overall scale was 0.69. Thus, the ABS-NA items and ABS-NA overall had moderate internal consistency reliability.

4.1.2 BFI-10

BFI-10 Item	Factor Loadings				Communality
	Factor 1	Factor 2	Factor 3	Factor 4	_
Item 1				0.88	0.79
Item 2		0.75			0.66
Item 3		0.79			0.74
Item 4	0.82				0.78
Item 5			-0.86		0.75
Item 6				0.50	0.65
Item 7		0.79			0.71
Item 8		0.76			0.64
Item 9	0.81				0.76
Item 10			0.76		0.63
Eigenvalues	2.4	2.6	1.3	0.9	
Variance explained (%)	23.6	26.2	12.7	8.6	
Total variance explained (%)		71	.2		

Table 4.1.2.1: Factor loadings and communalities for BFI-10

Note: Using polychoric factor analysis with 0.8 minimum value of eigenvalues to be retained and varimax rotation; only factor loading ≥ 0.5 shown to improve interpretation

For the BFI-10, PARA suggested that three factors should be derived from the 10 items. However, one of the items cross-loaded onto two factors and interpretation of the factors did not correlate with any of the factors in the original instrument. Next, MAP suggested that one factor should be derived from the 10 items. However, six items had factor loadings of less than 0.5 and interpretation of the factor did not correlate with any of the factors in the original instruments. Both scree test and Kaiser's criterion suggested that four factors should be derived from the 10 items, but one item had factor loadings of less than 0.5 and the interpretation of the factors did not correlate with any of the factors in the original instruments. Both scree test and Kaiser's criterion suggested that four factors should be derived from the 10 items, but one item had factor loadings of less than 0.5 and the interpretation of the factors did not correlate with any of the factors in the original instrument. Therefore, the minimum value of eigenvalue for the polychoric factor analysis was fixed at 0.8 and the analysis was repeated, to ensure that the relevant domains in the original instrument could be observed despite increased error variance (i.e. bias variance trade-off). The analysis produced three factors with factor loadings that uniquely loaded onto and tallied with three of factors in the original instruments, and two factors with factor loadings that uniquely loaded onto

two of the factors in the original instruments but the items did not tally with the factors in the original instrument. Therefore, those two factors were combined. Based on the observed data, a four-factor solution was derived from the 10 items. The first factor was defined as 'neuroticism'. The second factor was defined as 'agreeableness and conscientiousness. The third factor was defined as 'openness'. Finally, the fourth factor was defined as 'extraversion'. These four factors described 71.2% of the variance among the items.

BFI-10	ICC (%)	Cronbach's α
Items		
Item 1	74.0	0.57
Item 2	81.0	0.55
Item 3	67.3	0.55
Item 4	61.4	0.50
Item 5	83.1	0.55
Item 6	82.6	0.49
Item 7	70.7	0.57
Item 8	68.6	0.53
Item 9	78.6	0.55
Item 10	77.9	0.56
Domains		
Extraversion	83.9	
Agreeableness and Conscientiousness	67.3	
Neuroticism	81.3	
Openness	79.9	
Total score	63.3	
Overall Scale		0.57

Table 4.1.2.2: ICC and Cronbach's alpha for BFI-10

Based on the observed data, the ICC for the BFI-10 items ranged from 61.4% to 83.1%, the ICC for BFI-10 domains ranged from 67.3% to 83.9%, and the ICC for BFI-10 total score was 63.3%. Thus, the BFI-10 items and domains had good to excellent test retest reliability, and the BFI-10 overall had good test retest reliability. The Cronbach's alpha for the BFI-10 items ranged from 0.49 to 0.57, and the Cronbach's alpha for the overall scale was 0.57. Thus, the BFI-10 items and BFI-10 overall had moderate internal consistency reliability.

4.1.3 SISES

As the SISES was a single item, the internal consistency reliability could not be determined. Based on the observed data, the ICC for SISES was 82.6%, which indicated excellent test retest reliability.

4.1.4 CLIOR-Short

CLIOR-Short Item	Factor Loading	Communality
	Factor 1	
Item 1	0.69	0.50
Item 2	0.78	0.61
Item 3	0.75	0.57
Item 4	0.71	0.55
Item 5	0.74	0.55
Item 6	0.74	0.59
Item 7	0.82	0.68
Item 8	0.72	0.53
Item 9	0.79	0.65
Item 10	0.76	0.58
Item 11	0.77	0.62
Item 12	0.52	0.49
Item 13	0.77	0.63
Item 14	0.95	0.90
Item 15	0.68	0.60
Eigenvalues	9.1	
otal variance explained (%)	60.4	

Table 4.1.4.1: Factor loadings and communalities for CLIOR-Short

Note: Using polychoric factor analysis with varimax rotation

For the CLIOR-Short, PARA suggested that two factors should be derived from the 15 items. However, one of the items had factor loadings of less than 0.5, and the interpretation of the factors did not correlate with the factor in the original instrument. Next, MAP suggested that one factor should be derived from the 15 items. However, three of the items had factor loadings of less than 0.5. Both scree test and Kaiser's criterion suggested that three factors should be derived from the 15 items, which produced items with factor loadings of 0.50 and above that uniquely loaded onto three

factors, but the interpretation of the factors did not correlate with the factor in the original instrument. Therefore, the three factors were combined. Based on the observed data, a one-factor solution was derived from the 15 items. The factor was defined as 'organisational climate'. The factor described 60.4% of the variance among the items.

CLIOR-Short	ICC (%)	Cronbach's o
Items		
Item 1	75.2	0.86
Item 2	66.3	0.85
Item 3	60.1	0.85
Item 4	72.2	0.86
Item 5	58.3	0.85
Item 6	69.8	0.85
Item 7	61.3	0.85
Item 8	59.5	0.86
Item 9	72.0	0.85
Item 10	50.1	0.85
Item 11	51.7	0.85
Item 12	66.3	0.86
Item 13	63.2	0.88
Item 14	66.6	0.88
Item 15	63.4	0.88
Total score	85.8	
Overall Scale		0.87

Table 4.1.4.2: ICC and Cronbach's alpha for CLIOR-Short

Based on the observed data, the ICC for the CLIOR-Short items ranged from 50.1% to 75.2%, and the ICC for CLIOR-Short total score was 85.8%. Thus, the CLIOR-Short items had fair to excellent test retest reliability, and the CLIOR-Short overall had excellent test retest reliability. The Cronbach's alpha for the CLIOR-Short items ranged from 0.85 to 0.88, and the Cronbach's alpha for the overall scale was 0.87. Thus, the CLIOR-Short items and CLIOR-Short overall had high internal consistency reliability.

4.1.5 CVFQ

CVFQ Item	Factor	Factor Loading	
	Factor 1	Factor 2	
Item 1	0.73		0.61
Item 2	0.68		0.54
Item 3	0.58		0.35
Item 4	0.62		0.47
Item 5		0.78	0.72
Item 6		0.85	0.82
Item 7		0.81	0.76
Item 8		0.81	0.71
Item 9	0.66		0.62
Item 10	0.62		0.60
Item 11	0.79		0.68
Item 12	0.69		0.63
Item 13	0.72		0.67
Item 14	0.72		0.68
Item 15	0.65		0.64
Item 16	0.54		0.55
Eigenvalues	8.1	2.0	
Variance explained (%)	50.6	12.3	
Total variance explained (%)	6	2.8	

 Table 4.1.5.1: Factor loadings and communalities for CVFQ

Note: Using polychoric factor analysis with varimax rotation; only factor loading ≥ 0.5 shown to improve interpretation

For the CVFQ, both PARA and MAP suggested that three factors should be derived from the 16 items. The analysis produced items with factor loadings of 0.50 and above that uniquely loaded onto three factors, but the interpretation of one of the factors correlated with one of the factors in the original instrument whereas the interpretation of the remaining two factors did not correlate with any of the factors in the original instrument. The scree test and Kaiser's criterion both suggested that four factors should be derived from the 16 items, but one of the items had factor loading of less than 0.5 and another item cross-loaded onto two factors. In addition to that, the interpretation of one of the factors correlated with one of the factors in the original instrument whereas interpretation of the remaining three factors did not correlate with any of the factors in the original instrument. Therefore, three factors were derived from the 16 items and the first factor and third factor were combined. Based on the observed data, a two-factor solution was derived from the 16 items. The first factor was defined as 'dominant values, basis for bonding, and organisational strategic emphasis' and the second factor was defined as 'leadership style'. These two factors described 62.8% of the variance among the items.

CVFQ	ICC (%)	Cronbach's a
Items		
Item 1	74.0	0.88
Item 2	75.5	0.88
Item 3	49.8	0.89
Item 4	76.6	0.89
Item 5	72.7	0.87
Item 6	82.6	0.87
Item 7	66.2	0.87
Item 8	72.1	0.88
Item 9	68.1	0.87
Item 10	52.5	0.87
Item 11	40.2	0.88
Item 12	61.4	0.88
Item 13	61.5	0.87
Item 14	60.8	0.87
Item 15	64.0	0.88
Item 16	55.3	0.88
Domains		
Clan culture	81.2	
Adhocracy culture	83.6	
Hierarchy culture	65.6	
Market culture	71.9	
Total score	85.8	
Overall Scale		0.88

Table 4.1.5.2: ICC and Cronbach's alpha for CVFQ

Based on the observed data, the ICC for the CVFQ items ranged from 40.2% to 82.6%, the ICC for CVFQ domains ranged from 65.6% to 83.6%, and the ICC for CVFQ total score was 85.8%. Thus, the CVFQ items had fair to excellent test retest reliability, the CVFQ domains had good to excellent test retest reliability, and the CVFQ overall had excellent test retest reliability. The Cronbach's alpha for the CVFQ

items ranged from 0.87 to 0.89, and the Cronbach's alpha for the overall scale was 0.88.

Thus, the CVFQ items and CVFQ overall had high internal consistency reliability.

4.1.6 SPOS-Short

SPOS-Short Item	Factor Loading	Communality
	Factor 1	
Item 1	0.77	0.64
Item 2	0.84	0.71
Item 3	0.85	0.74
Item 4	0.78	0.64
Item 5	0.85	0.77
Item 6	0.79	0.71
Item 7	0.69	0.62
Item 8	0.74	0.55
Eigenvalues	5.4	
Total variance explained (%)	67.3	

Table 4.1.6.1: Factor loadings and communalities for SPOS-Short

Note: Using polychoric factor analysis with varimax rotation

For the SPOS-Short, all extraction criteria consistently suggested that two factors should be derived from the 8 items. However, the analysis produced items with factor loadings of 0.50 and above that uniquely loaded onto two factors, but interpretation of the factors did not correlate with the factor in the original instrument. Therefore, both factors were combined. Based on the observed data, a one-factor solution was derived from the 8 items. The factor was defined as 'organisational support'. The factor described 67.3% of the variance among the items.

SPOS-Short	ICC (%)	Cronbach's a
Items		
Item 1	57.4	0.81
Item 2	52.2	0.81
Item 3	67.4	0.81
Item 4	68.1	0.81
Item 5	57.3	0.80
Item 6	48.8	0.80
Item 7	76.5	0.80
Item 8	71.8	0.83
Total score	87.2	
Overall Scale		0.83

Table 4.1.6.2: ICC and Cronbach's alpha for SPOS-Short

Based on the observed data, the ICC for the SPOS-Short items ranged from 48.8% to 76.5%, and the ICC for SPOS-Short total score was 87.2%. Thus, the SPOS-Short items had fair to excellent test reliability, and the SPOS-Short overall had excellent test retest reliability. The Cronbach's alpha for the SPOS-Short items ranged from 0.80 to 0.83, and the Cronbach's alpha for the overall scale was 0.83. Thus, the SPOS-Short items and SPOS-Short overall had high internal consistency reliability.

4.1.7 OJS-Short

OJS-Short Item	F	Factor Loading			
	Factor 1	Factor 2	Factor 3		
Item 1		0.77		0.76	
Item 2		0.84		0.80	
Item 3		0.81		0.72	
Item 4	0.89			0.92	
Item 5	0.89			0.93	
Item 6	0.83			0.80	
Item 7			0.90	0.94	
Item 8			0.89	0.94	
Eigenvalues	4.8	1.2	0.8		
Variance explained (%)	60.2	14.8	10.2		
Fotal variance explained (%)		85.2			

Table 4.1.7.1: Factor loadings and communalities for OJS-Short

Note: Using polychoric factor analysis with 0.8 minimum value of eigenvalues to be retained and varimax rotation; only factor loading ≥ 0.5 shown to improve interpretation

For the OJS-Short, PARA suggested that two factors should be derived from the 8 items. The analysis produced items with factor loadings of 0.5 and above that uniquely loaded onto two factors, but the interpretation of the factors did not correlate with the factor in the original instrument. MAP, scree test and Kaiser's criterion suggested that three factors should be derived from the 8 items. Again, the analysis produced items with factor loadings of 0.5 and above that uniquely loaded onto two factors, but the interpretation of the factors did not correlate with the factor in the original instrument. Therefore, the minimum value of eigenvalue for the polychoric factor analysis was fixed at 0.8 and the analysis was repeated, to ensure that the relevant domains in the original instrument could be observed despite increased error variance (i.e. bias variance trade-off). The analysis produced items with factor loadings of 0.5 and above that uniquely loaded onto and tallied with three of factors in the original instruments. Based on the observed data, a three-factor solution was derived from the 8 items. The first factor was defined as 'interactional justice'. The second factor was defined as 'procedural justice'. The third factor was defined as 'distributive justice'. These three factors described 85.2% of the variance among the items.

OJS-Short	ICC (%)	Cronbach's o
Items		
Item 1	63.9	0.87
Item 2	74.8	0.87
Item 3	64.4	0.88
Item 4	76.8	0.86
Item 5	76.3	0.86
Item 6	59.5	0.87
Item 7	56.0	0.87
Item 8	62.8	0.87
Domains		
Procedural justice	74.4	
Interactional justice	77.3	
Distributive justice	62.0	
Total score	77.1	
Overall Scale		0.88

Table 4.1.7.2: ICC and Cronbach's alpha for OJS-Short

Based on the observed data, the ICC for the OJS-Short items ranged from 56.0% to 76.8%, the ICC for OJS-Short domains ranged from 62.0% to 77.3%, and the ICC for OJS-Short total score was 77.1%. Thus, the OJS-Short items had fair to excellent test retest reliability, the OJS-Short domains had good to excellent test retest reliability, and the OJS-Short overall had excellent test retest reliability. The Cronbach's alpha for the OJS-Short items ranged from 0.86 to 0.88, and the Cronbach's alpha for the overall scale was 0.88. Thus, the OJS-Short items and OJS-Short overall had high internal consistency reliability.

4.1.8 NAQ-R

NAQ-R Item	Factor 1	Communality
Item 1	0.68	0.47
Item 2	0.78	0.60
Item 3	0.69	0.47
Item 4	0.76	0.58
Item 5	0.77	0.59
Item 6	0.82	0.67
Item 7	0.84	0.70
Item 8	0.81	0.66
Item 9	0.85	0.72
Item 10	0.85	0.72
Item 11	0.84	0.71
Item 12	0.89	0.80
Item 13	0.90	0.81
Item 14	0.88	0.78
Item 15	0.87	0.75
Item 16	0.85	0.72
Item 17	0.88	0.77
Item 18	0.83	0.69
Item 19	0.77	0.59
Item 20	0.89	0.80
Item 21	0.81	0.66
Item 22	0.83	0.69
Eigenvalues	15.0	
Total variance explained (%)	68.0	

Table 4.1.8.1: Factor loadings and communalities for NAQ-R

Note: Using polychoric factor analysis with varimax rotation

For the NAQ-R, PARA, scree test and Kaiser's criterion suggested that two factors should be derived from the 22 items. However, two of the items cross-loaded onto both factors. In addition, the interpretation of the factors did not correlate with the factors in the original instrument. MAP suggested that three factors should be derived from the 22 items. Again, the analysis produced a two-factor solution with two items that cross-loaded onto both factors and interpretation of the factors did not correlate with the factors in the original instrument. Next, one factor was derived, which produced items with factor loadings of 0.50 and above and a variance explained of 50% and above. In addition, interpretation of the factor correlated with the factor in the original instrument. Based on the observed data, a one-factor solution was derived from the 22 items. The factor was defined as 'workplace bullying'. The factor described 68.0% of the variance among the items.

NAQ-R	ICC (%)	Cronbach's α
Items		
Item 1	46.8	0.97
Item 2	65.7	0.97
Item 3	76.6	0.97
Item 4	58.8	0.97
Item 5	83.7	0.97
Item 6	78.1	0.97
Item 7	80.9	0.97
Item 8	90.2	0.97
Item 9	93.7	0.97
Item 10	79.1	0.97
Item 11	62.6	0.97
Item 12	87.2	0.97
Item 13	73.7	0.96
Item 14	67.8	0.97
Item 15	45.6	0.97
Item 16	53.9	0.97
Item 17	61.2	0.97
Item 18	79.9	0.97
Item 19	74.5	0.97
Item 20	67.5	0.97
Item 21	70.7	0.97
Item 22	77.1	0.97
Total score	93.4	
Overall Scale		0.97

Table 4.1.8.2: ICC and Cronbach's alpha for NAQ-R

Based on the observed data, the ICC for the NAQ-R items ranged from 45.6% to 93.7%, and the ICC for NAQ-R total score was 93.4%. Thus, the NAQ-R items had fair to excellent test reliability, and the NAQ-R overall had excellent test retest reliability. The Cronbach's alpha for the NAQ-R items ranged from 0.96 to 0.97, and the Cronbach's alpha for the overall scale was 0.97. Thus, the NAQ-R items and NAQ-R overall had high internal consistency reliability.

4.2 Prevalence and Experience of Workplace Bullying Among Junior Doctors

4.2.1 Response Rate

ТОН	Hos-			Respond	led, n (%)			Overal
	pital	Online	Survey	Me	Meeting		Leader	RR (%
	-	No	Yes	No	Yes	No	Yes	
SH	H1			30	137	42	36	173
				(18.0%)	(82.0%)	(53.8%)	(46.2%)	(70.6%)
	H2			0	12	99	96	108
				(0.0%)	(100.0%)	(50.8%)	(49.2%)	(52.2%)
MSH	Н3			0	24	67	68	92
				(0.0%)	(100.0%)	(49.6%)	(50.4%)	(57.9%)
	H4			0	4	33	60	64
				(0.0%)	(100.0%)	(35.5%)	(64.5%)	(66.0%)
	Н5			0	67	49	106	173
				(0.0%)	(100.0%)	(31.6%)	(68.4%)	(77.9%)
	H6				·	56	81	81
						(40.9%)	(59.1%)	(59.1%)
	H7			1	14	34	46	60
				(6.7%)	(93.3%)	(42.5%)	(57.5%)	(63.2%)
	H8				, í	36	57	57
						(38.7%)	(61.3%)	(61.3%)
	H9			4	56	20	25	81
				(4.9%)	(93.3%)	(44.4%)	(55.6%)	(77.1%)
	H10			. ,	, í	30	67	67
						(30.9%)	(69.1%)	(69.1%)
UH	H11	130	43			0	15	58
		(75.1%)	(24.9%)			(0.0%)	(100.0%)	(30.9%)
	H12					42	60	60
						(41.2%)	(58.8%)	(58.8%)
	all RR 6)	43 (24	4.9%)	314 (9	90.0%)	717 (:	58.5%)	
Ì	ĺ.	Тс	otal RR (inc	luding onli	ne survey)			1,074
				5	.,			(61.5%)
Total RR (excluding online survey)					1,031			
				6				(65.5%)

Table 4.2.1: Response rate by hospital and data collection method

Note: TOH = type of hospital; MSH = major specialist hospital; RR = response rate; SH = state hospital; UH = university hospital

The overall response rate varied widely, ranging from 30.9% to 77.9%. In particular, the response rate for data collected via online survey was observed to be relatively low (24.9%) compared to the response rate for data collected via meeting (90.0%) or TL

(58.5%). Correspondingly, the total response rate varied when data collected via online survey were included or excluded (61.5% vs. 65.5%). To explore whether the difference in data collection method resulted in differential outcomes, sensitivity analysis was performed. The sensitivity analysis revealed no significant difference in the prevalence of workplace bullying according to data collection method or hospital (Appendix K). Consequently, results from all hospitals were pooled together for subsequent analysis. The total response rate for this study was 62%, which is higher than 60%, a figure that is considered to be an acceptable survey response rate (Fincham, 2008).

4.2.2 Characteristics of Participants

Variable	Mean ± S.D. or n (%)
Age (years)	27.0 ± 1.5
Gender	
Male	371 (34.6%)
Female	701 (65.4%)
Ethnicity	
Malay	710 (66.5%)
Chinese	159 (14.9%)
Indian	180 (16.9%)
Others	18 (1.7%)
Academic graduation by region	
Local	546 (52.4%)
Western Europe	56 (5.4%)
Eastern Europe	104 (10.0%)
Australasia	14 (1.3%)
Middle East	181 (17.4%)
East Asia	2 (0.2%)
South Asia	56 (5.4%)
Southeast Asia	83 (8.0%)
English proficiency	
Poor	5 (0.5%)
Fair	284 (26.9%)
Good	567 (53.6%)
Excellent	201 (19.0%)
Duration working (months)	15.5 ± 7.0
Specialty	
S1	173 (16.8%)
S2	145 (14.1%)
S3	173 (16.8%)
S4	183 (17.8%)
S5	155 (15.1%)
S6	133 (12.9%)
S7	66 (6.4%)
Type of hospital	
State hospital	281 (26.2%)
Major specialist hospital	675 (62.9%)
University hospital	118 (11.0%)

Table 4.2.2: Characteristics of participants (N=1,074)

Note: Percentage may not add up to 100.0% due to rounding up to 1 decimal point

The study participants had a mean age of 27.0 ± 1.5 , and were mainly composed of female participants (65.4%). In terms of ethnicity, Malay participants comprised the majority (66.5%), followed by Indian participants (16.9%), Chinese participants (14.9%), and those of Others ethnicity (1.7%). Most of the participants graduated from

medical schools in Malaysia (52.4%), followed by medical schools in countries within the Middle East, i.e. Egypt and Jordan (17.4%), medical schools in countries within Eastern Europe, i.e. Russia, Ukraine, Czech Republic and Poland (10.0%), medical schools within countries in Southeast Asia, i.e. Indonesia (8.0%), medical schools within countries in Western Europe, i.e. United Kingdom and Ireland (5.4%), medical schools within countries in South Asia, i.e. India and Pakistan (5.4%), medical schools within countries in Australasia, i.e. Australia and New Zealand (1.3%), and finally, medical schools within countries in East Asia, i.e. China and Taiwan (0.2%). Majority of participants rated their English speaking proficiency as good (53.6%), followed by fair (26.9%), excellent (19.0%), and poor (0.5%). The study participants had a mean duration working of 15.5 ± 7.0 months, and were fairly distributed across all clinical specialties (ranging from 12.9% to 17.8%), with the exception of S7, which made up only 6.4% of the study sample. In terms of type of hospital, participants from major specialist hospital made the majority of the study sample (62.9%), followed by state hospital (26.2%), and university hospital (11.0%).

4.2.3 Prevalence of Workplace Bullying

Method of Measuring Workplace Bullying	n (%)
Behavioural experience method, based on NAQ-R cut-off scores ^a	(n=1,041)
No	644 (61.9%)
Yes	397 (38.1%)
Behavioural experience method, based on Leymann's criterion ^b (n=1,041)
No	588 (56.5%)
Yes	453 (43.5%)
Behavioural experience method, based on Mikkelsen & Einarsen's crite	erion ^c (n=1,041)
No	688 (66.1%)
Yes	353 (33.9%)
Self labelling with definition method ^d (n=1,042)	
No	878 (84.3%)
Yes	164 (15.7%)
Prevalence of Workplace Bullying According to Combination Mether	hod ^e (n=1,025)
No	889 (86.7%)
Yes	136 (13.3%)
Note: ^a Score of >45 on NAQ-R; ^b Experiencing ≥ 1 negative act on a weekly or date	aily basis during the

Table 4.2.3: Prevalence of workplace bullying among participants (N=1,074)

Note: "Score of >45 on NAQ-R; "Experiencing ≥1 negative act on a weekly or daily basis during the past six months; "Experiencing ≥2 negative acts on a weekly or daily basis during the past six months; d Perceiving to be bullied weekly or daily during the past six months; Score of >45 on NAQ-R and perceiving to be bullied weekly or daily during the past six months

The prevalence of workplace bullying differed between the different methods of measuring workplace bullying. According to the behavioural experience method based on NAQ-R cut off scores, 38.1% of the study sample could be classified as cases of workplace bullying. On the other hand, according to the behavioural experience method based on previous authors' criterion, 43.5% and 33.9% could be classified as cases of workplace bullying according to Leymann's criterion and Mikkelsen and Einarsen's criterion respectively. Comparatively, according to the self-labelling with definition method, a much smaller prevalence (15.7%) of workplace bullying was observed. Overall, the prevalence of workplace bullying among junior doctors included in this study according to the combination method was 13%.

4.2.4 Types of Bullying Experienced

According to the study, the most frequent type of negative actions experienced by participants included work-related bullying, such as "being ordered to do work below your level of competence" (11.5% weekly and 9.3% daily), "pressure to not claim something to which by right you are entitled to" (9.0% weekly and 6.0% daily), and "being exposed to unmanageable workload" (8.6% weekly and 5.9% daily), personrelated bullying, such as "being humiliated or ridiculed in connection with your work" (11.2% weekly and 5.4% daily), "having key areas of responsibility removed or replaced with more trivial or unpleasant tasks" (9.6% weekly and 6.6% daily), and "repeated reminders of your errors or mistakes" (8.5% weekly and 3.9% daily), as well as physically intimidating bullying such as "being shouted at or being target of spontaneous anger" (11.3% weekly and 4.8% daily). The least frequent type of negative actions reported by participants included "threats of violence or physical or actual abuse" (3.9% weekly and 1.4% daily), "having allegations made against you" (4.6% weekly and 2.1% daily), and "hints or signals from others that you should quit your job" (5.0% weekly and 2.5% daily). The table outlining the types and frequency of negative actions experienced by participants is outlined in Appendix L.

4.2.5 Sources of Workplace Bullying

Source	Perpetrator of Negative Actions, n (%		
_	No	Yes	
Consultants and specialists	782 (72.8%)	292 (27.2%)	
Medical officers	439 (40.9%)	635 (59.1%)	
House officers	890 (82.9%)	184 (17.1%)	
Nurses and support staff	741 (69.0%)	333 (31.0%)	
Administrative and non-clinical staff	1,030 (95.9%)	44 (4.1%)	

Table 4.2.5: Commonest perpetrators of negative actions reported by participants

(N=1,074)

According to study participants, the commonest perpetrators of negative actions were medical officers (59.1%), followed by nurses and support staff (31.0%), consultants and specialists (27.2%), house officers (17.1%), and administrative and non-clinical staff (4.1%).

4.3 Association between Individual Traits and Workplace Bullying

4.3.1 Association between Negative Affect and Workplace Bullying

Variable	Negative .	Affect, mean ± S.D	. or n (%)	Sig.
	Low (n=350)	Mod (n=566)	High (n=150)	Ũ
Age	27.0 ± 1.7	27.0 ± 1.5	26.8 ± 1.4	<0.001*
Gender				0.468
Male	127 (36.4%)	185 (32.7%)	54 (36.0%)	
Female	222 (63.6%)	381 (67.3%)	96 (64.0%)	
Ethnicity				0.411
Malay	231 (66.4%)	379 (67.2%)	95 (64.2%)	
Chinese	61 (17.5%)	80 (14.2%)	18 (12.2%)	
Indian	50 (14.4%)	96 (17.0%)	32 (21.6%)	
Others	6 (1.7%)	9 (1.6%)	3 (2.0%)	
Academic graduation				0.844
by region				
Local	171 (50.0%)	286 (52.2%)	84 (57.9%)	
Western Europe	18 (5.3%)	32 (5.8%)	6 (4.1%)	
Eastern Europe	33 (9.7%)	59 (10.8%)	12 (8.3%)	
Australasia	7 (2.1%)	6 (1.1%)	1 (0.7%)	
Middle East	64 (18.7%)	88 (16.1%)	28 (19.3%)	
South Asia	1 (0.3%)	1 (0.2%)	0 (0.0%)	
East Asia	20 (5.9%)	28 (5.1%)	7 (4.8%)	
South-east Asia	28 (8.2%)	48 (8.8%)	7 (4.8%)	
English proficiency				0.660
Poor	1 (0.3%)	3 (0.5%)	1 (0.7%)	
Fair	100 (29.2%)	137 (24.5%)	45 (30.4%)	
Good	178 (52.1%)	313 (55.9%)	74 (50.0%)	
Excellent	63 (18.4%)	107 (19.1%)	28 (18.9%)	
Duration working	15.8 ± 6.8	15.7 ± 7.1	14.2 ± 7.1	0.717
Specialty				0.186
S1	55 (16.4%)	95 (17.5%)	21 (14.7%)	
S2	49 (14.6%)	74 (13.6%)	22 (15.4%)	
S3	55 (16.4%)	93 (17.1%)	23 (16.1%)	
S4	58 (17.3%)	87 (16.0%)	36 (25.2%)	
S5	48 (14.3%)	83 (15.3%)	24 (16.8%)	
S 6	42 (12.5%)	81 (14.9%)	9 (6.3%)	
S7	28 (8.4%)	30 (5.5%)	8 (5.6%)	
Type of hospital	~ /			0.371
SH	89 (25.4%)	149 (26.3%)	39 (26.0%)	
MSH	229 (65.4%)	345 (61.0%)	98 (65.3%)	
UH	32 (9.1%)	72 (12.7%)	13 (8.7%)	

Note: * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age according to degree of negative affect. The group with high degree of negative affect had participants who were younger (p<0.001) compared with the group with low degree of negative affect.

Variable	Negative A	Affect, mean \pm S.D). or n (%)	Sig.
	Low (n=350)	Mod (n=566)	High (n=150)	
Personality traits				
Extraversion				0.008*
Low	172 (49.7%)	320 (56.8%)	101 (67.3%)	
Mod	101 (29.2%)	147 (26.1%)	29 (19.3%)	
High	73 (21.1%)	96 (17.1%)	20 (13.3%)	
Agreeableness and				0.077
conscientiousness				
Low	123 (35.6%)	208 (36.9%)	71 (47.3%)	
Mod	127 (36.7%)	221 (39.3%)	46 (30.7%)	
High	96 (27.8%)	134 (23.8%)	33 (22.0%)	
Neuroticism				< 0.001
Low	153 (44.2%)	154 (27.4%)	20 (13.3%)	
Mod	168 (48.6%)	292 (51.9%)	77 (51.3%)	
High	25 (7.2%)	117 (20.8%)	53 (35.3%)	
Openness				0.067
Low	254 (73.4%)	379 (67.3%)	96 (64.0%)	
Mod	67 (19.4%)	133 (23.6%)	33 (22.0%)	
High	25 (7.2%)	51 (9.1%)	21 (14.0%)	
Self-esteem				0.006*
Low	208 (60.3%)	396 (70.3%)	111 (74.0%)	
Mod	116 (33.6%)	148 (26.3%)	33 (22.0%)	
High	21 (6.1%)	19 (3.4%)	6 (4.0%)	

 Table 4.3.1.2: Individual traits of participants by negative affect

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point.

In terms of participants' individual traits, there were significant differences in personality traits and self-esteem according to degree of negative affect. In relation to personality traits, the group with high degree of negative affect had higher proportions of participants with low degree of extraversion (p=0.008) and high degree of neuroticism (p<0.001) compared with the group with low degree of negative affect. In relation to relation to self-esteem, the group with high degree of negative affect had higher

proportions of participants with low degree of self-esteem (p=0.006) compared with the group with low degree of negative affect.

Negative Affect	Cases of Workplace Bullying, n (%)			
	No	Yes	Sig.	
Degree of trait			< 0.001	
Low	320 (96.4%)	12 (3.6%)		
Mod	472 (86.8%)	72 (13.2%)		
High	93 (64.6%)	51 (35.4%)		

Table 4.3.1.3: Bullied participants by degree of negative affect

Among the participants, there were higher proportions of cases of bullying among the group with high degree of negative affect (p<0.001) compared with the group with low degree of negative affect.

. *	COR (95% CI)	AOR (95% CI)
Fixed effects		
Intercept (S.E.)	0.03 (0.02, 0.06)	0.45 (0.01, 24.86)
Negative affect		
Low	1.00 (ref)	1.00 (ref)
Mod	4.29 (2.23, 8.28)	4.40 (2.20, 8.77)
High	14.23 (7.02, 28.86)	13.69 (6.46, 29.02)
P trend	< 0.001	< 0.001
Random effects		
Department variance (S.E.)	0.11 (0.14)	0.04 (0.12)
ICC (%)	3.1	1.2
Model fitness		
Log likelihood	-338.95	-326.26
Wald chi-square (p value)	59.8 (<0.001)	68.70 (<0.001)

Table 4.3.1.4: Association of negative affect with workplace bullying

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age, extraversion, neuroticism, and self-esteem

Results indicated that negative affect was a significant factor of workplace bullying among junior doctors included in this study. Participants with moderate degree of negative affect had 4.29 times the odds (COR = 4.29, 95% CI = 2.23 - 8.28) and participants with high degree of negative affect had 14.23 times the odds (COR = 14.23,

95% CI = 7.02 – 28.86) of being bullied compared with participants with low degree of negative affect. After controlling for confounding, participants with moderate degree of negative affect had 4.40 times the odds (AOR = 4.40, 95% CI = 2.20 – 8.77) and participants with high degree of negative affect had 13.69 times the odds (AOR = 13.69, 95% CI = 6.46 – 29.02) of being bullied compared with participants with low degree of negative affect. There was a significant trend in the odds of workplace bullying with increasing degree of negative affect for both the crude association (p<0.001) and adjusted association (p<0.001). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments (τ = 0.04, p-value = 0.369) and similarly, the ICC indicated that only 1% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p<0.001).

4.3.2 Association between Personality Traits and Workplace Bullying

4.3.2.1 Association of Extraversion with Workplace Bullying

Variable	Extrave	rsion, mean ± S.D.	or n (%)	Sig.
	Low (n=595)	Mod (n=279)	High (n=189)	Ũ
Age	26.9 ± 1.5	27.0 ± 1.4	27.1 ± 1.7	0.014*
Gender				0.435
Male	199 (33.5%)	96 (34.5%)	73 (38.6%)	
Female	395 (66.5%)	182 (65.5%)	116 (61.4%)	
Ethnicity				< 0.001*
Malay	391 (66.1%)	201 (72.6%)	111 (59.0%)	
Chinese	105 (17.7%)	33 (11.9%)	20 (10.6%)	
Indian	87 (14.7%)	41 (14.8%)	50 (26.6%)	
Others	9 (1.5%)	2 (0.7%)	7 (3.7%)	
Academic graduation				0.021*
by region				
Local	298 (51.4%)	143 (53.6%)	100 (53.8%)	
Western Europe	30 (5.2%)	15 (5.6%)	11 (5.9%)	
Eastern Europe	51 (8.8%)	25 (9.4%)	28 (15.1%)	
Australasia	12 (2.1%)	0 (0.0%)	2 (1.1%)	
Middle East	111 (19.1%)	51 (19.1%)	16 (8.6%)	
South Asia	2 (0.3%)	0 (0.0%)	0 (0.0%)	
East Asia	30 (5.2%)	11 (4.1%)	15 (8.1%)	
South-east Asia	46 (7.9%)	22 (8.2%)	14 (7.5%)	
English proficiency				< 0.001*
Poor	2 (0.3%)	2 (0.7%)	1 (0.5%)	
Fair	178 (30.3%)	68 (24.9%)	37 (19.8%)	
Good	317 (54.0%)	151 (55.3%)	92 (49.2%)	
Excellent	90 (15.3%)	52 (19.1%)	57 (30.5%)	
Duration working	15.4 ± 7.2	16.1 ± 6.9	14.9 ± 6.7	0.468
Specialty				0.091
S1	94 (16.6%)	36 (13.4%)	40 (22.0%)	
S2	83 (14.6%)	36 (13.4%)	26 (14.3%)	
S3	91 (16.1%)	45 (16.8%)	35 (19.2%)	
S4	94 (16.6%)	53 (19.8%)	33 (18.1%)	
S5	102 (18.0%)	33 (12.3%)	19 (10.4%)	
S 6	68 (12.0%)	44 (16.4%)	20 (11.0%)	
S 7	35 (6.2%)	21 (7.8%)	9 (5.0%)	
Type of hospital				0.380
SH	164 (27.6%)	65 (23.3%)	48 (25.4%)	
MSH	371 (62.4%)	183 (65.6%)	114 (60.3%)	
UH	60 (10.1%)	31 (11.1%)	27 (14.3%)	

Table 4.3.2.1.1:	Characteristics of	narticinants b	v extraversion
1 abit 7.5.2.1.1.	Character istics of	par incipants b	y CALL avel 51011

Note: * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age, ethnicity, education background, and English proficiency according to degree of extraversion. The group with high degree of extraversion had participants who were older (p=0.014) and had higher proportions of participants of Indian and Others ethnicity (p<0.001), participants who graduated from medical schools in Malaysia, Western Europe, Eastern Europe, and East Asia (p=0.021), and participants with excellent English proficiency (p<0.001) compared with the group with low degree of extraversion.

Table 4.3.2.1.2: Bullied participants by degree of extraversion

Extraversion	Cases of Workplace Bullying, n (%)		
	No	Yes	Sig.
Degree of trait			0.079
Low	488 (85.8%)	81 (14.2%)	
Mod	242 (90.6%)	25 (9.4%)	
High	154 (84.2%)	29 (15.9%)	

Among the participants, there was no significant difference in the proportion of those bullied and not according to the degree of extraversion.

COR (95% CI)	AOR (95% CI)
	· · · · ·
0.15 (0.11, 0.20)	13.43 (0.14, 1301.76)
1.00 (ref)	1.00 (ref)
0.62 (0.38, 1.02)	0.64 (0.37, 1.09)
1.19 (0.74, 1.92)	1.09 (0.65, 1.83)
0.922	0.886
0.11 (0.13)	0.13 (0.16)
3.2	3.7
-370.08	-332.38
5.00 (0.082)	27.15 (0.040)
	0.15 (0.11, 0.20) 1.00 (ref) 0.62 (0.38, 1.02) 1.19 (0.74, 1.92) 0.922 0.11 (0.13) 3.2 -370.08

Table 4.3.2.1.3: Association of extraversion with workplace bullying

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age, ethnicity, education background, and English proficiency Results indicated that extraversion was not a significant factor of workplace bullying among junior doctors included in this study. Participants with moderate degree and high degree of extraversion were not significantly less or more likely to be bullied compared with participants with low degree of extraversion. There was no significant trend in the odds of workplace bullying with increasing degree of extraversion for both the crude association (p=0.922) and adjusted association (p=0.886). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments ($\tau = 0.13$, p-value = 0.178) and similarly, the ICC indicated that only 4% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p=0.040).

4.3.2.2 Association of Agreeableness and Conscientiousness with Workplace Bullying

conscientiousness				
Variable	Agreeableness and Conscientiousness, mean ± S.D.			Sig.
	0	or n (%)		, i i i i i i i i i i i i i i i i i i i
	Low (n=404)	Mod (n=394)	High (n=265)	
Age	27.0 ± 1.4	26.9 ± 1.4	27.0 ± 1.9	< 0.001*
Gender				0.042*
Male	158 (39.1%)	121 (30.7%)	89 (33.8%)	
Female	246 (60.9%)	273 (69.3%)	174 (66.2%)	
Ethnicity				<0.001*
Malay	302 (75.1%)	256 (65.3%)	145 (55.1%)	
Chinese	50 (12.4%)	57 (14.5%)	51 (19.4%)	
Indian	47 (11.7%)	70 (17.9%)	61 (23.2%)	
Others	3 (0.8%)	9 (2.3%)	6 (2.3%)	
Academic graduation				0.001*
by region				
Local	202 (51.1%)	196 (50.9%)	143 (56.5%)	
Western Europe	13 (3.3%)	28 (7.3%)	15 (5.9%)	
Eastern Europe	36 (9.1%)	32 (8.3%)	36 (14.2%)	
Australasia	2 (0.5%)	7 (1.8%)	5 (2.0%)	
Middle East	82 (20.8%)	68 (17.7%)	28 (11.1%)	
South Asia	2 (0.5%)	0 (0.0%)	0 (0.0%)	
East Asia	21 (5.3%)	18 (4.7%)	17 (6.7%)	
South-east Asia	37 (9.4%)	36 (9.4%)	9 (3.6%)	
English proficiency				< 0.001*
Poor	2 (0.5%)	2 (0.5%)	1 (0.4%)	
Fair	131 (33.0%)	112 (28.8%)	40 (15.3%)	
Good	208 (52.4%)	206 (53.0%)	146 (55.9%)	
Excellent	56 (14.1%)	69 (17.7%)	74 (28.4%)	
Duration working	16.0 ± 7.5	15.3 ± 6.7	15.2 ± 6.7	0.077
Specialty	1010 110	1010 017	10.2 0.7	0.586
S1	62 (16.0%)	74 (19.7%)	34 (13.3%)	
S2	59 (15.3%)	46 (12.3%)	40 (15.7%)	
S3	68 (17.6%)	61 (16.3%)	42 (16.5%)	
S3 S4	59 (15.3%)	70 (18.7%)	51 (20.0%)	
S5	60 (15.5%)	54 (14.4%)	40 (15.7%)	
S6	51 (13.2%)	51 (13.6%)	30 (11.8%)	
S7	28 (7.2%)	19 (5.1%)	18 (7.1%)	
Type of hospital	20 (7.270)	17 (5.170)	10 (7.170)	0.060
SH	109 (27.0%)	95 (24.1%)	73 (27.6%)	0.000
MSH	261 (64.6%)	225 (64.7%)	152 (57.4%)	
UH	34 (8.4%)	44 (11.2%)	40 (15.1%)	

Table 4.3.2.2.1: Characteristics of participants by agreeableness and

Note: * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age, gender, ethnicity, education background, and English proficiency according to degree of agreeableness and conscientiousness. The group with high degree of agreeableness and conscientiousness had participants who were older (p<0.001) and had higher proportions of male participants (p=0.001), participants of Chinese, Indian and Others ethnicity (p=0.001), participants graduating from medical schools in Eastern Europe, Australasia, and East Asia (p=0.007), and participants with excellent English proficiency (p<0.001) compared with the group with low degree of agreeableness and conscientiousness.

Agreeableness and	Cases of Workplace Bullying, n (%)			
Conscientiousness	No Yes			
Degree of trait			0.709	
Low	334 (86.1%)	54 (13.9%)		
Mod	334 (87.9%)	46 (12.1%)		
High	216 (86.1%)	35 (13.9%)		

 Table 4.3.2.2.2: Bullied participants by degree of agreeableness and conscientiousness

Among the participants, there was no significant difference in the proportion of those bullied and not according to the degree of agreeableness and conscientiousness.

	COR (95% CI)	AOR (95% CI)
Fixed effects		
Intercept (S.E.)	0.15 (0.11, 0.21)	14.92 (0.15, 1457.05)
Agreeableness and		
conscientiousness		
Low	1.00 (ref)	1.00 (ref)
Mod	0.80 (0.51, 1.25)	0.75 (0.47, 1.20)
High	0.95 (0.59, 1.54)	0.73 (0.42, 1.25)
P trend	0.740	0.213
Random effects		
Department variance (S.E.)	0.11 (0.13)	0.10 (0.15)
ICC (%)	3.1	3.0
Model fitness		
Log likelihood	-372.22	-332.59
Wald chi-square (p value)	1.03 (0.598)	26.91 (0.060)

Table 4.3.2.2.3: Association of agreeableness and conscientiousness with workplace bullying

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age, gender, ethnicity, education background, and English proficiency

Results indicated that agreeableness and conscientiousness was not a significant factor of workplace bullying among junior doctors included in this study. Participants with moderate degree and high degree of agreeableness and conscientiousness were not significantly less or more likely to be bullied compared with participants with low degree of agreeableness and conscientiousness. There was no significant trend in odds of workplace bullying with increasing degree of agreeableness and conscientiousness for both the crude association (p=0.740) and adjusted association (p=0.213). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments ($\tau = 0.10$, p-value = 0.227) and similarly, the ICC indicated that only 3% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, but the Wald test indicated that the covariates in the adjusted model did not significantly improve the fit of the model (p=0.060).

4.3.2.3 Association of Neuroticism with Workplace Bullying

Variable	Neuroticism, mean ± S.D. or n (%)			Sig.
	Low (n=328)	Mod (n=539)	High (n=197)	. 0
Age	27.1 ± 1.8	26.9 ± 1.4	27.1 ± 1.6	< 0.001*
Gender				< 0.001*
Male	157 (47.9%)	162 (30.2%)	50 (25.4%)	
Female	171 (52.1%)	375 (69.8%)	147 (74.6%)	
Ethnicity	· · · ·			0.554
Malay	208 (63.4%)	365 (68.4%)	131 (66.8%)	
Chinese	54 (16.5%)	73 (13.7%)	31 (15.8%)	
Indian	59 (18.0%)	90 (16.9%)	29 (14.8%)	
Others	7 (2.1%)	6 (1.1%)	5 (2.6%)	
Academic graduation	. ,	`		0.172
by region				
Local	173 (53.9%)	267 (51.3%)	101 (52.6%)	
Western Europe	21 (6.5%)	29 (5.6%)	6 (3.1%)	
Eastern Europe	30 (9.4%)	54 (10.4%)	20 (10.4%)	
Australasia	5 (1.6%)	8 (1.5%)	1 (0.5%)	
Middle East	43 (13.4%)	97 (18.6%)	39 (20.3%)	
South Asia	0 (0.0%)	0 (0.0%)	2 (1.0%)	
East Asia	20 (6.2%)	27 (5.2%)	9 (4.7%)	
South-east Asia	29 (9.0%)	39 (7.5%)	14 (7.3%)	
English proficiency	, ,			< 0.001*
Poor	0 (0.0%)	2 (0.4%)	3 (1.5%)	
Fair	68 (21.1%)	151 (28.4%)	64 (32.8%)	
Good	166 (51.6%)	291 (54.8%)	103 (52.8%)	
Excellent	88 (27.3%)	87 (16.4%)	25 (12.8%)	
Duration working	16.0 ± 7.0	15.4 ± 6.9	14.9 ± 7.3	0.736
Specialty				0.429
S1	47 (15.0%)	89 (17.2%)	35 (18.6%)	
S2	45 (14.4%)	71 (13.7%)	29 (15.4%)	
S 3	60 (19.2%)	81 (15.7%)	30 (16.0%)	
S4	52 (16.6%)	94 (18.2%)	34 (18.1%)	
S 5	37 (11.8%)	85 (16.4%)	32 (17.0%)	
S 6	52 (16.6%)	63 (12.2%)	17 (9.0%)	
S7	20 (6.4%)	34 (6.6%)	11 (5.9%)	
Type of hospital	()	- ((, .)	()	0.529
SH	85 (25.9%)	132 (24.5%)	61 (31.0%)	
MSH	207 (63.1%)	345 (64.0%)	116 (58.9%)	
UH	36 (11.0%)	62 (11.5%)	20 (10.2%)	

 Table 4.3.2.3.1: Characteristics of participants by neuroticism

Note: * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age, gender, and English proficiency according to degree of neuroticism. The group with high neuroticism had participants who were younger (p<0.001), and higher proportions

of female participants (p<0.001) and lower proportions of participants with excellent English proficiency (p<0.001) compared with the group with low degree of neuroticism.

Neuroticism	Cases of Wo	orkplace Bullying,	n (%)
	No	Yes	Sig.
Degree of trait			< 0.001
Low	279 (90.3%)	30 (9.7%)	
Mod	459 (88.1%)	62 (11.9%)	
High	146 (77.3%)	43 (22.8%)	

Table 4.3.2.3.2: Bullied participants by degree of neuroticism

Among the participants, there were higher proportions of cases of bullying among the group with high degree of neuroticism (p<0.001) compared with the group with low degree of neuroticism.

AOR (95% CI)
0.15) 6.15 (0.08, 500.99)
f) 1.00 (ref)
1.98) 1.34 (0.82, 2.22)
4.59) 2.99 (1.71, 5.21)
< 0.001
3) 0.06 (0.13)
1.9
-351.99
001) 25.51 (<0.001)

Table 4.3.2.3.3: Association of neuroticism with workplace bullying

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age, gender, and English proficiency

Results indicated that neuroticism was a significant factor of workplace bullying among junior doctors included in this study. Participants with high degree of neuroticism had 2.70 times the odds (COR = 2.70, 95% CI = 1.59 - 4.59) of being bullied compared with participants with low degree of neuroticism. After controlling for confounders, participants with high degree of neuroticism had 2.99 times the odds

(AOR = 2.99, 95% CI = 1.71 - 5.21) of being bullied compared with participants with low degree of neuroticism. There was significant trend in the odds of workplace bullying with increasing degree of neuroticism for both the crude association (p<0.001) and adjusted association (p<0.001). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments ($\tau = 0.06$, p-value = 0.286) and similarly, the ICC indicated that only 2% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p<0.001).

4.3.2.4 Association	of Openness with	Workplace Bullying

Variable	Openn	ess, mean ± S.D. or	r n (%)	Sig.
	Low (n=731)	Mod (n=234)	High (n=98)	0
Age	27.0 ± 1.5	26.9 ± 1.5	27.1 ± 1.9	0.006*
Gender				0.033*
Male	237 (32.5%)	87 (37.3%)	44 (44.9%)	
Female	493 (67.5%)	146 (62.7%)	54 (55.1%)	
Ethnicity	`	. ,		0.193
Malay	482 (66.3%)	161 (69.1%)	60 (61.9%)	
Chinese	117 (16.1%)	29 (12.5%)	12 (12.4%)	
Indian	116 (16.0%)	41 (17.6%)	21 (21.7%)	
Others	12 (1.7%)	2 (0.9%)	4 (4.1%)	
Academic graduation	`	. ,		0.456
by region				
Local	357 (50.6%)	130 (56.0%)	54 (56.3%)	
Western Europe	36 (5.1%)	18 (7.8%)	2 (2.1%)	
Eastern Europe	74 (10.5%)	21 (9.1%)	9 (9.4%)	
Australasia	12 (1.7%)	1 (0.4%)	1 (1.0%)	
Middle East	127 (18.0%)	31 (13.4%)	20 (20.8%)	
South Asia	2 (0.3%)	0 (0.0%)	0 (0.0%)	
East Asia	42 (6.0%)	11 (4.7%)	3 (3.1%)	
South-east Asia	55 (7.8%)	20 (8.6%)	7 (7.3%)	
English proficiency	· · · ·			0.076
Poor	2 (0.3%)	3 (1.3%)	0 (0.0%)	
Fair	190 (26.3%)	62 (26.8%)	31 (33.0%)	
Good	387 (53.6%)	132 (57.1%)	41 (43.6%)	
Excellent	143 (19.8%)	34 (14.7%)	22 (23.4%)	
Duration working	$15.5 \pm 7.0^{\circ}$	15.4 ± 7.0	15.8 ± 7.0	0.999
Specialty				0.124
S1	115 (16.5%)	40 (17.6%)	15 (16.1%)	
S2	104 (14.9%)	32 (14.1%)	9 (9.7%)	
S 3	122 (17.5%)	38 (16.7%)	11 (11.8%)	
S4	108 (15.5%)	49 (21.6%)	23 (24.7%)	
S5	113 (16.2%)	26 (11.5%)	15 (16.1%)	
S 6	91 (13.1%)	24 (10.6%)	17 (18.3%)	
S7	44 (6.3%)	18 (7.9%)	3 (3.2%)	
Type of hospital	× /			0.111
SH	176 (24.1%)	77 (32.9%)	24 (24.5%)	
MSH	471 (64.4%)	135 (57.7%)	62 (63.3%)	
UH	84 (11.5%)	22 (9.4%)	12 (12.2%)	

Table 4.3.2.4.1: Characteristics of participants by openness

Note: * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age and gender according to degree of openness. The group with high degree of openness had participants who were older (p=0.006) and had higher proportions of male participants (p=0.033) compared with the group with low degree of openness.

Openness	Cases of Wo	orkplace Bullying,	n (%)
_	No	Yes	Sig.
Degree of trait			0.101
Low	613 (88.2%)	82 (11.8%)	
Mod	192 (84.6%)	35 (15.4%)	
High	79 (81.4%)	18 (18.6%)	

Table 4.3.2.4.2: Bullied participants by degree of openness

Among the participants, there was no significant difference in the proportions of those bullied and not according to the degree of openness.

	COR (95% CI)	AOR (95% CI)
Fixed effects		
Intercept (S.E.)	0.12 (0.09, 0.16)	2.79 (0.06, 133.94)
Openness		
Low	1.00 (ref)	1.00 (ref)
Mod	1.35 (0.86, 2.10)	1.32 (0.85, 2.07)
High	1.48 (0.80, 2.72)	1.36 (0.73, 2.55)
P trend	0.109	0.180
Random effects		
Department variance (S.E.)	0.11 (0.13)	0.09 (0.13)
ICC (%)	3.3	2.7
Model fitness		
Log likelihood	-371.42	-365.97
Wald chi-square (p value)	2.71 (0.258)	5.10 (0.278)

Table 4.3.2.4.3: Association of openness with workplace bullying

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age and gender

Results indicated that openness was not a significant factor of workplace bullying among junior doctors included in this study. Participants with moderate degree and high degree of openness were not significantly less or more likely to be bullied compared with participants with low degree of openness. There was no significant trend in the odds of workplace bullying with increasing degree of openness for both the crude association (p=0.109) and adjusted association (p=0.180). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments ($\tau = 0.09$, p-value = 0.209) and similarly, the ICC indicated that only 3% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, but the Wald test indicated that the covariates in the adjusted model did not significantly improve the fit of the model (p=0.278).

4.3.3 Association between Self-Esteem and Workplace Bullying

Variable	Self-Est	eem, mean ± S.D. o	or n (%)	Sig.
	Low (n=719)	Mod (n=299)	High (n=46)	
Age	26.9 ± 1.4	27.2 ± 1.9	26.8 ± 1.0	< 0.001*
Gender				<0.001*
Male	211 (29.4%)	129 (43.3%)	29 (63.0%)	
Female	507 (70.6%)	169 (56.7%)	17 (37.0%)	
Ethnicity				0.001*
Malay	495 (69.3%)	184 (62.0%)	25 (54.4%)	
Chinese	101 (14.2%)	51 (17.2%)	6 (13.0%)	
Indian	109 (15.3%)	57 (19.2%)	11 (23.9%)	
Others	9 (1.3%)	5 (1.7%)	4 (8.7%)	
Academic graduation				0.248
by region				
Local	359 (51.4%)	157 (54.0%)	26 (59.1%)	
Western Europe	36 (5.2%)	18 (6.2%)	2 (4.6%)	
Eastern Europe	76 (10.9%)	21 (7.2%)	6 (13.6%)	
Australasia	8 (1.1%)	4 (1.4%)	2 (4.6%)	
Middle East	125 (17.9%)	50 (17.2%)	4 (9.1%)	
South Asia	2 (0.3%)	0 (0.0%)	0 (0.0%)	
East Asia	33 (4.7%)	19 (6.5%)	4 (9.1%)	
South-east Asia	60 (8.6%)	22 (7.6%)	0 (0.0%)	
English proficiency				<0.001*
Poor	5 (0.7%)	0 (0.0%)	0 (0.0%)	
Fair	220 (31.2%)	60 (20.2%)	3 (6.7%)	
Good	385 (54.5%)	155 (52.2%)	20 (44.4%)	
Excellent	96 (13.6%)	82 (27.6%)	22 (48.9%)	
Duration working	15.6 ± 7.1	15.5 ± 6.9	14.8 ± 6.7	0.813
Specialty				0.759
S1	115 (16.7%)	46 (16.0%)	9 (20.5%)	
S2	97 (14.1%)	44 (15.3%)	4 (9.1%)	
S3	117 (17.0%)	43 (15.0%)	11 (25.0%)	
S4	115 (16.7%)	59 (20.6%)	6 (13.6%)	
S5	109 (15.9%)	39 (13.6%)	6 (13.6%)	
S 6	93 (13.5%)	34 (11.9%)	6 (13.6%)	
S7	41 (6.0%)	22 (7.7%)	2 (4.6%)	
Type of hospital				0.311
SH	188 (26.2%)	77 (25.8%)	13 (28.3%)	
MSH	460 (64.0%)	179 (59.9%)	29 (63.0%)	
UH	71 (9.9%)	43 (14.4%)	4 (8.7%)	

Table 4.3.3.1: Characteristics of participants by self-esteem

Note: * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age, gender, ethnicity, and English proficiency according to degree of self-esteem. The

group with high degree of self-esteem had participants who were younger (p<0.001) and had higher proportions of male participants (p<0.001), participants of Indian and Others ethnicity (p=0.001), and participants with excellent English proficiency (p<0.001) compared with the group with low self-esteem.

Variable	Solf Est	$aam maan \pm SD$	on n (9/)	Sig
v al lable		eem, mean ± S.D. (Sig.
	Low (n=719)	Mod (n=299)	High (n=46)	
Personality traits				
Extraversion				< 0.001*
Low	448 (62.5%)	133 (44.5%)	13 (28.3%)	
Mod	177 (24.7%)	86 (28.8%)	16 (34.8%)	
High	92 (12.8%)	80 (26.8%)	17 (37.0%)	
Agreeableness and				< 0.001*
conscientiousness				
Low	303 (42.3%)	84 (28.1%)	17 (37.0%)	
Mod	268 (37.4%)	117 (39.1%)	9 (19.6%)	
High	146 (20.4%)	98 (32.8%)	20 (43.5%)	
Neuroticism				< 0.001*
Low	166 (23.1%)	137 (45.8%)	25 (54.4%)	
Mod	393 (54.7%)	130 (43.5%)	15 (32.6%)	
High	159 (22.1%)	32 (10.7%)	6 (13.0%)	
Openness		. ,	. ,	0.323
Low	504 (70.3%)	196 (65.6%)	30 (65.2%)	
Mod	154 (21.5%)	71 (23.8%)	9 (19.6%)	
High	59 (8.2%)	32 (10.7%)	7 (15.2%)	

Table 4.3.3.2: Individual traits of participants by self-esteem

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' individual traits, there were significant differences in personality traits according to degree of self-esteem. The group with high degree of self-esteem had higher proportions of participants with high degree of extraversion (p<0.001), high degree of agreeableness and conscientiousness (p<0.001), and low degree of neuroticism (p<0.001) compared with the group with low degree of self-esteem.

Self-Esteem	Cases of Workplace Bullying, n				
	No	Yes	Sig.		
Degree of trait			0.836		
Low	603 (86.9%)	91 (13.1%)			
Mod	245 (86.9%)	37 (13.1%)			
High	36 (83.7%)	7 (16.3%)			

Table 4.3.3.3: Bullied participants by degree of self-esteem

Among the participants, there was no significant difference in proportions of those bullied and not according to the degree of self-esteem.

	COR (95% CI)	AOR (95% CI)	
Fixed effects			
Intercept (S.E.)	0.14 (0.11, 0.19)	5.95 (0.07, 512.17)	
Self-esteem			
Low	1.00 (ref)	1.00 (ref)	
Mod	0.88 (0.57, 1.37)	0.99 (0.61, 1.60)	
High	1.15 (0.46, 2.84)	0.89 (0.31, 2.52)	
P trend	0.840	0.860	
Random effects			
Department variance (S.E.)	0.12 (0.13)	0.08 (0.13)	
ICC (%)	3.4	2.4	
Model fitness			
Log likelihood	-372.52	-343.02	
Wald chi-square (p value)	0.44 (0.803)	32.71 (0.008)	

Table 4.3.3.4: Association of self-esteem with workplace bullying

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age, gender, ethnicity, English proficiency, extraversion, agreeableness and conscientiousness and neuroticism

Results indicated that self-esteem was not a significant factor of workplace bullying among junior doctors included in this study. Participants with a moderate and high degree of self-esteem were not more or less likely to be bullied compared to participants with low degree of self-esteem. There was no significant trend in the odds of workplace bullying with increasing degree of self-esteem for both the crude association (p=0.840) and adjusted association (p=0.860). The likelihood ratio test results of the adjusted model showed that there was no statistical significant variability in the odds of workplace bullying between departments ($\tau = 0.08$, p-value = 0.254) and similarly, the ICC indicated that only 2% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p=0.008).

University Malays

4.4 Association between Organisational Characteristics and Workplace Bullying

4.4.1 Association between Organisational Climate and Workplace Bullying

Variable	Organisational Climate, mean ± S.D. or n (%)			Sig.
	Negative	Neutral	Positive	
	(n=273)	(n=539)	(n=245)	
Age	26.9 ± 1.4	26.9 ± 1.4	27.1 ± 1.6	0.044*
Gender				0.744
Male	93 (34.2%)	183 (34.0%)	90 (36.7%)	
Female	179 (65.8%)	355 (66.0%)	155 (63.3%)	
Ethnicity				0.047*
Malay	169 (62.4%)	362 (67.7%)	167 (68.4%)	
Chinese	34 (12.6%)	84 (15.7%)	40 (16.4%)	
Indian	61 (22.5%)	83 (15.5%)	32 (13.1%)	
Others	7 (2.6%)	6 (1.1%)	5 (2.1%)	
Academic graduation				0.680
by region				
Local	123 (46.8%)	283 (53.8%)	134 (56.3%)	
Western Europe	16 (6.1%)	29 (5.5%)	11 (4.6%)	
Eastern Europe	31 (11.8%)	45 (8.6%)	27 (11.3%)	
Australasia	4 (1.5%)	7 (1.3%)	3 (1.3%)	
Middle East	50 (19.0%)	96 (18.3%)	31 (13.0%)	
South Asia	1 (0.4%)	1 (0.2%)	0 (0.0%)	
East Asia	16 (6.1%)	24 (4.6%)	15 (6.3%)	
South-east Asia	22 (8.4%)	41 (7.8%)	17 (7.1%)	
English proficiency				0.007*
Poor	4 (1.5%)	1 (0.2%)	0 (0.0%)	
Fair	80 (29.6%)	148 (27.9%)	55 (22.9%)	
Good	126 (46.7%)	296 (55.7%)	132 (55.0%)	
Excellent	60 (22.2%)	86 (16.2%)	53 (22.1%)	
Duration working	14.9 ± 7.4	15.4 ± 6.8	16.4 ± 6.9	0.195
Specialty				< 0.001*
S1	30 (11.6%)	102 (19.6%)	38 (16.2%)	
S2	37 (14.3%)	81 (15.6%)	27 (11.5%)	
S3	51 (19.8%)	81 (15.6%)	39 (16.7%)	
S4	58 (22.5%)	80 (15.4%)	39 (16.7%)	
S 5	55 (21.3%)	75 (14.4%)	23 (9.8%)	
S 6	22 (8.5%)	64 (12.3%)	46 (19.7%)	
S7	5 (1.9%)	37 (7.1%)	22 (9.4%)	
Type of hospital	× ,	、 /	、 /	0.001*
SH	85 (31.1%)	150 (27.8%)	42 (17.1%)	
MSH	159 (58.2%)	340 (63.1%)	164 (66.9%)	
UH	29 (10.6%)	49 (9.1%)	39 (15.9%)	

Note: * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age, ethnicity, English proficiency, specialty and type of hospital according to type of organisational climate. In relation to sociodemographic characteristics, departments with positive climate had higher proportions of participants who were older (p=0.044), of Malay and Chinese ethnicity (p=0.047), and participants with good English proficiency (p=0.007) compared with departments with negative climate. In relation to employment characteristics, departments with positive climate had higher proportions of participants who were working in S1, S6 and S7 specialties (p<0.001), and were more likely to be part of a major specialist hospital and university hospital (p=0.001) compared with departments with negative climate.

Variable	Organisation	al Climate, mean ±	= S.D. or n (%)	Sig.
	Negative (n=273)	Neutral (n=539)	Positive (n=245)	
Personality traits Extraversion				<0.001*
Low	159 (58.2%)	328 (61.1%)	105 (42.9%)	
Mod	61 (22.3%)	133 (24.8%)	82 (33.5%)	
High	53 (19.4%)	76 (14.2%)	58 (23.7%)	
Agreeableness and conscientiousness				<0.001*
Low	112 (41.0%)	222 (41.3%)	68 (27.8%)	
Mod	94 (34.4%)	203 (37.8%)	94 (38.4%)	
High	67 (24.5%)	112 (20.9%)	83 (33.9%)	
Neuroticism				<0.001*
Low	61 (22.3%)	155 (28.8%)	108 (44.1%)	
Mod	132 (48.4%)	291 (54.1%)	115 (46.9%)	
High	80 (29.3%)	92 (17.1%)	22 (9.0%)	
Openness				0.017*
Low	167 (61.2%)	377 (70.2%)	180 (73.5%)	
Mod	70 (25.6%)	115 (21.4%)	48 (19.6%)	
High	36 (13.2%)	45 (8.4%)	17 (6.9%)	

Table 4.4.1.2: Individual traits of participants by organisational climate

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' individual traits, there were significant differences in personality traits according to type of organisational climate. Departments with positive climate had higher proportions of participants with high degree of extraversion (p<0.001), high degree of agreeableness and conscientiousness (p<0.001), low degree of neuroticism (p<0.001) and low degree of openness (p=0.017) compared with departments with negative climate.

Variable	Organisation	al Climate, mean ±	S.D. or n (%)	Sig.
, armore	Negative (n=273)	Neutral (n=539)	Positive (n=245)	
Organisational culture	· · ·			
Clan culture				$< 0.001^{\circ}$
Low	192 (70.6%)	153 (28.4%)	28 (11.5%)	
Mod	70 (25.7%)	313 (58.2%)	106 (43.4%)	
High	10 (3.7%)	72 (13.4%)	110 (45.1%)	
Adhocracy culture				< 0.001
Low	182 (66.9%)	155 (28.8%)	27 (11.1%)	
Mod	70 (25.7%)	275 (51.1%)	91 (37.3%)	
High	20 (7.4%)	108 (20.1%)	126 (51.6%)	
Hierarchy culture				< 0.001
Low	123 (45.2%)	190 (35.3%)	52 (21.3%)	
Mod	99 (36.4%)	264 (49.1%)	114 (46.7%)	
High	50 (18.4%)	84 (15.6%)	78 (32.0%)	
Market culture		()		< 0.001
Low	136 (50.0%)	222 (41.3%)	62 (25.4%)	
Mod	107 (39.3%)	259 (48.2%)	126 (51.6%)	
High	29 (10.7%)	56 (10.4%)	56 (23.0%)	
Organisational leadership Mentor/facilitator				< 0.001
Low	200.(7(.50/))	242(62.60/)	05(29,00/)	<0.001
	208 (76.5%)	342 (63.6%)	95 (38.9%)	
Mod	50 (18.4%)	169 (31.4%)	115 (47.1%)	
High	14 (5.2%)	27 (5.0%)	34 (13.9%)	<0.001
Innovator/				< 0.001
entrepreneur	222 (95 70/)	400 (76 00/)	120 (52 00/)	
Low	233 (85.7%)	409 (76.0%)	129 (52.9%)	
Mod	29 (10.7%)	116 (21.6%)	96 (39.3%)	
High	10 (3.7%)	13 (2.4%)	19 (7.8%)	<0.001
Administrator/				< 0.001
organizer	104 (71.20/)	21((50 70/)		
Low	194 (71.3%)	316 (58.7%)	80 (32.8%)	
Mod	64 (23.5%)	193 (35.9%)	138 (56.6%)	
High	14 (5.2%)	29 (5.4%)	26 (10.7%)	

Table 4.4.1.3: Organisational characteristics of departments by organisational

Variable	Organisational Climate, mean ± S.D. or n (%)		Sig.	
-	Negative	Neutral	Positive	
	(n=273)	(n=539)	(n=245)	
Production &		· ·	· · ·	< 0.001*
achievement-				
oriented				
Low	232 (85.3%)	414 (77.0%)	138 (56.6%)	
Mod	30 (11.0%)	111 (20.6%)	89 (36.5%)	
High	10 (3.7%)	13 (2.4%)	17 (7.0%)	
Organisational support				<0.001*
Low	176 (64.9%)	105 (19.7%)	8 (3.3%)	
Mod	87 (32.1%)	328 (61.5%)	97 (40.3%)	
High	8 (3.0%)	100 (18.8%)	136 (56.4%)	
Organisational justice				
Procedural justice				< 0.001*
Low	140 (51.7%)	153 (28.8%)	27 (11.3%)	
Mod	111 (41.0%)	300 (56.4%)	118 (49.2%)	
High	20 (7.4%)	79 (14.9%)	95 (39.6%)	
Interactional justice	. ,		. ,	< 0.001*
Low	168 (61.8%)	122 (22.9%)	8 (3.3%)	
Mod	95 (34.9%)	325 (61.1%)	112 (46.5%)	
High	9 (3.3%)	85 (16.0%)	121 (50.2%)	
Distributive justice			`	< 0.001*
Low	235 (86.7%)	402 (75.6%)	106 (44.0%)	
Mod	15 (5.5%)	36 (6.8%)	13 (5.4%)	
High	21 (7.8%)	94 (17.7%)	122 (50.6%)	

Table 4.4.1.3, continued

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of organisational characteristics, there were significant differences in organisational culture, organisational leadership, organisational support and organisational justice according to type of organisational climate. In relation to organisational culture, departments with positive climate tended to have high degree of clan culture (p<0.001), high degree of adhocracy culture (p<0.001), high degree of hierarchy culture (p<0.001), and high degree of market culture (p<0.001) compared with departments with negative climate. In relation to organisational leadership, departments with positive climate tended to have high degree of mentor or facilitator leadership style (p<0.001), high degree of innovator or entrepreneur leadership style (p<0.001), and

high degree of production and achievement-oriented leadership style (p<0.001) compared with departments with negative climate. In relation to organisational support, departments with positive climate tended to have high degree of organisational support (p<0.001) compared with departments with negative climate. Finally, in relation to organisational justice, departments with positive climate tended to have high degree of procedural justice (p<0.001), high degree of interactional justice (p<0.001), and high degree of distributive justice (p<0.001) compared with departments with departments with departments with departments explicitly (p<0.001), and high degree of distributive justice (p<0.001) compared with departments departments with departments with departments with departments with departments with departments departments with departments departments with negative climate.

Table 4.4.1.4: Bullied participants by type of organisational climate

Organisational	Cases of Workplace Bullying, n (%)		
Climate	No	Sig.	
Type of climate			< 0.001
Negative	179 (67.3%)	87 (32.7%)	
Neutral	481 (92.2%)	41 (7.9%)	
Positive	221 (96.9%)	7 (3.1%)	

Among the participants, there were higher proportions of cases of bullying among departments with negative climate (p<0.001) compared with departments with positive climate.

	COR (95% CI)	AOR (95% CI)
Fixed effects		
Intercept (S.E.)	0.48 (0.37, 0.62)	13.49 (0.06, 3215.72)
Organisational climate		
Negative	1.00 (ref)	1.00 (ref)
Neutral	0.17 (0.11, 0.26)	0.35 (0.20, 0.62)
Positive	0.07 (0.03, 0.16)	0.33 (0.11, 0.98)
P trend	< 0.001	0.001
Random effects		
Department variance (S.E.)	$1.73^{e-15} (2.68^{e-8})$	$2.83^{-13} (2.07^{e-7})$
ICC (%)	5.9 x 10 ⁻⁵	7.2×10^{-4}
Model fitness		
Log likelihood	-320.94	-260.62
Wald chi-square (p value)	92.19 (<0.001)	117.04 (<0.001)

 Table 4.4.1.5: Association of organisational climate with workplace bullying

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age, ethnicity, English proficiency, specialty, type of hospital, extraversion, agreeableness and conscientiousness, neuroticism, openness, clan culture, adhocracy culture, hierarchy culture, market culture, mentor or facilitator leadership style, innovator or entrepreneur leadership style, administrator or organizer leadership style, production and achievement-oriented leadership style, organisational support, procedural justice, interactional justice, and distributive justice

Results indicated that positive organisational climate was a significant factor of workplace bullying among junior doctors included in this study. Participants working in departments with neutral climate had 0.17 times the odds (COR = 0.17, 95% CI = 0.11 – 0.26) and participants working in department with positive climates had 0.07 times the odds (COR = 0.07, 95% CI = 0.03 – 0.16) of being bullied compared with participants working in departments with negative climates. After adjusting for confounding, participants working in departments with neutral climates had 0.35 times the odds (AOR = 0.35, 95% CI = 0.20 – 0.62) and participants working in departments with neutral climates had 0.35 times the odds (AOR = 0.33, 95% CI = 0.11 – 0.98) of being bullied compared with participants working in departments working in departments with negative climate. There was significant trend in the odds of workplace bullying with more positive organisational climate for both the crude association (p<0.001) and adjusted association (p=0.001). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments (τ =

2.83⁻¹³, p-value = 1.00) and similarly, the ICC indicated that less than 0.1% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p<0.001).

4.4.2 Association between Organisational Culture and Workplace Bullying

4.4.2.1 Association of Clan Culture with Workplace Bullying

Variable	Clan Cu	lture, mean ± S.D.	or n (%)	Sig.
	Low (n=375)	Mod (n=489)	High (n=193)	0
Age	26.9 ± 1.4	26.9 ± 1.3	27.2 ± 2.1	< 0.001*
Gender				0.081
Male	114 (30.5%)	177 (36.2%)	75 (39.1%)	
Female	260 (69.5%)	312 (63.8%)	117 (60.9%)	
Ethnicity				0.573
Malay	238 (64.8%)	334 (68.9%)	126 (65.3%)	
Chinese	57 (15.3%)	73 (15.1%)	28 (14.5%)	
Indian	69 (18.5%)	72 (14.9%)	36 (18.7%)	
Others	9 (2.4%)	6 (1.2%)	3 (1.6%)	
Academic graduation				0.698
by region				
Local	199 (54.5%)	242 (51.4%)	99 (51.8%)	
Western Europe	22 (6.0%)	25 (5.3%)	9 (4.7%)	
Eastern Europe	36 (9.9%)	42 (8.9%)	24 (12.6%)	
Australasia	7 (1.9%)	4 (0.9%)	3 (1.6%)	
Middle East	55 (15.1%)	90 (19.1%)	32 (16.8%)	
South Asia	1 (0.3%)	1 (0.2%)	0 (0.0%)	
East Asia	18 (4.9%)	31 (6.6%)	6 (3.1%)	
South-east Asia	27 (7.4%)	36 (7.6%)	18 (9.4%)	
English proficiency				0.310
Poor	1 (0.3%)	3 (0.6%)	1 (0.5%)	
Fair	97 (26.2%)	144 (30.0%)	40 (21.1%)	
Good	197 (53.1%)	250 (52.1%)	108 (56.8%)	
Excellent	76 (20.5%)	83 (17.3%)	41 (21.6%)	
Duration working	15.2 ± 7.1	15.4 ± 6.6	16.4 ± 7.6	0.046*
Specialty				0.008*
S1	60 (16.9%)	78 (16.6%)	32 (17.2%)	
S2	52 (14.7%)	66 (14.0%)	26 (14.0%)	
S 3	64 (18.0%)	76 (16.1%)	30 (16.1%)	
S 4	68 (19.2%)	81 (17.2%)	29 (15.6%)	
S5	56 (15.8%)	81 (17.2%)	17 (9.1%)	
S 6	42 (11.8%)	62 (13.2%)	27 (14.5%)	
S7	13 (3.7%)	27 (5.7%)	25 (13.4%)	
Type of hospital	. ,	. /	· /	0.125
SH	115 (30.7%)	119 (24.3%)	43 (22.3%)	
MSH	221 (58.9%)	318 (65.0%)	124 (64.3%)	
UH	39 (10.4%)	52 (10.6%)	26 (13.5%)	

Note: * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age, duration working, and specialty according to degree of clan culture. In relation to sociodemographic characteristics, departments with high degree of clan culture had participants who were older (p<0.001) compared with departments with low degree of clan culture. In relation to employment characteristics, departments with high degree of clan culture had participants who have worked for longer durations (p=0.046) and had higher proportions of participants who were working in S6 and S7 specialties (p=0.008) compared with departments with low degree of clan culture.

Variable	Clan Cu	lture, mean ± S.D.	on n (0/)	Sig
				Sig.
	Low (n=375)	Mod (n=489)	High (n=193)	
Personality traits				
Extraversion				0.188
Low	213 (56.8%)	282 (57.9%)	97 (50.3%)	
Mod	88 (23.5%)	129 (26.5%)	58 (30.1%)	
High	74 (19.7%)	76 (15.6%)	38 (19.7%)	
Agreeableness and		. ,	. ,	0.077
conscientiousness				
Low	136 (36.3%)	198 (40.7%)	68 (35.2%)	
Mod	129 (34.4%)	186 (38.2%)	75 (38.9%)	
High	110 (29.3%)	103 (21.2%)	50 (25.9%)	
Neuroticism			· · · ·	0.004*
Low	98 (26.1%)	156 (32.0%)	71 (36.8%)	
Mod	187 (49.9%)	253 (51.8%)	96 (49.7%)	
High	90 (24.0%)	79 (16.2%)	26 (13.5%)	
Openness	· · · ·	· · /	× ,	0.012*
Low	233 (62.1%)	353 (72.5%)	140 (72.5%)	
Mod	97 (25.9%)	96 (19.7%)	39 (20.2%)	
High	45 (12.0%)	38 (7.8%)	14 (7.3%)	

Table 4.4.2.1.2: Individual traits of participants by clan culture

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' individual traits, there were significant differences in personality traits according to degree of clan culture. Departments with high degree of clan culture had higher proportions of participants with low degree of neuroticism (p=0.004) and low degree of openness (p=0.012) compared with departments with low degree of clan culture.

Clan Culture	Cases of Workplace Bullying, n (%)			
-	No	Yes	Sig.	
Degree of culture			< 0.001	
Low	287 (78.4%)	79 (21.6%)		
Mod	425 (91.0%)	42 (9.0%)		
High	171 (92.4%)	14 (7.6%)		

Table 4.4.2.1.3: Bullied participants by degree of clan culture

Among the participants, there were higher proportions of cases of bullying among departments with low degree of clan culture (p<0.001) compared with departments with high degree of clan culture.

	COR (95% CI)	AOR (95% CI)
Fixed effects		
Intercept (S.E.)	0.26 (0.20, 0.35)	0.92 (0.02, 53.44)
Clan culture		
Low degree	1.00 (ref)	1.00 (ref)
Moderate degree	0.36 (0.24, 0.55)	0.39 (0.25, 0.59)
High degree	0.27 (0.14, 0.52)	0.33 (0.17, 0.63)
P trend	< 0.001	< 0.001
Random effects		
Department variance (S.E.)	0.05 (0.12)	$6.38^{e-13} (3.48^{e-7})$
ICC (%)	1.5	4.4 x 10 ⁻⁴
Model fitness		
Log likelihood	-357.02	-338.32
Wald chi-square (p value)	30.50 (<0.001)	54.69 (<0.001)

Table 4.4.2.1.4: Association of clan culture with workplace bullying

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age, duration working, specialty, neuroticism, and openness

Results indicated that high degree of clan culture was a significant factor of workplace bullying among junior doctors included in this study. Participants working in departments with moderate degree of clan culture had 0.36 times the odds (COR = 0.36, 95% CI = 0.24 - 0.55) and participants working in departments with high degree of clan

culture had 0.27 times the odds (COR = 0.27, 95% CI = 0.14 - 0.52) of being bullied compared with participants working in departments with low degree of clan culture. After adjusting for confounding, participants working in departments with moderate degree of clan culture had 0.39 times the odds (AOR = 0.39, 95% CI = 0.25 - 0.59) and participants working in departments with high degree of clan culture had 0.33 times the odds (AOR = 0.33, 95% CI = 0.17 - 0.63) of being bullied compared with participants working in departments with low degree of clan culture. There was significant trend in the odds of workplace bullying with increasing degree of clan culture for both the crude association (p<0.001) and adjusted association (p<0.001). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments ($\tau = 6.38^{e-13}$, p-value = 1.000) and similarly, the ICC indicated that less than 0.1% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p<0.001).

4.4.2.2 Association of Adhocracy Culture with Workplace Bullying

Variable	Adhocracy Culture, mean ± S.D. or n (%)			Sig.
	Low (n=366)	Mod (n=436)	High (n=254)	. 0
Age	27.0 ± 1.7	26.9 ± 1.5	27.0 ± 1.4	0.009*
Gender				0.466
Male	132 (36.2%)	142 (32.6%)	92 (36.4%)	
Female	233 (63.8%)	294 (67.4%)	161 (63.6%)	
Ethnicity			· · ·	0.212
Malay	229 (63.1%)	296 (68.2%)	172 (68.0%)	
Chinese	51 (14.1%)	69 (15.9%)	38 (15.0%)	
Indian	76 (20.9%)	64 (14.8%)	37 (14.6%)	
Others	7 (1.9%)	5 (1.2%)	6 (2.4%)	
Academic graduation				0.985
by region				
Local	182 (51.3%)	227 (53.8%)	130 (52.2%)	
Western Europe	18 (5.1%)	24 (5.7%)	14 (5.6%)	
Eastern Europe	35 (9.9%)	41 (9.7%)	26 (10.4%)	
Australasia	7 (2.0%)	4 (1.0%)	3 (1.2%)	
Middle East	61 (17.2%)	72 (17.1%)	44 (17.7%)	
South Asia	1 (0.3%)	0 (0.0%)	1 (0.4%)	
East Asia	18 (5.1%)	24 (5.7%)	13 (5.2%)	
South-east Asia	33 (9.3%)	30 (7.1%)	18 (7.2%)	
English proficiency				0.105
Poor	1 (0.3%)	3 (0.7%)	1 (0.4%)	
Fair	87 (24.2%)	137 (31.6%)	57 (23.1%)	
Good	194 (53.9%)	222 (51.3%)	138 (55.9%)	
Excellent	78 (21.7%)	71 (16.4%)	51 (20.7%)	
Duration working	15.0 ± 7.0	15.5 ± 6.8	16.1 ± 7.4	0.339
Specialty				< 0.001*
S1	63 (18.1%)	61 (14.7%)	46 (18.7%)	
S2	46 (13.2%)	64 (15.4%)	34 (13.8%)	
S 3	64 (18.3%)	67 (16.1%)	39 (15.9%)	
S4	68 (19.5%)	80 (19.2%)	30 (12.2%)	
S 5	58 (16.6%)	69 (16.6%)	26 (10.6%)	
S 6	38 (10.9%)	53 (12.7%)	40 (16.3%)	
S7	12 (3.4%)	22 (5.3%)	31 (12.6%)	
Type of hospital	()	()		0.757
SH	100 (27.3%)	117 (26.8%)	60 (23.6%)	
MSH	223 (60.9%)	271 (62.2%)	168 (66.1%)	
UH	43 (11.8%)	48 (11.0%)	26 (10.2%)	

Note: * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age and specialty according to degree of adhocracy culture. In relation to sociodemographic characteristics, departments with high degree of adhocracy culture had participants who were older (p=0.009) compared with departments with low degree of adhocracy culture. In relation to employment characteristics, departments with high degree of adhocracy culture had higher proportions of participants who were working in S1, S2, S6 and S7 specialties (p<0.001) compared with departments with low degree of adhocracy culture.

Variable	Adhocracy Culture, mean ± S.D. or n (%)			Sig.
	Low (n=366)	Mod (n=436)	High (n=254)	
Personality trait				
Extraversion				0.012*
Low	214 (58.5%)	258 (59.3%)	120 (47.4%)	
Mod	83 (22.7%)	108 (24.8%)	84 (33.2%)	
High	69 (18.9%)	69 (15.9%)	49 (19.4%)	
Agreeableness and	. ,			0.113
conscientiousness				
Low	144 (39.3%)	170 (39.1%)	88 (34.8%)	
Mod	127 (34.7%)	173 (39.8%)	90 (35.6%)	
High	95 (26.0%)	92 (21.2%)	75 (29.6%)	
Neuroticism				0.002*
Low	95 (26.0%)	131 (30.1%)	98 (38.6%)	
Mod	189 (51.6%)	222 (51.0%)	125 (49.2%)	
High	82 (22.4%)	82 (18.9%)	31 (12.2%)	
Openness		. ,	. ,	<0.001*
Low	224 (61.2%)	314 (72.2%)	187 (73.9%)	
Mod	91 (24.9%)	96 (22.1%)	45 (17.8%)	
High	51 (13.9%)	25 (5.8%)	21 (8.3%)	

 Table 4.4.2.2.2: Individual traits of participants by adhocracy culture

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' individual traits, there were significant differences in personality traits according to degree of adhocracy culture. Departments with high degree of adhocracy culture had higher proportions of participants with high degree of extraversion (p=0.012), low degree of neuroticism (p=0.002), and low degree of openness (p<0.001) compared with departments with low degree of adhocracy culture.

Adhocracy	Cases of Workplace Bullying, n (%)			
Culture	No	Sig.		
Degree of culture			< 0.001	
Low	282 (78.8%)	76 (21.2%)		
Mod	382 (91.0%)	38 (9.1%)		
High	219 (91.3%)	21 (8.8%)		

 Table 4.4.2.2.3: Bullied participants by degree of adhocracy culture

Among the participants, there were higher proportions of cases of bullying in departments with low degree of adhocracy culture (p<0.001) compared with departments with high degree of adhocracy culture.

Table 4.4.2.2.4: Association of adhocracy culture with workplace bullying

	COR (95% CI)	AOR (95% CI)
Fixed effects		
Intercept (S.E.)	0.26 (0.19, 0.35)	0.83 (0.02, 44.07)
Adhocracy culture		
Low degree	1.00 (ref)	1.00 (ref)
Moderate degree	0.37 (0.24, 0.57)	0.36 (0.23, 0.57)
High degree	0.34 (0.20, 0.58)	0.42 (0.24, 0.74)
P trend	< 0.001	< 0.001
Random effects		
Department variance (S.E.)	0.03 (0.12)	$1.26^{e-15} (1.46^{e-8})$
ICC (%)	1.0	4.3 x 10 ⁻⁵
Model fitness		
Log likelihood	-358.83	-337.34
Wald chi-square (p value)	27.68 (<0.001)	55.98 (<0.001)

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age, specialty, extraversion, neuroticism and openness

Results indicated that high degree of adhocracy culture was a significant factor of workplace bullying among junior doctors included in this study. Participants working in departments with moderate degree of adhocracy culture had 0.37 times the odds (COR = 0.37, 95% CI = 0.24 - 0.57) and participants working in departments with high degree of adhocracy culture had 0.34 times the odds (COR = 0.34, 95% CI = 0.20 - 0.58) of being bullied compared with participants working in departments with low degree of adhocracy culture. After adjusting for confounding, participants working in departments

with moderate degree of adhocracy culture had 0.36 times the odds (AOR = 0.36, 95% CI = 0.23 - 0.57) and participants working in departments with high degree of adhocracy culture had 0.42 times the odds (AOR = 0.42, 95% CI = 0.24 - 0.74) of being bullied compared with participants working in departments with low degree of adhocracy culture. There was significant trend in the odds of workplace bullying with increasing degree of adhocracy culture for both the crude association (p<0.001) and adjusted association (p<0.001). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments ($\tau = 1.26^{e-15}$, p-value = 1.000) and similarly, the ICC indicated that less than 0.1% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p<0.001).

4.4.2.3 Association of Hierarchy Culture with Workplace Bullying

Variable	Hierarchy	Culture, mean ± S.	.D. or n (%)	Sig.
	Low (n=366)	Mod (n=477)	High (n=213)	_
Age	26.9 ± 1.3	27.0 ± 1.5	27.0 ± 1.9	< 0.001*
Gender				
Male	118 (32.2%)	169 (35.4%)	79 (37.4%)	0.409
Female	248 (67.8%)	308 (64.6%)	132 (62.6%)	
Ethnicity			× (0.601
Malay	227 (62.5%)	324 (68.4%)	146 (68.5%)	
Chinese	57 (15.7%)	69 (14.6%)	32 (15.0%)	
Indian	72 (19.8%)	73 (15.4%)	32 (15.0%)	
Others	7 (1.9%)	8 (1.7%)	3 (1.4%)	
Academic graduation				0.745
by region				
Local	198 (55.2%)	237 (51.2%)	104 (51.0%)	
Western Europe	20 (5.6%)	26 (5.6%)	10 (4.9%)	
Eastern Europe	32 (8.9%)	46 (9.9%)	24 (11.8%)	
Australasia	7 (2.0%)	6 (1.3%)	1 (0.5%)	
Middle East	60 (16.7%)	82 (17.7%)	35 (17.2%)	
South Asia	2 (0.6%)	0 (0.0%)	0 (0.0%)	
East Asia	18 (5.0%)	26 (5.6%)	11 (5.4%)	
South-east Asia	22 (6.1%)	40 (8.6%)	19 (9.3%)	
English proficiency				0.558
Poor	3 (0.9%)	1 (0.2%)	1 (0.5%)	
Fair	92 (25.9%)	139 (29.3%)	50 (23.7%)	
Good	191 (53.8%)	249 (52.5%)	114 (54.0%)	
Excellent	69 (19.4%)	85 (17.9%)	46 (21.8%)	
Duration working	15.2 ± 6.6	15.6 ± 7.3	15.8 ± 7.0	0.131
Specialty				0.032*
S1	69 (19.9%)	73 (15.8%)	28 (13.9%)	
S2	42 (12.1%)	73 (15.8%)	29 (14.4%)	
S3	76 (22.0%)	67 (14.5%)	27 (13.4%)	
S4	57 (16.5%)	83 (17.9%)	38 (18.8%)	
S 5	44 (12.7%)	68 (14.7%)	41 (20.3%)	
S6	40 (11.6%)	68 (14.7%)	23 (11.4%)	
S7	18 (5.2%)	31 (6.7%)	16 (7.9%)	
Type of hospital	× /	× /	~ /	0.916
SH	98 (26.8%)	122 (25.6%)	57 (26.8%)	-
MSH	227 (62.0%)	299 (62.7%)	136 (63.9%)	
UH	41 (11.2%)	56 (11.7%)	20 (9.4%)	

Table 4.4.2.3.1: Characteristics of participants by hierarchy culture

Note: * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age, and specialty according to degree of hierarchy culture. In relation to sociodemographic characteristics, departments with high degree of hierarchy culture had participants that were older (p<0.001) compared with departments with low degree of hierarchy culture. In relation to employment characteristics, departments with high degree of hierarchy culture had higher proportions of participants who were working in S2, S4, S5, and S7 specialties (p=0.032) compared with departments with low degree of hierarchy culture.

Variable	Hierarchy	Culture, mean ± S.	.D. or n (%)	Sig.
	Low (n=366)	Mod (n=477)	High (n=213)	
Personality traits				
Extraversion				0.193
Low	222 (61.0%)	261 (54.7%)	109 (51.2%)	
Mod	84 (23.1%)	130 (27.3%)	61 (28.6%)	
High	58 (15.9%)	86 (18.0%)	43 (20.2%)	
Agreeableness and			. ,	0.042*
conscientiousness				
Low	162 (44.5%)	167 (35.0%)	73 (34.3%)	
Mod	122 (33.5%)	182 (38.2%)	86 (40.4%)	
High	80 (22.0%)	128 (26.8%)	54 (25.4%)	
Neuroticism				0.572
Low	102 (28.0%)	156 (32.7%)	66 (31.0%)	
Mod	196 (53.7%)	236 (49.5%)	104 (48.8%)	
High	67 (18.4%)	85 (17.8%)	43 (20.2%)	
Openness		. ,	. ,	0.084
Low	236 (64.8%)	330 (69.2%)	159 (74.7%)	
Mod	96 (26.4%)	100 (21.0%)	36 (16.9%)	
High	32 (8.8%)	47 (9.9%)	18 (8.5%)	

Table 4.4.2.3.2: Individual traits of participants by hierarchy culture

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' individual traits, there were significant differences in personality traits according to degree of hierarchy culture. Departments with high degree of hierarchy culture had higher proportions of participants with high agreeableness and conscientiousness (p=0.042) compared with departments with low degree of hierarchy culture.

Hierarchy	Cases of Workplace Bullying, n (%)			
Culture	No	Sig.		
Degree of culture			0.072	
Low	293 (83.7%)	57 (16.3%)		
Mod	413 (89.2%)	50 (10.8%)		
High	177 (86.3%)	28 (13.7%)		

 Table 4.4.2.3.3: Bullied participants by degree of hierarchy culture

Among the participants, there was no significant difference in proportions of those bullied and not according to the degree of hierarchy culture.

Table 4.4.2.3.4: Association of hierarchy culture with workplace bullying

	COR (95% CI)	AOR (95% CI)			
Fixed effects					
Intercept (S.E.)	0.18 (0.13, 0.25)	0.69 (0.01, 34.48)			
Hierarchy culture					
Low degree	1.00 (ref)	1.00 (ref)			
Moderate degree	0.61 (0.40, 0.95)	0.64 (0.41, 0.98)			
High degree	0.87 (0.52, 1.45)	0.87 (0.52, 1.46)			
P trend	0.346	0.375			
Random effects					
Department variance (S.E.)	0.10 (0.13)	$2.92^{e-15} (2.70^{e-8})$			
ICC (%)	2.8	9.9 x 10 ⁻⁵			
Model fitness					
Log likelihood	-370.03	-356.61			
Wald chi-square (p value)	5.08 (0.079)	21.07 (0.033)			
NUL COD 140D1 1	1 00 1 1 1	11 10 1 1 1			

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age, specialty, and agreeableness and conscientiousness

Results indicated that moderate degree of hierarchy culture was a significant factor of workplace bullying among junior doctors included in this study. Participants working in departments with moderate degree of hierarchy culture had 0.61 times the odds (COR = 0.61, 95% CI = 0.40 - 0.95) of being bullied compared with participants working in departments with a low degree of hierarchy culture. After adjusting for confounding, participants working in departments with moderate degree of hierarchy culture had 0.64 times the odds (AOR = 0.64, 95% CI = 0.41 - 0.98) of being bullied compared with participants working in departments with a low degree of hierarchy culture. There was

no significant trend in the odds of workplace bullying with increasing degree of hierarchy culture for both the crude association (p=0.346) and adjusted association (p=0.375). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments ($\tau = 2.92^{e-15}$, p-value = 1.000) and similarly, the ICC indicated that less than 0.1% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p=0.033).

4.4.2.4 Association of Market Culture with Workplace Bullying

Variable	Market C	ulture, mean ± S.I). or n (%)	Sig.
	Low (n=423)	Mod (n=496)	High (n=142)	
Age	26.9 ± 1.4	27.0 ± 1.7	26.9 ± 1.2	< 0.001*
Gender				0.086
Male	145 (34.3%)	161 (32.5%)	60 (42.6%)	
Female	278 (65.7%)	334 (67.5%)	81 (57.5%)	
Ethnicity				0.436
Malay	269 (64.1%)	341 (69.0%)	89 (63.1%)	
Chinese	65 (15.5%)	66 (13.4%)	28 (19.9%)	
Indian	79 (18.8%)	79 (16.0%)	21 (14.9%)	
Others	7 (1.7%)	8 (1.6%)	3 (2.1%)	
Academic graduation	· · · ·			0.788
by region				
Local	218 (52.8%)	256 (53.4%)	67 (48.9%)	
Western Europe	28 (6.8%)	25 (5.2%)	3 (2.2%)	
Eastern Europe	37 (9.0%)	45 (9.4%)	20 (14.6%)	
Australasia	5 (1.2%)	7 (1.5%)	2 (1.5%)	
Middle East	71 (17.2%)	82 (17.1%)	24 (17.5%)	
South Asia	1 (0.2%)	1 (0.2%)	0 (0.0%)	
East Asia	21 (5.1%)	27 (5.6%)	7 (5.1%)	
South-east Asia	32 (7.8%)	36 (7.5%)	14 (10.2%)	
English proficiency			× ,	0.711
Poor	3 (0.7%)	1 (0.2%)	1 (0.7%)	
Fair	112 (27.1%)	138 (28.2%)	32 (22.9%)	
Good	220 (53.1%)	261 (53.3%)	75 (53.6%)	
Excellent	79 (19.1%)	90 (18.4%)	32 (22.9%)	
Duration working	15.4 ± 7.0	15.8 ± 7.1	14.8 ± 7.1	0.958
Specialty				0.012*
S1	68 (16.8%)	77 (16.3%)	27 (19.6%)	
S2	54 (13.3%)	60 (12.7%)	29 (21.0%)	
S 3	73 (18.0%)	76 (16.1%)	22 (15.9%)	
S4	87 (21.5%)	80 (16.9%)	13 (9.4%)	
S5	59 (14.6%)	71 (15.0%)	23 (16.7%)	
S 6	49 (12.1%)	68 (14.4%)	15 (10.9%)	
S 7	15 (3.7%)	41 (8.7%)	9 (6.5%)	
Type of hospital		·····		0.092
SH	105 (24.8%)	129 (26.0%)	44 (31.0%)	
MSH	259 (61.2%)	323 (65.1%)	84 (59.2%)	
UH	59 (14.0%)	44 (8.9%)	14 (9.9%)	

Table 4.4.2.4.1: Characteristics of participants by market culture

Note: * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age and specialty according to degree of market culture. In relation to sociodemographic characteristics, departments with high degree of market culture had participants that were younger (p<0.001) compared with departments with low degree of market culture. In relation to employment characteristics, departments with high degree of market culture had higher proportions of participants who were working in S1, S2, S5, and S7 specialties (p=0.012) compared with departments with low degree of market culture.

Variable	Market C	ulture, mean ± S.D). or n (%)	Sig.
	Low (n=423)	Mod (n=496)	High (n=142)	
Personality traits				
Extraversion				0.071
Low	251 (59.5%)	274 (55.7%)	67 (47.5%)	
Mod	94 (22.3%)	137 (27.9%)	45 (31.9%)	
High	77 (18.3%)	81 (16.5%)	29 (20.6%)	
Agreeableness and	. ,			0.269
conscientiousness				
Low	174 (41.2%)	179 (36.4%)	48 (34.0%)	
Mod	152 (36.0%)	190 (38.6%)	50 (35.5%)	
High	96 (22.8%)	123 (25.0%)	43 (30.5%)	
Neuroticism	, ,		· · · ·	0.156
Low	113 (26.8%)	166 (33.7%)	45 (31.9%)	
Mod	233 (55.2%)	237 (48.1%)	67 (47.5%)	
High	76 (18.0%)	90 (18.3%)	29 (20.6%)	
Openness		· · · ·		0.075
Low	276 (65.4%)	350 (71.1%)	101 (71.6%)	
Mod	99 (23.5%)	108 (22.0%)	24 (17.0%)	
High	47 (11.1%)	34 (6.9%)	16 (11.4%)	
ote: * = significant at p<	0.05. Percentage may	· /	6 due to rounding up	to 1 decin
-		point		

Table 4.4.2.4.2: Individual traits of participants by market culture

In terms of participants' individual traits, there were no significant differences in

personality traits according to degree of market culture.

Market Culture	Cases of Workplace Bullying, n (%)				
-	No	Sig.			
Degree of culture			0.171		
Low	347 (85.3%)	60 (14.7%)			
Mod	426 (88.8%)	54 (11.3%)			
High	113 (83.7%)	22 (16.3%)			

 Table 4.4.2.4.3: Bullied participants by degree of market culture

Among the participants, there was no significant difference in the proportion of those bullied and not according to the degree of market culture.

	COR (95% CI)	AOR (95% CI)
Fixed effects		
Intercept (S.E.)	0.15 (0.11, 0.22)	0.60 (0.01, 29.82)
Market culture		
Low degree	1.00 (ref)	1.00 (ref)
Moderate degree	0.76 (0.50, 1.15)	0.80 (0.53, 1.22)
High degree	1.17 (0.67, 2.04)	1.16 (0.66, 2.03)
P trend	0.978	0.973
Random effects		
Department variance (S.E.)	0.10 (0.13)	$5.18^{e-14} (1.15^{e-7})$
ICC (%)	3.0	1.3×10^{-4}
Model fitness		
Log likelihood	-373.55	-360.22
Wald chi-square (p value)	2.90 (0.235)	19.17 (0.024)

Table 4.4.2.4.4: Association of market culture with workplace bullying

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age and specialty

Results indicated that market culture was not a significant factor of workplace bullying among junior doctors included in this study. Participants working in departments with moderate degree and high degree of market culture were not more likely or less likely to be bullied compared with participants working in departments with low degree of market culture. There was no significant trend in the odds of workplace bullying with increasing degree of market culture for both the crude association (p=0.978) and adjusted association (p=0.973). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments ($\tau = 5.18^{e-14}$, p-value = 1.000) and similarly, the ICC indicated that less than 0.1% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p=0.024).

185

4.4.3 Association between Organisational Leadership and Workplace Bullying

4.4.3.1 Association of Mentor or Facilitator Leadership Style with Workplace Bullying

Variable	Mentor or Fac	ilitator Leadership) Style, mean ±	Sig.
	L and (n=(52)	S.D. or n (%)	$\mathbf{H}_{\mathbf{ab}} \left(\mathbf{a} - 77 \right)$	-
Age	Low (n=652) 26.9 ± 1.3	Mod (n=336) 27.1 ± 1.5	High (n=77) 27.3 ± 2.7	< 0.001*
Gender	20.9 ± 1.3	27.1 ± 1.5	27.3 ± 2.7	<0.001 ⁴ 0.449
Male	217(22,20/)	118 (35.2%)	21(40,20/)	0.449
Female	217 (33.3%)		31 (40.3%)	
Ethnicity	434 (66.7%)	217 (64.8%)	46 (59.7%)	0.691
2	122 (65 20/)	232 (69.3%)	AO(62.60/)	0.091
Malay Chinese	422 (65.2%)		49 (63.6%)	
	98 (15.2%)	47 (14.0%)	14 (18.2%)	
Indian	113 (17.5%)	53 (15.8%)	13 (16.9%)	
Others	14 (2.2%)	3 (0.9%)	1 (1.3%)	0 707
Academic graduation				0.797
by region	227 (52 (0())	17((52 70/)	20 (20 50/)	
Local	337 (53.6%)	176 (53.7%)	30 (39.5%)	
Western Europe	36 (5.7%)	15 (5.6%)	5 (6.6%)	
Eastern Europe	59 (9.4%)	32 (9.8%)	11 (14.5%)	
Australasia	10 (1.6%)	3 (0.9%)	1 (1.3%)	
Middle East	106 (16.9%)	58 (17.7%)	14 (18.4%)	
South Asia	1 (0.2%)	1 (0.3%)	0 (0.0%)	
East Asia	33 (5.3%)	18 (5.5%)	5 (6.6%)	
South-east Asia	47 (7.5%)	25 (7.6%)	10 (13.2%)	
English proficiency				0.249
Poor	3 (0.5%)	1 (0.3%)	1 (1.3%)	
Fair	179 (28.0%)	87 (26.2%)	16 (20.8%)	
Good	335 (52.4%)	187 (56.3%)	38 (49.4%)	
Excellent	122 (19.1%)	57 (17.2%)	22 (28.6%)	
Duration working	15.4 ± 6.9	15.7 ± 7.3	15.5 ± 6.6	0.454
Specialty				0.009*
S1	114 (18.3%)	52 (16.2%)	7 (9.3%)	
S2	81 (13.0%)	50 (15.6%)	13 (17.3%)	
S 3	109 (17.5%)	49 (15.3%)	13 (17.3%)	
S4	99 (15.9%)	61 (19.0%)	20 (26.7%)	
S5	102 (16.4%)	46 (14.3%)	6 (8.0%)	
S6	89 (14.3%)	37 (11.5%)	6 (8.0%)	
S7	29 (4.7%)	26 (8.1%)	10 (13.3%)	

Table 4.4.3.1.1: Characteristics of participants by mentor or facilitator leadership

Variable		3.1.1 (continued) ilitator Leadership	Style, mean +	Sig.
variable		S.D. or n (%)	5 Style, mean –	515.
	Low (n=652)	Mod (n=336)	High (n=77)	-
Type of hospital				0.012*
SH	183 (28.1%)	79 (23.5%)	17 (22.1%)	
MSH	384 (58.9%)	231 (68.8%)	54 (70.1%)	
UH	85 (13.0%)	26 (7.7%)	6 (7.8%)	

Note: * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age, specialty and type of hospital according to degree of mentor or facilitator leadership style. In relation to sociodemographic characteristics, departments with high degree of market culture had participants who were older (p<0.001) compared with departments with low degree of mentor or facilitator leadership style. In relation to employment characteristics, departments with high degree of mentor or facilitator leadership style for a major specialist hospital (p=0.012) compared with departments with low degree of mentor of a major specialist hospital (p=0.012)

Variable	Mentor or Fac	ilitator Leadership) Style, mean ±	Sig.
	S.D. or n (%)			
	Low (n=652)	Mod (n=336)	High (n=77)	
Personality traits				
Extraversion				0.009*
Low	379 (58.5%)	174 (52.1%)	40 (52.6%)	
Mod	154 (23.8%)	107 (32.0%)	15 (19.7%)	
High	115 (17.8%)	53 (15.9%)	21 (27.6%)	
Agreeableness and				0.811
conscientiousness				
Low	250 (38.6%)	128 (38.3%)	25 (32.9%)	
Mod	241 (37.2%)	123 (36.8%)	28 (36.8%)	
High	157 (24.2%)	83 (24.9%)	23 (30.3%)	
Neuroticism				0.614
Low	195 (30.1%)	103 (30.8%)	27 (35.5%)	
Mod	327 (50.4%)	176 (52.7%)	34 (44.7%)	
High	127 (19.6%)	55 (16.5%)	15 (19.7%)	
Openness	. ,		. ,	0.312
Low	436 (67.3%)	239 (71.6%)	54 (71.1%)	
Mod	152 (23.5%)	68 (20.4%)	12 (15.8%)	
High	60 (9.3%)	27 (8.1%)	10 (13.2%)	

Table 4.4.3.1.2: Individual traits of participants by mentor or facilitator leadership style

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' individual traits, there were significant differences in personality traits according to degree of mentor or facilitator leadership style. Departments with high degree of mentor or facilitator leadership style had higher proportions of participants with high degree of extraversion (p=0.009) compared with departments with low degree of mentor or facilitator leadership style.

Variable	Mentor or Facilitator Leadership Style, mean ± S.D. or n (%)			Sig.
	Low (n=652)	Mod (n=336)	High (n=77)	
Organisational culture				
Clan culture				<0.001*
Low	342 (52.9%)	31 (9.3%)	2 (2.6%)	
Mod	285 (44.1%)	184 (55.1%)	20 (26.3%)	
High	20 (3.1%)	119 (35.6%)	54 (71.1%)	
Adhocracy culture				< 0.001*
Low	296 (45.8%)	60 (18.0%)	10 (13.2%)	
Mod	292 (45.2%)	129 (38.6%)	15 (19.7%)	
High	58 (9.0%)	145 (43.4%)	51 (67.1%)	
Hierarchy culture	. ,			<0.001*
Low	316 (48.9%)	46 (13.8%)	4 (5.3%)	
Mod	254 (39.3%)	196 (58.7%)	27 (35.5%)	
High	76 (11.8%)	92 (27.5%)	45 (59.2%)	
Market culture	· · · ·			<0.001*
Low	351 (54.1%)	63 (18.8%)	9 (11.7%)	
Mod	262 (40.4%)	199 (59.4%)	35 (45.5%)	
High	36 (5.6%)	73 (21.8%)	33 (42.9%)	

Table 4.4.3.1.3: Organisational characteristics of departments by mentor or facilitator leadership style

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of organisational characteristics, there were significant differences in organisational culture according to degree of mentor or facilitator leadership style. Departments with high degree of mentor or facilitator leadership style tended to have high degree of clan culture (p<0.001), high degree of adhocracy culture (p<0.001), high degree of market culture (p<0.001) compared with departments with low degree of mentor or facilitator leadership style.

style						
Mentor or Facilitator	Cases of Workplace Bullying, n (%)					
Leadership Style	No	Yes	Sig.			
Degree of leadership style			0.063			
Low	533 (84.9%)	95 (15.1%)				
Mod	290 (90.3%)	31 (9.7%)				
High	64 (86.5%)	10 (13.5%)				

Among the participants, there was no significant difference in the proportion of those

bullied and not according to the degree of mentor or facilitator leadership style.

 Table 4.4.3.1.5: Association of mentor or facilitator leadership style with

 workplace bullying

workplace burrying	
COR (95% CI)	AOR (95% CI)
0.16 (0.12, 0.21)	1.68 (0.03, 102.97)
1.00 (ref)	1.00 (ref)
0.59 (0.37, 0.92)	1.08 (0.61, 1.93)
0.95 (0.46, 1.94)	1.91 (0.74, 4.93)
0.142	0.287
0.11 (0.13)	$4.47^{e-14} (9.24^{e-8})$
3.3	1.1×10^{-4}
-372.28	-334.13
5.35 (0.069)	58.58 (<0.001)
	COR (95% CI) 0.16 (0.12, 0.21) 1.00 (ref) 0.59 (0.37, 0.92) 0.95 (0.46, 1.94) 0.142 0.11 (0.13) 3.3 -372.28

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age, specialty, type of hospital, extraversion, clan culture, adhocracy culture, hierarchy culture, and market culture

Results indicated that mentor or facilitator leadership style was not a significant factor of workplace bullying among junior doctors included in this study. Participants working in departments with moderate degree of mentor or facilitator leadership style had 0.59 times the odds (COR = 0.59, 95% CI = 0.37 - 0.92) of being bullied compared with participants working in departments with low degree of mentor or facilitator leadership style. After adjusting for confounding, participants working in departments with moderate degree and high degree of mentor or facilitator leadership style were not more or less likely to be bullied compared with participants working in departments with participants working in departments with participants working in departments with participants to be bullied compared with participants working in departments with low degree of mentor or facilitator leadership style were not more or less likely to be bullied compared with participants working in departments with low degree of mentor or facilitator leadership style. There was no significant trend in the odds of workplace bullying with increasing degree of mentor or facilitator leadership style for both the crude association (p=0.142) and adjusted association (p=0.287). The likelihood ratio test results of the adjusted model showed that there was

no significant variability in the odds of workplace bullying between departments ($\tau = 4.47^{e-14}$, p-value = 1.000) and similarly, the ICC indicated that less than 0.1% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p<0.001).

moreity

4.4.3.2 Association of Innovator or Entrepreneur Leadership Style with Workplace Bullying

leadership style Variable Innovator or Entrepreneur Leadership Style, mean Sig. ± S.D. or n (%) Low (n=780) Mod (n=241) High (n=43) 27.0 ± 1.6 27.0 ± 1.5 26.9 ± 1.4 0.229 Age Gender 0.997 Male 268 (34.4%) 83 (34.6%) 15 (34.9%) Female 511 (65.6%) 157 (65.4%) 28 (65.1%) Ethnicity 0.834 Malay 517 (66.8%) 157 (65.2%) 28 (65.1%) Chinese 116 (15.0%) 34 (14.1%) 9 (20.9%) 129 (16.7%) 45 (18.7%) 5 (11.6%) Indian Others 12 (1.6%) 5 (2.1%) 1 (2.3%) Academic graduation 0.607 by region Local 407 (53.9%) 119 (50.4%) 16 (39.0%) Western Europe 44 (5.8%) 10 (4.2%) 2 (4.9%) Eastern Europe 68 (9.0%) 26 (11.0%) 8 (19.5%) Australasia 11 (1.5%) 3 (1.3%) 0 (0.0%) Middle East 124 (16.4%) 46 (19.5%) 8 (19.5%) 2 (0.3%) 0 (0.0%) South Asia 0 (0.0%) East Asia 41 (5.4%) 11 (4.7%) 4 (9.8%) 21 (8.9%) South-east Asia 58 (7.7%) 3 (7.3%) 0.101 English proficiency 2 (0.3%) Poor 2(0.8%)1 (2.3%) Fair 214 (27.9%) 61 (25.6%) 7 (16.3%) Good 396 (51.7%) 138 (58.0%) 25 (58.1%) Excellent 154 (20.1%) 37 (15.6%) 10 (23.3%) Duration working 15.5 ± 7.0 15.7 ± 7.3 15.0 ± 6.8 0.686 Specialty 0.119 **S**1 130 (17.6%) 36 (15.2%) 6 (14.6%) S2 90 (12.2%) 45 (19.0%) 9 (22.0%) S3 130 (17.6%) 34 (14.4%) 7 (17.1%) S4 135 (18.2%) 37 (15.6%) 8 (19.5%) S5 115 (15.5%) 34 (14.4%) 5 (12.2%) **S6** 101 (13.7%) 28 (11.8%) 3 (7.3%) 3 (7.3%) **S**7 39 (5.3%) 23 (9.7%) Type of hospital 0.118 SH 214 (27.4%) 59 (24.5%) 6 (14.0%) MSH 474 (60.8%) 161 (66.8%) 33 (76.7%) 4 (9.3%) 21 (8.7%) UH 92 (11.8%)

Table 4.4.3.2.1: Characteristics of participants by innovator or entrepreneur

Note: * = significant at p<0.05; Note: MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

There were no significant differences in participant characteristics according to degree of innovator or entrepreneur leadership style.

leadership style					
Variable	Innovator or Entrepreneur Leadership Style, mean ± S.D. or n (%)			Sig.	
	Low (n=780)	Mod (n=241)	High (n=43)		
Personality traits					
Extraversion				0.002*	
Low	449 (57.9%)	124 (51.5%)	20 (47.6%)		
Mod	186 (24.0%)	82 (34.0%)	8 (19.1%)		
High	140 (18.1%)	35 (14.5%)	14 (33.3%)		
Agreeableness and				0.077	
conscientiousness					
Low	303 (39.1%)	87 (36.1%)	13 (31.0%)		
Mod	294 (37.9%)	86 (35.7%)	12 (28.6%)		
High	178 (23.0%)	68 (28.2%)	17 (40.5%)		
Neuroticism				0.870	
Low	232 (29.9%)	78 (32.4%)	15 (35.7%)		
Mod	400 (51.6%)	117 (48.6%)	20 (47.6%)		
High	144 (18.6%)	46 (19.1%)	7 (16.7%)		
Openness	·	. ,	· /	0.406	
Low	530 (68.4%)	165 (68.5%)	34 (81.0%)		
Mod	174 (22.5%)	54 (22.4%)	4 (9.5%)		
High	71 (9.2%)	22 (9.1%)	4 (9.5%)		

 Table 4.4.3.2.2: Individual traits of participants by innovator or entrepreneur

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' individual traits, there were significant differences in personality traits according to degree of innovator or entrepreneur leadership style. Departments with high degree of innovator or entrepreneur leadership style had higher proportions of participants with high degree of extraversion (p=0.002) compared with departments with low degree of innovator or entrepreneur leadership style.

Variable	Innovator or En	trepreneur Leaders	hip Style, mean ±	Sig.
	S.D. or n (%)			
	Low (n=780)	Mod (n=241)	High (n=43)	
Organisational culture				
Clan culture				<0.001*
Low	347 (44.8%)	24 (10.0%)	4 (9.5%)	
Mod	365 (47.2%)	111 (46.1%)	13 (31.0%)	
High	62 (8.0%)	106 (44.0%)	25 (59.5%)	
Adhocracy culture				< 0.001*
Low	350 (45.3%)	13 (5.4%)	3 (7.1%)	
Mod	360 (46.6%)	72 (29.9%)	4 (9.5%)	
High	63 (8.2%)	156 (64.7%)	35 (83.3%)	
Hierarchy culture		. í		<0.001*
Low	343 (44.4%)	20 (8.3%)	3 (7.1%)	
Mod	323 (41.8%)	142 (58.9%)	12 (28.6%)	
High	107 (13.8%)	79 (32.8%)	27 (64.3%)	
Market culture	、 ,	·	. ,	< 0.001*
Low	388 (49.9%)	34 (14.1%)	1 (2.3%)	
Mod	348 (44.8%)	133 (55.2%)	15 (34.9%)	
High	41 (5.3%)	74 (30.7%)	27 (62.8%)	

Table 4.4.3.1.3: Organisational characteristics of departments by innovator or entrepreneur leadership style

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of organisational characteristics, there were significant differences in organisational culture according to degree of innovator or entrepreneur leadership style. Departments with high degree of innovator or entrepreneur leadership style tended to have high degree of clan culture (p<0.001), high degree of adhocracy culture (p<0.001), high degree of market culture (p<0.001), high degree of market culture (p<0.001) compared with departments with low degree of innovator or entrepreneur leadership style.

Innovator or Entrepreneur	Cases of Workplace Bullying, n (%)			
Leadership Style	No	Yes	Sig.	
Degree of leadership style			0.054	
Low	645 (85.5%)	109 (14.5%)		
Mod	210 (91.3%)	20 (8.7%)		
High	32 (82.1%)	7 (18.0%)		

Table 4.4.3.1.4: Bullied participants by degree of innovator or entrepreneurleadership style

Among the participants, there was no significant difference in the proportion of those

bullied and not according to the degree of innovator or entrepreneur leadership style.

 Table 4.4.3.1.5: Association of innovator or entrepreneur leadership style with workplace bullying

	workplace sunjing	
	COR (95% CI)	AOR (95% CI)
Fixed effects	· ·	
Intercept (S.E.)	0.15 (0.12, 0.20)	0.34 (0.22, 0.51)
Innovator or entrepreneur		
leadership style		
Low degree	1.00 (ref)	1.00 (ref)
Moderate degree	0.57 (0.34, 0.95)	1.13 (0.58, 2.21)
High degree	1.50 (0.63, 3.57)	2.15 (0.73, 6.32)
P trend	0.350	0.248
Random effects		
Department variance (S.E.)	0.12 (0.14)	0.04 (0.12)
ICC (%)	3.5	1.1
Model fitness		
Log likelihood	-371.99	-345.90
Wald chi-square (p value)	5.87 (0.053)	48.04 (<0.001)

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for extraversion, clan culture, adhocracy culture, hierarchy culture, and market culture

Results indicated that innovator or entrepreneur leadership style was not a significant factor of workplace bullying among junior doctors included in this study. Participants working in departments with moderate degree of innovator or entrepreneur leadership style had 0.57 times the odds (COR = 0.57, 95% CI = 0.34 - 0.95) of being bullied compared with participants working in departments with low degree of innovator or entrepreneur leadership style. After adjusting for confounding, participants working in departments with moderate degree and high degree of innovator or entrepreneur leadership style were not more or less likely to be bullied compared with participants with low degree of innovator or entrepreneur leadership style. There was no significant trend in the odds of workplace bullying with increasing degree of innovator and entrepreneur leadership style for both the crude association (p=0.350)

and adjusted association (p=0.248). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments ($\tau = 0.04$, p-value = 0.372) and similarly, the ICC indicated that less than 1% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p<0.001).

4.4.3.3 Association of Administrator or Organizer Leadership Style with Workplace Bullying

	leadership style					
Variable		r or Organizer Lea		Sig.		
		$\frac{\text{nean} \pm \text{S.D. or n}(\%)}{\text{Mod}(n-306)}$,	-		
	Low (n=596)	Mod (n=396)	High (n=71)	-0.001*		
Age	26.9 ± 1.3	27.0 ± 1.5	27.4 ± 2.8	< 0.001*		
Gender	000 (04 10()	120 (25 00())	25 (25 20)	0.944		
Male	203 (34.1%)	138 (35.0%)	25 (35.2%)			
Female	393 (65.9%)	256 (65.0%)	46 (64.8%)			
Ethnicity				0.288		
Malay	391 (66.2%)	268 (67.9%)	42 (59.2%)			
Chinese	85 (14.4%)	56 (14.2%)	18 (25.4%)			
Indian	103 (17.4%)	66 (16.7%)	10 (14.1%)			
Others	12 (2.0%)	5 (1.3%)	1 (1.4%)			
Academic graduation				0.041*		
by region						
Local	323 (56.1%)	194 (50.0%)	25 (37.3%)			
Western Europe	31 (5.4%)	20 (5.2%)	5 (7.5%)			
Eastern Europe	47 (8.2%)	42 (10.8%)	13 (19.4%)			
Australasia	11 (1.9%)	3 (0.8%)	0 (0.0%)			
Middle East	92 (16.0%)	75 (19.3%)	11 (16.4%)			
South Asia	2 (0.4%)	0 (0.0%)	0 (0.0%)			
East Asia	32 (5.6%)	18 (4.6%)	5 (7.5%)			
South-east Asia	38 (6.6%)	36 (9.3%)	8 (11.9%)			
English proficiency				0.186		
Poor	4 (0.7%)	0 (0.0%)	1 (1.4%)			
Fair	157 (26.9%)	111 (28.4%)	14 (19.7%)			
Good	312 (53.4%)	210 (53.7%)	36 (50.7%)			
Excellent	111 (19.0%)	70 (17.9%)	20 (28.2%)			
Duration working	15.4 ± 7.0	15.7 ± 7.1	15.4 ± 7.1	0.876		
Specialty	10.1 = 7.0	10.7 ± 7.1	10.1 ± 7.1	0.001*		
Specially S1	109 (19.3%)	58 (15.1%)	5 (7.3%)	0.001		
S1 S2	66 (11.7%)	62 (16.2%)	16 (23.2%)			
S2 S3	111 (19.7%)	52 (13.5%)	8 (11.6%)			
S5 S4	. ,					
	100 (17.7%)	67 (17.5%)	13 (18.8%)			
S5	82 (14.5%)	58 (15.1%)	14 (20.3%)			
S6	66 (11.7%)	62 (16.2%)	4 (5.8%)			
S7	31 (5.5%)	25 (6.5%)	9 (13.0%)	0.007+		
Type of hospital				0.037*		
SH	171 (28.7%)	99 (25.0%)	9 (12.7%)			
MSH	356 (59.7%)	257 (64.9%)	54 (76.1%)			
UH	69 (11.6%)	40 (10.1%)	8 (11.3%)			

Table 4.4.3.3.1: Characteristics of participants by administrator or organizer

Note; * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age, education background, specialty, and type of hospital according to degree of administrator or organizer leadership style. In relation to sociodemographic characteristics, departments with high degree of administrator or organizer leadership style had participants who were older (p<0.001) and higher proportions of participants who graduated from medical schools in Western Europe, Eastern Europe, Middle East, East Asia and South-east Asia (p=0.041) compared with departments with low degree of administrator or organizer leadership style. In relation to employment characteristics, departments with high degree of administrator or organizer leadership style. In relation to employment characteristics, departments with high degree of administrator or organizer leadership style had participants who had worked for shorter durations (p=0.001), higher proportions of participants who were working in S2, S4, S5, and S7 specialties (p=0.001), and were more likely to be part of a major specialist hospital (p=0.037) compared with departments with low degree of administrator or organizer leadership style.

Variable	Administrator or Organizer Leadership Style, mean ± S.D. or n (%)			Sig.
	Low (n=596)	Mod (n=396)	High (n=71)	-
Personality traits				
Extraversion				0.001*
Low	353 (59.7%)	206 (52.0%)	34 (48.6%)	
Mod	133 (22.5%)	128 (32.3%)	15 (21.4%)	
High	105 (17.8%)	62 (15.7%)	21 (30.0%)	
Agreeableness and				0.004*
conscientiousness				
Low	248 (42.0%)	134 (33.8%)	20 (28.6%)	
Mod	216 (36.6%)	153 (38.6%)	23 (32.9%)	
High	127 (21.5%)	109 (27.5%)	27 (38.6%)	
Neuroticism	. ,	. ,		0.018*
Low	159 (26.9%)	142 (35.9%)	24 (34.3%)	
Mod	310 (52.4%)	195 (49.2%)	32 (45.7%)	
High	123 (20.8%)	59 (14.9%)	14 (20.0%)	
Openness	. ,		. ,	0.187
Low	399 (67.5%)	277 (70.0%)	52 (74.3%)	
Mod	142 (24.0%)	81 (20.5%)	9 (12.9%)	
High	50 (8.5%)	38 (9.6%)	9 (12.9%)	

Table 4.4.3.3.2: Individual traits of participants by administrator or organizerleadership style

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' individual traits, there were significant differences in personality traits according to degree of administrator or organizer leadership style. Departments with high degree of administrator or organizer leadership style had higher proportions of participants with high degree of extraversion (p=0.001), participants with high degree of agreeableness and conscientiousness (p=0.004), and participants with low degree of neuroticism (p=0.018) compared with departments with low degree of administrator or organizer leadership style.

Variable	Administrator or Organizer Leadership Style, mean ± S.D. or n (%)			Sig.
	Low (n=596)	Mod (n=396)	High (n=71)	
Organisational culture				
Clan culture				< 0.001*
Low	268 (45.3%)	96 (24.3%)	11 (15.7%)	
Mod	285 (48.1%)	182 (46.1%)	22 (31.4%)	
High	39 (6.6%)	117 (29.6%)	37 (52.9%)	
Adhocracy culture	. ,			< 0.001*
Low	261 (44.2%)	91 (23.0%)	14 (20.0%)	
Mod	281 (47.6%)	141 (35.7%)	14 (20.0%)	
High	49 (8.3%)	163 (41.3%)	42 (60.0%)	
Hierarchy culture	. ,			< 0.001*
Low	339 (57.4%)	26 (6.6%)	1 (1.4%)	
Mod	230 (38.9%)	227 (57.5%)	20 (28.6%)	
High	22 (3.7%)	142 (36.0%)	49 (70.0%)	
Market culture	× /	· · · ·	. ,	< 0.001*
Low	339 (57.0%)	75 (19.0%)	9 (12.7%)	
Mod	231 (38.8%)	238 (60.3%)	27 (38.0%)	
High	25 (4.2%)	82 (20.8%)	35 (49.3%)	

Table 4.4.3.3.3: Organisational characteristics of departments by administrator or organizer leadership style

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of organisational characteristics, there were significant differences in organisational culture according to degree of administrator or organizer leadership style. Departments with high degree of administrator or organizer leadership style tended to have high degree of clan culture (p<0.001), high degree of adhocracy culture (p<0.001), high degree of market culture (p<0.001), high degree of market culture (p<0.001) compared with departments with low degree of administrator or organizer leadership style.

Administrator or Organizer	Cases of Workplace Bullying		
Leadership Style	No	Yes	Sig.
Degree of leadership style			0.011
Low	486 (84.5%)	89 (15.5%)	
Mod	345 (90.8%)	35 (9.2%)	
High	56 (82.4%)	12 (17.7%)	

Table 4.4.3.3.4: Bullied participants by degree of administrator or organizerleadership style

Among the participants, there were higher proportions of cases of bullying in departments with high degree of administrator or organizer leadership style (p=0.011) compared with departments with low degree of administrator or organizer leadership style.

	1 10	
	COR (95% CI)	AOR (95% CI)
Fixed effects		
Intercept (S.E.)	0.16 (0.12, 0.22)	1.69 (0.02, 126.41)
Administrator or organizer		
leadership style		
Low degree	1.00 (ref)	1.00 (ref)
Moderate degree	0.57 (0.37, 0.87)	0.82 (0.46, 1.47)
High degree	1.30 (0.65, 2.57)	1.18 (0.44, 3.17)
P trend	0.282	0.928
Random effects		
Department variance (S.E.)	0.11 (0.13)	$3.04e^{-10} (6.61e^{-6})$
ICC (%)	3.2	$1.5 \ge 10^{-2}$
Model fitness		
Log likelihood	-370.81	-310.78
Wald chi-square (p value)	8.24 (0.016)	72.38 (<0.001)

 Table 4.4.3.3.5: Association of administrator or organizer leadership style with workplace bullying

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age, education background, specialty, type of hospital, extraversion, agreeableness and conscientiousness, neuroticism, clan culture, adhocracy culture, hierarchy culture, and market culture

Results indicated that administrator or organizer leadership style was not a significant factor of workplace bullying among junior doctors included in this study. Participants working in departments with moderate degree of administrator or organizer leadership style had 0.57 times the odds (COR = 0.57, 95% CI = 0.37 - 0.87) of being bullied compared with participants working in departments with low degree of administrator or organizer leadership style. After adjusting for confounding, participants working in departments with moderate degree and high degree of administrator or organizer leadership style were not more or less likely to be bullied compared with participants with low degree of administrator or organizer leadership style were not more or less likely to be bullied compared with participants working in departments with low degree of administrator or organizer leadership style were not more or less likely to be bullied compared with participants working in departments with low degree of administrator or organizer leadership style were not more or less likely to be bullied compared with participants working in departments with low degree of administrator or organizer leadership style were not more or less likely to be bullied compared with participants working in departments with low degree of administrator or organizer leadership style were not more or less likely to be bullied compared with participants working in departments with low degree of administrator or organizer leadership style were not more or less likely to be bullied compared with participants working in departments with low degree of administrator or organizer leadership style were not more or less likely to be bullied compared with participants working in departments with low degree of administrator or organizer

leadership style. There was no significant trend in the odds of workplace bullying with increasing degree of administrator or organizer leadership style for both the crude association (p=0.282) and adjusted association (p=0.928). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments ($\tau = 3.04e^{-10}$, p-value = 1.000) and similarly, the ICC indicated that less than 0.1% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p<0.001).

4.4.3.4 Association of Production and Achievement-Oriented Leadership Style with Workplace Bullying

Table 4.4.3.4.1: Characteristics of participants by production and achievement-

oriented leadership style					
Variable		Achievement-Orie e, mean ± S.D. or n		Sig.	
	Low (n=791)	$\frac{1}{10000000000000000000000000000000000$	High (n=41)		
Age	27.0 ± 1.6	26.9 ± 1.3	27.0 ± 1.5	0.001*	
Gender				0.004*	
Male	262 (33.1%)	80 (35.1%)	24 (58.5%)		
Female	529 (66.9%)	148 (64.9%)	17 (41.5%)		
Ethnicity		, , ,		0.221	
Malay	535 (68.1%)	143 (62.5%)	22 (53.7%)		
Chinese	110 (14.0%)	38 (16.6%)	11 (26.8%)		
Indian	127 (16.2%)	45 (19.7%)	7 (17.1%)		
Others	14 (1.8%)	3 (1.3%)	1 (2.4%)		
Academic graduation				0.654	
by region					
Local	407 (53.3%)	120 (52.9%)	14 (35.9%)		
Western Europe	42 (5.5%)	13 (5.7%)	1 (2.6%)		
Eastern Europe	69 (9.0%)	26 (11.5%)	7 (18.0%)		
Australasia	11 (1.4%)	3 (1.3%)	0 (0.0%)		
Middle East	131 (17.2%)	38 (16.7%)	9 (23.1%)		
South Asia	2 (0.3%)	0 (0.0%)	0 (0.0%)		
East Asia	42 (5.5%)	9 (4.0%)	4 (10.3%)		
South-east Asia	60 (7.9%)	18 (7.9%)	4 (10.3%)		
English proficiency				0.129	
Poor	4 (0.5%)	0 (0.0%)	1 (2.4%)		
Fair	217 (27.9%)	58 (25.8%)	7 (17.1%)		
Good	407 (52.3%)	129 (57.3%)	21 (51.2%)		
Excellent	151 (19.4%)	38 (16.9%)	12 (29.3%)		
Duration working	15.6 ± 7.0	15.5 ± 7.3	13.8 ± 6.6	0.546	
Specialty				0.009*	
S1	129 (17.0%)	36 (16.2%)	7 (18.4%)		
S2	96 (12.7%)	41 (18.5%)	7 (18.4%)		
S3	130 (17.2%)	33 (14.9%)	8 (21.1%)		
S4	155 (19.8%)	22 (9.9%)	8 (21.1%)		
S5	110 (14.5%)	37 (16.7%)	6 (15.8%)		
S 6	100 (13.2%)	30 (13.5%)	2 (5.3%)		
S7	42 (5.6%)	23 (10.4%)	0 (0.0%)		
Type of hospital				0.252	
SH	212 (26.8%)	61 (26.5%)	6 (14.6%)		
MSH	487 (61.6%)	150 (65.2%)	29 (70.7%)		
UH	92 (11.6%)	19 (8.3%)	6 (14.6%)		

oriented leadership style

Note: * = significant at p<0.05. Note: MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age, gender, and specialty according to degree of production and achievement-oriented leadership style. In relation to sociodemographic characteristics, departments with high degree of production and achievement-oriented leadership style had participants who were older (p=0.001) and had higher proportions of male participants (p=0.004) compared with departments with low degree of production and achievement-oriented leadership style. In relation to employment characteristics, departments with high degree of production and achievement-oriented leadership style. In relation to employment characteristics, departments with high degree of production and achievement-oriented leadership style had higher proportions of participants who were working in S1, S2, S3, S4, and S5 (p=0.009) compared with departments with low degree of production and achievement-oriented leadership style.

Variable	Production and Achievement-Oriented Leadership Style, mean ± S.D. or n (%)			Sig.
	Low (n=791)	Mod (n=230)	High (n=41)	
Personality traits	5			
Extraversion				0.044*
Low	451 (57.3%)	128 (55.9%)	14 (35.0%)	
Mod	199 (25.3%)	64 (28.0%)	13 (32.5%)	
High	137 (17.4%)	37 (16.2%)	13 (32.5%)	
Agreeableness and	· · · ·	. ,		0.178
conscientiousness				
Low	312 (39.6%)	77 (33.6%)	13 (32.5%)	
Mod	294 (37.4%)	84 (36.7%)	14 (35.0%)	
High	181 (23.0%)	68 (29.7%)	13 (32.5%)	
Neuroticism	· · · ·	. ,		0.212
Low	228 (29.0%)	84 (36.5%)	12 (30.0%)	
Mod	405 (51.5%)	112 (48.7%)	20 (50.0%)	
High	154 (19.6%)	34 (14.8%)	8 (20.0%)	
Openness	. ,	. ,	. ,	0.073
Low	533 (67.7%)	164 (71.6%)	30 (75.0%)	
Mod	182 (23.1%)	47 (20.5%)	3 (7.5%)	
High	72 (9.2%)	18 (7.9%)	7 (17.5%)	

 Table 4.4.3.4.2: Individual traits of participants by production and achievementoriented leadership style

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' individual traits, there were significant differences in personality traits according to production and achievement-oriented leadership style. Departments with high degree of production and achievement-oriented leadership style had higher proportions of participants with high degree of extraversion (p=0.044) compared with departments with low degree of production and achievement-oriented leadership style.

 Table 4.4.3.4.3: Organisational characteristics of departments by production and achievement-oriented leadership style

Variable	Production and Achievement-Oriented Leadership Style, mean ± S.D. or n (%)			Sig.
	Low (n=791)	Mod (n=230)	High (n=41)	•
Organisational culture				
Clan culture				< 0.001*
Low	336 (42.8%)	34 (14.8%)	4 (10.0%)	
Mod	375 (47.7%)	100 (43.5%)	14 (35.0%)	
High	75 (9.5%)	96 (41.7%)	22 (55.0%)	
Adhocracy culture		. ,	. ,	<0.001*
Low	335 (42.6%)	26 (11.3%)	5 (12.5%)	
Mod	358 (45.6%)	68 (29.6%)	10 (25.0%)	
High	93 (11.8%)	136 (59.1%)	25 (62.5%)	
Hierarchy culture		· · · · · ·	· · · ·	<0.001*
Low	342 (43.5%)	19 (8.3%)	5 (12.5%)	
Mod	338 (43.0%)	130 (56.5%)	9 (22.5%)	
High	106 (13.5%)	81 (35.2%)	26 (65.0%)	
Market culture			· · · · ·	< 0.001*
Low	409 (51.7%)	12 (5.2%)	2 (4.9%)	
Mod	357 (45.1%)	134 (58.5%)	5 (12.2%)	
High	25 (3.2%)	83 (36.2%)	34 (82.9%)	

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of organisational characteristics, there were significant differences in organisational culture according to degree of production and achievement-oriented leadership style. Departments with high degree of production and achievement-oriented leadership style tended to have high degree of clan culture (p<0.001), high degree of adhocracy culture (p<0.001), high degree of hierarchy culture (p<0.001), and high

degree of market culture (p<0.001) compared with departments with low degree of production and achievement-oriented leadership style.

 Table 4.4.3.4.4: Bullied participants by degree of production and achievementoriented leadership style

Production and Achievement-	Cases of	Workplace Bullyin	ıg
Oriented Leadership Style	No	Yes	Sig.
Degree of leadership style			0.001
Low	651 (85.1%)	114 (14.9%)	
Mod	207 (93.7%)	14 (6.3%)	
High	29 (78.4%)	8 (21.6%)	

Among the participants, there were higher proportions of cases of bullying in departments with high degree of production and achievement-oriented leadership style (p=0.001) compared with departments with low degree of production and achievement-oriented leadership style.

Table 4.4.3.4.5: Association of production and achievement-oriented leadership style with workplace bullying

	COR (95% CI)	AOR (95% CI)
Fixed effects		
Intercept (S.E.)	0.16 (0.12, 0.21)	1.52 (0.03, 91.16)
Production and		
achievement-oriented		
leadership style		
Low degree	1.00 (ref)	1.00 (ref)
Moderate degree	0.35 (0.19, 0.65)	0.36 (0.17, 0.76)
High degree	1.86 (0.81, 4.31)	1.19 (0.41, 3.49)
P trend	0.147	0.260
Random effects		
Department variance (S.E.)	0.12 (0.14)	$2.13e^{-18} (6.44e^{-10})$
ICC (%)	3.6	3.6×10^{-6}
Model fitness		
Log likelihood	-366.79	-329.49
Wald chi-square (p value)	13.91 (0.001)	64.69 (<0.001)

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age, gender, specialty, extraversion, clan culture, adhocracy culture, hierarchy culture, and market culture

Results indicated that production and achievement-oriented leadership style was a significant factor of workplace bullying among junior doctors included in this study. Participants working in departments with moderate degree of production and achievement-oriented leadership style had 0.35 times the odds (COR = 0.35, 95% CI =0.19 - 0.65) of being bullied compared with participants working in a department with low degree of production and achievement-oriented leadership style. After adjusting for confounding, participants working in departments with moderate degree of production and achievement-oriented leadership style had 0.36 times the odds (AOR = 0.36, 95%CI = 0.17 - 0.76) of being bullied compared with participants working in departments with a low degree of production and achievement-oriented leadership style. There was no significant trend in the odds of workplace bullying with increasing degree of production and achievement-oriented leadership style for both the crude association (p=0.147) and adjusted association (p=0.260). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments ($\tau = 2.13e^{-18}$, p-value = 1.000) and similarly, the ICC indicated that less than 0.1% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p<0.001).

4.4.4 Association between Organisational Support and Workplace Bullying

Variable	Organisationa	l Support, mean ±	S.D. or n (%)	Sig.
	Low (n=295)	Mod (n=513)	High (n=245)	
Age	26.9 ± 1.4	26.9 ± 1.4	27.1 ± 1.9	< 0.001*
Gender				0.937
Male	103 (35.0%)	175 (34.1%)	82 (33.6%)	
Female	191 (65.0%)	338 (65.9%)	162 (66.4%)	
Ethnicity				0.827
Malay	186 (63.5%)	347 (68.2%)	161 (65.7%)	
Chinese	45 (15.4%)	72 (14.2%)	41 (16.7%)	
Indian	57 (19.5%)	82 (16.1%)	39 (15.9%)	
Others	5 (1.7%)	8 (1.6%)	4 (1.6%)	
Academic graduation				0.761
by region				
Local	151 (53.2%)	259 (52.1%)	127 (52.7%)	
Western Europe	18 (6.3%)	21 (4.2%)	16 (6.6%)	
Eastern Europe	30 (10.6%)	43 (8.7%)	29 (12.0%)	
Australasia	3 (1.1%)	9 (1.8%)	2 (0.8%)	
Middle East	44 (15.5%)	92 (18.5%)	39 (16.2%)	
South Asia	0 (0.0%)	1 (0.2%)	1 (0.4%)	
East Asia	17 (6.0%)	27 (5.4%)	11 (4.6%)	
South-east Asia	21 (7.4%)	45 (9.1%)	16 (6.6%)	
English proficiency			· · · · ·	0.009*
Poor	3 (1.0%)	1 (0.2%)	1 (0.4%)	
Fair	64 (22.0%)	159 (31.4%)	59 (24.7%)	
Good	154 (52.9%)	268 (53.0%)	130 (54.4%)	
Excellent	70 (24.1%)	78 (15.4%)	49 (20.5%)	
Duration working	14.9 ± 7.1	15.6 ± 7.1	16.0 ± 6.9	0.847
Specialty				0.008*
S1	46 (16.4%)	87 (17.6%)	37 (16.0%)	
S2	40 (14.2%)	76 (15.4%)	28 (12.1%)	
S 3	48 (17.1%)	85 (17.2%)	38 (16.4%)	
S4	53 (18.9%)	84 (17.0%)	41 (17.7%)	
S 5	55 (19.6%)	74 (15.0%)	23 (9.9%)	
S 6	28 (10.0%)	63 (12.7%)	39 (16.8%)	
S7	11 (3.9%)	26 (5.3%)	26 (11.2%)	
Type of hospital			×)	0.220
SH	84 (28.5%)	141 (27.5%)	52 (21.2%)	-
MSH	184 (62.4%)	311 (60.6%)	165 (67.4%)	
UH	27 (9.2%)	61 (11.9%)	28 (11.4%)	

Table 4.4.4.1: Characteristics of participants by organisational support

Note: * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age, English proficiency, and specialty according to degree of organisational support. In relation to sociodemographic characteristics, departments with high degree of organisational support had participants who were older (p<0.001) and had lower proportions of participants who had excellent English proficiency (p=0.009) compared with departments with low degree of organisational support. In relation to employment characteristics, departments with high degree of organisational support had higher proportions of participants who were working in S6 and S7 (p=0.008) compared with departments with low degree of organisational support.

Variable	Organisationa	al Support, mean ±	= S.D. or n (%)	Sig.
	Low (n=295)	Mod (n=513)	High (n=245)	_
Negative affect				< 0.001*
Low	51 (17.4%)	174 (34.2%)	118 (48.2%)	
Mod	179 (61.1%)	262 (51.5%)	118 (48.2%)	
High	63 (21.5%)	73 (14.3%)	9 (3.7%)	
Personality traits				
Extraversion				0.001*
Low	169 (57.9%)	302 (59.1%)	119 (48.6%)	
Mod	61 (20.9%)	142 (27.8%)	72 (29.4%)	
High	62 (21.2%)	67 (13.1%)	54 (22.0%)	
Agreeableness and				0.001*
conscientiousness				
Low	109 (37.3%)	221 (43.3%)	69 (28.2%)	
Mod	99 (33.9%)	180 (35.2%)	110 (44.9%)	
High	84 (28.8%)	110 (21.5%)	66 (26.9%)	
Neuroticism				< 0.001*
Low	72 (24.7%)	152 (29.8%)	97 (39.6%)	
Mod	145 (49.7%)	279 (54.6%)	108 (44.1%)	
High	75 (25.7%)	80 (15.7%)	40 (16.3%)	
Openness		× ,		0.101
Low	183 (62.7%)	366 (71.6%)	171 (69.8%)	
Mod	74 (25.3%)	103 (20.2%)	54 (22.0%)	
High	35 (12.0%)	42 (8.2%)	20 (8.2%)	

 Table 4.4.4.2: Individual traits of participants by organisational support

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' individual traits, there were significant differences in negative affect and personality traits according to degree of organisational support. In relation to negative affect, departments with high degree of organisational support had higher proportions of participants with low degree of negative affect (p<0.001)

compared with departments with low degree of organisational support. In relation to personality traits, departments with high degree of organisational support had higher proportions of participants with high degree of extraversion (p=0.001), participants with moderate degree of agreeableness and conscientiousness (p=0.001), and participants with low degree of neuroticism (p<0.001) compared with departments with low degree of organisational support.

Variable	Organisation	al Support, mean =	± S.D. or n (%)	Sig.
	Low (n=295)	Mod (n=513)	High (n=245)	=
Organisational leadership				
Mentor/facilitator				< 0.001*
Low	221 (74.9%)	329 (64.1%)	92 (37.6%)	
Mod	63 (21.4%)	158 (30.8%)	114 (46.5%)	
High	11 (3.7%)	26 (5.1%)	39 (15.9%)	
Innovator/entrepreneur				< 0.001*
Low	244 (83.0%)	385 (75.1%)	141 (57.6%)	
Mod	41 (14.0%)	111 (21.6%)	88 (35.9%)	
High	9 (3.1%)	17 (3.3%)	16 (6.5%)	
Administrator/organizer			. ,	< 0.001*
Low	189 (64.3%)	311 (60.6%)	88 (35.9%)	
Mod	87 (29.6%)	179 (34.9%)	128 (52.2%)	
High	18 (6.1%)	23 (4.5%)	29 (11.8%)	
Production &				< 0.001*
achievement-oriented				
Low	245 (83.3%)	388 (75.6%)	151 (61.6%)	
Mod	40 (13.6%)	107 (20.9%)	81 (33.1%)	
High	9 (3.1%)	18 (3.5%)	13 (5.3%)	
Organisational justice				
Procedural justice				< 0.001*
Low	159 (54.5%)	124 (24.3%)	41 (16.7%)	
Mod	108 (37.0%)	303 (59.4%)	118 (48.2%)	
High	25 (8.6%)	83 (16.3%)	86 (35.1%)	
Interpersonal justice		× ,		<0.001*
Low	175 (59.5%)	111 (21.7%)	16 (6.5%)	
Mod	108 (36.7%)	309 (60.5%)	117 (47.8%)	
High	11 (3.7%)	91 (17.8%)	112 (45.7%)	
Distributive justice	× /	× /	× /	<0.001*
Low	243 (82.9%)	390 (76.3%)	115 (46.9%)	
Mod	19 (6.5%)	30 (5.9%)	15 (6.1%)	
High	31 (10.6%)	91 (17.8%)	115 (46.9%)	

 Table 4.4.1.3: Organisational characteristics of departments by organisational

support

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of organisational characteristics, there were significant differences in organisational leadership and organisational justice according to degree of organisational support. In relation to organisational leadership, departments with high degree of organisational support tended to have high degree of clan culture (p<0.001), high degree of adhocracy culture (p<0.001), high degree of hierarchy culture (p<0.001), and high degree of market culture (p<0.001) compared with departments with low degree of organisational support. In relation to organisational justice, departments with high degree of organisational support. In relation to organisational justice, departments with high degree of organisational support tended to have high degree of procedural justice (p<0.001), high degree of interpersonal justice (p<0.001), and high degree of interpersonal justice (p<0.001), and high degree of organisational support tended to have high degree of procedural justice (p<0.001), high degree of interpersonal justice (p<0.001), and high degree of organisational support tended to have high degree of procedural justice (p<0.001), high degree of interpersonal justice (p<0.001), and high degree of organisational support tended to have high degree of procedural justice (p<0.001), high degree of interpersonal justice (p<0.001), and high degree of organisational support.

Cases of Workplace Bullying, n (%				
No	Yes	Sig.		
		< 0.001		
205 (72.2%)	79 (27.8%)			
449 (89.6%)	52 (10.4%)			
232 (98.3%)	4 (1.7%)			
	No 205 (72.2%) 449 (89.6%)	No Yes 205 (72.2%) 79 (27.8%) 449 (89.6%) 52 (10.4%)		

 Table 4.4.1.4: Bullied participants by degree of organisational support

Among the participants, there were higher proportions of cases of bullying in departments with low degree of organisational support (p<0.001) compared with departments with high degree of organisational support.

	COR (95% CI)	AOR (95% CI)
Fixed effects		
Intercept (S.E.)	0.37 (0.28, 0.49)	1.95 (0.01, 324.36)
Organisational support		
Low degree	1.00 (ref)	1.00 (ref)
Moderate degree	0.29 (0.19, 0.43)	0.49 (0.30, 0.80)
High degree	0.04 (0.01, 0.11)	0.12 (0.03, 0.42)
P trend	< 0.001	< 0.001
Random effects		
Department variance (S.E.)	0.07 (0.13)	$2.63e^{-22} (6.86e^{-12})$
ICC (%)	2.2	8.2×10^{-8}
Model fitness		
Log likelihood	-330.65	-265.39
Wald chi-square (p value)	57.26 (<0.001)	115.23 (<0.001)

 Table 4.4.1.5: Association of organisational support with workplace bullying

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age, English proficiency, specialty, negative affect, extraversion, agreeableness and conscientiousness, neuroticism, mentor or facilitator leadership style, innovator or entrepreneur leadership style, administrator or organizer leadership style, production and achievement-oriented leadership style, procedural justice, interactional justice, and distributive justice

Results indicated that organisational support was a significant factor of workplace bullying among junior doctors included in this study. Participants working in departments with moderate degree of organisational support had 0.29 times the odds (COR = 0.29, 95% CI = 0.19 – 0.43) and participants working in departments with high degree of organisational support had 0.04 times the odds (COR = 0.01, 95% CI = 0.01 – 0.11) of being bullied compared with participants working in departments with low degree of organisational support. After adjusting for confounding, participants working in departments with moderate degree of organisational support had 0.49 times the odds (AOR = 0.49, 95% CI = 0.30 – 0.80) and participants working in departments with high degree of organisational support had 0.12 times the odds (AOR = 0.12, 95% CI = 0.03 – 0.42) of being bullied compared with participants working in a department with a low degree of organisational support. There was significant trend in the odds of workplace bullying with increasing degree of organisational support for both the crude association (p<0.001) and adjusted association (p<0.001). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments ($\tau = 2.63e^{-22}$, p-value = 1.000) and similarly, the ICC indicated that less than 0.1% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p<0.001).

4.4.5 Association between Organisational Justice and Workplace Bullying

4.4.5.1 Association of Procedural Justice with Workplace Bullying

Variable	Procedural	Justice, mean ± S.	.D. or n (%)	Sig.
	Low (n=325)	Mod (n=533)	High (n=194)	0
Age	26.9 ± 1.8	27.0 ± 1.3	27.0 ± 1.7	< 0.001*
Gender				0.001*
Male	103 (31.7%)	168 (31.6%)	88 (45.4%)	
Female	222 (68.3%)	363 (68.4%)	106 (54.6%)	
Ethnicity	· · · ·			0.043*
Malay	195 (60.2%)	372 (70.2%)	125 (65.1%)	
Chinese	54 (16.7%)	67 (12.6%)	37 (19.3%)	
Indian	68 (21.0%)	83 (15.7%)	27 (14.1%)	
Others	7 (2.2%)	8 (1.5%)	3 (1.6%)	
Academic graduation			~ /	0.960
by region				
Local	173 (54.6%)	271 (52.7%)	92 (48.4%)	
Western Europe	15 (4.7%)	27 (5.3%)	12 (6.3%)	
Eastern Europe	32 (10.1%)	45 (8.8%)	25 (13.2%)	
Australasia	4 (1.3%)	7 (1.4%)	3 (1.6%)	
Middle East	54 (17.0%)	91 (17.7%)	31 (16.3%)	
South Asia	1 (0.3%)	1 (0.2%)	0 (0.0%)	
East Asia	14 (4.4%)	31 (6.0%)	10 (5.3%)	
South-east Asia	24 (7.6%)	41 (8.0%)	17 (9.0%)	
English proficiency			· · · · · · · · · · · · · · · · · · ·	0.005*
Poor	1 (0.3%)	4 (0.8%)	0 (0.0%)	
Fair	78 (24.3%)	158 (30.3%)	44 (22.9%)	
Good	164 (51.1%)	285 (54.6%)	104 (54.2%)	
Excellent	78 (24.3%)	75 (14.4%)	44 (22.9%)	
Duration working	15.2 ± 7.2	15.2 ± 6.9	16.8 ± 7.0	0.787
Specialty				0.072
S1	52 (16.6%)	79 (15.6%)	38 (20.2%)	
S2	42 (13.4%)	79 (15.6%)	22 (11.7%)	
S 3	63 (20.1%)	79 (15.6%)	29 (15.4%)	
S4	55 (17.5%)	92 (18.2%)	31 (16.5%)	
S 5	54 (17.2%)	81 (16.0%)	18 (9.6%)	
S 6	30 (9.6%)	64 (12.7%)	35 (18.6%)	
S7	18 (5.7%)	31 (6.1%)	15 (8.0%)	
Type of hospital		× ,		0.031*
SH	100 (30.8%)	134 (25.1%)	40 (20.6%)	
MSH	184 (56.6%)	349 (65.5%)	130 (67.0%)	
UH	41 (12.6%)	50 (9.4%)	24 (12.4%)	

Table 4.4.5.1.1: Characteristics of	participants by	procedural justice
-------------------------------------	-----------------	--------------------

Note: * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age, gender, ethnicity, English proficiency, and type of hospital according to degree of procedural justice. In relation to sociodemographic characteristics, departments with high degree of procedural justice had participants who were older (p<0.001) and higher proportion of male participants (p=0.001), participants of Malay and Chinese ethnicity (p=0.043), and participants with good English proficiency (p=0.005) compared with departments with low degree of procedural justice. In relation to employment characteristics, departments with high degree of procedural justice had participants who were more likely to be part of a major specialist hospital (p=0.031) compared with departments with low degree of procedural justice.

Variable	Procedural	Justice, mean ± S.	.D. or n (%)	Sig.
	Low (n=325)	Mod (n=533)	High (n=194)	_
Negative affect	N N			<0.001*
Low	67 (20.6%)	196 (37.0%)	79 (41.2%)	
Mod	199 (61.2%)	263 (49.6%)	99 (51.6%)	
High	59 (18.2%)	71 (13.4%)	14 (7.3%)	
Personality traits				
Extraversion				0.005*
Low	182 (56.2%)	310 (58.7%)	94 (48.5%)	
Mod	71 (21.9%)	144 (27.3%)	60 (30.9%)	
High	71 (21.9%)	74 (14.0%)	40 (20.6%)	
Agreeableness and				0.128
conscientiousness				
Low	124 (38.3%)	213 (40.3%)	62 (32.0%)	
Mod	113 (34.9%)	200 (37.9%)	76 (39.2%)	
High	87 (26.9%)	115 (21.8%)	56 (28.9%)	
Neuroticism				0.016*
Low	93 (28.7%)	152 (28.8%)	74 (38.1%)	
Mod	157 (48.5%)	287 (54.4%)	91 (46.9%)	
High	74 (22.8%)	89 (16.9%)	29 (15.0%)	
Openness	. ,	~ /	. ,	0.447
Low	212 (65.4%)	371 (70.3%)	137 (70.6%)	
Mod	75 (23.2%)	113 (21.4%)	42 (21.7%)	
High	37 (11.4%)	44 (8.3%)	15 (7.7%)	

 Table 4.4.5.1.2: Individual traits of participants by procedural justice

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' individual traits, there were significant differences in negative affect and personality traits according to degree of procedural justice. In relation to negative affect, departments with high degree of procedural justice had higher proportion of participants with low degree of negative affect (p<0.001) compared with departments with low degree of procedural justice. In relation to personality traits, departments with high degree of procedural justice had lower proportion of participants with low degree of procedural justice had lower proportion of participants with low degree of and participants with high degree of negative affect (p=0.005) and participants with high degree of procedural justice.

	justice				
Variable	Procedura	l Justice, mean ± S	5.D. or n (%)	Sig.	
	Low (n=325)	Mod (n=533)	High (n=194)		
Organisational leadership					
Mentor/facilitator				<0.001*	
Low	231 (71.1%)	315 (59.3%)	94 (48.5%)		
Mod	81 (24.9%)	178 (33.5%)	75 (38.7%)		
High	13 (4.0%)	38 (7.2%)	25 (12.9%)		
Innovator/entrepreneur				<0.001*	
Low	268 (82.5%)	378 (71.2%)	122 (62.9%)		
Mod	48 (14.8%)	135 (25.4%)	57 (29.4%)		
High	9 (2.8%)	18 (3.4%)	15 (7.7%)		
Administrator/organizer			. ,	< 0.001*	
Low	211 (64.9%)	292 (55.0%)	83 (42.8%)		
Mod	95 (29.2%)	207 (39.0%)	92 (47.4%)		
High	19 (5.9%)	32 (6.0%)	19 (9.8%)		
Production &		. ,		<0.001*	
achievement-oriented					
Low	267 (82.2%)	393 (74.0%)	122 (62.9%)		
Mod	47 (14.5%)	122 (23.0%)	59 (30.4%)		
High	11 (3.4%)	16 (3.0%)	13 (6.7%)		

 Table 4.4.5.1.3: Organisational characteristics of departments by procedural

 insting

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of organisational characteristics, there were significant differences in organisational leadership according to degree of procedural justice. Departments with high degree of procedural justice tended to have high degree of mentor or facilitator leadership style (p<0.001), high degree of innovator or entrepreneur leadership style (p<0.001), high degree of administrator or organizer leadership style (p<0.001) and high degree of production and achievement-oriented leadership style (p<0.001) compared with departments with low degree of procedural justice.

Procedural	Cases of Workplace Bullying, n				
Justice	No	Yes	Sig.		
Degree of justice			< 0.001		
Low	251 (79.4%)	65 (20.6%)			
Mod	463 (89.6%)	54 (10.4%)			
High	171 (91.0%)	17 (9.0%)			

Table 4.4.5.1.4: Bullied participants by degree of procedural justice

Among the participants, there were higher proportions of cases of bullying in departments with low degree of procedural justice (p<0.001) compared with departments with high degree of procedural justice.

	COR (95% CI)	AOR (95% CI)
Fixed effects	· · · ·	
Intercept (S.E.)	0.24 (0.17, 0.33)	1.52 (0.01, 159.16)
Procedural justice		
Low degree	1.00 (ref)	1.00 (ref)
Moderate degree	0.46 (0.30, 0.69)	0.56 (0.35, 0.88)
High degree	0.36 (0.20, 0.66)	0.58 (0.29, 1.13)
P trend	< 0.001	0.024
Random effects		
Department variance (S.E.)	0.09 (0.13)	0.04 (0.15)
ICC (%)	2.6	1.2
Model fitness		
Log likelihood	-365.51	-303.29
Wald chi-square (p value)	18.90 (<0.001)	86.66 (<0.001)

Table 4.4.5.1.5: Association of procedural justice with workplace bullying

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age, gender, ethnicity, English proficiency, type of hospital, negative affect, extraversion, neuroticism, mentor or facilitator leadership style, innovator or entrepreneur leadership style, administrator or organizer leadership style, and production and achievement-oriented leadership style

Results indicated that procedural justice was a significant factor of workplace bullying among junior doctors included in this study. Participants working in departments with moderate degree of procedural justice had 0.46 times the odds (COR = 0.46, 95% CI = 0.30 - 0.69) and participants working in departments with high degree procedural justice had 0.36 times the odds (COR = 0.36, 95% CI = 0.20 - 0.66) of being bullied compared with participants working in a department with a low degree of procedural justice. After adjusting for confounding, participants working in departments with moderate degree of procedural justice had 0.56 times the odds (AOR = 0.56, 95%CI = 0.35 - 0.88) of being bullied compared with participants working in departments with a low degree of procedural justice. There was significant trend in the odds of workplace bullying with increasing degree of procedural justice for both the crude association (p<0.001) and adjusted association (p=0.024). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments ($\tau = 0.04$, p-value = 0.387) and similarly, the ICC indicated that less than 1% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p<0.001).

4.4.5.2 Association of Interactional Justice with Workplace Bullying

Variable	Interactiona	l Justice, mean ± S	S.D. or n (%)	Sig.
	Low (n=302)	Mod (n=537)	High (n=216)	
Age	26.9 ± 1.2	27.0 ± 1.7	27.0 ± 1.5	< 0.001*
Gender				0.316
Male	98 (32.6%)	178 (33.2%)	83 (38.4%)	
Female	203 (67.4%)	358 (66.8%)	133 (61.6%)	
Ethnicity				0.131
Malay	182 (60.9%)	371 (69.4%)	142 (66.1%)	
Chinese	49 (16.4%)	71 (13.3%)	38 (17.7%)	
Indian	64 (21.4%)	83 (15.5%)	31 (14.4%)	
Others	4 (1.3%)	10 (1.9%)	4 (1.9%)	
Academic graduation	· · · · ·			0.577
by region				
Local	160 (54.2%)	256 (49.6%)	122 (57.3%)	
Western Europe	12 (4.1%)	31 (6.0%)	12 (5.6%)	
Eastern Europe	30 (10.2%)	54 (10.5%)	18 (8.5%)	
Australasia	4 (1.4%)	6 (1.2%)	4 (1.9%)	
Middle East	49 (16.6%)	97 (18.8%)	30 (14.1%)	
South Asia	1 (0.3%)	1 (0.2%)	0 (0.0%)	
East Asia	13 (4.4%)	26 (5.0%)	16 (7.5%)	
South-east Asia	26 (8.8%)	45 (8.7%)	11 (5.2%)	
English proficiency				0.090
Poor	1 (0.3%)	3 (0.6%)	1 (0.5%)	
Fair	69 (23.3%)	165 (31.3%)	48 (22.4%)	
Good	162 (54.7%)	273 (51.7%)	119 (55.6%)	
Excellent	64 (21.6%)	87 (16.5%)	46 (21.5%)	
Duration working	15.4 ± 7.5	15.4 ± 6.8	15.6 ± 6.9	0.116
Specialty				0.009*
S1	41 (14.6%)	88 (16.9%)	41 (19.7%)	
S2	42 (15.0%)	73 (14.0%)	28 (13.5%)	
S3	51 (18.2%)	87 (16.7%)	34 (16.4%)	
S4	51 (18.2%)	96 (18.4%)	31 (14.9%)	
S5	58 (20.6%)	76 (14.6%)	20 (9.6%)	
S 6	24 (8.5%)	73 (14.0%)	32 (15.4%)	
\$7	14 (5.0%)	28 (5.4%)	22 (10.6%)	
Type of hospital	(0.0,0)	(0,,0)	(-0.070)	0.003*
SH	102 (33.8%)	131 (24.4%)	42 (19.4%)	0.000
MSH	172 (57.0%)	347 (64.6%)	144 (66.7%)	
UH	28 (9.3%)	59 (11.0%)	30 (13.9%)	

Table 4.4.5.2.1: Characteristics of participants by interactional justic
--

Note: * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in age, specialty and type of hospital according to degree of interactional justice. In relation to

sociodemographic characteristics, departments with high degree of interactional justice had participants who were older (p<0.001) compared with departments with low degree of interactional justice. In relation to employment characteristics, departments with high degree of interactional justice had higher proportions of participants who were working in S1, S6, and S7 specialties (p=0.009) and were more likely to be part of a major specialist hospital and university hospital (p=0.003) compared with departments with low degree of interactional justice.

Variable	Interactional Justice, mean ± S.D. or n (%)			Sig.
	Low (n=302)	Mod (n=537)	High (n=216)	. –
Negative affect				< 0.001*
Low	56 (18.7%)	195 (36.4%)	91 (42.5%)	
Mod	174 (58.2%)	277 (51.7%)	111 (51.9%)	
High	69 (23.1%)	64 (11.9%)	12 (5.6%)	
Personality traits				
Extraversion				0.341
Low	178 (59.3%)	296 (55.4%)	114 (53.3%)	
Mod	68 (22.7%)	150 (28.1%)	56 (26.2%)	
High	54 (18.0%)	88 (16.5%)	44 (20.6%)	
Agreeableness and				0.006*
conscientiousness				
Low	123 (41.0%)	207 (38.8%)	70 (32.7%)	
Mod	88 (29.3%)	211 (39.5%)	90 (42.1%)	
High	89 (29.7%)	116 (21.7%)	54 (25.2%)	
Neuroticism				<0.001*
Low	77 (25.7%)	156 (29.2%)	86 (40.2%)	
Mod	158 (52.7%)	269 (50.4%)	108 (50.5%)	
High	65 (21.7%)	109 (20.4%)	20 (9.4%)	
Openness				0.220
Low	191 (63.7%)	379 (71.0%)	151 (70.6%)	
Mod	76 (25.3%)	108 (20.2%)	47 (22.0%)	
High	33 (11.0%)	47 (8.8%)	16 (7.5%)	

Table 4.4.5.2.2: Individual traits of participants by interactional justice

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' individual traits, there were significant differences in negative affect and personality traits according to degree of interactional justice. In relation to negative affect, departments with high degree of interactional justice had higher proportion of participants with low degree of negative affect (p<0.001) compared with departments with low degree of interactional justice. In relation to personality traits, departments with high degree of interactional justice had lower proportion of participants with low degree of agreeableness and conscientiousness (p=0.006) and participants with high degree of neuroticism (p<0.001) compared with departments with low degree of interactional justice.

Variable	Interaction	al Justice, mean ± 8	S.D. or n (%)	Sig.
	Low (n=302)	Mod (n=537)	High (n=216)	. 0
Organisational leadership				
Mentor/facilitator				< 0.001*
Low	221 (73.2%)	343 (64.0%)	78 (36.3%)	
Mod	69 (22.9%)	164 (30.6%)	102 (47.4%)	
High	12 (4.0%)	29 (5.4%)	35 (16.3%)	
Innovator/entrepreneur				< 0.001*
Low	248 (82.4%)	405 (75.6%)	117 (54.4%)	
Mod	43 (14.3%)	120 (22.4%)	77 (35.8%)	
High	10 (3.3%)	11 (2.1%)	21 (9.8%)	
Administrator/organizer				< 0.001*
Low	199 (66.1%)	311 (58.0%)	79 (36.7%)	
Mod	82 (27.2%)	199 (37.1%)	112 (52.1%)	
High	20 (6.6%)	26 (4.9%)	24 (11.2%)	
Production &				<0.001*
achievement-oriented				
Low	243 (80.7%)	416 (77.6%)	125 (58.1%)	
Mod	46 (15.3%)	110 (20.5%)	72 (33.5%)	
High	12 (4.0%)	10 (1.9%)	18 (8.4%)	

Table 4.4.5.2.3: Organisational characteristics of departments by interactional

justice

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of organisational characteristics, there were significant differences in organisational leadership according to degree of interactional justice. Departments with high degree of interactional justice tended to have high degree of mentor or facilitator leadership style (p<0.001), high degree of innovator or entrepreneur leadership style (p<0.001), high degree of administrator or organizer leadership style (p<0.001) and high

degree of production and achievement-oriented leadership style (p<0.001) compared with departments with low degree of interactional justice.

Interactional	Cases of Workplace Bullying, n (%)		
Justice	No	Yes	Sig.
Degree of justice			< 0.001
Low	208 (70.8%)	86 (29.3%)	
Mod	476 (91.2%)	46 (8.8%)	
High	203 (98.1%)	4 (1.9%)	

Table 4.4.5.2.4: Bullied participants by degree of interactional justice

Among the participants, there were higher proportions of cases of bullying in departments with low degree of interactional justice (p<0.001) compared with departments with high interactional justice.

	COR (95% CI)	AOR (95% CI)
Fixed effects		
Intercept (S.E.)	0.41 (0.31, 0.53)	0.70 (0.01, 65.41)
Interactional justice		
Low degree	1.00 (ref)	1.00 (ref)
Moderate degree	0.23 (0.16, 0.35)	0.27 (0.17, 0.42)
High degree	0.04 (0.01, 0.12)	0.06 (0.02, 0.19)
P trend	< 0.001	< 0.001
Random effects		
Department variance (S.E.)	$1.22e^{-21}$ (2.60 x 10 ⁻¹¹)	$2.27e^{-17} (1.99e^{-9})$
ICC (%)	1.0×10^{-7}	$1.0 \ge 10^{-5}$
Model fitness		
Log likelihood	-329.29	-284.43
Wald chi-square (p value)	69.95 (<0.001)	111.99 (<0.001)

Table 4.4.5.2.5: Association of interactional justice with workplace bullying

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for age, specialty, type of hospital, negative affect, agreeableness and conscientiousness, neuroticism, mentor or facilitator leadership style, innovator or entrepreneur leadership style, administrator or organizer leadership style, and production and achievement-oriented leadership style

Results indicated that interactional justice was a significant factor of workplace bullying among junior doctors included in this study. Participants working in departments with moderate degree of interactional justice had 0.23 times the odds (COR = 0.23, 95% CI = 0.16 - 0.35) and participants working in departments with high degree of interactional justice had 0.04 times the odds (COR = 0.04, 95% CI = 0.01 - 0.12) of being bullied compared with participants working in departments with low degree of interactional justice. After adjusting for confounding, participants working in departments with moderate degree of interactional justice had 0.27 times the odds (AOR = 0.27, 95% CI = 0.17 - 0.42) and participants working in departments with high degree of interactional justice had 0.06 times the odds (AOR = 0.06, 95% CI = 0.02 - 0.19) of being bullied compared with participants working in departments with low degree of interactional justice. There was significant trend in the odds of workplace bullying with increasing degree of interactional justice for both the crude association (p<0.001) and adjusted association (p<0.001). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments ($\tau = 2.27e^{-17}$, p-value = 1.000) and similarly, the ICC indicated that less than 0.1% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p<0.001).

4.4.5.3 Association of Distributive Justice with Workplace Bullying

Variable	Distributive	Justice, mean ± S	5.D. or n (%)	Sig.
	Low (n=752)	Mod (n=64)	High (n=238)	U
Age	26.9 ± 1.5	27.2 ± 1.6	27.0 ± 1.6	0.788
Gender				0.095
Male	241 (32.1%)	24 (37.5%)	94 (39.5%)	
Female	509 (67.9%)	40 (62.5%)	144 (60.5%)	
Ethnicity				0.867
Malay	493 (66.0%)	43 (68.3%)	159 (66.8%)	
Chinese	109 (14.6%)	12 (19.1%)	37 (15.6%)	
Indian	132 (17.7%)	7 (11.1%)	38 (16.0%)	
Others	13 (1.7%)	1 (1.6%)	4 (1.7%)	
Academic graduation				0.871
by region				
Local	381 (52.3%)	35 (54.7%)	121 (52.6%)	
Western Europe	41 (5.6%)	3 (4.7%)	11 (4.8%)	
Eastern Europe	67 (9.2%)	8 (12.5%)	27 (11.7%)	
Australasia	11 (1.5%)	0 (0.0%)	3 (1.3%)	
Middle East	131 (18.0%)	8 (12.5%)	37 (16.1%)	
South Asia	1 (0.1%)	0 (0.0%)	1 (0.4%)	
East Asia	36 (4.9%)	3 (4.7%)	16 (7.0%)	
South-east Asia	61 (8.4%)	7 (10.9%)	14 (6.1%)	
English proficiency				0.001*
Poor	5 (0.7%)	0 (0.0%)	0 (0.0%)	
Fair	223 (30.1%)	15 (23.4%)	44 (18.9%)	
Good	389 (52.6%)	28 (43.8%)	136 (58.4%)	
Excellent	123 (16.6%)	21 (32.8%)	53 (22.8%)	
Duration working	15.2 ± 7.1	16.8 ± 7.0	16.0 ± 6.6	0.277
Specialty				0.040*
S1	115 (15.9%)	12 (19.4%)	43 (19.1%)	
S2	103 (14.3%)	8 (12.9%)	32 (14.2%)	
S 3	130 (18.0%)	10 (16.1%)	32 (14.2%)	
S4	129 (17.9%)	12 (19.4%)	36 (16.0%)	
S5	124 (17.2%)	7 (11.3%)	23 (10.2%)	
S 6	86 (11.9%)	6 (9.7%)	37 (16.4%)	
S7	35 (4.9%)	7 (11.3%)	22 (9.8%)	
Type of hospital	· /	· /	· · /	0.708
SH	203 (27.0%)	15 (23.4%)	56 (23.5%)	
MSH	470 (62.5%)	42 (65.6%)	151 (63.5%)	
UH	79 (10.5%)	7 (10.9%)	31 (13.0%)	

Table 4.4.5.3.1: Characteristics of participants by distributive justice

Note: * = significant at p<0.05; MSH = major specialist hospital; SH = state hospital; UH = university hospital. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' characteristics, there were significant differences in English proficiency and specialty according to degree of distributive justice. In relation to sociodemographic characteristics, departments with high degree of distributive justice had higher proportions of participants with excellent English proficiency (p=0.001) compared with departments with low degree of distributive justice. In relation to employment characteristics, departments with high degree of distributive justice had higher proportions of participants who were working in S1, S6 and S7 specialties (p=0.040) compared with departments with low degree of distributive justice.

Variable	Distributive	Justice, mean ± S	5.D. or n (%)	Sig.
	Low (n=752)	Mod (n=64)	High (n=238)	~-8'
Negative affect	· · · · · · · · · · · · · · · · · · ·			0.002*
Low	236 (31.6%)	15 (23.4%)	91 (38.6%)	
Mod	398 (53.2%)	35 (54.7%)	129 (54.7%)	
High	114 (15.2%)	14 (21.9%)	16 (6.8%)	
Personality traits				
Extraversion				0.005*
Low	444 (59.5%)	31 (48.4%)	112 (47.3%)	
Mod	187 (25.1%)	18 (28.1%)	69 (29.1%)	
High	115 (15.4%)	15 (23.4%)	56 (23.6%)	
Agreeableness and			. ,	0.022*
conscientiousness				
Low	309 (41.4%)	19 (29.7%)	72 (30.4%)	
Mod	264 (35.4%)	27 (42.2%)	98 (41.4%)	
High	173 (23.2%)	18 (28.1%)	67 (28.3%)	
Neuroticism			. ,	0.008*
Low	208 (27.9%)	19 (29.7%)	92 (38.8%)	
Mod	389 (52.1%)	30 (46.9%)	115 (48.5%)	
High	149 (20.0%)	15 (23.4%)	30 (12.7%)	
Openness	. ,	. ,	. ,	0.355
Low	501 (67.2%)	48 (75.0%)	172 (72.6%)	
Mod	171 (22.9%)	11 (17.2%)	49 (20.7%)	
High	74 (9.9%)	5 (7.8%)	16 (6.8%)	

Table 4.4.5.3.2: Individual traits of participants by distributive justice

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of participants' individual traits, there were significant differences in negative affect and personality traits according to degree of distributive justice. In relation to negative affect, departments with high degree of distributive justice had higher proportion of participants with low degree of negative affect (p=0.002) compared with departments with low degree of distributive justice. In relation to personality traits,

departments with high degree of distributive justice had higher proportion of participants with high degree of extraversion (p=0.005), participants with high degree of agreeableness and conscientiousness (p=0.022), and participants with low degree of neuroticism (p=0.008) compared with departments with low degree of distributive justice.

	j	ustice		
Variable	Distributive Justice, mean ± S.D. or n (%)			Sig.
	Low (n=752)	Mod (n=64)	High (n=238)	
Organisational leadership				
Mentor/facilitator				<0.001*
Low	494 (65.8%)	38 (59.4%)	109 (46.0%)	
Mod	222 (29.6%)	20 (31.3%)	93 (39.2%)	
High	35 (4.7%)	6 (9.4%)	35 (14.8%)	
Innovator/entrepreneur			. ,	<0.001*
Low	579 (77.2%)	46 (71.9%)	144 (60.8%)	
Mod	153 (20.4%)	16 (25.0%)	71 (30.0%)	
High	18 (2.4%)	2 (3.1%)	22 (9.3%)	
Administrator/organizer				<0.001*
Low	456 (60.8%)	35 (54.7%)	97 (40.9%)	
Mod	260 (34.7%)	23 (35.9%)	110 (46.4%)	
High	34 (4.5%)	6 (9.4%)	30 (12.7%)	
Production &				<0.001*
achievement-oriented				
Low	591 (78.8%)	47 (73.4%)	145 (61.2%)	
Mod	138 (18.4%)	14 (21.9%)	76 (32.1%)	
High	21 (2.8%)	3 (4.7%)	16 (6.8%)	

 Table 4.4.5.3.3: Organisational characteristics of departments by distributive

 instice

Note: * = significant at p<0.05. Percentage may not add up to 100.0% due to rounding up to 1 decimal point

In terms of organisational characteristics, there were significant differences in organisational leadership according to degree of distributive justice. Departments with high degree of distributive justice tended to have high degree of mentor or facilitator leadership style (p<0.001), high degree of administrator or organizer leadership style (p<0.001) and high

degree of production and achievement-oriented leadership style (p<0.001) compared with departments with low degree of distributive justice.

Distributive	Cases of Workplace Bullying, n (%)		
Justice	No	Yes	Sig.
Degree of justice			< 0.001
Low	618 (84.7%)	112 (15.3%)	
Mod	52 (82.5%)	11 (17.5%)	
High	217 (94.8%)	12 (5.2%)	

Table 4.4.5.3.4: Bullied participants by degree of distributive justice

Among the participants, there were higher proportions of cases of bullying in departments with low degree of distributive justice (p<0.001) compared with departments with high degree of distributive justice.

	COR (95% CI)	AOR (95% CI)
Fixed effects		
Intercept (S.E.)	0.17 (0.13, 0.22)	0.08 (0.01, 0.80)
Distributive justice		
Low degree	1.00 (ref)	1.00 (ref)
Moderate degree	1.12 (0.55, 2.28)	0.96 (0.44, 2.10)
High degree	0.28 (0.14, 0.54)	0.37 (0.18, 0.76)
P trend	< 0.001	0.010
Random effects		
Department variance (S.E.)	0.05 (0.12)	$6.08e^{-14} (1.07e^{-7})$
ICC (%)	1.6	1.5×10^{-4}
Model fitness		
Log likelihood	-363.48	-305.49
Wald chi-square (p value)	14.48 (<0.001)	93.48 (<0.001)

Table 4.4.5.3.5: Association of distributive justice with workplace bullying

Note: COR and AOR based on mixed effects logistic regression with 12 integration points and unstructured covariance; AOR controlled for English proficiency, specialty, negative affect, extraversion, agreeableness and conscientiousness, neuroticism, mentor or facilitator leadership style, innovator or entrepreneur leadership style, administrator or organizer leadership style, and production and achievement-oriented leadership style

Results indicated that distributive justice was a significant factor of workplace bullying among junior doctors included in this study. Participants working in departments with high degree of distributive justice had 0.28 times the odds (COR =

0.28, 95% CI = 0.14 – 0.54) of being bullied compared with participants working in departments with low degree of distributive justice. After adjusting for confounding, participants working in departments with high degree of distributive justice had 0.37 times the odds (AOR = 0.37, 95% CI = 0.18 – 0.76) of being bullied compared with participants working in departments with low degree of distributive justice. There was significant trend in the odds of workplace bullying with increasing degree of distributive justice for both the crude association (p<0.001) and adjusted association (p=0.010). The likelihood ratio test results of the adjusted model showed that there was no significant variability in the odds of workplace bullying between departments (τ = 6.08e⁻¹⁴, p-value = 1.000) and similarly, the ICC indicated that less than 0.1% of the total variance in workplace bullying was attributed to differences between departments. Lastly, in relation to model fitness, the log likelihood was observed to increase in the adjusted model, and the Wald test indicated that the covariates in the adjusted model significantly improved the fit of the model (p<0.001).

4.5 Graphical Representation of the Associations of Individual and Organisational Factors with Workplace Bullying Among Junior Doctors

The individual and organisational factors found to be significantly associated with workplace bullying among junior doctors are illustrated in Figure 4.5.1, Figure 4.5.2.1, and Figure 4.5.2.2.

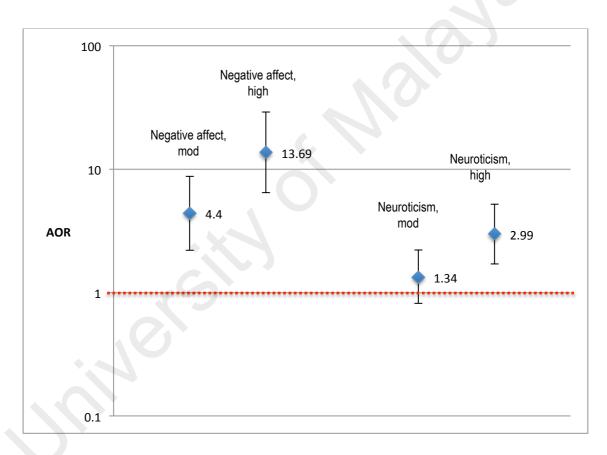


Figure 4.5.1: Individual traits associated with workplace bullying among junior doctors

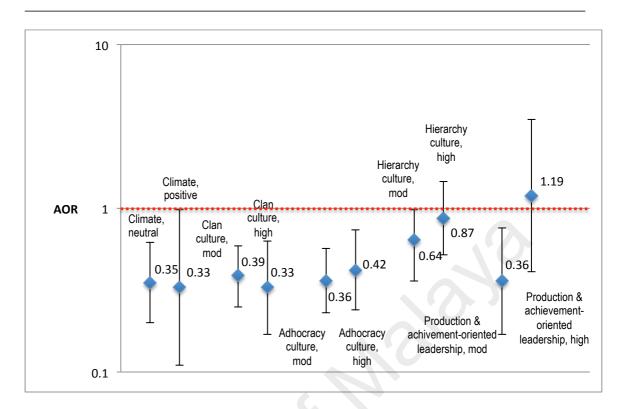


Figure 4.5.2.1: Organisational characteristics associated with workplace bullying among junior doctors (part I)

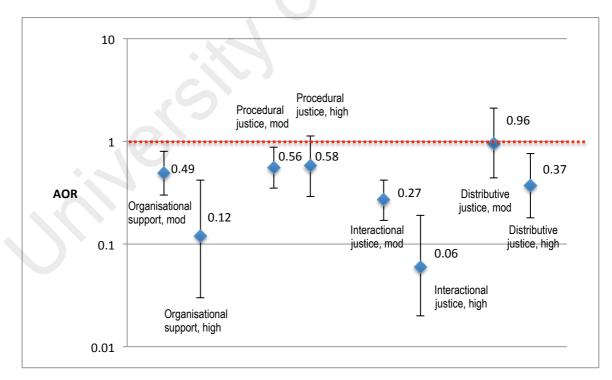


Figure 4.5.2.2: Organisational characteristics associated with workplace bullying among junior doctors (part II)

CHAPTER 5: DISCUSSION

Two of the main objectives of the present study were to examine the association of individual traits and organisational characteristics with workplace bullying among junior doctors. Based on the conceptual framework from which this study proceeded, individual traits including negative affect, personality and self-esteem as well as organisational characteristics including organisational climate, organisational culture, organisational leadership, organisational support and organisational justice were hypothesized to be significantly related with workplace bullying among junior doctors. In the final mixed effects logistic regression models, several of the associations were significant, demonstrating support for the hypotheses proposed in the current research. The following sections present a discussion of the study findings.

5.1 The Prevalence and Experience of Workplace Bullying Among Junior Doctors

An overall response rate of 62% was achieved in this study, which sampled a total of 1,074 junior doctors working in government hospitals accredited for housemanship within the central zone of Malaysia. Workplace bullying was operationalized as scoring more than 45 on the NAQ-R (behavioural experience method) and perceiving to be bullied weekly or daily according to the stem question based on a given definition (self-labelling with definition method), and the six-month prevalence of workplace bullying among junior doctors included in this study was determined to be 13%. In the systematic review, it was noted that a wide range of prevalence of workplace bullying was reported by previous studies examining bullying among junior doctors, i.e. 30% to 95%, depending on the operationalization of bullying utilised. Among the 18 studies examining workplace bullying among junior doctors identified, only Ling et al. (2016) measured bullying via the NAQ-R cut off scores and Leymann's criterion, whereas the

bulk of the studies measured prevalence in terms of occurring at least once during the past six months, past year, or during residency or posting. Ling et al. (2016) reported a prevalence of 38% using NAQ-R and Leymann's criterion, and a prevalence of 14% using the self-labelling with definition method; however, they did not report the prevalence using NAQ-R cut off scores. In comparison, the prevalence observed in this study using the NAQ-R and Leymann's criterion was 44%, and the prevalence observed using the self-labelling with definition method was 16%. The results are fairly comparable, and additionally, it should be noted that Ling et al. (2016) prevalence using NAQ-R and Leymann's criteria was based on responses from both consultants and trainees. As they reported that trainees experienced significantly higher levels of negative actions compared to consultants, correspondingly, their reported prevalence using NAQ-R and Leymann's criteria among trainees alone would have likely been closer to the prevalence found in this study.

As for measuring workplace bullying based on the NAQ-R cut off scores, the prevalence of bullying observed among junior doctors included in this study was 38%. As Ling et al. (2016) did not report the prevalence of workplace bullying based on this cut off, other occupational cohorts were considered to compare findings. Studies using the same NAQ-R cut-off including the studies published by Evans (2016), Sauer and McCoy (2017), Hampton, Tharp-Barrie, and Kay Rayens (2019), Obeidat, Qan'ir, and Turaani (2018), and Sungwan, Deoisres, and Chaimongkol (2017) have reported prevalence ranging from 12% to 43%. Therefore, the prevalence for behavioural experience method using NAQ-R cut off scores observed in this study (38%) is within the range of those reported by other studies. Meanwhile, few studies have used the combination method to operationalize workplace bullying. Studies that do utilise the

combination method include the study published by Zapf (1999b), who operationalized cases of mobbing as participants who were exposed to mobbing behaviours (scored at least one LIPT item as occurring at least once a week within the past six months), as well as perceiving they were mobbed according to the definition provided. Niedhammer, David, and Degioanni (2007) also defined cases of bullying as those who were exposed to bullying behaviours (scored at least one LIPT item as occurring at least once a week within the past six months) as well as perceiving themselves as being bullied according to the definition provided, and found a prevalence of 9% for men and 11% for women working in southeast France. In addition, though Petrović, Čizmić, and Vukelić (2014) did not define cases of bullying based on the combination method, they reported the prevalence using the behavioural experience method (NAQ-R and Mikkelsen and Einarsen (2001) criterion) as well as self-labelling with definition method as 13% among employees from 44 Serbian municipalities, which is equivalent to the findings in this study. On the whole, as demonstrated above, it was observed that when similar approaches to measurement were adopted there appeared to be some consistency in the prevalence of bullying reported. Nonetheless, though the prevalence observed in this study (13%) is comparable to the prevalence reported by Petrović et al. (2014), according to Zapf et al. (2011), meta-analytic results pooled from a wide selection of studies (N=44,878, k=15 samples) indicated that the combination method led to a weighted prevalence of 3.7% bullying. Thus, despite the conservative approach to measuring workplace bullying, 13% of bullying among Malaysian junior doctors can be regarded as relatively high compared to the general working population. However, it should still be noted that as the study population of the present study and those of others described are not homogenous, it is difficult to make a truly objective comparison. Indeed, according to O'Connell and Williams (2002), there is strong evidence that the prevalence of workplace bullying vary considerably across different occupations and industries.

In terms of types of negative actions experienced, the findings of this study indicated that the most frequently experienced negative actions by junior doctors comprising this study included work-related bullying such as "being exposed to unmanageable workload" and "pressure to not claim something to which by right you are entitled to", which is similar to the findings of Ling et al. (2016). Additionally, comparable to their findings, high prevalence of person-related bullying among junior doctors including "being humiliated or ridiculed in connection with your work", high prevalence of physically intimidating bullying such as "being shouted at or being target of spontaneous anger", and low prevalence of physically intimidating bullying such as "threats of violence or physical or actual abuse" were also observed. However, contrary to the findings of this study which indicated that the commonest perpetrators of negative actions reported by junior doctors were medical officers (58%) followed by nurses and support staff (31%), the commonest perpetrators of negative actions reported in the study by Ling et al. (2016) were consultants (54%), followed by administration (28%) and fellow trainees (13%).

5.2 Individual Traits Associated with Workplace Bullying Among Junior Doctors

Among junior doctors included in this study, after adjusting for confounding, negative affect and neuroticism were significant factors of workplace bullying. Other individual traits such as extraversion, agreeableness and conscientiousness, openness, and self-esteem were not significantly associated with workplace bullying in the final

mixed effects logistic regression models. The following sections present a discussion of the individual traits examined in this study.

5.2.1 Negative Affect

With regards to negative affect, this study found that participants with moderate degree of negative affect had 4.40 times the odds of being bullied compared with participants with low degree of negative affect (AOR = 4.40, 95% CI = 2.20 - 8.77), whereas participants with high degree of negative affect had 13.69 times the odds (AOR = 13.69, 95% CI = 6.46 - 29.02) of being bullied compared with participants with low degree of negative affect. This is similarly reported by a host of studies that considered the role of negative affect as a predictor of workplace victimisation, including those published by Aquino, Grover, et al. (1999), Aquino and Bradfield (2000), Mikkelsen and Einarsen (2002), Tepper, Duffy, Henle, and Lambert (2006), Bowling and Beehr (2006), and Bowling, Beehr, Bennett, and Watson (2010). According to Aquino and Thau (2009), the predisposition to negative affect demonstrated the most consistent relationship with victimisation among the many research into the role of individual traits as a predictor of hostile workplace behaviour. However, there are studies that reported no significant association between negative affect and hostile workplace behaviours. These studies include studies published by Glomb and Liao (2003), and Quine (2003), who reported that negative affect accounted for only 6% of the variance in bullying among junior doctors.

There are several theoretical explanations as to why participants with high degree of negative affect had higher odds of workplace bullying compared to their counterparts. According to Watson and Clark (1984), individuals with high degree of negative affect

are prone to experience negative moods across situations regardless of specific stimulus and tend to emphasize on the negative aspects of themselves and others. Because of these tendencies, they may be more likely to perceive ambiguous social communication as threatening and have lower thresholds for interpreting behaviours as negative (Aquino & Bradfield, 2000; Bowling & Beehr, 2006). Indeed, according to the study published by Matthiesen and Einarsen (2001), some of the participants who had reported bullying were extremely suspicious of the outside world and could be more prone to construe others' behaviours as malicious. Moreover, this inclination to perceive negative actions by others may in turn cause them to retort with antagonistic behaviours towards those who display such communication (Aquino & Bradfield, 2000). This is in line with the norm of reciprocity (Gouldner, 1960), which explains how individuals may reciprocate with responses directed towards the aggravating perpetrators if they attribute the cause of aggravation to them. Therefore, it may be that participants with moderate and high degree of negative affect had higher likelihood of bullying compared to their counterparts because, one, they were more likely to perceive bullying due to their biased sense-making process, and two, they were more likely to be the target of retaliatory aggression from their coworkers due to their antagonistic responses to ambiguous interactions.

In addition, individuals with high degree of negative affect have a tendency to experience emotional distress (Watson & Clark, 1984), and according to Felson (1978), individuals who are emotionally distressed more habitually breach rules of deference, resulting in behaviours that may be perceived by others as inappropriate, disrespectful and hostile. Coupled with the fact that these individuals are often seen as hostile, distant, and demanding due to their pessimistic, independent and nonconformist nature

(Watson & Clark, 1984), these behaviours may be interpreted by coworkers as attacks on self. This notion builds on the concept of "provocative victims" by Olweus (1993), which was also described by Coyne et al. (2000), Glasø et al. (2009) and Bowling et al. (2010). The "provocative victim" concept suggests that individuals with specific dispositions arouse negative responses from those around them, including anger or irritation. Moreover, according to the impression management theory proposed by Felson (1978), persons may retaliate in order to conserve a positive situational identity when they perceive being attacked. As such, it may be that participants with moderate and high degree of negative affect had higher odds of bullying compared to their counterparts because their behaviours were interpreted as aggression by coworkers, which elicited negative emotions and called forth a similar response in attempts to counterattack against perceived offences.

Furthermore, individuals with high degree of negative affect often display "victimlike" characteristics such as fear and nervousness (Watson & Clark, 1984), which may cause others to recognise them as weak and vulnerable and finding them to be easy target for exploitation or mistreatment. In addition, due to being fearful and insecure, they may be less likely to defend themselves if they are exposed to any form of mistreatment and less likely to report bullying in order to avoid conflict, furthering their potential as susceptible targets (Coyne et al., 2000; M. G. Harvey, Heames, Richey, & Leonard, 2006; Matthiesen & Einarsen, 2001). This vulnerability hypothesis has been discussed in studies published by Einarsen (1999), Zapf (1999b), Matthiesen and Einarsen (2001), Coyne et al. (2000), and Aquino and Bradfield (2000), and is in keeping with the victim precipitation theory described by Curtis (1974) and Elias (1986). According to this theory, targets of hostility may contribute to a certain degree in their own victimisation by eliciting the aggression of potential perpetrators. As such, it may be that participants with moderate and high degree of negative affect had higher likelihood of being bullied compared to their counterparts because others perceived them as weak and submissive, thus they were more likely to be targeted by perpetrators seeking to displace their frustration against a safe target (Spector, 1978).

Alternative to the mechanisms described is that it may be that participants with moderate and high degree of negative affect had higher odds of bullying compared to their counterparts because they developed high degree of negative affect as a result of their experience of workplace bullying. Indeed, many studies report anxiety, fear, and low mood as a consequence of exposure to workplace bullying (Kivimaki et al., 2003; Mayhew et al., 2004; Moayed et al., 2006; Quine, 2001; Verkuil et al., 2015), which are negative mood states related to negative affect. As the findings of this study were based on cross-sectional data, reverse causality is a possibility. In line with this school of thought, Leymann (1996) strongly opposed the notion that personality of individuals predisposes them to bullying, and argued that targets develop changes in personality due to experiencing bullying. He proposed the work environment hypothesis, in which the underlying causes of bullying are not to be found in targets' characteristics, but rather, in the workplace environmental conditions.

Nevertheless, trait theory infers that for a situation (e.g. being bullied) to have an effect on a person, the person must have a disposition that is responsive to that effect (J. A. Johnson, 1997). To lend support to this argument, Einarsen et al. (1994) reported that only 10% of bullying could be explained in terms of work environment circumstances. A recurring finding in several prospective studies is that symptoms of distress also

predict subsequent exposure to workplace bullying (Nielsen & Einarsen, 2012; Nielsen et al., 2014). Bowling et al. (2010) conducted a 13-month two-wave prospective study and observed a reciprocal relationship between negative affect and workplace bullying. According to Mikkelsen and Einarsen (2002), the relationship between negative affect and hostile workplace behaviour can be thought of as a vicious cycle, in which negative interactions lead to elevated negative affect, which again makes the target more provocative or vulnerable to further abuse. In light of the above, another explanation for the findings of this study is that it may be that participants with moderate and high degree of negative affect had higher likelihoods of being bullied compared to their counterparts because they were predisposed to bullying as well as being at risk of developing negative affect as a result of their bullying experience.

5.2.2 Neuroticism

With regards to neuroticism, this study found that participants with high degree of neuroticism had 3.10 times the odds (AOR = 2.99, 95% CI = 1.71 - 5.21) of being bullied compared with participants with low degree of neuroticism. This finding is widely supported by the findings of other studies, including the studies published by Galdolfo (1995), Coyne et al. (2000), Coyne, Chong, Seigne, and Randall (2003), Glasø, Matthiesen, Nielsen, and Einarsen (2007), Berry, Ones, and Sackett (2007), Milam, Spitzmueller, and Penney (2009), Mathisen (2012), Nielsen and Knardahl (2015), and Nielsen et al. (2017). Exceptions to this include the studies published by Vartia (1996), who demonstrated that the association between neuroticism and workplace bullying became non-significant after adjusting for psychological work environment and climate factors, and Nielsen and Knardahl (2015), who established that baseline neuroticism significantly predicted subsequent bullying, though this did not

hold true when adjustment for role conflict and role ambiguity were made. Nevertheless, a recent meta-analysis published by Nielsen et al. (2017) found that neuroticism was significantly associated with workplace harassment, which supports the findings of this study. According to the authors, corresponding to Cohen's interpretation of effect sizes, neuroticism as a personality trait seemed to be especially important in appreciating the nature of hostile workplace behaviours.

A few mechanisms can be proposed to explain why participants with high degree of neuroticism were more likely to experience workplace bullying. The first relate to the perception mechanism. According to Coyne et al. (2003) and Duffy, Shaw, Scott, and Tepper (2006), individuals who are high in neuroticism may be more likely than their counterparts to attribute any assertive behaviours or criticism by others as abusive, and interpret even neutral stimuli negatively. Consequently, they may have lowered thresholds for labelling and defining negative actions at the workplace. Indeed, studies published by Brodsky (1976), Galdolfo (1995) and Coyne et al. (2003) described cases of workplace harassment as being paranoid, viewing the world as threatening, being exceedingly suspicious of others, being easily distressed and having difficulties accepting criticism. Correspondingly, it may be that participants with high degree of neuroticism had higher odds of bullying compared to their counterparts because of their tendencies to perceive and report interactions as negative.

In addition, another explanation as to why those who are neurotic were more prone to bullying centers on the vulnerability factor. According to Mathisen (2012) and Nielsen et al. (2017), individuals who are neurotic often appear anxious, insecure and react negatively to teasing. Additionally, Matthiesen and Einarsen (2001) suggested that those who have high degree of anxiety face difficulties in defending themselves if others subjected them to antagonism. Because of these vulnerabilities, they may be more likely to be targeted by perpetrators seeking easy targets for displacing their anger (Glasø et al., 2009). Similar to the vulnerability mechanism brought about by negative affect, the increased susceptibility to bullying generated by neuroticism is in keeping with the victim precipitation theory as discussed by Curtis (1974) and Elias (1986). According to this theory, targets of hostility may contribute to a certain degree in their own victimization by eliciting the aggression of potential perpetrators. Therefore, it may be that participants with high degree of neuroticism had higher likelihood of bullying compared to their counterparts because they appeared as unhinged and weak to others and thus more frequently targeted by predatory bullies at the workplace.

Besides that, another mechanism to explain the preponderance of bullying among individuals with high degree of neuroticism follows the argument of the provocative victim, which is hypothesized by Olweus (1993), and also described by Coyne et al. (2000), Glasø et al. (2009) and Bowling et al. (2010). According to Coyne et al. (2003), neurotic individuals tend to have a hostile view of the world and display more outward acts of aggression. Indeed, empirical evidence from studies conducted among children revealed that the pattern of cognitive processing have been found to be able to predict individual differences in aggressive behaviour (Dodge & Crick, 1990). Additionally, according to the Coyne et al. (2003) and Nielsen et al. (2017), as neurotic individuals are prone to anxiety and insecurity, they may display behaviours associated with nervousness such as fidgeting, excessive talking or ruminating out loud. These behaviours may irritate those around them, produce negative reactions among others, and increase their likelihood of being targeted with aggression (Zapf, 1999b).

241

Therefore, it may be that participants with high degree of neuroticism had higher odds of bullying compared to their counterparts because their antagonistic behaviours and nervous mannerism elicited aggression from others at the workplace.

Finally, another explanation for the findings of this study could be one of reverse causality, which is plausible given that this is a cross-sectional study. Giving weight to this notion, Leymann and Gustafsson (1996) strongly claimed that any personality differences observed between those bullied and not is purely an effect of exposure to bullying itself. They suggested that these changes in personality could be displayed in the form of extreme animosity and suspiciousness and a persistent feeling of trepidation and being in danger, which are features consistent with neuroticism. To lend support to their claims, many studies report anxiety and fear as a consequence of exposure to workplace bullying (Kivimaki et al., 2003; Mayhew et al., 2004; Moayed et al., 2006; Quine, 2001; Verkuil et al., 2015). According to Matthiesen and Einarsen (2001) and Lind, Glasø, Pallesen, and Einarsen (2009), it is not unexpected that a person may become exceedingly sceptical, distrustful and critical of other people after being subjected to prolonged bullying. Thus, it may be that participants with high degree of neuroticism had higher odds of bullying compared to their counterparts because they developed fearfulness and neuroses from their exposure to bullying.

5.2.3 Extraversion, Conscientiousness, Agreeableness, Openness and Self-Esteem

With regards to extraversion, agreeableness and conscientiousness, openness, and self-esteem, associations with workplace bullying were non-significant for both the crude and adjusted models in this study. Evidence from literature indicates that there are studies that reported significant association between workplace bullying and

extraversion (Coyne et al., 2000; Glasø et al., 2007; Nielsen et al., 2017), agreeableness (Berry et al., 2007; Glasø et al., 2007; Lind et al., 2009; Milam et al., 2009; Nielsen et al., 2017), conscientiousness (Berry et al., 2007; Coyne et al., 2000; Glasø et al., 2007; Lind et al., 2009; Nielsen et al., 2017; Nielsen & Knardahl, 2015), openness (Glasø et al., 2007; Rammsayer et al., 2006) and self-esteem (Chang et al., 2018; S. Harvey & Keashly, 2003). A recent meta-analysis published by Nielsen et al. (2017) indicated that five-factor model of personality, extraversion, agreeableness, of the out conscientiousness, and neuroticism emerged as significant correlates of workplace harassment. Thus, the findings of this study in terms of neuroticism were similar to the findings of the meta-analysis; however, significant associations between extraversion, agreeableness, conscientiousness and workplace bullying among junior doctors included in this study were not observed. This may be due to neuroticism being more strongly correlated with workplace bullying compared to the other traits. Indeed, according to Cohen's interpretation of effect sizes, the study by Nielsen et al. (2017) showed that neuroticism had a moderate average association with workplace harassment, agreeableness a small to moderate association with workplace harassment, and extraversion and conscientiousness a small association with workplace harassment. In fact, the findings of this study were similar to Coyne et al. (2003) and Mathisen (2012), who reported significant findings only for neuroticism when examining the relation between the "Big Five" personality factors and workplace bullying. On the other hand, in relation to self-esteem, similar to the finding of this study, Vartia (1996) reported a non-significant association between self-esteem and bullying after adjusting for psychological work environment and climate factors.

Though the findings for these variables were non-significant, there are reasons to believe that they may potentially play a role in influencing the prevalence of workplace bullying. Those who are introverted may be more likely to be perceived as easy targets by others as they are less likely to have a social network support (Coyne et al., 2000; M. G. Harvey et al., 2006; Mathisen, 2012), may irritate others who view them as aloof, cold and detached (Nielsen et al., 2017), and may be more likely to be reflective and self-aware of negative interactions compared to extraverted individuals who are predisposed to interpreting negative interactions in a more pleasant light (Milam et al., 2009; Nielsen et al., 2017). Those who are conscientious and agreeable would seem less likely to be bullied as they do less to irritate coworkers compared to those who are unreliable and unpleasant (Bowling & Beehr, 2006). Those who have high degree of openness are more inclined to new experiences and positive affectivity (Steel et al., 2008), and therefore less likely to feel easily harassed compared to those with low degree of openness. Those who have low self-esteem may appear weak to others and may be less able to assertively defend him or herself from aggressive behaviours or deal constructively with disagreements, resulting in the escalation of interpersonal conflicts (Appelberg, Romanov, Honkasalo, & Koskenvuo, 1991; Matthiesen & Einarsen, 2001; Zapf, 1999b). Nevertheless, given that this study was based on adequate sample size and therefore sufficiently powered to detect effects, these non-relationships are believed to be robust. However, as the findings of this study were based on cross-sectional data, another explanation could be that there was a time-lagged relationship between extraversion, agreeableness, conscientiousness, openness, self-esteem, and workplace bullying. This was suggested by the findings of Nielsen and Knardahl (2015) prospective study, which observed that conscientiousness was not associated with bullying at baseline, though it was significantly associated with bullying two years later.

According to Zapf et al. (1996) and Nielsen et al. (2017), this may suggest the existence of a "sleeper effect" between the aforementioned variables and workplace bullying, where the influence of the traits materialize only after prolonged exposure to bullying. Thus, longitudinal evidence is required to establish whether such effect exists in relation to these variables.

5.3 Organisational Factors Associated with Workplace Bullying Among Junior Doctors

Among junior doctors included in this study, after adjusting for confounding, all organisational factors, i.e. organisational climate, organisational culture, organisational leadership, organisational support and organisational justice, were significantly associated with workplace bullying. The following sections present a discussion of the organisational characteristics examined in this study.

5.3.1 Organisational Climate

With regards to organisational climate, this study found that participants working in departments with neutral climate had 0.35 times the odds (AOR = 0.35, 95% CI = 0.20 – 0.62) of being bullied compared with participants working in departments with negative climate, and participants working in departments with positive climate had 0.33 times the odds (AOR = 0.33, 95% CI = 0.11 - 0.98) of being bullied compared with participants working in departments with negative climate had 0.33 times the odds (AOR = 0.33, 95% CI = 0.11 - 0.98) of being bullied compared with participants working in departments with negative climate. Similar to the findings of this study, studies published by Einarsen et al. (1994), Vartia (1996), Zapf (1999b), Agervold and Mikkelsen (2004), Hauge, Skogstad, and Einarsen (2007), Agervold (2009), Baillien et al. (2011), Van den Broeck, Baillien, and De Witte (2011), Balducci, Fraccaroli, and Schaufeli (2011), Skogstad, Torsheim, and Einarsen (2011), Naseem

and Ahmed (2014) and Hua et al. (2016) observed significant association between workplace climates and hostile workplace behaviours.

To explain the findings of this study, one mechanism as to why participants working in departments with negative climates had higher odds of bullying compared to their counterparts is related to aspects of climate, including deficiencies in two dimensions of organisational climate, i.e. structure and responsibility (Litwin & Stringer, 1968). According to Einarsen et al. (1994), poor work organisations in which there are incompatible demands and expectations around roles in relation to rights, responsibilities, privileges and positions, as well as poor employee participation where there is little power to influence decision-making, often leads to the production of angry reactions and latent hostility. This could act as precursors of conflicts and poor interworker relationships, which may lead to bullying. Indeed, studies published by Einarsen et al. (1994), Zapf (1999b), Quine (2001), Agervold (2009), Hauge et al. (2007), Baillien et al. (2011), and Balducci et al. (2011) demonstrated that role conflict and low job control were significantly related to workplace bullying. This notion is in keeping with the job demand-control model (Karasek, 1979), which states that job strain result when there is high job demand and low job control, which in turn leads to aggressive behaviours via the production of negative affect according to the frustrationaggression hypothesis (Berkowitz, 1989). Indeed, studies published by Naseem and Ahmed (2014) and Van den Broeck et al. (2011) demonstrated significant associations between job demand or stress and hostile workplace behaviour, and Hua et al. (2016) showed that job demand was associated with a 124% increase (OR = 2.24, 95% CI =1.34 - 3.74) in odds of workplace bullying. Concurrently, according to Bowling and Beehr (2006), certain individuals when stressed may exhibit behavioural and affective responses that encourage others to victimize them. This follows the social interactionist approach to aggression (Felson, 1992; Felson & Tedeschi, 1993; Neuman & Baron, 2003), which suggests that stressful conditions will indirectly affect aggression through its effect on the target's behaviour, such as violating expectations or social norms. In addition to that, Einarsen et al. (1994) suggested that the stress brought about by a job condition characterised by role conflict and low self-monitoring opportunities can in itself be perceived as harassment by employees if they attribute the cause as hostile intentions from their superiors or the organisation itself, which is in keeping with the attribution process (Kelley, 1973). Taken together, it may be that participants working in departments with negative climate had higher odds of bullying compared to their counterparts because one, work environment deficiencies led to job strain that caused them to be more prone to aggression as well as displaying distressed behaviours that elicited more aggressiveness from others, and two, perceived job strain was in itself considered by them to be a form of workplace harassment and victimisation.

On the other hand, another mechanism that may explain the increased odds of workplace bullying among participants working in departments with negative work climates is related to competition for scarce resources. According to Salin (2003), competitive workplace settings with scarce resources, politicized climates, and certain customs of reward system may give rise to conditions where it is rewarding for perpetrators of bullying to exploit others at the workplace. Moreover, Wheeler et al. (2010) suggested that in demanding and unsupportive workplace environments, the risk of personal resource loss elicits the low cost, high reward resource seeking behaviours that are typically symptomatic of bullies at the workplace. Indeed, competition was cited as a reason for bullying in the study conducted by Björkqvist, Österman, and Hjelt-Bäck (1994). This notion is in accordance to the job demand-resource model (Bakker & Demerouti, 2007), which states that job resource relates negatively to job strain. Indeed, the study published by Van den Broeck et al. (2011) demonstrated that job resources associated negatively with target's report of bullying, and Vigoda (2002) reported that job distress mediated the relationship between workplace politics and workplace aggression across all types of organisations. According to French and Raven (1959) who explored the bases of social power, harm and the threat of harm often provide an effectual method for succeeding in the competition for scarce rewards, a situation termed "instrumental aggression" (Felson, 1978). Correspondingly, it may be that participants working in departments with negative climates had higher odds of bullying compared to their counterparts because their departments' highly competitive and resource-stricken climate lead to cutthroat working conditions which encouraged aggressive behaviours among employees.

Besides that, alternative mechanisms as to why participants working in departments with negative organisational climate had higher odds of bullying compared to their counterparts relates to the departmental psychosocial environment. According to O'Moore et al. (1998), cases of bullying tended to describe their work environment as being extremely stressful and lacking an encouraging and sociable atmosphere. Additionally, Agervold (2009), Law et al. (2011), Skogstad et al. (2011) and Hua et al. (2016) demonstrated that departments with high prevalence of workplace bullying have poor psychosocial work environment. Studies have shown that psychosocial climate may affect how individuals deal with bullying at the workplace; for example, an unsupportive climate leads to individuals passively allowing the bullying to perpetuate instead of lodging a complaint (Tedeschi & Felson, 1994). In this regard, poor

psychosocial work climates may encourage a sense of helplessness in targets of aggression and consequently encourage predatory bullying. Therefore, it may be that participants working in departments with negative climates had greater odds of bullying compared to their counterparts because in such departments bullying is rarely reported and allowed to perpetuate.

Finally, as reverse causality is an issue of cross-sectional data, it must be considered that one possibility was that departments' organisational climate was rated as poor as a result of participants' experience of workplace bullying, and not vice versa. An explanation to this could be that high prevalence of workplace bullying gives rise to poor communication or conscious miscommunication and reduced cooperation among coworkers, creating a strained workplace environment (Zapf, 1999b). Alternatively, according to Einarsen et al. (1994), those who were bullied may perceive their workplace climate as negative as a result of their own anger, frustration and disappointment from experiencing bullying, rather than making an objective assessment of their workplace climate. Indeed, according to Zapf (1999b), bullied participants evaluated their environment more negatively on all aspects compared to their counterparts. Therefore, both circumstances could have led to the higher odds of bullying observed for participants working in departments with negative climates compared to their counterparts. Nevertheless, the findings of Vartia (1996), Agervold and Mikkelsen (2004), Agervold (2009), Hauge et al. (2007) and Skogstad et al. (2011) suggested that both bullied and non-bullied participants in their studies perceived deficiencies in aspects of their work environment. This implies that organisational climate may indeed play a precursory role in workplace bullying.

249

5.3.2 Organisational Culture

With regards to organisational culture, this study found significant associations for three types of organisational culture, i.e. clan culture, adhocracy culture, and hierarchy culture. One other type of organisational culture, i.e. market culture, was not associated with workplace bullying among junior doctors. Similar to the findings of this study, according to Omari (2007) and Pilch and Turska (2015), clan culture and adhocracy culture was negatively associated with workplace bullying. However, contrary to the findings of this study, the authors as well as An and Kang (2016) reported that bullying was positively related to hierarchy culture, whereas in this study it was observed that participants working in departments with moderate degree of hierarchy culture had lower odds of bullying compared to their counterparts.

In relation to clan culture, this study found that participants working in departments with moderate degree of clan culture had 0.39 times the odds (AOR = 0.39, 95% CI = 0.25 - 0.59) of being bullied compared with participants working in departments with low degree of clan culture, and participants working in departments with high degree of clan culture had 0.33 times the odds (AOR = 0.33, 95% CI = 0.17 - 0.63) of being bullied compared with participants working in departments with low degree of clan culture. Clan culture is characterised by cohesiveness, teamwork, participation, and a sense of family (Cameron & Freeman, 1991). As organisations with high degree of clan culture focuses on interpersonal cohesion and high morale (Cameron & Freeman, 1991), hostile workplace behaviours such as bullying is unlikely to be tolerated by members of the organisation. Consequently, through the process of modelling, employees do not learn to engage in such behaviour. Indeed, according to the study published by Escartin, Ullrich, Zapf, Schlüter, and van Dick (2013), group identification influenced bullying at

both the individual and group level, such that higher levels of group identification reduced the odds of victimisation from workplace bullying. Moreover, findings from several studies indicate that organisational tolerance of bullying and its subsequent normalisation was an enabling factor for workplace bullying (Blackstock, Harlos, Macleod, & Hardy, 2015; Hutchinson, Vickers, Jackson, & Wilkes, 2006). In fact, in the study published by Hutchinson (2006), participants claimed that bullies were not only tolerated in their organisation, they were often promoted and protected by management, while targets of bullying were blamed and punished for reporting the bullying. Indeed, aspects of organisational culture may encourage bullying via the dehumanisation of employees or disregard for the harm of workplace bullying (Simpson & Cohen, 2004). As employees look for alignment between their values and behaviours and that of others, if their organisation tolerates hostile workplace behaviours, it is unlikely to be challenged by employees in that organisation, and they may even learn to suppose that such behaviours are appropriate and even rewarded (Brotheridge, 2013; Salin, 2003). As a consequence, bullying becomes normalised and employees are more likely to engage in such behaviours, while targets of bullying become unwilling to confront or report it due to believing that their claims will be ignored (Lewis, 2006). These line of arguments, which highlights the importance of group norms, follows the social learning theory by Bandura (1971). According to this theory, behaviours are acquired by observing others, and as such, how others behave in an organisation will influence whether an individual engages likely in aggressive behaviours. Correspondingly, it may be that participants working in departments with moderate and high degree of clan culture had lower odds of bullying compared to their counterparts because in such departments, hostile workplace behaviours are frowned upon and not tolerated, and accordingly, they do not learn to emulate such behaviour and bullying does not become normalised.

In relation to adhocracy culture, participants working in departments with moderate degree of adhocracy culture had 0.36 times the odds (AOR = 0.36, 95% CI = 0.25 – 0.59) of being bullied compared with participants working in a department with a low degree of adhocracy culture, and participants working in departments with high degree of adhocracy culture had 0.42 times the odds (AOR = 0.42, 95% CI = 0.24 - 0.74) of being bullied compared with participants working in a department with a low degree of adhocracy culture. An adhocracy culture is characterised by flexibility, adaptability, and entrepreneurship (Cameron & Freeman, 1991). Because of the lack of excessive rules limiting freedom of action, employees may perceive greater work autonomy and job satisfaction, which reduces their likelihood of aggression according to the frustrationaggression hypothesis (Berkowitz, 1989). In addition, the fluent structure and absence of strict hierarchy in organisations high in adhocracy culture may reduce vertical bullying (Pilch & Turska, 2015). Moreover, such organisations are more likely to be responsive to organisational change. According to Baron and Neuman (1996), M. Sheehan (1998), and Agervold (2009), major organisational change increases the likelihood of bullying. This is because restructuring, downsizing and mergers often mean that employees have to do more with fewer resources (Hoel & Salin, 2003), and often create perceived threats and anxieties at work (Agervold, 2009), thus generating highly strained work conditions which encourages aggressive behaviours. As such, it may be that participants working in departments with moderate and high degree of adhocracy culture had lower odds of bullying compared to their counterparts because they were less inclined to feel frustrated, less likely to be targets of vertical bullying, and less impacted by organisational change.

In relation to hierarchy culture, participants working in departments with moderate degree of hierarchy culture had 0.64 times the odds (AOR = 0.64, 95% CI = 0.41 – 0.98) of being bullied compared with participants working in departments with low degree of hierarchy culture. A hierarchy culture is characterised by order, rules and regulations, and control (Cameron & Freeman, 1991). Though the findings of this study suggested that moderate degree of hierarchy culture was protective against workplace bullying compared to low degree of hierarchy culture, the findings of other studies suggested that hierarchy culture was associated with increased odds of workplace bullying. This includes studies published by Omari (2007) among public sector workers in Australia, Pilch and Turska (2015) among employees of several Polish companies, as well as An and Kang (2016) who studied Korean nurses and reported that the odds of bullying among nurses working in organisations with hierarchy-oriented culture was 2.58 times the odds of bullying among nurses working in organisations with relationoriented culture. According to Samnani and Singh (2016), the centralisation of organisational structure and hierarchical relationships may give rise to a working environment with high levels of power imbalance. They argued that employees working in such environments may believe that it is appropriate to exact power over others since such culture legitimizes their actions. Similarly, according to Mikkelsen and Einarsen (2001), large power differences between the various levels of the organisation has been linked to the perpetration of negative acts. This may be because it is more difficult to discern bullying in organisations that are large, hierarchical and bureaucratic, and this makes it more likely that authority is abused (Pilch & Turska, 2015). Though hierarchy culture was expected to be positively associated with workplace bullying, the study findings that were based on the experiences of junior doctors suggested otherwise. This may be because of the specific nature of modern healthcare work, where there is often an ordered and regulated structure in the relationships between healthcare providers, artefacts, and patients (Kannampallil, Schauer, Cohen, & Patel, 2011), which reduces work ambiguity and allows junior doctors to operate efficiently and systematically. Correspondingly, it may be that participants working in departments with moderate degree of hierarchy culture had lower odds of bullying compared to their counterparts because their workplace culture was optimal for the nature of their job, which reduced the risk of job strain and task-related disputes.

On the other hand, the findings of this study suggested that market culture was not associated with workplace bullying among junior doctors. However, there are mechanisms to suggest that it may play a role in the prevalence of bullying. A market culture is predominantly focused on production and goals achievement (Cameron & Freeman, 1991). Such exceedingly competitive work environment may encourage employees to engage in bullying behaviours, especially if there are scarce resources and limited rewards (Salin, 2003; Samnani & Singh, 2014). Nevertheless, given that this study was based on adequate sample size and therefore sufficiently powered to detect effects, this non-relationship is believed to be robust, and furthermore, the same non-relationship was observed in other studies (Omari, 2007; Pilch & Turska, 2015).

On a final note, as with all data collected via cross-sectional studies, reverse causality must be considered in the explanation of findings. In relation to this study, it may be that participants who were exposed to workplace bullying felt detached from

254

their workmates, felt that their department was too malleable, or that it was disorganized, thereby rating their department's degree of clan culture, adhocracy culture and hierarchy culture poorly. In this context, it would appear that participants working in departments with moderate and high degree of clan culture, moderate and high degree of adhocracy culture, and moderate degree of hierarchy culture had lower odds of bullying than their counterparts, and that these types of organisational cultures were negatively associated with bullying.

5.3.3 Organisational Leadership

With regards to organisational leadership, this study found that participants working in departments with moderate degree of production and achievement-oriented leadership style had 0.36 times the odds (AOR = 0.36, 95% CI = 0.17 - 0.76) of being bullied compared with participants working in departments with low degree of production and achievement-oriented leadership style. Three other types of leadership style, i.e. mentor or facilitator, innovator or entrepreneur, and administrator or organizer were not associated with workplace bullying among junior doctors. In relation to the findings of previous studies, none have scrutinized production and achievementoriented leadership style as a factor of workplace bullying specifically.

According to Cameron and Freeman (1991), a production and achievement-oriented leadership style is characterised by decisiveness and productivity. In explaining its relationship with workplace bullying, the certainty and stability brought about by a production and achievement-oriented leadership style is assumed to reduce the occurrence of work factors that have been shown to be related to workplace bullying, such as role ambiguity, role conflict, and uncertain, chaotic and unpredictable work climates (Bowling & Beehr, 2006; Einarsen et al., 1994; Zapf, 1999b). According to Zapf (1999b) and Nielsen (2013), frustrations due to unclear responsibilities and inadequate leadership may increase the likelihood of escalated conflicts and antisocial behaviour among employees. Correspondingly, a leader providing clear guidance and firm directives would be able to curb the root cause of such workplace behaviours. Additionally, such leadership style contrast pointedly from the laissez-faire leadership style, which has been shown to be positively associated with workplace bullying (Glambek, Skogstad, & Einarsen, 2018; Hauge et al., 2007; Hoel et al., 2010; Leymann, 1996; Nielsen, 2013; Skogstad et al., 2007; Tsuno & Kawakami, 2015). This may be because passive-avoidant and indistinct leadership style allows conflicts to escalate and progress, which leads to high prevalence of workplace bullying within the organisation (Glambek et al., 2018; Strandmark & Hallberg, 2007). Indeed, Hauge et al. (2007) reported that laissez-faire leadership was strongly related to task-related bullying, Hoel et al. (2010) observed that laissez-faire leadership was related to both self-reported and observed bullying, and Tsuno and Kawakami (2015) found that employees who worked under supervisors high in laissez-faire leadership had a 4.3 risk of exposure to workplace bullying. Furthermore, leadership styles that permit hostile workplace behaviours like bullying to flourish and persist is said to act as the work management's "sense of permission to harass", according to Brodsky (1976) and Skogstad et al. (2007). Correspondingly, it may be that participants working in departments with moderate degree of production and achievement-oriented leadership style had lower odds of bullying compared to their counterparts because superiors in such departments were able to direct and guide subordinates in a steadfast manner such that uncertainties that lead to job strain and ensuing conflicts do not arise.

Nevertheless, as with all data collected via cross-sectional studies, reverse causality must be considered in the explanation of findings. In relation to this study, it may be that participants who were exposed to workplace bullying felt that their leaders were not instructive or directive enough, leading them to score production and achievement-oriented leadership style poorly. This would have created an impression that a moderate degree of production and achievement-oriented leadership style was inversely related to workplace bullying.

Besides that, though the findings of this study indicated that mentor or facilitator, innovator or entrepreneur, and administrator or organizer leadership style were not associated with workplace bullying among junior doctors, there are mechanisms to suggest that they may play a role in influencing the prevalence of workplace bullying. A mentor or facilitator leadership style takes a parental approach to leadership and improves the sense of kinship and morale of those within the working group (Cameron & Freeman, 1991), thereby promoting good interworker relationships among employees. This would likely reduce the probability of escalated conflicts, as employees would likely handle any disputes over tasks or resources in a constructive and harmonious manner. An innovator or entrepreneur leadership style encourages creativity, risk-taking and growth (Cameron & Freeman, 1991), and this may instil a sense of work autonomy and promote a sense of achievement for employees, thereby improving their job satisfaction and reducing the likelihood of pent up hostility due to workplace frustration. Finally, an administrator or organizer leadership style enforces order and smooth operations (Cameron & Freeman, 1991), thereby circumventing work conditions such as a chaotic and unpredictable work climate that has been shown to be associated with workplace bullying (Bowling & Beehr, 2006; Einarsen et al., 1994; Zapf, 1999b). Nevertheless, given that this study was based on adequate sample size and therefore sufficiently powered to detect effects, these non-relationships are believed to be robust. However, as there are no other studies to support the findings of this study in terms of leadership style, future studies could incorporate these leadership styles as a focus for research to further discern whether they are significantly related to workplace bullying.

In addition, other than laissez-faire leadership style, the literature on leadership style linked to workplace bullying were focused on autocratic or tyrannical leadership (Agervold, 2009; Hauge et al., 2007; Keashly & Neuman, 2010), transformational leadership (Nielsen, 2013), ethical leadership (Stouten et al., 2010), authentic leadership (H. K. S. Laschinger & Fida, 2014b; Nielsen, 2013) and constructive leadership (Cooper-Thomas et al., 2013). Autocratic leadership has been described as a leadership style that heavily features on asserting authority and disempowering workers, which may likely be perceived by employees as negative and a source of bullying in itself (Hoel et al., 2010). Indeed, findings by Agervold (2009), Vartia (1996), Hauge et al. (2007) and Hoel et al. (2010) demonstrated that bullied participants were more likely to perceive autocratic or tyrannical leadership style. On the other hand, transformational leadership style is an approach that causes positive change in individuals by reinforcing a common purpose and promoting a work culture that nurtures growth (Nielsen, 2013). The results of the study published by Nielsen (2013) showed that transformational leadership was negatively associated with workplace bullying, which was suggested to be due to transformational leaders emphasizing the well being and success of the work group and discouraging the perpetuation of interpersonal conflicts. Meanwhile, ethical leadership is centered around the leader exhibiting and reinforcing normatively appropriate conduct to followers through personal actions and interpersonal relationships (Brown, Treviño, & Harrison, 2005). Based on the social learning theory by Bandura (1971), as behaviours are acquired by observing others, employees modelling superiors with high degree of ethical leadership would be less likely to engage in morally deficient behaviours such as bullying. Additionally, through rewards and punishment, ethical leaders would also discipline those who behave unethically (Stouten et al., 2010), thereby discouraging would-be perpetrators of bullying. Authentic leadership on the other hand is defined as an approach that promotes positive self-regulated behaviours (H. K. S. Laschinger & Fida, 2014b). According to H. K. S. Laschinger and Fida (2014b), authentic leaders are prone to creating work environments that nurture transparency, openness and positive interworker relationships, which may deter hostile workplace behaviours such as bullying. Finally, constructive leadership, which is described as an approach where leaders exhibit behaviours which encourage, support, and foster growth among followers, has also been shown to negatively predict workplace bullying (Cooper-Thomas et al., 2013). This has been suggested to be due to constructive leaders modelling constructive behaviours and managing precursors of bullying such as role ambiguity and interpersonal conflicts (Cooper-Thomas et al., 2013). Correspondingly, future studies could also consider these leadership styles when examining organisational factors of workplace bullying.

5.3.4 Organisational Support

With regards to organisational support, this study found that participants working in departments with moderate degree of organisational support had 0.49 times the odds (AOR = 0.49, 95% CI = 0.30 - 0.80) of being bullied compared with participants working in departments with low degree of organisational support, and participants

working in departments with high degree of organisational support had 0.12 times the odds (AOR = 0.12, 95% CI = 0.03 - 0.42) of being bullied compared with participants working in departments with low degree of organisational support. Similar to the findings of this study, organisational support has been shown to be significantly associated with workplace bullying in a number of studies, including those published by Djurkovic et al. (2008), Cooper-Thomas et al. (2013), Salahieh (2015), Naseer et al. (2016), and Gardner et al. (2016).

POS is defined as "the extent to which employees believe that their organisation value their contributions and care about their well being" (Eisenberger & Huntington, 1986, p. 500), and its specific antecedents include support from agents of organisations (e.g. superiors) and human resource management systems that acknowledges the importance of human capital (Parzefall & Salin, 2010). According to Djurkovic et al. (2008), an encouraging workplace that acknowledges, supports and values employees' well being, goals, and contributions is an effective counter to bullying. This may be explained via the norm of reciprocity, which states that good treatment from one party compels the others to respond in kind (Gouldner, 1960). An employee who perceives high organisational and social support may feel obliged to behave in a manner that benefits the organisation as well as those they work with. Correspondingly, they are less likely to engage in counterproductive work behaviours such as bullying. Indeed, Djurkovic et al. (2008), Cooper-Thomas et al. (2013), Salahieh (2015), Naseer et al. (2016), and Gardner et al. (2016) observed that POS had a significant inverse relationship with workplace bullying, while in terms of social support, Hansen et al. (2006) observed negative correlations between workplace bullying and support from coworkers as well as support from supervisors, and Hua et al. (2016) reported that workplace social support reduced the odds of workplace bullying by 67%. Concurrently, attribution theory proposes that individuals might reciprocate with responses directed towards the organisation or agents of the organisation if they attribute the cause of bullying to them (Kelley, 1973). According to Salahieh (2015), targets of bullying may be inclined to associate the bully with the entire organisation, and fault the organisation for failing to avert the bullying from occurring. In this regard, they may be more likely to direct aggressive behaviours towards agents of the organisation in order to vindicate any feelings of anger and frustration. Therefore, it may be that participants working in departments with moderate and high degree of organisational support had lower odds of bullying compared to their counterparts because employees in such departments were less likely to engage in behaviours that could harm the organisation and less likely to direct aggression towards agents of the organisation such as clinical team leaders as retribution for perceived lack of protection against bullying.

In addition, employees who perceive high degree of organisational support have been shown to have higher job satisfaction and positive mood at work (Rhoades & Eisenberger, 2002). As such, they are less likely to be frustrated or distressed. According to the frustration-aggression hypothesis (Berkowitz, 1989), frustration can lead to aggressive behaviours via the production of negative affect. Congruently, those who are content at work are less likely to engage in hostile workplace behaviours. Finally, the conservation of resources theory (Hobfoll, 1989) suggests that individuals are motivated to attain, retain and protect their resources. Correspondingly, if they perceive support from their organisations, they are more likely to make use of this resource instead of adopting defensive stances to conserve resources such as inaction. As such, they are more likely to report their experiences of abuse to management, leading a halt and discontinuation of bullying behaviours. Therefore, it may be that participants working in departments with moderate and high degree of organisational support had lower odds of bullying compared to their counterparts because employees in such departments were less likely to be frustrated and aggressive as well as more likely to report bullying, which allows bullying incidences to cease.

Nonetheless, as the findings of this study were based on cross-sectional data, another explanation for study findings could be that participants who were bullied scored organisational support poorly compared to those who were not exposed to workplace bullying. This could be the case if participants who were exposed to bullying perceived their organisational support as poor as a result of their own anger and disappointment rather than an objective evaluation of their workplace (Einarsen et al., 1994). Indeed, according to Vartia (1996) and Zapf (1999b), bullied participants evaluate their environment more negatively on all aspects compared to their counterparts. However, Vartia (1996), Agervold and Mikkelsen (2004), Hauge et al. (2007), and Agervold (2009) and Skogstad et al. (2011) reported that both bullied and non-bullied participants in their studies perceived deficiencies in the aspects of their work environment, which goes against this line of argument, and supports the role of organisational support as an antecedent of workplace bullying.

5.3.5 Organisational Justice

With regards to organisational justice, this study found significant associations for all three subdomains of organisational justice, i.e. procedural justice, interactional justice, and distributive justice. Similar to the findings of this study, studies that have observed significant relationship between organisational justice and hostile workplace behaviours include those published by Aquino, Lewis, et al. (1999), Tepper (2000), and Tepper et al. (2006).

In relation to procedural justice, this study found that participants working in departments with moderate degree of procedural justice had 0.56 times the odds (AOR = 0.56, 95% CI = 0.35 - 0.88) of being bullied compared with participants working in departments with low degree of procedural justice. Equally, Tepper (2000) and Tepper et al. (2006) observed significant correlation between procedural justice and abusive supervision, and Aquino, Lewis, et al. (1999) reported significant correlation between procedural justice and interpersonal deviance. Procedural justice is referred to "the fairness of the process by which outcomes are reached" (Luo, 2007, p. 644). According to Matthiesen (2006), perceptions of injustice due to employees perceiving themselves to be unfairly benefited or disadvantaged, such as experiencing layoffs and being denied opportunities to be promoted or receiving a salary increase, may result in them feeling victimised. Correspondingly, they may perceive the injustice to be a legitimate reason to seek retribution against those they perceive as being the source of their frustration, i.e. those who they perceive as having advantageous treatment, or those who act as agents of their organisation (Branch et al., 2007). This is in keeping with the norm of reciprocity (Gouldner, 1960) and causal attribution processes (Kelley, 1973), which states that individuals might reciprocate responses directed toward the organisation or agents of the organisations if they attribute the mistreatment to them. To support this, the study by Skarlicki and Folger (1997) reported that procedural, interactional and distributive justice interacted to predict organisational retaliation behaviour, and Greenberg and Barling (1999) observed that procedural justice predicted aggression against a supervisor. Concurrently, individuals targeted by the disgruntled employee may also wish to reciprocate the negative behaviour, which leads to a spiral of bullying behaviours (Andersson & Pearson, 1999). Indeed, according to the study published by Aquino and Lamertz (2004), perpetrators of negative interactions tend to often report being a victim of such interactions as well. Likewise, the study by Glomb and Liao (2003) reported that being a target of aggression significantly predicted employees' engagement in aggression, which suggests reciprocal influences. Therefore, it may be that participants working in departments with moderate degree of procedural justice had lower odds of bullying compared to their counterparts because one, they were less likely to perceive being unfairly treated and victimised, two, they were less likely to direct aggressive behaviours towards others as a means of retribution, and three, the likelihood of conflict escalation among employees in such departments was reduced.

In relation to interactional justice, this study found that participants working in department with moderate degree of interactional justice had 0.27 times the odds (AOR = 0.27, 95% CI = 0.17 - 0.42) of being bullied compared with participants working in departments with low degree of interactional justice, and participants working in departments with high degree of interactional justice had 0.06 times the odds (AOR = 0.06, 95% CI = 0.02 - 0.19) of being bullied compared with participants working in departments with low degree of interactional justice. Likewise, Tepper (2000) observed significant correlation between interactional justice and abusive supervision, and Aquino, Lewis, et al. (1999) reported significant correlation between interactional deviance. Interactional justice is referred to as "the fairness of the nuances of interpersonal treatment" (Luo, 2007, p. 644). Unfair treatment in this regard therefore refers to behaviours such as being

disrespectful, hostile, being deceptive, and denying important information (Parzefall & Salin, 2010), which are actions categorised under workplace bullying. Accordingly, individuals who perceive high degree of interactional injustice are likely to feel victimized. Additionally, according to Neuman (2004), resentment and aggression are most often related with perceptions of unfair or inflammatory treatment by others. This may be because according to the frustration-aggression hypothesis (Berkowitz, 1989), frustration due to perceived injustice leads to negative affect, which predisposes to aggressive behaviours. Alternatively, frustrations due to perceived injustice may also increase the likelihood of coping via passive-destructive methods such as violating work expectations, and this via the social interactionist theory (Felson & Tedeschi, 1993) may in turn cause aggressive behaviours from other members of the organisation. Correspondingly, it may be that participants working in departments with moderate and high degree of interactional justice had lower odds of bullying compared to their counterparts because one, they were less likely to perceive hostility from their superiors, and two, employees in such departments were less likely to engage in aggressive or counterproductive behaviours to either vent their frustration or as a method of coping.

Finally, in relation to distributive justice, this study found that participants working in departments with high degree of distributive justice had 0.37 times the odds (AOR = 0.37, 95% CI = 0.18 - 0.76) of being bullied compared with participants working in departments with low degree of distributive justice. Similarly, Tepper (2000) observed significant correlation between distributive justice and abusive supervision, and Aquino, Lewis, et al. (1999) reported significant correlation between distributive justice and interpersonal deviance. Distributive justice is referred to as "fair distribution of outcomes within workplaces" (Luo, 2007, p. 644). According to Neuman (2004), employees appraise the ratio of their inputs to their outcomes, and are sensitive to any discrepancy in this ratio. Therefore, if they perceive that their inputs greatly outweigh their outcomes, they may feel victimised by the organisation. Correspondingly, similar to the mechanism which links procedural justice to bullying, employees may believe that any enacted aggression towards those who had favourable treatment or those who act as agents of the organisation is justified considering that they had rightful motivations to seek reprisal. This is in keeping with the norm of reciprocity (Gouldner, 1960) and causal attribution processes (Kelley, 1973), and will likely lead to a spiral of bullying behaviours among employees involved in the altercations (Andersson & Pearson, 1999). Indeed, studies have demonstrated that distributive injustice was significantly related to counterproductive work behaviours aimed at retaliating against the organisation (Skarlicki & Folger, 1997) as well as supervisor (Greenberg & Barling, 1999). Additionally, the relationship between distributive justice and workplace bullying may be also explained by the balance theory (Heider, 1958) and restorative justice theory (Homans, 1961). According to the balance theory, individuals are motivated to seek balance, and as such, will seek a means of reducing the tension they feel from perceived injustice as a means of "balancing the equation" (Brotheridge, 2013). Meanwhile, according to the restorative justice theory, these means are usually indirect approaches, as employees will often avoid the potential danger of addressing the source of injustice directly (Brotheridge, 2013). Therefore, employees who experience injustice may pass the abuse onto other employees as a way of restoring justice and balance. Accordingly, it may be that participants working in departments with high degree of distributive justice had lower odds of bullying compared to their counterparts because employees in such departments were less likely to perceive being unfairly rewarded and correspondingly less likely to direct aggressive behaviours towards others as a means of retribution or as a method to achieve balance.

Alternatively, as these findings were based on cross-sectional data, reverse causality is a possibility. It may be that those who experienced mistreatment for prolonged periods developed negative perceptions of all aspects of their working environment, including organisational justice, and thus rated these constructs poorly. This would have created an impression that all subdomains of organisational justice were inversely related to workplace bullying. Indeed, according to Vartia (1996) and Zapf (1999b), individuals who are the targets of bullying appraise their environment more negatively on all aspects compared to their counterparts. Nevertheless, Vartia (1996), Agervold and Mikkelsen (2004), Hauge et al. (2007), Agervold (2009) and Skogstad et al. (2011) reported that both bullied and non-bullied participants in their studies perceived deficiencies in the aspects of their work environment, which suggest that this may not be the case.

CHAPTER 6: CONCLUSION

6.1 Summary of Key Study Findings

The purpose of this study was five-fold. Firstly, it aimed to systematically assess the prevalence, factors and outcomes of workplace bullying among junior doctors. Secondly, it intended to validate the psychometric properties of the instruments used in this study. Thirdly and fourthly, it aimed to determine the association of individual traits and organisational characteristics with workplace bullying among junior doctors. Finally, it meant to produce a policy brief outlining study findings and related policy recommendations. The systematic review performed has shown that junior doctors worldwide commonly experience workplace bullying, and this multi-causal phenomenon has led to detrimental consequences for both individuals and healthcare organisations. The multicentre cross-sectional study, which was conducted using instruments that were established to be psychometrically sound via post-hoc validation, revealed that individual traits and organisational characteristics were significantly associated with workplace bullying among junior doctors. Finally, the policy brief that is presented in Chapter 6.3 enabled the practice of applied research by suggesting policy recommendations based on factors of workplace bullying identified from the multicentre cross-sectional study. The following sections present the implications for theory as well as policy and practice, methodological reflections, directions for future research, and concluding remarks.

6.2 Implications for Theory

Interest in research into workplace bullying arose in 1980s when Heinz Leymann, credited as a pioneer in the field, published his findings on mobbing in Sweden. Both

academic and public awareness gradually surfaced in the 1990s, and since then the research field is growing as new empirical studies are added unremittingly. The present study was able to demonstrate that workplace bullying among junior doctors is related to both individual traits and organisational characteristics. This is especially pertinent as among the studies on workplace bullying conducted on junior doctors, many have focused on the outcomes, such as ill health (Aykut et al., 2016; Farley et al., 2015; McNamara et al., 1995; Quine, 2003) and work ramifications (Aykut et al., 2016; Bairy et al., 2007; Daugherty et al., 1998; Dikmetas et al., 2011; Farley et al., 2015; Quine, 2003), as well as sociodemographic and employment characteristics (Al-Shafaee et al., 2013; Aykut et al., 2016; Bairy et al., 2007; Chadaga et al., 2016; Cheema et al., 2005; Crutcher et al., 2011; Dikmetas et al., 2011; Fnais et al., 2013; Hills et al., 2012; Li et al., 2010; Ling et al., 2016; McNamara et al., 1995; Nagata-Kobayashi et al., 2009; Quine, 2003; J. Scott et al., 2008). In contrast, very little is known with regards to the influence of individual traits and organisational characteristics on workplace bullying among junior doctors that were the subjects of scrutiny in this study. Additionally, according to Hauge et al. (2011) and Mathisen (2012), previous studies that have examined organisational factors have principally conducted analysis on the individual level, which may not reflect objective organisational characteristics. Correspondingly, the multilevel analysis employed in this study was able to better account for the clustered nature of the data.

This study expands on Leymann (1996) work environment hypothesis theory by demonstrating that aspects of the work environment including organisational climate, organisational culture, organisational leadership, organisational support and organisational justice were associated with workplace bullying among junior doctors.

269

Indeed, all the organisational characteristics examined in this study showed statistically significant associations with workplace bullying. In addition, this study expands on the ecological model of workplace bullying as suggested by S. L. Johnson (2011), which is based on Brofenbrenner (1979) ecological systems theory, by identifying factors at the mesosystem and microsystem levels. In the context of healthcare, the findings of this study suggest that microsystem level factors include individual traits such as negative affect and neuroticism, while mesosystem level factors include organisational characteristics such as organisational climate, organisational culture, organisational leadership, organisational support, and organisational justice. In relation to negative affect, one limitation is that the findings of this study and many of others supporting negative affect as a factor of workplace bullying were based on cross-sectional data. However, as the prospective study by Bowling et al. (2010) was able to demonstrate that negative affect was significantly related to subsequent bullying, we may be more convinced of its causal relationship with workplace bullying. In relation to neuroticism however, though the findings of this study suggest that it was associated with workplace bullying, a prospective study published by Nielsen and Knardahl (2015) showed that neuroticism was not associated with subsequent harassment after controlling for role conflict and role clarity. Therefore, future studies should include more longitudinal studies with a focus on this trait to enable the ascertainment of causality. In relation to organisational characteristics, there are some studies that have employed prospective study designs to examine their relationships with workplace bullying, including the studies published by Dollard, Dormann, Tuckey, and Escartin (2017) who showed that psychosocial safety climate predicted less workplace bullying four years later, Glambek et al. (2018) who demonstrated that laissez-faire leadership moderated the relationship between baseline bullying and continued victimisation two years later, and Tsuno and Kawakami (2015) who reported that employees who worked under supervisors high in laissez-faire leadership had 4.3 risk of being exposed to workplace bullying. However, according to literature review, no prospective studies investigating the relationship between the organisational factors that were investigated in this study, i.e. organisational climate, clan, adhocracy, hierarchy and market culture, mentor or facilitator, innovator or entrepreneur, administrator or organizer, and production and achievement-oriented leadership style, organisational support, and procedural, interactional and distributive justice have been published thus far. Therefore, reverse causality may be an issue, as the findings of this study and those of others supporting these factors were based on cross-sectional data. However, to lend support to the findings of this study, Vartia (1996), Agervold and Mikkelsen (2004), Hauge et al. (2007), and Agervold (2009) reported that both bullied and non-bullied participants perceived deficiencies in aspects of their work environment, which implies that organisational characteristics have some degree of precursory roles in the prevalence of workplace bullying. Nonetheless, future studies should incorporate more longitudinal studies with a focus on these organisational characteristics to provide more evidence to establish whether causal relationships between these organisational characteristics and workplace bullying exist.

Moreover, this study expanded on the mechanisms that could explain how individual and organisational factors influence the prevalence of workplace bullying. To summarise, theories to explain how individual traits may influence the prevalence of workplace bullying include: (1) perception mechanism, in which certain dispositions increase the likelihood of perceiving bullying; (2) vulnerability factor (Aquino & Bradfield, 2000; Coyne et al., 2000; Einarsen, 1999; Matthiesen & Einarsen, 2001; Zapf, 1999b), in which certain characteristics make individuals appear as susceptible targets to others; (3) "provocative victims" (Olweus, 1993) and victim precipitation theory (Curtis, 1974; Elias, 1986), in which individuals with certain traits elicit aggressive behaviours in others; and (4) reversed effect mechanism, in which changes in traits develop as a result of experiencing bullying. On the other hand, theories to explain how organisational characteristics may affect the prevalence of workplace bullying included: (1) job demand-control model (Karasek, 1979), in which organisational situations involving high job demand and low job control create job strain that may lead to conflicts; (2) job demand-resource model (Bakker & Demerouti, 2007), in which organisational situations comprising high job demand and low job resources create job strain as well as competition for resources that may lead to conflicts; (3) frustrationaggression hypothesis (Berkowitz, 1989), in which work-related tension lead to frustration and negative affect and therefore elicit aggressive behaviours among employees; (4) social learning theory (Bandura, 1971), in which certain organisational cultures and leadership styles cause individuals to learn that bullying is acceptable and even rewarded; (5) causal attribution processes (Kelley, 1973) and norm of reciprocity theory (Gouldner, 1960), in which perceived ill treatment attributed to the organisation causes individuals to engage in counterproductive work behaviours and/or target aggression towards agents of the organisation; (6) conservation of resources theory (Hobfoll, 1989), in which unsupportive organisations lead to individuals' perception of resource deficit that causes them to adopt defensive stances when confronted with bullying, which allows bullying to perpetuate; (7) balance theory (Heider, 1958) and restorative justice theory (Homans, 1961), in which individuals who perceive injustice engage in indirect attacks against others to restore justice and balance; and finally (8) reversed effect mechanism, in which aspects of the work environment are perceived negatively as a result of experiencing workplace bullying.

Other than that, the methodology of measuring workplace bullying was explored by looking at the prevalence figures generated using different assessment methods. As observed in this study and other studies (Chadaga et al., 2016; Gardner et al., 2013; Ling et al., 2016; Nielsen, 2009; Nielsen et al., 2017; Nielsen et al., 2010), the behavioural experience method led to a much higher prevalence compared to the selflabelling with definition method. Through the literature review, it was determined that more recent studies have started to incorporate both assessment methods to measure the prevalence of workplace bullying (Cooper-Thomas et al., 2013; Gardner et al., 2013; Hampton et al., 2019; Ling et al., 2016; Obeidat et al., 2018; Petrović et al., 2014). Additionally, some recent studies have examined workplace bullying using the raw sum score approach as proposed by Notalaers and Einarsen (2013), as opposed to the more conventional dichotomous sum score approach (Evans, 2016; Hampton et al., 2019; Obeidat et al., 2018; Sauer & McCoy, 2017; Sungwan et al., 2017). However, few studies have used the combination of behavioural experience method and self-labelling with definition method to operationally define workplace bullying. Exceptions to this include the studies published by Zapf (1999b) and Niedhammer et al. (2007), who operationalized cases of bullying based on the LIPT and Leymann's criteria as well as the self-labelling method. In this study, it was argued that the classification of whether one is bullied or not should depend on both measures. As reasoned by Einarsen and Skogstad (1996) and Nielsen et al. (2010), it is important to assess both the exposure to negative actions as well as the perception of being victimised by such exposure when measuring workplace bullying, because in doing so, individual vulnerability is taken into account and we can therefore differentiate between situations that can be handled or tolerated, and situations where targets have difficulties defending themselves. In addition, Niedl (1995) argued that a person who is exposed to negative actions would only feel bullied if he or she experiences these actions as unpleasant, degrading, and hostile. Furthermore, as pointed out by Nielsen et al. (2010), popular inventories such as NAQ-R only assesses the frequency and duration of different bullying behaviours, and does not consider the power imbalance between the target and perpetrator. Therefore, both measures should be combined to capture the persistency of negative actions experienced as well as the participants' subjective interpretation of being victimised by such actions, in keeping with most definitions of workplace bullying.

6.3 Implications for Policy and Practice

The findings of this study have important implications for policy and practice. Firstly, it appears that at least one in ten Malaysian junior doctors were exposed to workplace bullying. This figure might understate the actual burden of workplace bullying among junior doctors, as workplace bullying is generally recognised to be underreported (Bairy et al., 2007; Baron & Neuman, 1998). With this in mind, considering its negative repercussions on junior doctors including ill health (Aykut et al., 2016; Farley et al., 2015; McNamara et al., 1995) and poor work outcomes (Daugherty et al., 1998; Dikmetas et al., 2011; Farley et al., 2015), as well as its negative impact on junior doctors' ability to provide safe and quality patient care (Ekici & Beder, 2014; Feudtner et al., 1994; Leape et al., 2012; Leisy & Ahmad, 2016; Moayed et al., 2006; Paice & Smith, 2009; K. H. Sheehan et al., 1990), this issue should be addressed promptly and enthusiastically. Secondly, greater awareness of workplace bullying itself is required. According to the studies published by Al-Shaface et al. (2013), Nagata-Kobayashi et al. (2009) and Coverdale, Balon, and Roberts (2009), junior doctors were not even aware of what is considered to be abuse and often thought that any harsh treatments experienced were part of ordinary training. Some senior doctors on the other hand were inclined to believe that any complaints of bullying from junior doctors can be disregarded as they should be able to withstand the pressure and harsh realities of medical training, which they argue is for the good of both junior doctors and patients (Yeoh, 2016). Therefore, the first step towards addressing this occupational hazard could include introducing workplace bullying seminars and workshops, to familiarize the topic to healthcare workers and heighten their appreciation for its nature, factors, and consequences. Indeed, education as a method of primary intervention was shown to be effective at curbing bullying in the study published by Osatuke, Moore, Ward, Dyrenforth, and Belton (2009), who reported that the Civility, Respect, Engagement in the Workforce program designed to promote awareness of one's interpersonal impact at the workplace resulted in substantial improvement in the civility of workplace behaviour. On a similar note, the study published by Chipps and McRury (2012) reported a decrease in proportion of respondents perceiving themselves as being bullied after the introduction of an educational program on workplace bullying.

Thirdly, the right of Malaysian employees to enjoy a safe and healthy working environment is stipulated in the Occupational Safety and Health Act 1994, yet the Act does not clearly outline protection against workplace bullying. Thus, more work has to be done towards achieving legislative control to combat workplace bullying. In this regard, the findings of this study were able to provide some focus in the development of evidence-based policies and guidelines on the prevention and management of workplace

275

bullying among junior doctors. In relation to specific factors that were found to be significantly associated with workplace bullying among junior doctors, individual traits including negative affect and neuroticism were found to be positively related to workplace bullying. Herein, though we cannot alter individual predispositions, an understanding of the role of targets' individual traits can contribute towards organisational measures with interpersonal focus that can be directed at workplace bullying. For example, as we know that high levels of negative affect and neuroticism may increase the odds of workplace bullying, we may implement targeted primary interventions such as cognitive training. Indeed, Van den Brande et al. (2017) observed that employees who engaged in emotion-focused coping strategies were more likely to be exposed to workplace bullying. In addition, Niven and colleagues demonstrated that emotion regulation was able to influence the severity of bullying outcomes in terms of health and well being, such that reappraisal of experienced negative actions attenuated it (Niven, Sprigg, & Armitage, 2013) whereas ruminative thinking exacerbated it (Niven, Sprigg, Armitage, & Satchwell, 2013). Therefore, such training may be able to encourage a more adaptive response to negative actions among junior doctors high in negative affect and neuroticism. This was demonstrated by Stagg, Sheridan, Jones, and Speroni (2011), who reported that following a workplace bullying cognitive rehearsal program, study participants stated that they felt more adequately prepared to handle bullying. Other than that, secondary interventions such as resource-enhancement building and conflict management skills training could be introduced to improve junior doctors' ability to deal with bullying should it occur. Indeed, bolstering one's personal resources has been shown to be effective in reducing psychological distress as demonstrated in the study by Freedy and Hobfoll (1994), who conducted an intervention study in which nurses received one or two resource-enhancement intervention,

including the skills to develop personal resilience and the skills to create social support. According to the authors, nurses who acquired both types of skills experienced lower levels of stress compared to nurses who acquired a single skill. Moreover, the qualitative study by Zapf and Gross (2001) reported that individuals who successfully coped with bullying were better at recognising and avoiding escalating behaviours, and the intervention study by León-Pérez, Arenas, and Griggs (2012) reported significant reduction in the number and intensity of interpersonal conflicts following conflict management strategies training. Besides that, tertiary intervention such as providing counselling sessions for junior doctors affected by bullying may reduce its negative impacts, as counselling has been shown to have long-term benefits for those who have experienced bullying (Tehrani, 2003). Nonetheless, it should be emphasised that while individual traits may have some bearing on the prevalence of workplace bullying, one should avoid being confined to the fundamental attribution error and fall into the realm of victim-blaming. As argued by Nielsen et al. (2017), the perpetrators of bullying behaviours are responsible for how they act towards others at work, and the healthcare organisation itself serve as an important influence on the pervasiveness of workplace bullying.

In addition to interventions targeted at addressing individual factors, healthcare organisations should ensure that organisational factors related to workplace bullying are tackled. As shown in this study, all aspects of the work environment, including organisational climate, organisational culture, organisational leadership, organisational support, and organisational justice were found to be associated with workplace bullying among junior doctors. To begin with, organisations could create explicit rules against bullying by introducing bullying prevention policies and creating a committee to review

and mediate any bullying complaints. Such bullying policies should include a statement that bullying will not be tolerated, as well as outlining standards of behaviour and protocols on reporting, investigating, and managing bullying. This will ensure that the organisation is seen by employees as not permitting bullying, thus avoiding the acceptance and subsequent normalisation of such behaviours. Indeed, the study published by Cooper-Thomas et al. (2013) found that organisational anti-bullying policies was negatively correlated with workplace bullying and buffered the relationship of workplace bullying with well-being and organisational commitment, and the study by Meloni and Austin (2011) showed that the implementation of zero tolerance of bullying and harassment program led to improvements in bullying and harassment as well as increases in employees' job satisfaction. In addition to that, multifaceted primary interventions targeted at improving all aspects of the work environment should be put in place. To improve organisational climate, departmental guidelines to reduce workrelated stressors such as overwork and to ensure that junior doctors are getting their entitled off days could be introduced. This is because as shown in this study, the commonest negative actions reported by junior doctors include "being exposed to unmanageable workload" and "pressure to not claim something to which by right you are entitled to". To augment organisational leadership, leadership training for heads of departments and clinical team leaders that encourages decisive and production-oriented leadership could be initiated, as such leadership style has been shown in this study to be inversely related to workplace bullying among junior doctors. Indeed, according to Leisy and Ahmad (2016), strong leadership by doctors in supervising roles impedes bullying even by its simple presence, and Cooper-Thomas et al. (2013) reported a negative correlation between constructive leadership and bullying among healthcare workers. To enhance organisational support, a mentor-mentee system, feedback sessions on internship training, and avenues for confidential reporting of any mistreatment could be introduced. As shown in the study by Quine (1999), a supportive work environment was able to moderate the effects of bullying such as job satisfaction, propensity to leave, and depression among junior doctors, and may function as a buffer against stress, which will reduce the odds of stress-related maladaptive behaviours such as bullving. To improve organisational justice, policies for ensuring fair and objective treatment, decisions, and outcomes, including procedures for logbook assessments and end-of-posting appraisals could be introduced, as well as allowing opportunities for house officers to ask questions in relation to their evaluations. This is essential not only to promote transparency, communication and mutual respect, but to also promote a culture of safety (Gluck, 2010). Finally, to foster an organisational culture that is nonconducive to bullying, management should place more emphasis on programs and activities that could encourage department members to be more close-knit, such as implementing family days, as well planning the work organisation to be team-based, flexible, and ordered, as clan, adhocracy and hierarchy culture has been shown to be significant factors of workplace bullying among junior doctors. Indeed, collegiality and supportive relationships have been shown to mitigate stress, and a team-based mentality to medicine has been said to reduce its hierarchical nature and improve clinical outcomes (Leisy & Ahmad, 2016). Other than that, management could task one person in each department, i.e. the department head or a designated senior specialist, to act as mediators in conflicts. This is because mediators may allow conflicts to deescalate (Felson, 1978), and this may be a helpful strategy at early stages of conflict situations.

The study findings and policy recommendations are summarised in an objective policy brief entitled: "Workplace bullying among junior doctors: What can be done?", which is outlined in Figure 6.3.1 and 6.3.2.

university

WORKPLACE BULLYING AMONG JUNIOR DOCTORS: WHAT CAN BE DONE?

Policy Brief

December 2018

DEPARTMENT OF SOCIAL AND PREVENTIVE MEDICINE

UNIVERSITI M A L A Y A



What is workplace bullying?

"Situations where an employee is persistently exposed to negative and aggressive behaviours at work primarily of a psychological nature, with the effect of humiliating, intimidating, frightening or punishing the target" (1)

- Commonest types of bullying reported by junior doctors (based on study findings):
- □ "Being exposed to unmanageable workload"
- □ "Pressure to not claim something to which by right you are entitled to"
- □ "Being humiliated or ridiculed in connection with your work"
- "Being shouted at or being target of spontaneous anger"

Junior doctors' exposure to workplace bullying poses several problems. First, it negatively impacts their health and work behaviour. Second, it affects their training and ability to provide safe patient care. Third, it compromises the delivery of quality healthcare.

This Paper examines the individual and organizational factors of workplace bullying among junior doctors, and outlines possible policy responses.

WORKPLACE BULLYING: QUICK FACTS (Based on study findings)

1. More than 1 in 10 Malaysian junior doctors reported being bullied at work

. Negative outcomes of workplace bullying (2-3)	
INDIVIDUAL	ORGANISATION
Mental strain	Job dissatisfaction
Burnout	Increased accidents
Impaired confidence	Increased medical errors
Decline in empathy	Impaired teamwork and
and ethics	communication

Summary from a Multicentre Cross-Sectional Study Conducted in Central Zone, Malaysia (2018)

2

INDIVIDUAL FACTORS



1. NEGATIVE AFFECT (NA; tendency to experience negative emotions)

Respondents with moderate degree NA were 340% more likely to be bullied (AOR = 4.40, 95% CI = 2.20 - 8.77) and respondents with high degree NA were 1269% more likely to be bullied (AOR = 13.69, 95% CI = 6.46 - 29.02) compared to respondents with low degree NA

2. NEUROTICISM (NEU; tendency to feel anxious and worry)

Respondents with high degree of NEU were 199% more likely to be bullied compared to respondents with low degree of NEU (AOR = 2.99, 95% CI = 1.71 - 5.21)

POLICY ALTERNATIVES TO ADDRESS THIS?

- ✓ Education; studies have shown that junior doctors aren't even aware of what qualifies as bullying (4). Improve awareness of workplace bullying among healthcare workers via seminars and/or workshops and dissemination of guidance booklets
- Conduct cognitive, resource building and conflict management training programs among junior doctors to encourage more adaptive responses to negative interactions should bullying occur, and to improve junior doctors' coping skills and resilience
- Provide counseling sessions for junior doctors affected by workplace bullying

Workplace Bullying Among Junior Doctors: A Policy Brief – Malaysia (December 2018) |1

Figure 6.3.1: Policy brief (page 1)

Summary from A Multicentre Cross-Sectional Study Conducted in Central Zone, Malaysia (2018)

ORGANISATIONAL 1. ORGANISATIONAL CLIMATE (OCL; organizational work environment)



Respondents working in departments with neutral OCL were 65% less likely (AOR = 0.35, 95% CI = 0.20 - 0.62) and respondents working in departments with positive OCL were 67% less likely (AOR = 0.33, 95% CI = 0.11 - 0.98) to be bullied compared with respondents working in departments with negative OCL

2. ORGANISATIONAL CULTURE (system of shared values and assumptions)

(A) Clan culture (CC); values cohesion: respondents working in departments with moderate degree CC were 61% less likely (AOR = 0.39, 95% CI = 0.25 – 0.59) and respondents working in departments with high degree CC were 67% less likely (AOR = 0.33, 95% CI = 0.17 – 0.63) to be bullied compared with respondents working in departments with low degree CC; (B) Adhocracy culture (AC); values dynamism: respondents working in departments with moderate degree AC were 64% less likely (AOR = 0.36, 95% CI = 0.23 – 0.57) and respondents working in departments with high degree AC were 58% less likely (AOR = 0.42, 95% CI = 0.24 – 0.74) to be bullied compared with respondents working in departments working in departments with low degree AC; (C) Hierarchy culture (HC); values order: respondents working in departments with moderate to respondents working in departments with low degree HC were 36% less likely (AOR 0.64, 95% CI = 0.41 – 0.98) to be bullied compared to respondents working in departments with low degree HC

3. LEADERSHIP STYLE (LS)

 Respondents working in departments with moderate degree of production & achievement-oriented LS were 64% less likely (AOR = 0.36, 95% CI = 0.17 - 0.76) to be bullied compared with respondents working in department with low degree of production & achievement-oriented LS

0

4. ORGANISATIONAL SUPPORT (OS)

 Respondents working in department with moderate degree of OS were 51% less likely (AOR = 0.49, 95% CI = 0.30 - 0.80) and respondents working in department with high degree OS were 88% less likely (AOR = 0.12, 95% CI = 0.03 - 0.42) to be bullied compared with respondents working in department with low degree OS

POLICY ALTERNATIVES TO ADDRESS THIS?

- Create bullying prevention policy, which includes:
- Statement that bullying will not be tolerated
- $\circ \quad \text{Outline of acceptable standards of behaviour}$
- Protocols on reporting, investigating, and managing, workplace bullying, including timescales for action
 Committee to review and mediate bullying complaints
- Drawida avanuas for confidential reporting
- Provide avenues for confidential reporting
- Set departmental guidelines to reduce work-related stressors (e.g. overwork, lack of off days)
- Provide leadership training for heads of departments and clinical team leaders
- Introduce a mentor-mentee system and feedback sessions on internship training
 Introduce policies for fair decisions and outcomes for
- Introduce policies for fair decisions and outcomes for logbook assessments and end-of-posting appraisal
- Implement programs that encourage bonding
- Plan work organization to be ordered and flexible
- Provide mediation for parties involved in conflicts

5. ORGANISATIONAL JUSTICE

- Procedural justice (PJ); fairness of process that leads to decision outcomes: respondents working in department with moderate degree of PJ were 44% less likely (AOR = 0.56, 95% CI = 0.35 – 0.88) to be bullied compared with respondents working in department with low degree PJ
- Interactional justice (IJ); degree to which individual affected by decision is treated with dignity & respect: respondents working in a department with moderate degree IJ were 73% less likely (AOR = 0.27, 95% CI = 0.17 0.42) and respondents working in department with high degree IJ were 94% less likely (AOR = 0.06, 95% CI = 0.02 0.19) to be bullied compared with respondents working in department with low degree of IJ.
- Distributive justice (DJ); fairness associated with decision outcomes & resource distribution: Respondents working in a department with a high degree of distributive justice were 63% less likely (Adjusted OR = 0.37, 95% CI = 0.18 0.76) to be bullied compared with respondents working in a department with a low degree of distributive justice.

REFERENCES: (1) Einarsen, et al (2009). Measuring exposure to bullying and harassment at work: Validity, factor structure and psychometric properties of the negative acts questionnaire-revised. Work & Stress, 23, 24–44 (2) Samsudin, et al (2018). The prevalence, risk factors and outcomes of workplace bullying among junior doctors: A systematic review. EJWOP, 27, 700-718 (3) Paice and Smith (2009). Bullying of trainee doctors is a patient safety issue. The Clinical Teacher, 6, 13-17 (4) Al-Shafaee, et al (2013). Pilot study on the prevalence of abuse and mistreatment during clinical internship: A cross-sectional study among first year residents in Oman. BMJ Open, 3, 1-7



This policy brief was prepared by: Dr. Ely Zarina Samsudin, (1) Population Health and Preventive Medicine
 Unit, Faculty of Medicine, UiTM; (2) Social and Preventive Medicine Department, Faculty of Medicine, University of Malaya. Email: elyzarina07@yahoo.com

Workplace Bullying Among Junior Doctors: A Policy Brief – Malaysia (December 2018)

Figure 6.3.2: Policy brief (page 2)

6.4 Methodological Reflection

This study is not without limitations. The first limitation stems from the design of this study. Cross-sectional studies measure both the exposure and outcome simultaneously, and are not able to establish evidence for cause-and-effect. Therefore, the study permits no inferences to the causality of the individual and organisational factors with regard to workplace bullying, and all associations observed in this study should be rigorously tested via longitudinal studies. Furthermore, the results only reflected a "snapshot" finding, and given another study timeframe, results may be different. However, given that the nature of the topic is sensitive and that participants' anonymity was observed during data collection such that there was no method of identifying who completed the study questionnaire, follow up of study participants for subsequent assessments was not possible. One way to conduct longitudinal studies whilst preserving the need for confidentiality would have been to conduct one-to-one assessments, which was not feasible given restraints in resources. Therefore, a multicentre cross-sectional study was deemed a practical and effective method of gathering information that could direct a focus for further work in this research area.

Secondly, the instrument used in this cross-sectional study was a self-administered questionnaire, and this could have led to recall bias, social desirability bias, information bias and common method bias, which would have biased estimates. Recall bias may have occurred if study participants were unable to recall events or experiences from the past with complete accuracy. Social desirability bias may have resulted if study participants answered certain questions in a manner that would be viewed positively by others. For example, a participant may experience bullying but in order to avoid perceiving him or herself as a victim, choose to report otherwise. Indeed, this may be

possible as Baron and Neuman (1998) reported that bullying often goes unreported because targets may feel ashamed and mortified. Information bias may have resulted if exposure status was erroneously classified while retrieving information via questionnaires. This could have occurred if data was entered incorrectly into Excel files. Finally, common method bias could have resulted from the use of self-administered questionnaire to measure multiple constructs (Schaller, Patil, & Malhotra, 2015). In these scenarios, recall bias was unavoidable, as the study questionnaires were anonymous and there was no method of contacting participants to verify any ambiguous or irregular responses once they have submitted the questionnaires. On the other hand, though it is difficult to remove the stigmatisation associated with the label of victim (Agervold, 2009; Lewis, 2004; Magley, Hulin, Fitzgerald, & DeNardo, 1999), social desirability bias may have been lessened as participant anonymity was observed by using a questionnaire that contained no identifying information and that was sealed into an opaque envelope once filled in. Information bias may have also been minimised, as data entry was double checked and rectified for any error. Finally, common method bias was addressed by choosing short versions of validated instruments where possible to reduce respondent fatigue and tendencies for satisficing, and introducing separations when measuring each type of construct (Podsakoff, MacKenzie, & Podsakoff, 2012). Other types of bias include non-response bias, which may have occurred if junior doctors who experienced workplace bullying and fear retributions from the perpetrators of bullying chose not to participate in this study, as they would differ in meaningful ways from junior doctors who agreed to participate in this study. However, during the participant recruitment process, potential participants were assured of anonymity and the confidentiality of this study, which may have reduced the likelihood of this occurring.

284

Thirdly, several factors may have affected the prevalence of workplace bullying among junior doctors in this study. Workplace bullying is described as a process that often progresses and escalates over time (Nielsen, Indregard, et al., 2016). As the study was conducted among study subjects who were currently employed, those who had been severely affected by bullying to the extent that they had left work or developed illness requiring long-term leave may have been excluded from the study. As such, the prevalence of workplace bullying may have been underestimated. In addition, the study questionnaire used for the first two study sites did not mention specifically the duration of negative actions experienced, i.e. the stem question was "For each statement, how often do you experience the following interactions" whereas the study instrument for subsequent study sites were worded to measure six-month prevalence, i.e. the stem question was "For each statement, how often do you experience the following interactions during the past six months". This inconsistency in reporting period was an unfortunate oversight on the author's part, as this could have resulted in non-differential misclassification of bullied participants and an underestimation of effects. However, according to sensitivity analysis (Appendix K), the prevalence of workplace bullying for those study sites did not differ significantly from other study sites, and the prevalence measured using the study questionnaire with and without the six-month reporting period did not differ significantly, which suggests that the prevalence for those study sites approximate the six-month prevalence of other study sites. In addition, the different data collection method used in study site I and study site II-XII could have led to differential response rates, which may have biased results. However, again, sensitivity analysis revealed that the prevalence of workplace bullying did not differ according to the mode of data collection. Therefore, it was decided that data would be pooled to ensure that the statistical power of this study was adequate. On the same topic of prevalence, it is also important to note that as this study was conducted in the central zone of Malaysia, the prevalence reported may not be generalised to the whole of Malaysia, as the work environment may be different for hospitals within other zones of Malaysia. In addition, though the response rate of this study (62%) is higher than the average response rate for surveys used in organisational research (Baruch & Holtom, 2008), a non-response of approximately 40% may have influenced the representativeness of the findings. Understanding the baseline characteristics of respondents and non-respondents would have been ideal to ascertain the risk of selection bias, but this was not possible as study participants were anonymous.

Fourthly, though all associations had been adjusted for important confounders, residual confounding may still be an issue. Factors that have been implicated with workplace bullying such as individual social, coping and problem-solving skills (Baillien & De Witte, 2010; Coyne et al., 2000; Einarsen et al., 1994; Glasø et al., 2009; Rammsayer et al., 2006; Van den Brande et al., 2017; Zapf, 1999b; Zapf et al., 2003), organisational change (Baron & Neuman, 1996; Hoel & Cooper, 2000; McCarthy, 1996; M. Sheehan, 1996), and societal cultures and norms (Kemp, 2014; Kwan et al., 2014; Moayed et al., 2006) were not able to be examined and addressed in this study. This is because limited resources did not allow for assessment of given factors, as it would have involved additional assessments via quantitative and/or qualitative approaches. These factors may have biased the relationships observed in this study. As such, where practical, they should be addressed in future studies. In addition, this study investigated workplace bullying as perceived by the targets of bullying and does not consider the perception of the perpetrators of bullying. According to Rayner and Cooper (2003), practical and ethical considerations make it challenging to both approach and

assess this group of subjects. Nevertheless, in order to elicit a more comprehensive picture of the phenomenon, future studies should incorporate the perspectives of perpetrators of bullying where feasible.

Finally, in relation to the systematic review performed to assess the body of evidence on workplace bullying among junior doctors, only articles in English were included to enable quality assessment. Therefore, evidence from articles in languages other than English were unable to be scrutinised. In addition, the database EMBASE could not be included in the database search due to it not being subscribed to by the university library. This was unfortunate considering that research into workplace bullying commenced in the Scandinavian countries (Einarsen et al., 2003), and important studies from researchers within the European region may have not been captured by the systematic review. Nevertheless, considering that the systematic review involved searches through five other important databases including Medline, Scopus, Web of Science, PsycINFO and Cochrane Library, the likelihood of this was low. Publication bias may have arisen as grey literature was not searched, which includes performing hand search in local libraries' thesis or report repositories. Furthermore, snowball search of references of included studies was not performed due to limitations in resources. A limitation of this is that relevant local studies may have been missed. However, this was likely minimised by including Scopus, which indexes grey literature (Bonato, 2016). Other than that, as studies included were all cross-sectional in design, used selfadministered questionnaires, and examined a topic pertaining to a sensitive issue, the validity of findings may have been hindered by temporal ambiguity, recall bias, as well as self-reporting bias. Nonetheless, authors of included studies took precautions in maintaining strict confidentiality in their studies so reporting bias may have been minimised.

Despite some limitations, it is equally important to note several strengths of this study. The first and most important strength is that to the author's knowledge, this study is the first study to assess workplace bullying among junior doctors in SEA. The systematic review conducted suggested that workplace bullying is a serious issue among junior doctors, yet to date, there are no published studies that evaluate workplace bullying among SEA junior doctor populations. This represented a research gap, which clearly warranted the need for this study. Moreover, there were no published studies looking into individual and organisational factors of workplace bullying among junior doctors. This suggested that individual traits and organisational characteristics that may contribute towards bullying among junior doctors were overlooked, and that there was a demand for studies that could contribute to the pool of evidence pertaining this.

Secondly, the findings of this study were able to underline the work environment and occupational health and safety status of Malaysian junior doctors. By estimating the prevalence of workplace bullying among junior doctors, and identifying individual and organisational factors associated with workplace bullying among junior doctors, we are made more aware of its preponderance and more able to identify potential focus for remedial actions. As such, evidence-based recommendations for the prevention and management of workplace bullying were enabled. Consequently, we are a step closer towards preventing and mitigating workplace bullying among junior doctors and lessening its associated negative effects, which will not only benefit junior doctors but healthcare organisations and patients as well. In addition, this study generated

hypotheses that could be tested in more rigorous studies, subsequently paving the way for future research.

Thirdly, this study was designed in such a way as to be relatively efficient yet robust. Because it was a "snapshot" study that required no follow-up, there was no danger of loss to follow-up, which eliminated the risk of attrition bias. The cross-sectional design was also advantageous in the sense that it was relatively inexpensive and simple to execute, compared to longitudinal studies. Moreover, short versions of instruments to measure study variables were utilised whenever available and appropriate, which facilitated the completion of the questionnaire for study participants and reduced the likelihood of respondent fatigue. Rigorous study procedures were also integrated into this study. First, the study was based on a conceptual framework that was derived from the scientific literature, and as such, the study is theoretically grounded. Second, the study was also informed by a systematic review that enabled a comprehensive and methodical appraisal of the body of literature on workplace bullying among junior doctors, which subsequently served as focus points for developing research questions that would be able to fill current research gaps. Third, universal sampling was applied, to avoid a non-probability sample and ensure that study participants were representative of junior doctors working in the central zone of Malaysia. Fourth, a priori sample size calculation was performed to ensure that this study had adequate power. Fifth, in terms of study instruments, care was taken to select only instruments that have satisfactory psychometric properties, and on top of that, post-hoc assessment of the validity and reliability of study instruments was undertaken to ensure that it would be able to provide accurate and consistent estimates for the study sample. Sixth, multilevel analysis in the form of mixed effects logistic regression modeling was employed to examine the association between individual and organisational factors and workplace bullying, which was able to account for the clustered nature of the data and ensure that robust and accurate estimates were produced. Seventh, important confounders were addressed in study analysis to improve the internal validity of study findings. Finally, data safety and integrity were ensured to improve the quality of study findings, and ethical procedures were adhered to. Therefore, with the implementation of these measures, the evidence derived from this study may be able to be confidently and safely utilised by relevant stakeholders, including policy makers, public health practitioners, patients and carers, healthcare professionals, and the general public.

6.5 Directions for Future Research

The deleterious repercussions of workplace bullying underscore the need for theory and research that can assist organisations in predicting employees' perception of having been bullied. Herein, the findings in terms of correlates of workplace bullying generated hypotheses that could be tested in more robust studies, including longitudinal studies. This is to enable the ascertainment of cause and effect, with the long-term goal of building comprehensive theoretical models of the nature, causes, and outcomes of workplace bullying for a greater understanding of this phenomenon. In addition, future studies on workplace bullying among junior doctors may want to focus on other variables that were not examined in this study and have not been assessed elsewhere, such as psychological capital (H. K. Laschinger & Grau, 2012), social competence (Einarsen et al., 1994), conflict management styles (Baillien & De Witte, 2010) and core self-evaluations (Judge, Locke, Durham, & Kluger, 1998). As studies examining bullying rarely consider perpetrators' perspective, future studies may include them for a more holistic understanding of the phenomenon. Other than that, supplementing quantitative findings from self-administered questionnaires with qualitative studies such as in-depth interviews and focus group studies may be able to provide a more comprehensive understanding of junior doctors' experience of workplace bullying. Finally, and perhaps most importantly, future studies should include a focus on developing a globally accepted definition and method for measuring workplace bullying. Indeed, according to the meta-analytic study published by Nielsen et al. (2010), findings from different studies on workplace bullying cannot be compared without taking into account moderator variables, such as measurement method and sampling. Therefore, uniformity in this regard will enable the opportunity to generalise and compare the phenomenon across continents and countries as well as allow for theoretical progress in the conceptualization of workplace bullying itself.

6.6 Concluding Remarks

Workplace bullying has been shown to have considerable negative repercussions for individuals and organisations, and it is a problem that should be tackled with great keenness. Research on the phenomenon has over the years evolved towards a multicausal conception. Given the preponderance of workplace bullying among junior doctors and contextual factors that are unique to healthcare such as high-pressured working conditions and disparities in knowledge that relate to medical hierarchies, this study attempted to explore factors that could explain the prevalence of bullying among junior doctors as well as identify potential points of intervention for managing bullying. Based on the present study, individual traits including negative affect and neuroticism, as well as organisational characteristics including climate, culture, leadership style, support and justice were identified as factors of workplace bullying among junior doctors. Correspondingly, these factors should be considered when developing antibullying initiatives targeted at this occupational cohort. In fact, according to M. Sheehan (2001), the costs of workplace bullying prevention strategies are marginal compared to the costs of workplace bullying on organisations. Thus, given the gravity of implications in relation to junior doctors' ability to learn and provide safe patient care, healthcare organisations should invest in system-wide and multipronged approaches to provide healthy work environments that discourage such negative behaviours.

292

REFERENCES

Abu Bakar, S. K. (2017). Just a little respect, please, say housemen. FMT News.

- Acar, A. Z., & Acar, P. (2014). Organizational culture types and their effects on organizational performance in Turkish hospitals. *Emerging Markets Journal*, 3(3), 17-31.
- Acik, Y., Deveci, S. E., Gunes, G., Gulbayrak, C., Dabak, S., Saka, G., . . . Tokdemir, M. (2008). Experience of workplace violence during medical specialty training in Turkey. *Occupational Medicine*, 58(5), 361-366.
- Agervold, M. (2009). The significance of organizational factors for the incidence of bullying. *Scandinavian Journal of Psychology*, *50*(3), 267-276.
- Agervold, M., & Mikkelsen, E. G. (2004). Relationships between bullying, psychosocial work environment and individual stress reaction. *Work & Stress, 18*(4), 336-351.
- Aidla, A. (2003). Interrelationships between personality traits and organisational culture. In M. Vadi (Ed.), Organisational Culture in Estonia: Manifestations and consequences. Tartu: Tartu Ülikooli Kirjastus.
- Akbulut, Y., Sahin, Y. L., & Eristi, B. (2010). Cyberbullying victimization among Turkish online social utility members. *Educational Technology & Society*, 13(4), 192-201.
- Al Bir, A. T. S., & Hassan, A. (2014). Workplace bullying in Malaysia: An exploratory study. *Malaysian Management Review*, 49(1), 1-8.
- Al-Daraji, W. I. (2009). An old problem that keeps re-emerging without clear solution. *The International Journal of Law, Healthcare and Ethics, 6*(1), 24-30.
- Al-Dubai, S. A. R., Ganasegeran, K., Perianayagam, W., & Rampal, K. G. (2013). Emotional burnout, perceived sources of job stress, professional fulfillment, and engagement among medical residents in Malaysia. *The Scientific World Journal*, 2013, Article ID 137620.
- Al-Mailam, F. F. (2004). Transactional versus transformational style of leadership employee perception of leadership efficacy in public and private hospital in Kuwait. *Quality Management in Healthcare, 13*(4), 278-284.

- Al-Sawai, A. (2013). Leadership of healthcare professionals: Where do we stand? *Oman Medical Journal, 28*(4), 285-287.
- Al-Shafaee, M., Al-Kaabi, Y., Al-Farsi, Y., White, G., Al-Maniri, A., Al-Sinawi, H., & Al-Adawi, S. (2013). Pilot study on the prevalence of abuse and mistreatment during clinical internship: A cross-sectional study among first year residents in Oman. *BMJ Open*, 3(2), 1-7.
- Al-Shammari, M. M. (1994). Perceptions of organizational climate as a function of employees' background attributes: Evidence from Jordanian industrial organizations. *International Journal of Commerce and Management*, 4(4), 26-40.
- Al-Zu'bi, H. A. (2010). A study of relationship between organizational justice and job satisfaction. *International Journal of Business and Management*, 5(12), 102-109.
- Alikhani, H., & Lebadi, Z. (2014). The relationship between organizational climate and organizational justice and mental health of the staff in Shahidbeheshti University of Medical Sciences. *Journal of Applied Environmental and Biological Sciences*, 4(10), 114-121.
- Allen, M. J., & Yen, W. M. (1979). *Introduction to measurement theory*. U.S.A.: Waveland Press, Inc.
- Allen, M. W., Armstrong, D. J., Reid, M. F., & Riemenscheider, C. K. (2008). Factors impacting the perceived organizational support of IT employees. *Information & Management*, 45(8), 556-563.
- Amason, P., & Allen, M. W. (1997). Intraorganizational communication, perceived organizational support, and gender. *Sex Roles*, *37*, 955.
- Amirazodi, F., & Amirazodi, M. (2011). Personality traits and self-esteem. *Procedia Social and Behavioral Sciences, 29*, 713-716.
- An, Y., & Kang, J. (2016). Relationship between organizational culture and workplace bullying among Korean nurses. *Asian Nursing Research*, *10*(3), 234-239.
- Andersson, L. M., & Pearson, C. M. (1999). Tit for tat? The spiraling effect of incivility in the workplace. *Academy of Management Review*, 24(3), 452-471.

- Angoff, N. R., Duncan, L., Roxas, N., & Hansen, H. (2016). Power Day: Addressing the use and abuse of power in medical training. *Journal of Bioethical Inquiry*, 13(2), 203-213.
- . Annual Report 2013 Ministry of Health Malaysia. (2013). Malaysia: Ministry of Health, Malaysia.
- Another houseman stressed from working long hours. (2013). Retrieved from https://new.medicine.com.my/2013/01/another-houseman-stressed-from-working-long-hours/
- Appelberg, K., Romanov, K., Honkasalo, M., & Koskenvuo, M. (1991). Interpersonal conflicts at work and psychosocial characteristics of employees. *Social Science* & *Medicine*, 32(9), 1051-1056.
- Aquino, K., & Bradfield, M. (2000). Perceived victimization in the workplace: The role of situational factors and victim characteristics. *Organization Science*, 11(5), 525-537.
- Aquino, K., & Douglas, S. (2003). Identity threats and antisocial behavior in organizations: The moderating effects of individual differences, aggressive modeling, and hierarchical status. *Organizational Behavior and Human Decision Processes*, 90(1), 195-208.
- Aquino, K., Grover, S., Bradfield, M., & Allen, D. (1999). The effects of negative affectivity, hierarchical status, and self-determination on workplace victimization. *Academy of Management Journal*, 42(3), 260-272.
- Aquino, K., & Lamertz, K. (2004). A relational model of workplace victimization: Social roles and patterns of victimization in dyadic relationships. *Journal of Applied Psychology*, 89(6), 1023-1034.
- Aquino, K., Lewis, M. U., & Bradfield, M. (1999). Justice constructs, negative affectivity, and employee deviance: A proposed model and empirical test. *Journal of Organizational Behavior, 20*(7), 1073-1091.
- Aquino, K., & Thau, S. (2009). Workplace victimization: Aggression from the target's perspective. *Annual Review of Psychology*, 60, 717-741.
- Ariza-Montes, A., Muniz, N. M., Montero-Simó, M. J., & Araque-Padilla, R. A. (2013). Workplace bullying among healthcare workers. *International Journal of Environmental Research and Public Health*, 10(8), 3121-3139.

- Armagen, Y., & Erzen, E. (2015). The effect of leadership on organizational justice. In E. Karadag (Ed.), *Leadership and Organizational Outcomes*. Cham: Springer.
- Askew, D. A., Schluter, P. J., Dick, M.-L., Régo, P. M., Turner, C., & Wilkinson, D. (2012). Bullying in the Australian medical workforce: Cross-sectional data from an Australian e-Cohort study. *Australian Health Review*, 36(2), 197-204.
- Aykut, G., Efe, M. E., Bayraktar, S., Sentürk, S., Basegmez, I., Özkumit, Ö., . . . Bilgin, H. (2016). Mobbing exposure of anaesthesiology residents in Turkey. *Turkish Journal of the Anaesthesiology and Reanimation*, 44(4), 177-189.
- Babcock, L., & Laschever, S. (2003). *Women don't ask: Negotiation and the gender divide*. Princeton and Oxford: Princeton University Press.
- Bahrami, M. A., Gazar, S. H., Montazeralfaraj, R., & Tafti, A. D. (2013). Determinants of perceived organizational justice among hospital employees. *Interdisciplinary Journal of Contemporary Research In Business*, *5*(7), 441-448.
- Baillien, E., Cuyper, N. D., & De Witte, H. (2011). Job autonomy and workload as antecedents of bullying: A two-wave test of Karasek's Job Demand Control Model for targets and perpetrators. *Journal of Occupational and Organizational Psychology*, 84(1), 191-208.
- Baillien, E., & De Witte, H. (2010). The relationship between the occurrence of conflicts in the work unit, the conflict management styles in the work unit and workplace bullying. *Psychologica Belgica*, 49(4), 207-226.
- Baillien, E., Neyens, I., & De Witte, H. (2008). Organizational, team related and job related risk factors for bullying, violence and sexual harassment in the workplace: A qualitative study. *International Journal of Organisational Behaviour*, 13(2), 132-146.
- Bairy, K. L., Thiramalaikolundusubramaniam, P., Sivagnanam, G., Saraswathi, S., Sachidananda, A., & Shalini, A. (2007). Bullying among trainee doctors in southern India: A questionnaire study. *Journal of Postgraduate Medicine*, 53(2), 87-91.
- Bajaj, H., & Krishnan, V. K. (2014). Perceived organizational support and affect: The moderating effect of locus of control. *Great Lakes Herald*, 8(1), 22-31.
- Bakker, A. B., & Demerouti, E. (2007). The Job Demands-Resources model: State of the art. *Journal of Managerial Psychology*, 22(3), 309-328.

- Balducci, C., Fraccaroli, F., & Schaufeli, W. B. (2011). Workplace bullying and its relation with work characteristics, personality, and post-traumatic symptoms: An integrated model. *Anxiety, Stress & Coping, 24*(5), 499-513.
- Baldwin, S. (2006). Organisational justice. Brighton, United Kingdom: Institute for Employment Studies, University of Sussex.
- Bandura, A. (1971). Social learning theory. New York: General Learning Press.
- Barling, J. (1996). The prediction, experience and consequences of workplace violence. In G. R. VamderBos & E. Q. Bulatoao (Eds.), *Violence on the job*. Washington: American Psychological Association.
- Barmes, L. (2016). *Bullying and behavioural conflict at work: The duality of individual right*. Oxford, United Kingdom: Oxford University Press.
- Baron, R. A., & Neuman, J. H. (1996). Workplace violence and workplace aggression: Evidence on their relative frequency and potential causes. *Aggressive Behaviour*, 22(3), 161-173.
- Baron, R. A., & Neuman, J. H. (1998). Workplace aggression The iceberg beneath the tip of workplace violence: Evidence on its forms, frequency, and targets. *Public Administration Quarterly*, 21(4), 446-464.
- Barsky, A., & Kaplan, S. A. (2007). If you feel bad, it's unfair: A quantitative synthesis of affect and organizational justice perceptions. *Journal of Applied Psychology*, 92(1), 286-295.
- Baruch, Y., & Holtom, B. C. (2008). Survey response rate levels and trends in organizational research. *Human Relations*, *61*(8), 1139-1160.
- Bedi, R. S., & Azizan, H. (2008). The dilemma of our young doctors. Retrieved 3 March 2017, from https://todaymalaysia.wordpress.com/2008/12/07/thedilemma-of-our-young-doctors/
- Berkowitz, L. (1989). Frustration-aggression hypothesis: Examination and reformulation. *Psychological Bulletin*, *106*(1), 59-73.
- Berman, J. A. (1989). Person characteristics and the perception of organization climate. *International Journal of Value-Based Management*, 2(2), 101-110.

- Berry, C. M., Ones, D. S., & Sackett, P. R. (2007). Interpersonal deviance, organizational deviance, and their common correlates: A review and metaanalysis. *Journal of Applied Psychology*, 92(2), 410-424.
- Björkqvist, K., Österman, K., & Hjelt-Bäck, M. (1994). Agression among university employees. *Aggressive Behaviour*, 20(3), 173-184.
- Björkqvist, K., Österman, K., & Lagerspetz, K. M. (1994). Sex differences in covert agression among adults. *Agressive Behavior*, 20(1), 27-33.
- Blackstock, S., Harlos, K., Macleod, M. L., & Hardy, C. L. (2015). The impact of organisational factors on horizantal bullying and turnover intentions in the nursing workplace. *Journal of Nursing Management*, 23(8), 1106-1114.
- Bleidorn, W., Arslan, R. C., Denissen, J. J., Rentfrow, P. J., Gebauer, J. E., Potter, J., & Gosling, S. D. (2016). Age and gender differences in self-esteem - A crosscultural window. *Journal of Personality and Social Psychology*, 111(3), 396-410.
- Bola, S., Trollip, E., & Parkinson, F. (2015). The state of South African internships: A national survey against HPCSA guidelines. *South Africa Medical Journal*, 105(7), 535-539.
- Bonato, S. (2016). Google scholar and scopus for finding gray literature publications. *Journal of the Medical Library Association*, 104(3), 252-254.
- Bowling, N. A., & Beehr, T. A. (2006). Workplace harassment from the victim's perspective: A theoretical model and meta-analysis. *Journal of Applied Psychology*, *91*(5), 998-1012.
- Bowling, N. A., Beehr, T. A., Bennett, M. M., & Watson, C. P. (2010). Target personality and workplace victimization: A prospective analysis. *Work & Stress, 24*(2), 140-158.

Bradburn, N. M. (1969). The structure of psychological well-being. Chicago: Aldine.

Braithwaite, V., Ahmed, E., & Braithwaite, J. (2008). Workplace bullying and victimization: The influence of organizational context, shame and pride. *International Journal of Organisational Behaviour, 13*(2), 71-94.

- Branch, S. (2008). You say tomatoe and I say tomato: Can we differentiate between workplace bullying and other counterproductive behaviours? *International Journal of Organisational Behaviour*, *13*(2), 4-17.
- Branch, S., Ramsay, S., & Barker, M. (2007). Managers in the firing line: Contributing factors to workplace bullying by staff an interview study. *Journal of Management & Organization*, 13(3), 264-281.
- Brodsky, C. M. (1976). The harassed worker. Toronto: Lexington Books.
- Brofenbrenner, U. (1979). *The ecology of human development: Experiments by nature and design*. Cambridge, Massachusetts: Harvard University Press.
- Brotheridge, C. M. (2013). Explaining bullying: Using theory to answer practical questions. *Team Performance Management*, 19(3/4), 185-201.
- Brown, M. E., Treviño, L. K., & Harrison, D. A. (2005). Ethical leadership: A social learning perspective for construct development and testing. Organizational Behavior and Human Decision Processes, 97(2), 117-134.
- Cameron, K. S., & Freeman, S. J. (1991). Cultural congruence, strength, and type: Relationships to effectiveness. *Research in Organizational Change and Development*, *5*, 23-58.
- Cameron, K. S., & Quinn, R. E. (1999). *Diagnosing and changing organizational culture. Based on the competing values framework.* Boston, MA: Addison-Wesley.
- Carter, M., Thompson, N., Crampton, P., Morrow, G., Burford, B., Gray, C., & Illing, J. (2013). Workplace bullying in the UK NHS: A questionnaire and interview study on prevalence, impact and barriers to reporting. *BMJ Open*, *3*(6), e002628.
- Cattell, R. B. (1966). The scree test for the number of factors. *Multivariate Behavioral Research*, *1*(2), 245-276.
- Chadaga, A. R., Villines, D., & Krikorian, A. (2016). Bullying in the American graduate medical education system: A national cross-sectional survey. *PLOS ONE*, *11*(3), e0150246.
- Chang, P. C. M., Su, A. T., & Mizanur, M. M. (2018). Workplace bullying and its association with depression and self-esteem among health care workers in

selected hospitals in Sarawak. Paper presented at the 32nd Triennial Congress of the International Commission on Occupational Health (ICOH), Dublin, Ireland.

- Chapman, A. L. N., Johnson, D., & Kilner, K. (2014). Leadership styles used by senior medical leaders: Patterns, influences and implications for leadership development. *Leadership in Health Services*, 27(4), 283-298.
- Charles, S. T., Reynolds, C. A., & Gatz, M. (2001). Age-related differences and change in positive and negative affect over 23 years. *Journal of Personality and Social Psychology*, 80(1), 136-151.
- Cheema, S., Ahmad, K., Giri, S. K., Kaliaperumal, V. K., & Naqvi, S. A. (2005). Bullying of junior doctors prevails in Irish health system: A bitter reality. *Irish Medical Journal*, 98(9), 274-275.
- Chipps, E. M., & McRury, M. (2012). The development of an educational intervention to address workplace bullying: a pilot study. *Journal for Nurses in Staff Development, 228*(3), 94-98.
- Chirila, T., & Constantin, T. (2013). Understanding workplace bullying phenomenon through its concepts: A literature review. Paper presented at the Third World Conference on Psychology, Counseling and Guidance (WCPCG-2012), Turkey.
- Chow, I. H. S. (2005). Gender differences in perceived leadership effectiveness in Hong Kong. *Women in Management Review*, 20(4), 216-233.
- Cicchetti, D. V. (1994). Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychological Assessment*, 6(4), 284-290.
- Cincinnati Children's Hospital Medical Center Table of Evidence Levels (2012). Retrieved 13 June 2019, from https://www.cincinnatichildrens.org/about
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences* (Third ed.). Mahwah, New Jersey: Lawrence Erlbaum Associates. Inc. Publishers.
- Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, *86*(3), 386-400.
- Condon, R., Duvivier, R., Kirition, R., Kafoa, B., McKimm, J., & Roberts, G. (2013). Medical internship programs in the Pacific: Current situation and future

challenges. Sydney, Australia: Human Resources for Health Knowledge Hub, University of New South Wales.

- Cook, D. J., Liutkus, J. F., Risdon, C. L., Griffith, L. E., Guyatt, G. H., & Walter, S. D. (1996). Residents' experiences of abuse, discrimination and sexual harassment during residency training. *Canadian Medical Association Journal*, 154(11), 1657-1665.
- Cook, R. D., & Weisberg, S. (1982). *Residuals and influence in regression*. New York: Chapman & Hall.
- Cooper-Thomas, H., Gardner, D., O'Driscoll, M., Catley, B., Bentley, T., & Trenberth, L. (2013). Neutralizing workplace bullying: the buffering effects of contextual factors. *Journal of Managerial Psychology*, *28*(4), 384-407.
- Cortina, L. M., Magley, V. J., Williams, J. H., & Langhout, R. D. (2001). Incivility in the workplace: Incidence and impact. *Journal of Occupational Health Psychology*, *6*(1), 64-80.
- Costa, P. T., Terracciano, A., & McCrae, R. R. (2001). Gender differences in personality traits across cultures: robust and surprising findings. *Journal of Personality and Social Psychology*, *81*(2), 322-331.
- Coverdale, J., Balon, R., & Roberts, L. W. (2009). Mistreatment of trainees: verbal abuse and other bullying behaviors. *Academic Psychiatry*, 33(4), 269-273.
- Cowie, H., Naylor, P., Rivers, I., Smith, P. K., & Pereira, B. (2002). Measuring workplace bullying. *Aggression and Violent Behavior*, 7(1), 33-51.
- Coyne, I., Chong, P. S., Seigne, E., & Randall, P. (2003). Self and peer nominations of bullying: An analysis of incident rates, individual differences, and perceptions of the working environment. *European Journal of Work and Organizational Psychology*, *12*(3), 209-228.
- Coyne, I., Seigne, E., & Randall, P. (2000). Predicting workplace victim status from personality. *European Journal of Work and Organizational Psychology*, *9*(3), 335-349.
- Crick, N. R., & Grotpeter, J. K. (1995). Relational aggression, gender, and socialpsychological adjustment. *Child Development*, 66, 710-722.

- Crowe, S., Brugha, R., & Clarke, N. (2017). 'You do not cross them': Hierarchy and emotion in doctors' narratives of power relations in specialist training. *Social Science & Medicine, doi: 10.1016/j.socscimed.2017.05.048*.
- Crutcher, R. A., Szafran, O., Woloschuk, W., Chatur, F., & Hansen, C. (2011). Family medicine graduates' perceptions of intimidation, harassment, and discrimination during residency training. *BMC Medical Education*, 11(88).
- Curtis, L. A. (1974). Victim precipitation and violent crime. *Social Problems*, 21(4), 594-605.
- Daugherty, S. R., Baldwin, D. C., & Rowley, B. D. (1998). Learning, satisfaction, and mistreatment during medical internship: A national survey of working conditions. JAMA, 279(15), 1194-1199.
- Davis, V. E. (2011). *The perceived leadership style of senior enlisted personnel in the* U.S. armed forces. North Central University, U.S., ProQuest.
- De Cuyper, N., Notelaers, G., & De Witte, H. (2009). Transitioning between temporary and permanent employment: A two-wave study on the entrapment, the stepping stone and the selection hypothesis. *Journal of Occupational and Organizational Psychology*, 82(1), 67-88.
- DeCoster, J., Galluci, M., & Iselin, A. R. (2011). Best practices for using median splits, artificial categorization, and their continuous alternatives. *Journal of Experimental Psychopathology*, 2(2), 197-209.
- DeNeve, K. M., & Cooper, H. (1998). The happy personality: A meta-analysis of 137 personality traits and subjective well-being. *Psychological Bulletin*, 124(2), 197-229.
- Dikmetas, E., Top, M., & Ergin, G. (2011). An examination of mobbing and burnout of residents. *Turkish Journal of Psychiatry*, 22(3), 137-149.
- Djurkovic, N., McCormack, D. J., & Casimir, G. (2008). Workplace bullying and intention to leave: the moderating effect of perceived organisational support. *Human Resource Management Journal*, *18*(4), 405-422.
- Dobson, A. (2002). *An introduction to generalized linear models*. Boca Raton, Florida: Chapman & Hall/CRC.

- . Doctors' titles: Explained. (2017). BMA House, Tavistock Square, London: British Medical Association.
- Dodge, K. A., & Crick, N. R. (1990). Social information-processing bases of aggressive behavior in children. *Personality and Social Psychology Bulletin, 16*(1), 8-22.
- Dollard, M., Dormann, C., Tuckey, M. R., & Escartin, J. (2017). Psychosocial safety climate (PSC) and enacted PSC for workplace bullying and psychological health problem reduction. *European Journal of Work and Organizational Psychology*, *26*(6), 844-857.
- Donnellan, M. B., & Lucas, R. E. (2008). Age differences in the Big Five across the life span: Evidence from two national samples. *Psychology and Aging*, *23*(3), 558-566.
- Duffy, M. K., Ganster, D. C., & Pagon, M. (2002). Social undermining in the workplace. *Academy of Management Journal*, 45(2), 331-351.
- Duffy, M. K., Shaw, J. D., Scott, K. L., & Tepper, B. J. (2006). The moderating role of self-esteem and neuroticism in the relationship between group and individual undermining behavior. *Journal of Applied Psychology*, *91*(5), 1066-1077.
- Dzurec, L. C., & Bromley, G. E. (2012). Speaking of workplace bullying. *Journal of Professional Nursing*, 28(4), 247-254.
- Einarsen, S. (1999). The nature and causes of bullying at work. *International Journal of Manpower, 20*(1/2), 16-27.
- Einarsen, S. (2000). Harassment and bullying at work: A review of the Scandinavian approach. *Aggression and Violent Behavior*, 5(4), 379-401.
- Einarsen, S., Hoel, H., & Notelaers, G. (2009). Measuring exposure to bullying and harassment at work: Validity, factor structure and psychometric properties of the Negative Acts Questionnaire-Revised. *Work & Stress, 23*(1), 24-44.
- Einarsen, S., Hoel, H., Zapf, D., & Cooper, C. L. (2003). The concept of bullying at work: The European Tradition. In S. Einarsen, H. Hoel, D. Zapf & C. L. Cooper (Eds.), *Bullying and emotional abuse in the workplace: International perspectives in research and practice*. London: Taylor & Francis.
- Einarsen, S., Hoel, H., Zapf, D., & Cooper, C. L. (2011). The concept of bullying and harassment at work: The European tradition. In S. Einarsen, H. Hoel, D. Zapf &

C. L. Cooper (Eds.), *Bullying and harassment in the workplace: Development in Theory, Research, and Practice* (Second ed.). London: Taylor & Francis.

- Einarsen, S., Matthiesen, S. B., & Skogstad, A. (1998). Bullying, burnout and wellbeing among assistant nurses. *Journal of Occupational Health and Safety*, *14*(6), 563-568.
- Einarsen, S., & Nielsen, M. B. (2015). Workplace bullying as an antecedent of mental health problems: A five-year prospective and representative study. *INternational Archives of Occupational and Environmental Health*, 88(2), 131-142.
- Einarsen, S., & Raknes, B. I. (1997). Harassment in the workplace and the victimization of men. *Violence and Victims*, *12*(3), 247-263.
- Einarsen, S., Raknes, B. I., & Matthiesen, S. B. (1994). Bullying and harassment at work and their relationships to work environment quality. An exploratory study. *The European Work and Organisational Psychologist, 4*(4), 381-401.
- Einarsen, S., Raknes, B. I., Matthiesen, S. B., & Hellesøy, O. H. (1996). [Bullying at work and its relationship with health complaints moderating effects of social support and personality]. *Nordisk Psykologi, 48*(2), 116-137.
- Einarsen, S., & Skogstad, A. (1996). Bullying at work: Epidemiological findings in public and private organizations. *European Journal of Work and Organizational Psychology*, *5*(2), 185-201.
- Eisenberger, R., & Huntington, R. (1986). Perceived organizational support. *Journal of Applied Psychology*, 71(3), 500-507.
- Ekici, D., & Beder, A. (2014). The effects of workplace bullying on physicians and nurses. *Australian Journal of Advanced Nursing*, *31*(4), 24-33.
- Elias, R. (1986). *The politics of victimization: Victims, victimology, and human rights*. New York: Oxford University Press.
- Elliot, A. C., & Woodward, W. A. (2014). *IBM SPSS by example: A practical guide to statistical data analysis* (Second ed.). Thousand Oaks, California: SAGE Publications.
- Elovainio, M., Heponiemi, T., Kuusio, H., Sinervo, T., Hintsa, T., & Aalto, A. (2010). Developing a short measure of organizational justice: A multisample health

professionals study. *Journal of Occupational and Environmental Medicine*, 52(11), 1068-1074.

- Escartin, J., Ullrich, J., Zapf, D., Schlüter, E., & van Dick, R. (2013). Individual- and group-level effects of social identification on workplace bullying. *European Journal of Work and Organizational Psychology*, *22*(2), 182-193.
- Eustace, A., & Martins, N. (2014). The role of leadership in shaping organisational climate: An example from the FMCG industry. *SA Journal of Industrial Psychology*, 40(1), 1112.
- Evans, D. (2016). Categorizing the magnitude and frequency to uncivil behaviors: A new approach for more meaningful intervention. *Journal of Nursing Scholarship, 00*(0), 1-9.
- Farley, S., Coyne, I., Sprigg, C., Axtell, C., & Subramanian, G. (2015). Exploring the impact of workplace cyberbullying on trainee doctors. *Medical Education*, 49(4), 436-443.
- Farrington, D. P., & Loeber, R. (2000). Some benefits of dichotomization in psychiatric and criminological research. *Criminal Behaviour and Mental Health*, 10(2), 100-122.
- Felson, R. B. (1978). Aggression as impression management. *Social Psychology*, *41*(3), 205-213.
- Felson, R. B. (1992). "Kick "em when they're down": Explanations of the relationship between stress and interpersonal aggression and violence. *The Sociological Quarterly*, 33(1), 1-16.
- Felson, R. B., & Tedeschi, J. T. (1993). *Aggression and violence: Social interactionist perspectives*. Washington, DC, US: American Psychological Association.
- Feudtner, C., Christakis, D. A., & Christakis, N. A. (1994). Do clinical clerks suffer ethical erosions? Students' perceptions of their ethical environment and personal development. *Academic Medicine*, 69(8), 670-679.
- Fincham, J. E. (2008). Response rates and responsiveness for surveys, standards, and the Journal. *American Journal of Pharmaceutical Education*, 72(2), Article 43.

- Finne, L. B., Knardahl, S., & Lau, B. (2011). Workplace bullying and mental distress a prospective study of Norwegian employees. *Scandinavian Journal of Work, Environment & Health*, 37(4), 276-286.
- Fnais, N., Al-Nasser, M., Zamakhshary, M., Abuznadah, W., Al-Dhukair, S., Saadeh, M., . . . BinAhmed, A. (2013). Prevalence of harassment and discrimination among residents in three training hospitals in Saudi Arabia. *Annals of Saudi Medicine*, 33(2), 134-139.
- Fnais, N., Soobiah, C., Chen, M. H., Lillie, E., Perrier, L., Tashkhandi, M., . . . Tricco, A. C. (2014). Harassment and discrimination in medical training: A systematic review and meta-analysis. *Academic Medicine*, 89(5), 817-827.
- Fox, S., & Spector, P. E. (1999). A model of work frustration-aggression. Journal of Organizational Behavior, 20(6), 915-931.
- Fox, S., & Stallworth, L. E. (2005). Racial/ethnic bullying: Exploring links between bullying and racism in the US workplace. *Journal of Vocational Behavior*, 66(3), 438-456.
- Freedy, J. R., & Hobfoll, S. E. (1994). Stress inoculation for reduction of burnout: A conservation of resource approach. *Anxiety, Stress & Coping, 6*(4), 311-325.
- French, J. R. P., Jr., & Raven, B. (1959). The bases of social power. In D. Cartwright (Ed.), *Studies in social power*. Oxford, England: University of Michigan.
- Fujita, F., Diener, E., & Sandvik, E. (1991). Gender differences in negative affect and well-being: the case for emotional intensity. *Journal of Personality and Social Psychology*, 61(3), 427-434.
- Galdolfo, R. (1995). MMPI-2 profiles of worker's compensation claimants who present with complaints of harassment. *Journal of Clinical Psychology*, *51*(5), 711-715.
- Gardner, D., Bentley, T., Catley, B., Cooper-Thomas, H., O'Driscoll, M., & Trenberth, L. (2013). Ethnicity, workplace bullying, social support and psychological strain in Aotearoa/New Zealand. *New Zealand Journal of Psychology*, 42(1), 123-130.
- Gardner, D., O'Driscoll, M., Cooper-Thomas, H., Roche, M., Bentley, T., Catley, B., . .
 Trenberth, L. (2016). Predictors of workplace bullying and cyber-bullying in New Zealand. *International Journal of Environmental Research and Public Health*, 13(5), pii: E448.

- Gilbert, J. A. (2013). Gender, conflict, and workplace bullying: Is civility policy the silver bullet. *Journal of Managerial Issues*, 25(1), 79-98.
- Giorgi, G., Mikayo, A., Arenas, A., Shoss, M. K., Leon-Perez, J. M., & Jose, M. (2013). Exploring personal and organizational determinants of workplace bullying and its prevalence in a Japanese sample. *Psychology of Violence*, 3(2), 185-197.
- Giri, P. A., & Parhar, G. S. (2012). Internship: A transition from a medical student to a doctor. *International Journal of Biomedical and Advanced Research*, *3*(10), 753-755.
- Glambek, M., Skogstad, A., & Einarsen, S. (2018). Workplace bullying, the development of job insecurity and the role of laissez-faire leadership: A two-wave moderated mediation study. *Work & Stress*, *32*(3), 297-312.
- Glasø, L., Matthiesen, S. B., Nielsen, M. B., & Einarsen, S. (2007). Do targets of workplace bullying portray a general victim personality profile? *Personality and Social Sciences*, 48(4), 313-319.
- Glasø, L., Nielsen, M. B., & Einarsen, S. (2009). Interpersonal problems among perpetrators and targets of workplace bullying. *Journal of Applied Social Psychology*, *39*(6), 1316-1333.
- Glomb, T. M., & Liao, H. (2003). Interpersonal aggression in work groups: Social influence, reciprocal, and individual effects. *Academy of Management Journal*, *46*(4), 486-496.
- Gluck, P. A. (2010). Physician leadership: essential in creating a culture of safety. *Clinical Obstetrics and Gynecology*, *53*(3), 473-481.
- Goldberg, L. R., Sweeney, D., Merenda, P. F., & Hughes Jr, J. E. (1998). Demographic variables and personality: the effects of gender, age, education, and ethnic/racial status on self-descriptions of personality attributes. *Personality and Individual Differences*, 24(3), 393-403.
- Gorji, H. A., Etemadi, M., & Hoseini, F. (2014). Perceived organizational support and job involvement in the Iranian health care system: A case study of emergency room nurses in general hospitals. *Journal of Education and Health Promotion*, 3, 58.
- Gouldner, A. W. (1960). The norm of reciprocity: A preliminary statement. *American Sociological Review*, 25(2), 161-178.

- Gozu, A., Kern, D. E., & Wright, S. M. (2009). Similarities and differences between international medical graduates and U.S. medical graduates at six Maryland community-based internal medicine residency training programs. *Academic Medicine*, 84(3), 385-390.
- Greenberg, L., & Barling, J. (1999). Predicting employee aggression against coworkers, subordinates and supervisors: The roles of person behaviors and perceived workplace factors. *Journal of Organizational Behavior*, 20(6), 897-913.
- Greenwood, R. A., George, R., Murphy, E. E. F. J., Teahan, J., Madero, S., Monserrat, S., ... Khilji, S. (2016). *An exploration of cross-cultural and gender differences in East Asia, South Asia and Southeast Asia*. Paper presented at the HCBE Faculty Presentations.
- Gyekye, S. A., & Haybatollahi, M. (2014). Relationship between organizational justice and organizational safety climate: Do fairness perceptions influence employee safety behaviour? *International Journal of Occupational Safety and Ergonomics* (JOSE), 2(2), 199-211.
- Gyekye, S. A., & Salminen, S. (2007). Workplace safety perceptions and perceived organizational support: do supportive perceptions influence safety perceptions? *International Journal of Occupational Safety and Ergonomics (JOSE)*, 13(2), 189-200.
- Haber, P. (2012). Perceptions of leadership: An examination of college students' understandings of the concept of leadership. *Journal of Leadership Education*, *11*(2), 26-51.
- Hair, J., Anderson, R. E., Tatham, R. L., & Black, W. C. (1995). *Multivariate data analysis*. New Jersey: Prentice-Hall Inc.
- Hallberg, L. R. M., & Strandmark, M. K. (2006). Health consequences of workplace bullying: Experiences from the perspective of employees in the public service sector. *INternational Journal of Qualitative Studies on Health & Well-Being*, 1(2), 109-119.
- Hampton, D., Tharp-Barrie, K., & Kay Rayens, M. (2019). Experience of nursing leaders with workplace bullying and how to best cope. *Journal of Nursing Management*, *27*(3), 517-526.
- Hansen, A. M., Hogh, A., Garde, A., & Persson, R. (2014). Workplace bullying and sleep difficulties: a 2-year follow-up study. *INternational Archives of Occupational and Environmental Health*, 87(3), 285-294.

- Hansen, A. M., Hogh, A., Persson, R., Karlson, B., Garde, A. H., & Ørbaek, P. (2006). Bullying at work, health outcomes, and physiological stress response. *Journal of Psychosomatic Research*, 60(1), 63-72.
- Harvey, M., Buckley, M. R., Heames, J. T., Zinko, R., Brouer, R. L., & Ferris, G. R. (2007). A bully as an archetypal destructive leader. *Journal of Leadership and Organizational Studies*, 14(2), 117-129.
- Harvey, M. G., Heames, J. T., Richey, R. G., & Leonard, N. (2006). Bullying: From the playground to the boardroom. *Journal of Leadership and Organizational Studies*, 12(4), 1-11.
- Harvey, S., & Keashly, L. (2003). Predicting the risk for aggression in the workplace: Risk factors, self-esteem, and time at work. *Social Behavior and Personality*, 31(8), 807-814.
- Hatam, N., Fardid, M., & Kavosi, Z. (2013). Perceptions of organizational justice among nurses working in university hospitals of Shiraz: A comparison between general and specialty settings. *Nursing and Midwifery Studies*, *2*(4), 77-82.
- Hatcher, L. (1994). A step-by-step approach to using the SAS system for factor analysis and structural equation modeling. Cary: SAS Institute.
- Hauge, L. J., Einarsen, S., Knardahl, S., Lau, B., Notalaers, G., & Skogstad, A. (2011). Leadership and role stressors as departmental level predictors of workplace bullying. *International Journal of Stress Management*, 18(4), 305-323.
- Hauge, L. J., Skogstad, A., & Einarsen, S. (2007). Relationship between stressful work environments and bullying: Results of a large representative study. *Work & Stress, 21*(3), 220-242.
- Hauge, L. J., Skogstad, A., & Einarsen, S. (2010). The relative impact of workplace bullying as a social stressor at work. *Scandinavian Journal of Psychology*, 51(5), 426-433.
- Hautala, T. (2005). The effects of subordinates' personality on appraisal of transformational leadership. *Journal of Leadership and Organizational Studies*, *11*(4), 84-92.
- Hearn, J., & Parkin, W. (2001). *Gender, sexuality and violence in organizations*. London: Sage.

- Heider, F. (1958). *The psychology of interpersonal relation*. Hoboken, NJ, US: John Wiley & Sons Inc.
- Helfrich, C. D., Li, Y. F., Mohr, D. C., Meterko, M., & Sales, A. E. (2007). Assessing an organizational culture instrument based on the Competing Values Framework: Exploratory and confirmatory factor analyses. *Implementation Science*, 2, 13.
- Helms, M. M., & Stern, R. (2001). Exploring the factors that influence employees' perceptions of their organisation's culture. *Journal of Management in Medicine*, *15*(6), 415-429.
- Hershcovis, M. S. (2011). "Incivility, social undermining, bullying. . .oh my!": A call to reconcile constructs within workplace aggression research. *Journal of Organizational Behavior*, 32(3), 499-519.
- Herzog, R., Alvarez-Pasquin, M. J., Diaz, C., Del Barrio, J. L., Estrada, J. M., & Gil, A. (2013). Are healthcare workers' intentions to vaccinate related to their knowledge, beliefs and attitudes? A systematic review. *BMC Public Health*, 13, 154.
- Hills, D. J., Joyce, C. M., & Humphreys, J. S. (2012). A national study of workplace aggression in Australian clinical medical practice. *Medical Journal of Australia*, 197(6), 336-340.
- Hinton, P. R., Brownlow, C., McMurray, I., & Cozens, B. (2004). SPSS explained. New York: Routledge.
- Hobfoll, S. E. (1989). Conservation of resources. A new attempt at conceptualizing stress. *American Psychologist*, 44(3), 513-524.
- Hodgins, M., & McNamara, P. M. (2014). Workplace bullying and incivility: A systematic review of interventions. *International Journal of Workplace Health Management*, 7(1), 54-72.
- Hoel, H., & Cooper, C. L. (2000). Destructive conflict and bullying at work. United Kingdom: University of Manchester Institute Science and Technology.
- Hoel, H., Cooper, C. L., & Faragher, B. (2001). The experience of bullying in Great Britain: The organizational status. *European Journal of Work and Organizational Psychology*, 10(4), 443-465.

- Hoel, H., & Einarsen, S. (2010). Shortcomings of anti-bullying regulations: The case study of Sweden. *European Journal of Work and Organizational Psychology*, 19(1), 30-50.
- Hoel, H., Glasø, L., Hetland, H., Cooper, C. L., & Einarsen, S. (2010). Leadership styles as predictors of self-reported and observed workplace bullying. *British Journal of Management*, 21(2), 453-468.
- Hoel, H., & Salin, D. (2003). Organisational antecedents of workplace bullying. In S.
 Einarsen, H. Hoel, D. Zapf & C. L. Cooper (Eds.), *Bullying and emotional abuse in the workplace: International perspectives in research and practice*. London: Taylor & Francis.
- Hogh, A., Hoel, H., & Carneiro, I. G. (2011). Bullying and employee turnover among healthcare workers: A three-wave prospective study. *Journal of Nursing Management*, 19(6), 742-751.
- Hogh, A., Mikkelsen, E. G., & Hansen, A. M. (2011). Individual consequences of workplace bullying/mobbing. In S. Einarsen, H. Hoel, D. Zapf & C. L. Cooper (Eds.), Bullying and harassment in the workplace. Developments in theory, research, and practice (Second ed.). Boca Raton, Florida: CRC Press.
- Holgado-Tello, F. P., Chacón-Moscoco, S., Barbero-García, I., & Vila-Abad, E. (2010). Polychoric versus Pearson correlations in exploratory and confirmatory factor analysis of ordinal variables. *Quality & Quantity*, 44(1), 153-166.
- Holloway, J. B. (2012). Leadership behavior and organizational climate: An empirical study in a non-profit organization. *Emerging Leadership Journeys*, 5(1), 9-35.
- Homans, G. (1961). *Social behaviour: Its elementary forms*. New York: Harcourt, Brace & World.
- Hoobler, J. M., Rospenda, K. M., Lemmon, G., & Rosa, J. A. (2010). Within-subject longitudinal study of the effects of positive job experiences and generalized workplace harassment on well-being. *Journal of Occupational Health Psychology*, 15(4), 434-451.
- Horn, J. L. (1965). A rationale and test for the number of factors in factor analysis. *Psychometrika*, *30*(2), 179-185.

- Hua, Y. J., Dai, J. M., Gao, J. L., Lu, X. Y., Liu, J. Y., & Fu, H. (2016). [Association between psychosocial work environment and workplace bullying among office workers]. *Zhonghua Lao Dong Wei Sheng Zhi Ye Bing Za Zhi*, 34(4), 262-266.
- Hubert, A. B., & van Veldhoven, M. (2001). Risk sectors for undesirable behaviour and mobbing. *European Journal of Work and Organizational Psychology*, *10*(4), 415-424.
- Hutchinson, M. (2006). Like wolves in a pack: Predatory alliances of bullies in nursing. Journal of Management & Organization, 12(3), 235-250.
- Hutchinson, M., Vickers, M. H., Jackson, D., & Wilkes, L. (2006). Workplace bullying in nursing: Towards a more critical organisational perspective. *Nursing Inquiry*, 13(2), 118-126.
- Hutchinson, M., Wilkes, L., Jackson, D., & Vickers, M. H. (2010). Integrating individual, work group and organizational factors: Testing a multidimensional model of bullying in the nursing workplace. *Journal of Nursing Management*, 18(2), 173-181.
- Imran, N., Jawaid, M., Haider, I. I., & Masood, Z. (2010). Bullying of junior doctors in Pakistan: A cross-sectional survey. *Singapore Medical Journal*, 51(7), 592-595.
- Iqbal, A. (2011). The influence of personal factors on the perceived organizational climate: Evidence from the Pakistani Industrial Organizations. *Interdisciplinary Journal of Contemporary Research In Business*, 2(9), 511-527.
- John, O. P., Donahue, E. M., & Kentle, R. L. (1991). *The Big Five Inventory Versions 4a and 54*. Berkeley, CA: University of California, Berkeley, Institute of Personality and Social Research.
- Johnson, J. A. (1997). Units of analysis for the description and explanation of personality. In R. Hogan, J. A. Johnson & S. Briggs (Eds.), *Handbook of personality psychology* San Diego, CA: Academic Press.
- Johnson, S. L. (2011). An ecological model of workplace bullying: A guide for intervention and research. *Nursing Forum, 46*(2), 55-63.
- Joules, N., Wiliams, D. M., & Thompson, A. W. (2014). Depression in resident physicians: A systematic review. Open Journal of Depression, 3, 89-100.

- Judge, T. A., Locke, E. A., Durham, C. C., & Kluger, A. N. (1998). Dispositional effects on job and life satisfaction: the role of core evaluations. *Journal of Applied Psychology*, 83(1), 17-34.
- Judge, T. A., Thoreson, C. J., Bono, J. E., & Patton, G. K. (2001). The job satisfactionjob performance relationship: A qualitative and quantitative review. *Psychological Bulletin*, 127(3), 376-407.
- Kääriä, S., Laaksonen, M., Rahkonen, O., Lahelma, E., & Leino-Arjas, P. (2012). Risk factors of chronic neck pain: A prospective study among middle-aged employees. *European Journal of Pain*, 16(6), 911-920.
- Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement*, 20(1), 141-151.
- Kalliath, T. J., Bluedorn, A. C., & Gillepsie, D. F. (1999). A confirmatory factor analysis of the competing values instrument. *Educational and Psychological Measurement*, 59(1), 143-158.
- Kannampallil, T. G., Schauer, G. F., Cohen, T., & Patel, V. L. (2011). Considering complexity in healthcare systems. *Journal of Biomedical Informatics*, 44(6), 943-947.
- Karasek, R. A., Jr. (1979). Job demands, job decision latitude and mental strain: Implications for job redesign. *Administrative Science Quarterly*, 24(2), 285-308.
- Keashly, L. (1998). Emotional abuse in the workplace: Conceptual and empirical issues. *Journal of Emotional Abuse*, 1(1), 85-117.
- Keashly, L., & Jagatic, K. (2011). North American perspectives on hostile behaviors and bullying at work. In S. Einarsen, H. Hoel, D. Zapf & C. L. Cooper (Eds.), *Bullying and harassment in the workplace: Developments in theory, research, and practice.* Boca Raton, Florida: CRC Press.
- Keashly, L., & Neuman, J. H. (2010). Faculty experiences with bullying in higher education: Causes, consequences, and management. *Administrative Theory & Praxis, 32*(1), 48-70.
- Keashly, L., Trott, V., & MacLean, L. M. (1994). Abusive behavior in the workplace: a preliminary investigation. *Violence and Victims*, 9(4), 341-357.

- Kelley, H. H. (1973). The processes of causal attribution. *American Psychologist, 28*(2), 107-128.
- Kemp, V. (2014). Antecedents, consequences and interventions for workplace bullying. *Current Opinion in Psychiatry*, 27(5), 364-368.
- Keuskamp, D., Ziersch, A. M., Baum, F. E., & Lamontagne, A. D. (2012). Workplace bullying a risk of permanent employees. *Australian and New Zealand Journal of Public Health*, 36(2), 116-119.
- Kim, S. Y., Kim, J. M., Yoo, J. A., Bae, K. Y., Kim, S. W., Yang, S. J., . . . Yoon, J. S. (2010). Standardization and validation of Big Five Inventory-Korean Version (BFI-K) in elders. *Korean Journal of Biological Psychiatry*, 17(1), 15-25.
- Kivimaki, M., Elovainio, M., & Vahtera, J. (2000). Workplace bullying and sickness absence in hospital staff. *Occup Environ Med*, 57(10), 656-660.
- Kivimaki, M., Leino-Arjas, P., Virtanen, M., Elovainio, M., Keltikangas-Jarvinen, L., Puttonen, S., . . Vahtera, J. (2004). Work stress and incidence of newly diagnosed fibromyalgia: A prospective cohort study. *Journal of Psychosomatic Research*, 57(5), 417-422.
- Kivimaki, M., Virtanen, M., Vartia, M., Elovainio, M., Vahtera, J., & Keltikangas-Jarvinen, L. (2003). Workplace bullying and the risk of cardiovascular disease and depression. *Occup Environ Med*, 60(10), 779-783.
- Koene, B. A. S., Vogelaar, A. L. W., & Soeters, J. L. (2002). Leadership effects on organizational climate and financial performance: Local leadership effect in chain organizations. *The Leadership Quarterly*, 13(3), 193-215.
- Koo, T. K., & Li, M. Y. (2016). A guideline of selecting and reporting intraclass correlation coefficients for reliability research. *Journal of Chiropractic Medicine*, 15(2), 155-163.
- Kurtessis, J. N., Eisenberger, R., Ford, M. T., Buffardi, L. C., Stewart, K. A., & Adis, C. S. (2015). Perceived organizational support: A meta-analytic evaluation of Organizational Support Theory. *Journal of Management*, 43(6), 1854-1884.
- Kwan, S. S. M., Tuckey, M. R., & Dollard, M. F. (2014). Dominant culture and bullying; Personal accounts of workers in Malaysia. In M. F. Dollard, A. Shimazu, R. Nordin, P. Brough & M. R. Tuckey (Eds.), *Psychosocial factors at work in the Asia Pacific*. Dordrecht: Springer.

- Laschinger, H. K., & Grau, A. L. (2012). The influence of personal dispositional factors and organizational resources on workplace violence, burnout, and health outcomes in new graduate nurses: a cross-sectional study. *International Journal* of Nursing Studies, 49(3), 282-291.
- Laschinger, H. K. S., & Fida, R. (2014a). New nurses burnout and workplace wellbeing: The influence of authentic leadership and psychological capital. *Burnout Research*, 1(1), 19-28.
- Laschinger, H. K. S., & Fida, R. (2014b). A time-lagged analysis of the effect of authentic leadership on workplace bullying, burnout, and occupational turnover intentions. *European Journal of Work and Organizational Psychology*, 23(5), 739-753.
- Laschinger, H. K. S., Grau, A. L., Finegan, J., & Wilk, P. (2010). New graduate nurses' experiences of bullying and burnout in hospital settings. *Journal of Advanced Nursing*, 66(12), 2732-2742.
- Law, R., Dollard, M., Tuckey, M. R., & Dormann, C. (2011). Psychosocial safety climate as lead indicator of workplace bullying and harassment, job resources, psychological health and employee engagement. *Accident Analysis and Prevention*, 43(5), 1782-1793.
- Leape, L. L., Shore, M. F., Dienstag, J. L., Mayer, R. J., Edgman-Levitan, S., Meyer, G. S., & Healy, G. B. (2012). Perspective: a culture of respect, part 1: The nature and causes of disrespectful behavior by physicians. *Academic Medicine*, 87(7), 845-852.
- Leisy, H. B., & Ahmad, M. (2016). Altering workplace attitudes for resident education (A.W.A.R.E.): Discovering solutions for medical resident bullying through literature review. *BMC Medical Education*, *16*, 127.
- León-Pérez, J. M., Arenas, A., & Griggs, T. B. (2012). Effectiveness of conflict management training to prevent workplace bullying. In N. Tehrani (Ed.), *Workplace bullying: Symptoms and solutions*. London & New York: Routledge.
- Lewis, D. (2004). Bullying at work: The impact of shame among university and college lecturers. *British Journal of Guidance & Counselling*, *32*(3), 281-299.
- Lewis, D. (2006). Nurse bullying: Organizational considerations in the maintenance and perpetration of health care bullying cultures. *Journal of Nursing Management*, *14*(1), 52-58.

- Lewis, D., & Gunn, R. W. (2007). Workplace bullying in the public sector: Understanding the racial dimension. *Public Administration an International Quarterly*, 83(3), 641-665.
- Leymann, H. (1986). *Vuxenmobbning Om psykiskt våld i arbetslivet*. Lund: Studentlitteratur.
- Leymann, H. (1990). Mobbing and psychological terror at workplaces. *Violence and Victims*, 5(2), 119-126.
- Leymann, H. (1996). The content and development of mobbing at work. *European Journal of Work and Organizational Psychology*, 5(2), 165-184.
- Leymann, H., & Gustafsson, A. (1996). Mobbing at work and the development of posttraumatic stress disorders. *European Journal of Work and Organizational Psychology*, 5(2), 251-275.
- Li, S. F., Grant, K., Bhoj, T., Lent, G., Garrick, J. F., Greenwald, P., . . . Cowan, E. (2010). Resident experience of abuse and harassent in emergency medicine: Ten years later. *The Journal of Emergency Medicine*, 38(2), 248-252.
- Lind, K., Glasø, L., Pallesen, S., & Einarsen, S. (2009). Personality profiles among targets and nontargets of workplace bullying. *European Psychologist*, 14(3), 231-237.
- Ling, M., Young, C. J., Shepherd, H. L., Mak, C., & Saw, R. P. M. (2016). Workplace bullying in surgery. *World Journal of Surgery*, 40(11), 2560-2566.
- Lippel, K. (2010). The law of workplace bullying: An international overview. *Comparative Labor Law & Policy Journal, 32*(1).
- Litwin, G. H., & Stringer, R. A. (1968). *Motivation and organizational climate*. Boston: Division of Research, Graduate School of Business Administration, Harvard University.
- Loh, F. F., Lim, W. W., Arlina, P., & Ho, S. (2012). Housemen still being overworked and bullied, sending some into depression. *The Star Online*.
- Lorr, M., & Wunderlich, R. (1988). Self-esteem and negative affect. *Journal of Clinical Psychology*, 44(1), 36-39.

- Luo, Y. (2007). The independent and interactive roles of procedural, distributive, and interactional justice in strategic alliances. *Academy of Management Journal*, *50*(3), 644-664.
- Lynam, D. R., Miller, J. D., & Derefinko, K. J. (2018). Psychopathy and personality: An articulation of the benefits of a trait-based approach. In C. J. Patrick (Ed.), *Handbook of psychopathy* (Second ed.). United States of America: The Guildford Press.
- MacCallum, R. C., Zhang, S., Preacher, K. J., & Rucker, D. D. (2002). On the practice of dichotomization of quantitative variables. *Psychological Methods*, 7(1), 19-40.
- Macintosh, R. (1998). A confirmatory factor analysis of the Affect Balance Scale in 38 nations: A research note. *Social Psychology Quarterly*, *61*(1), 83-91.
- Magerøy, N., Lau, B., Riise, T., & Moen, B. E. (2009). Association of psychological factors and bullying at individual and department levels among naval military personnel. *Journal of Psychosomatic Research*, *66*(4), 343-351.
- Magley, V. J., Hulin, C. L., Fitzgerald, L. F., & DeNardo, M. (1999). Outcomes of selflabeling sexual harassment. *Journal of Applied Psychology*, 84(3), 390-402.
- Marquardt, D. W. (1970). Generalized inverses, ridge regression, biased linear estimation, and nonlinear estimation. *Technometrics*, *12*(3), 591-612.
- Martino, V. D., Hoel, H., & Cooper, C. L. (2003). *Preventing violence and harassment in the workplace*. Dublin, Ireland: European Federation for the Improvement of Living and Working Conditions.
- Mathisen, G. E. (2012). Individual and situational antecedents of workplace victimization. *International Journal of Manpower*, *33*(5), 539-555.
- Matthiesen, S. B. (2006). *Bullying at the workplace. Antecedents and outcomes.* (PhD), University of Bergen, Norway.
- Matthiesen, S. B., Aasen, E., Holst, G., Wie, K., & Einarsen, S. (2003). The escalation of conflict: A case study of bullying at work. *International Journal of Management and Decision Making*, 4(1), 96-112.

- Matthiesen, S. B., & Einarsen, S. (2001). MMPI-2 configurations among victims of bullying at work. *European Journal of Work and Organizational Psychology*, 10(4), 467-484.
- Matthiesen, S. B., & Einarsen, S. (2004). Psychiatric distress and symptoms of PTSD among victims of bullying at work. *British Journal of Guidance & Counselling*, *32*(3), 335-356.
- Matthiesen, S. B., & Einarsen, S. (2010). Bullying in the workplace: Definition, prevalence, antecedents and consequences. *International Journal of Organization Theory and Behavior*, *13*(2), 202-248.
- Mayhew, C., McCarthy, P., Chappell, D., Quinlan, M., Barker, M., & Sheehan, M. (2004). Violence and bullying on traumatised workers. *Employee Responsibilities and Rights Journal*, 16(3), 117-134.
- McCarthy, P. (1996). When the mask slips: Inappropriate coercian in organisations undergoing restructuring. In P. McCarthy, M. Sheehan & D. Wilkie (Eds.), Bullying: From backyard to boardroom. Alexandria: Millenium Books.
- McDougall, R. (2009). *The ethical challenges association with medical internship and residency*. (PhD), University of Melbourne, Faculty of Medicine, Dentistry & Health Sciences and Centre for Applied Philosophy and Public Ethics.
- McKay, R., Arnold, D. H., Fratzl, J., & Thomas, R. (2008). Workplace bullying in academia: A Canadian study. *Employee Responsibilities and Rights Journal*, 20(3), 77-100.
- McNamara, R. M., Whitley, T., Sanders, A. B., & Andrew, L. B. (1995). The extent and effects of abuse and harassment of emergency medicine residents. *Academic Emergency Medicine*, 2(4), 293-301.
- Meek, C. B. (2004). The dark side of Japanese management in the 1990s, Karoshi and Ijime in the Japanese workplace. *Journal of Managerial Psychology*, *19*(3), 312-331.
- Meloni, M., & Austin, M. (2011). Implementation and outcomes of a zero tolerance of bullying and harassment program. *Australian Health Review*, 35(1), 92-94.
- Mikkelsen, E. G., & Einarsen, S. (2001). Bullying in Danish worklife: Prevalence and health correlates. *European Journal of Work and Organizational Psychology*, *10*(4), 393-413.

- Mikkelsen, E. G., & Einarsen, S. (2002). Relationships between exposure to bullying at work and psychological and psychosomatic health complaints: The role of state negative affectivity and generalized self-efficacy. *Scandinavian Journal of Psychology*, 43(5), 397-405.
- Milam, A. C., Spitzmueller, C., & Penney, L. M. (2009). Investigating individual differences among targets of workplace incivility. *Journal of Occupational Health Psychology*, 14(1), 58-69.
- Moayed, F. A., Daraiseh, N., Shell, R., & Salem, S. (2006). Workplace bullying: A systematic review of risk factors and outcomes. *Theoretical Issues in Ergonomics Science*, 7(3), 311-327.
- Mooi, E., Sarstedt, M., & Mooi-Reci, I. (2018). Principal component and factor analysis *Market research: The process, data, and methods using Stata*. Singapore: Springer Nature.
- Muñiz, J., Peña-Suárez, E., de la Roca, Y., Fonseca-Pedrero, E., Cabal, A. L., & Garcia-Cueto, E. (2014). Organizational climate in Spanish Public Health Services: Administration and Services Staff. *International Journal of Clinical and Health Psychology*, 14(2), 102-110.
- Musselman, L. J., MacRae, H. M., Reznick, R. K., & Lingard, L. A. (2005). 'You learn better under the gun': Intimidation and harassment in surgical education. *Medical Education*, 39(9), 926-934.
- Nagata-Kobayashi, S., Maeno, T., Yoshizu, M., & Shimbo, T. (2009). Universal problems during residency: Abuse and harassment. *Medical Education*, 43(7), 628-636.
- Namie, G. (2007). The challenge of workplace bullying. *Employment Relations Today*, 34(2), 43-51.
- Naseem, A., & Ahmed, M. (2014). Relationship between work stress and aggression among employees of The Resource Group (TRG). *European Scientific Journal, August*(Special edition), 381-384.
- Naseer, S., Raja, U., & Donia, M. B. (2016). Effects of perceived politics and perceived support on bullying and emotional exhaustion: The moderating role of type A personality. *The Journal of Psychology*, *150*(5), 606-624.

- Neuman, J. H. (2004). Injustice, stress, and aggression in organizations. In R. W. Griffin & A. M. O'Leary-Kelly (Eds.), *The dark side of organizational behavior* San Francisco: Jossey-Bass.
- Neuman, J. H., & Baron, R. A. (1998). Workplace violence and workplace aggression: Evidence concerning specific forms, potential causes, and preferred targets. *Journal of Management*, 24(3), 391-419.
- Neuman, J. H., & Baron, R. A. (2003). Social antecedents of bullying: A social interactionist perspective. In S. Einarsen, H. Hoel, D. Zapf & C. L. Cooper (Eds.), Bullying and emotional abuse in the workplace: International perspectives in research and practice. London: Taylor & Francis.
- Niedhammer, I., David, S., & Degioanni, S. (2007). Economic activities and occupations at high risk for workplace bullying: results from a large-scale cross-sectional survey in the general working population in France. *INternational Archives of Occupational and Environmental Health*, 80, 346-353.
- Niedl, K. (1995). [Mobbing/bullying at work. An empirical analysis of the phenomenon and the effects of systematic harassment on human resource management.]. Munich: Hampp.
- Nielsen, M. B. (2009). Methodological issues in research on workplace bullying: Operationalisations, measurements, and samples. (PhD), University of Bergen, Norway.
- Nielsen, M. B. (2013). Bullying in work groups: The impact of leadership. Scandinavian Journal of Psychology, 54(2), 127-136.
- Nielsen, M. B., & Einarsen, S. (2012). Outcomes of exposure to workplace bullying: A meta-analytic review. *Work & Stress*, *26*(4), 309-332.
- Nielsen, M. B., & Einarsen, S. (2018). What we know, what we do not know, and what we should and could have known about workplace bullying: An overview of the literature and agenda for future research. *Aggression and Violent Behavior*, 42, 71-83.
- Nielsen, M. B., Einarsen, S., Notelaers, G., & Nielsen, G. H. (2016). Does exposure to bullying behaviours at the workplace contribute to later suicidal ideation? A three-wave longitudinal study. *Scandinavian Journal of Work, Environmental & Health, 42*(3), 246-250.

- Nielsen, M. B., Glasø, L., & Einarsen, S. (2017). Exposure to workplace harassment and the Five Factor Model of personality: A meta-analysis. *Personality and Individual Differences*, 104, 195-206.
- Nielsen, M. B., Indregard, A. R., & Overland, S. (2016). Workplace bullying and sickness absence: A systematic review and meta-analysis of the research literature. *Scandinavian Journal of Work, Environmental & Health*, 42(5), 359-370.
- Nielsen, M. B., & Knardahl, S. (2015). Is workplace bullying related to the personality traits of victims? A two-year prospective study. *Work & Stress*, 29(2), 128-149.
- Nielsen, M. B., Magerøy, N., Gjerstad, J., & Einarsen, S. (2014). Workplace bullying and subsequent health problems. *Tidsskr Nor Laegeforen*, 134(12-13), 1233-1238.
- Nielsen, M. B., Matthiesen, S. B., & Einarsen, S. (2010). The impact of methodological moderators on prevalence rates of workplace bullying. A meta-analysis. *Journal* of Occupational and Organizational Psychology, 83(4), 955-979.
- Nielsen, M. B., Nielsen, G. H., Notelaers, G., & Einarsen, S. (2015). Workplace bullying and suicidal ideation: A 3-wave longitudinal Norwegian study. *American Journal of Public Health*, 105(11), e23-28.
- Niven, K., Sprigg, C. A., & Armitage, C. J. (2013). Does emotion regulation protect employees from the negative effects of workplace aggression? *European Journal of Work and Organizational Psychology*, 22(1), 88-106.
- Niven, K., Sprigg, C. A., Armitage, C. J., & Satchwell, A. (2013). Ruminative thinking exacerbates the negative effects of workplace violence. *Journal of Occupational and Organizational Psychology*, *86*(1), 67-84.
- Notalaers, G., & Einarsen, S. (2013). The world turns at 33 and 45: Defining simple cutoff scores for the Negative Acts Questionnaire-Revised in a representative sample. *European Journal of Work and Organizational Psychology, 22*(6), 670-682.
- Notelaers, G., De Witte, H., & Einarsen, S. (2010). A job characteristics approach to explain workplace bullying. *European Journal of Work and Organizational Psychology*, 19(4), 487-504.

- O'Connell, P. J., & Williams, J. (2002). The incidence and correlates of workplace bullying in Ireland. Dublin: Economic and Social Research Institute.
- O'Leary-Kelly, A. M., Griffin, R. W., & Glew, D. J. (1996). Organization-motivated aggression: A research framework. *Academy of Management Review*, 21(1), 225-253.
- O'Moore, M., Seigne, E., McGuire, L., & Smith, M. (1998). Victims of workplace bullying in Ireland. *The Irish Journal of Psychology*, 19(2-3), 345-357.
- Obeidat, R. F., Qan'ir, Y., & Turaani, H. (2018). The relationship between perceived competence and perceived workplace bullying among registered nurses: A cross sectional survey. *International Journal of Nursing Studies*, *88*, 71-78.
- Olweus, D. (1993). Understanding children's worlds. Bullying at school: What we know and what we can do. Malden: Blackwell Publishing.
- Omar, Z., Mokhtar, M., & Hamzah, S. R. (2015). Prevalence of workplace bully in selected public service agency in Malaysia: Do destructive leadership behaviour matters? *International Journal of Education and Training*, 1(1), 1-9.
- Omari, M. (2007). Towards dignity and respect at work: An exploration of bullying in the public sector. Edith Cowan University, Western Australia.
- Osatuke, K., Moore, S. C., Ward, C., Dyrenforth, S. R., & Belton, L. (2009). Civility, Respect, Engagement in the Workplace (CREW): Nationwide organization development intervention at Veterans Health Administration. *Journal of Applied Behavioral Science*, 45(3), 384-410.
- Oxenstierna, G., Elofsson, S., Gjerde, M., Magnusson, H., & Theorell, T. (2012). Workplace bullying, working environment and health. *Industrial Health*, 50(3), 180-188.
- Paice, E., Aitken, M., Houghton, A., & Firth-Cozens, J. (2004). Bullying among doctors in training: Cross-sectional questionnaire survey. *BMJ*, 329(7467), 658-659.
- Paice, E., & Smith, D. (2009). Bullying of trainee doctors is a patient safety issue. *The Clinical Teacher*, 2009(6), 13-17.
- Parzefall, M. R., & Salin, D. M. (2010). Perceptions of and reactions to workplace bullying: A social exchange perspective. *Human Relations*, 63(3), 761-780.

- Patah, M. O. R. A., Abdullah, R., Naba, M. M., Zahari, M. S. M., & Radzi, S. M. (2010). Workplace bullying experiences, emotional dissonance and subsequent intentions to pursue a career in the hospitality industry. *Journal of Global Business and Economics*, 1(1), 15-26.
- Pearson, R., Mundfrom, D., & Piccone, A. (2013). A comparison of ten methods for determining the number of factors in exploratory factor analysis. *Multiple Linear Regression Viewpoints*, 39(1), 1-15.
- Peña-Suárez, E., Muñiz, J., Campillo-Alvarez, A., Fonseca-Pedrero, E., & Garcia-Cueto, E. (2013). Assessing organizational climate: Psychometric properties of the CLIOR Scale. *Psicotherna*, 25(1), 137-144.
- Petrović, I. B., Čizmić, S., & Vukelić, M. (2014). Workplace bullying in Serbia: The relation of self-labeling and behavioral experience with job-related behaviors. *Psihologija*, 47(2), 185-199.
- Pilch, I., & Turska, E. (2015). Relationships between Machiavellianism, organizational culture, and workplace bullying: Emotional abuse from the target's and the perpetrator's perspective. *Journal of Business Ethics*, 128(1), 83-93.
- Podsakoff, P. M., MacKenzie, S. B., & Podsakoff, N. P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology*, 63, 539-569.
- Quine, L. (1999). Workplace bullying in NHS community trust: Staff questionnaire survey. *BMJ*, *318*(7178), 228-232.
- Quine, L. (2001). Workplace bullying in nurses. Journal of Psychology, 6(1), 73-84.
- Quine, L. (2002). Workplace bullying in junior doctors: questionnaire survey. *BMJ*, 324(7342), 878-879.
- Quine, L. (2003). Workplace bullying, psychological distress, and job satisfaction in junior doctors. *Cambridge Quarterly of Healthcare Ethics, 12*(1), 91-101.
- Quinn, R. E., & Rohrbaugh, J. (1981). A competing values approach to organizational effectiveness. *Public Productivity Review*, 5(2), 122-140.
- Rammsayer, T., Stahl, J., & Schmiga, K. (2006). [Basic personality dimensions and stress-related coping strategies in victims of workplace bullying]. *Zeitschrift für Personalpsychologie*, *5*(2), 41-52.

Rammstedt, B., & John, O. P. (2007). Measuring personality in one minute or less: A 10-item short version of the Big Five Inventory in English and German. *Journal of Research in Personality*, *41*(1), 203-212.

Rampal, K. G. (2013). [Stress among doctors in Malaysia].

- Rayner, C. (1997). The incidence of workplace bullying. *Journal of Community and Applied Social Psychology*, 7(3), 199-208.
- Rayner, C., & Cooper, C. L. (2003). The black hole in 'bullying at work' research. *International Journal of Management and Decision Making*, 4(1), 47-64.
- Rayner, C., & Hoel, H. (1997). A summary review of literature relating to workplace bullying. *Journal of Community and Applied Social Psychology*, 7(3), 181-191.
- Rhoades, L., & Eisenberger, R. (2002). Perceived organizational support: A review of literature. *Journal of Applied Psychology*, 87(4), 698-714.
- Robins, R. W., Hendin, H. M., & Trzesniewski, K. H. (2001). Measuring global selfesteem: Construct validation of a Single-Item Measure and the Rosenberg Self-Esteem Scale. *Personality and Social Psychology Bulletin*, 27(2), 151-161.
- Robinson, S. L., & Bennett, R. J. (1995). A typology of deviant workplace behaviors: A multidimensional scaling study. *The Academy of Management Journal*, 38(2), 555-572.
- Rodríguez-Muñoz, A., Baillien, E., De Witte, H., Moreno-Jiménez, B., & Pastor, J. C. (2009). Cross-lagged relationships between workplace bullying, job satisfaction and engagement: Two longitudinal studies. *Work & Stress, 23*(3), 225-243.
- Rolstad, S., Adler, J., & Rydén, A. (2011). Response burden and questionnaire length: Is shorter better? A review and metaanalysis. *Value in Health*, *14*(8), 1101-1108.
- Rowell, P. A. (2005). Being a "target" at work: Or William Tell and how the apple felt. *Journal of Nursing Administration*, *35*(9), 377-379.
- Sabri, B., St. Vil, N. M., Campbell, J. C., Fitzgerald, S., Kub, J., & Agnew, J. (2015). Racial and ethnic differences in factors related to work place violence victimization. *Western Journal of Nursing Research*, 37(2), 180-196.

- Salahieh, Z. (2015). The moderating role of perceived organisational support on the relationship between bullying and work behaviors. *Master's Theses*, Paper 4610.
- Salin, D. (2001). Prevalence and forms of bullying among business professionals: A comparison of two different strategies for measuring bullying. *European Journal of Work and Organizational Psychology*, *10*(4), 425-441.
- Salin, D. (2003). Ways of explaining workplace bullying: A review of enabling, motivating and precipitating structures and processes in the work environment. *Human Relations*, *56*(10), 1213-1232.
- Salin, D., & Hoel, H. (2011). Organisational causes of workplace bullying. In S. Einarsen, H. Hoel, D. Zapf & C. L. Cooper (Eds.), *Bullying and harassment in the workplace: Developments in theory, research, and practice* (Second ed.). Boca Raton: CRC Press.
- Salin, D., & Hoel, H. (2013). Workplace bullying as a gendered phenomenon. *Journal* of Managerial Psychology, 28(3), 235-251.
- Samnani, A., & Singh, P. (2012). 20 years of workplace bullying research: A review of the antecedents and consequences of bullying in the workplace. *Agression and Violent Behavior*, 17(1), 581-589.
- Samnani, A., & Singh, P. (2014). Performance-enhancing compensation practices and employee productivity: The role of workplace bullying. *Human Resource Management Review*, 24(1), 5-16.
- Samnani, A., & Singh, P. (2016). Workplace bullying: Considering the interaction between individual and work environment. *Journal of Business Ethics*, 139(3), 537-549.
- Santos, J., & Gonçalves, G. (2014). Organizational culture and perceived organizational support: the impact on professional satisfaction. *Global Journal For Research Analysis*, *3*(1), 33-37.
- Sauer, P. A., & McCoy, T. P. (2017). Nurses bullying: Impact on nurses' health. *Western Journal of Nursing Research*, *39*(12), 1533-1546.
- Saunders, P., Huynh, A., & Goodman-Delahunty, J. (2007). Defining workplace bullying behaviour professional lay definitions of workplace bullying. *International Journal of Law and Psychiatry*, 30(4-5), 340-354.

- Schafer, J. L. (1999). Multiple imputation: a primer. *Statistical Methods in Medical Research*, 8(1), 3-15.
- Schaller, T. K., Patil, A., & Malhotra, N. K. (2015). Alternative techniques for assessing common method variance: An analysis of the Theory of Planned Behavior research. Organizational Research Methods, 18(2), 177-206.
- Schneider, B., Ehrhart, M. G., & Macey, W. H. (2013). Organizational climate and culture. Annual Review of Psychology, 64, 361-388.
- Schreiber-Gregory, D. (2018). Logistic and linear regression assumptions: Violation recognition and control. Retrieved 31 October 2018, from https://www.lexjansen.com/wuss/2018/130_Final_Paper_PDF.pdf
- Schwartz, A. J., Black, E. R., Goldstein, M. G., Jozefowicz, R. F., & Emmings, F. G. (1987). Levels and cause of stress among residents. *Journal of Medical Education*, 62(9), 744-753.
- Scott, J., Blanshard, C., & Child, S. (2008). Workplace bullying of junior doctors: Cross-sectional questionnaire survey. New Zealand Medical Journal, 121(1282), 10-14.
- Scott, K. M., Caldwell, P. H. Y., Barnes, E. H., & Barrett, J. (2015). "Teaching by humiliation" and mistreatment of medical students in clinical rotations: A pilot study. *Medical Journal of Australia*, 203(4), 185e.181-185e.186.
- Seghieri, C., Rojas, D., & Nuti, S. (2015). Are there gender differences in how managers and professionals perceived organizational climate? The case of Tuscan healthcare system. *Suma De Negocios*, 6(13), 8-16.
- Serafeimidou, A., & Dimou, M. (2016). *Workplace bullying with special emphasis in the Greek public sector – a review article.* Paper presented at the 11th MIBES Conference Heraklion, Crete, Greece
- Shahruddin, S. A., Saseedaran, P., Salleh, A. D., Azmi, C. A. A., Alfaisal, N. H. I. M., Fuad, M. D. F., . . . Abdullah, M. R. (2016). Prevalence and risk factors of stress, anxiety and depression among house officers in Kota Kinabalu, Sabah. *Education in Medicine Journal*, 8(1), 31-40.
- Shalmani, R. S., Qadimi, A., Praveena, K. B., & Moslem, C. (2015). Teachers perception of organizational climate: Gender differences. *International Journal* of Psychology and Behavioral Research, 4(1), 1-8.

- Sheehan, K. H., Sheehan, D. V., White, K., Leibowitz, A., & Baldwin, D. C. (1990). A pilot study of medical student 'abuse'. Student perceptions of mistreatment and misconduct in medical school. *JAMA*, 263(4), 533-537.
- Sheehan, M. (1996). Case studies in organisational restructuring. In P. McCarthy, M. Sheehan & D. Wilkie (Eds.), *Bullying: From backyard to boardroom*. Alexandria: Millenium Books.
- Sheehan, M. (1998). Restructuring rhetoric versus reality. In P. McCarthy, M. Sheehan, S. Wilkie & W. Wilkie (Eds.), *Bullying: Causes, costs and cures*. Nathan, Queensland, Australia: The Beyond Bullying Association.
- Sheehan, M. (2001). A model for assessing the impacts and costs of workplace bullying. Paper presented at the Standing Conference on Organizational Symbolism (SCOS), Trinity College, Dublin.
- Shinsako, S. A., Richman, J. A., & Rospenda, K. M. (2001). Training-related harassment and drinking outcomes in medical residents versus graduate students. *Substance Use & Misuse*, *36*(14), 2043-2063.
- Simpson, R., & Cohen, C. (2004). Dangerous work: The gendered nature of bullying in the context of higher education. *Gender Work and Organization*, 11(2), 163-186.
- Skarlicki, D. P., & Folger, R. (1997). Retaliation in the workplace: The roles of distributive, procedural, and interactional justice. *Journal of Applied Psychology*, 82(3), 434-443.
- Skogstad, A., Einarsen, S., Torsheim, T., Aasland, M. S., & Hetland, H. (2007). The destructiveness of laissez-faire leadership behavior. *Journal of Occupational Health Psychology*, *12*(1), 80-92.
- Skogstad, A., Torsheim, T., & Einarsen, S. (2011). Testing the work environment hypothesis of bullying on a group level of analysis: Psychosocial factors as precursors of observed workplace bullying. *Applied Psychology*, *60*(3), 475-495.
- Sommet, N., & Morselli, D. (2017). Keep calm and learn multilevel logistic modeling: A simplified three-step procedure using Stata, R, Mplus and SPSS. *International Review of Social Psychology*, *30*(1), 203-218.
- Spector, P. E. (1978). Organizational frustration: A model and review of literature. *Personnel Psychology*, *31*(4), 815-829.

- Spector, P. E., & Fox, S. (2005). The stressor-emotion model of counterproductive work behavior. In S. Fox & P. E. Spector (Eds.), *Counterproductive work behavior: Investigations of actors and targets*. Washington, DC, US: American Psychological Association.
- Speroff, T., Nwosu, S., Greevy, R., Weinger, M. B., Talbot, T. R., Wall, R. J., . . . Dittus, R. S. (2010). Organisational culture: variation across hospitals and connection to patient safety climate. *Quality & Safety in Health Care, 19*(6), 592-596.
- Stagg, S. J., Sheridan, D., Jones, R. A., & Speroni, K. G. (2011). Evaluation of a workplace bullying cognitive rehearsal program in a hospital setting. *The Journal of Continuing Education in Nursing*, 42(9), 395-401.
- Steadman, L., Quine, L., Jack, K., Felix, D. H., & Waumsley, J. (2009). Experience of workplace bullying behaviours in postgraduate hospital dentists: Questionnaire survey. *British Dental Journal*, 207(8), 379-380.
- Steel, P., Schmidt, J., & Shultz, J. (2008). Refining the relationship between personality and subjective well-being. *Psychological Bulletin*, 134(1), 136-161.
- Stellefson, M., & Hanik, B. (2008). Strategies for determining the number of factors to retain in exploratory factor analysis. http://files.eric.ed.gov/fulltext/ED500003.pdf
- Stevens, J. P. (1984). Outliers and influential data points in regression analysis. *Psychological Bulletin*, 95(2), 334-344.
- Stouten, J., Baillien, E., Van den Broeck, A., Camps, J., De Witte, H., & Euwema, M. (2010). Discouraging bullying: The role of ethical leadership and its effects on the work environment. *Journal of Business Ethics*, 95(Supplement 1), 17-27.
- Strandmark, M. K., & Hallberg, L. R. M. (2007). The origin of workplace bullying: Experiences from the perspective of bully victims in the public service sector. *Journal of Nursing Management*, 15(3), 332-341.

A strategy for dealing with problematic data points. (2018). *STAT 501: Regression methods*. Retrieved 31 October 2018, from https://onlinecourses.science.psu.edu/stat501/node/341/

Strawberry generation. (n.d.). Retrieved 3 March 2017, from https://en.wikipedia.org/wiki/Strawberry_generation

- Stroup, D. F., Berlin, J. A., Morton, S. C., Olkin, I., Williamson, G. D., Rennie, D., ... Thacker, S. B. (2000). Meta-analysis of observational studies in epidemiology: A proposal for reporting. Meta-analysis of Observational Studies in Epidemiology (MOOSE) group. *JAMA*, 283(15), 2008-2012.
- Sungwan, P., Deoisres, W., & Chaimongkol, N. (2017). Perceptions of newly registered Thai nurses about workplace bullying. *Thai Pharmaceutical and Health Science Journal*, 12(3), 101-107.
- Tabachnick, B. G., & Fiddell, L. S. (2007). *Using multivariate statistics*. Boston: Pearson Education Inc.
- Tedeschi, J. T., & Felson, R. B. (1994). *Violence, aggression and coercive actions*. Washington DC: American Psychological Association.
- Teh, A. (2018). Workplace bullying, harassment even doctors are not spared. *Malaysiakini*.
- Tehrani, N. (2003). Counselling and rehabilitating employees involved with bullying. In S. Einarsen, H. Hoel & C. L. Cooper (Eds.), *Bullying and emotional abuse in the* workplace: International perspectives in research and practice. London: CRC Press.
- Temple, T. (2014). Resident duty hours around the globe: Where are we now? *BMC Medical Education*, 14(Supplement 1), 58.
- Tepper, B. J. (2000). Consequences of abusive supervision. Academy of Management Journal, 43(2), 178-190.
- Tepper, B. J., Duffy, M. K., Henle, C. A., & Lambert, L. S. (2006). Procedural injustice, victim precipitation, and abusive supervision. *Personnel Psychology*, *59*(1), 101-123.
- Tepper, B. J., & Henle, C. A. (2011). A case for recognizing distinctions among constructs that capture interpersonal mistreatment in work organizations. *Journal of Organizational Behavior*, 32(3), 487-498.
- Theorell, T., Hammarstrom, A., Aronsson, G., Traskman, B. L., Grape, T., Hodstedt, C., & Hall, C. (2015). A systematic review including meta-analysis of work environment and depressive symptoms. *BMC Public Health*, *15*(15), 738.

- Thomas, T. (2004). Bullying among support staff in a higher education institution. *Health Education*, *105*(4), 273-288.
- Thylefors, I. (1987). *[Scapegoats: On expulsion and bullying in working life.]*. Stockholm: Natur och Kultur.
- Tinakon, W., & Nahathai, W. (2012). A comparison of reliability and construct validity betwen the original and revised versions of the Rosenberg Self-Esteem Scale. *Psychiatry Investigation*, *9*(1), 54-58.
- Törnroos, M., Elovainio, M., Hintsa, T., Hintsanen, M., Pulkki-Råback, L., Jokela, M., . . Keitikangas-Järvinen, L. (2019). Personality traits and perceptions of organisational justice. *International Journal of Psychology*, 54(3), 414-422. doi: 10.1002/ijop.12472
- Treglown, L., Zivkov, K., Zarola, A., & Furnham, A. (2018). Intention to quit and the role of dark personality and perceived organizational support: A moderation and mediation model. *PLOS ONE, 13*(3), e0195155.
- Tsai, Y. (2011). Relationship between organizational culture, leadership behavior, and job satisfaction. *BMC Health Services Research*, 11(98).
- Tsuno, K., & Kawakami, N. (2015). Multifactor leadership styles and new exposure to workplace bullying: a six-month prospective study. *Industrial Health*, 53(2), 139-151.
- Tsuno, K., Kawakami, N., Tsutsumi, A., Shimazu, A., Inoue, A., Odagiri, Y., ... Kawachi, I. (2015). Socioeconomic determinants of bullying in the workplace: A national representative sample in Japan. *PLOS ONE*, *10*(3), e0119435.
- Ursin, H., & Eriksen, H. R. (2004). The cognitive activation theory of stress. *Psychoneuroendocrinology*, *29*(5), 567-592.
- Van den Brande, W., Baillien, E., Elst, T. V., De Witte, H., Van den Broeck, A., & Godderis, L. (2017). Exposure to workplace bullying: The role of coping strategies in dealing with work stressors. *BioMed Research International*, *Volume 2017*, Article ID 1019529.
- Van den Broeck, A., Baillien, E., & De Witte, H. (2011). Workplace bullying: A perspective from the Job Demands-Resources model. *SA Journal of Industrial Psychology*, *37*(2), 879-891.

- Vartia, M. (1993). Psychological harassment at work. In K. Kauppinen (Ed.), *OECD Panel Group on Women, Work and Health*. Helsinki: Institute of Occupational Health.
- Vartia, M. (1996). The sources of bullying: Psychological work environment and organisational climate. *European Journal of Work and Organizational Psychology*, *5*(2), 203-214.
- Vartia, M. (2001). Consequences of workplace bullying with respect to the well-being of its targets and the observers of bullying. *Scandinavian Journal of Work, Environment & Health, 27*(1), 63-69.
- Vartia, M., & Hyyti, J. (2002). Gender differences in workplace bullying among prison officers. *European Journal of Work and Organizational Psychology*, 11(1), 113-126.
- Velicer, W. F. (1976). Determining the number of components from the matrix of partial correlations. *Psychometrika*, 41(3), 321-327.
- Velicer, W. F., Eaton, C. A., & Fava, J. L. (2000). Construct explication through factor or component analysis: A review and evaluation of alternative procedures for determining the number of factors or components. In R. D. Goffin & E. Helmes (Eds.), *Problems and solutions in human assessment: Honoring Douglas N. Jackson at seventy*. Norwell, MA: Kluwer Academic.
- Verkuil, B., Atasayi, S., & Molendijk, M. L. (2015). Workplace bullying and mental health: A meta-analysis on cross-sectional and longitudinal data. *PLOS ONE*, *10*(8), e0135225.
- Vigoda, E. (2002). Stress-related aftermaths to workplace politics: The relationships among politics, job distress, and aggressive behavior in organizations. *Journal of Organizational Behavior*, 23(5), 571-591.
- Vivekanandan, G., Thirupathy, U., Affan, M., Zamri, A. A., Ariffin, K., Asraff, A., & Sugnadan, S. (2015). Stress perceived by housemen in a hospital in northern Malaysia. *Medical Journal of Malaysia*, 71(1), 8-11.
- Walker, J. T., & Maddan, S. (2008). Factor analysis and structural equation modeling *Statistics in criminology and criminal justice: Analysis and interpretation* (Third ed.). United States of America: Jones and Bartlett Publishers.

- Wallace, J., Hunt, J., & Richards, C. (1999). The relationship between organisational culture, organisational climate and managerial values. *The International Journal* of Public Sector Management, 12(7), 548-564.
- Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin*, *96*(3), 465-490.
- Weisberg, Y. J., DeYoung, C. G., & Hirsh, J. B. (2011). Gender differences in personality across the ten aspects of the Big Five. *Frontiers in Psychology*, *2*, Article 178.
- Weiss, H. M., & Cropanzano, R. (1996). Affective Events Theory: A theoretical discussion of the structure, causes and consequences of affective experiences at work. In B. M. Staw & L. L. Cummings (Eds.), *Research in organizational behavior: An annual series of analytical essays and critical reviews* (Vol. 18). United States: Elsevier Science/JAI Press.
- Wells, G. A., Shea, B., O'Connell, D., Peterson, J., Welch, V., Losos, M., & Tugwell, P. (2000). The Newcastle–Ottawa Scale (NOS) for Assessing the Quality of Non-Randomized Studies in Meta-Analysis. from http://www.ohri.ca/programs/clinical_epidemiology/oxford.htm
- Wheeler, A. R., Halbesleben, J. R. B., & Shanine, K. (2010). Eating their cake and everyone's cake, too: Resources as the main ingredients to workplace bullying. *Business Horizons*, 53(6), 553-560.
- Wijnen-Meijer, M., Burdick, W., Alofs, L., Burgers, C., & Cate, O. T. (2013). Stages and transitions in medical education around the world: Clarifying structures and terminology. *Medical Teacher*, 35(4), 301-307.
- Willness, C. R., Steep, P., & Lee, K. (2007). A meta-analysis of the antecedents and consequences of workpalce sexual harassment. *Personnel Psychology*, 60(1), 127-162.
- Wilson, C. B. (1991). US businesses suffer from workplace trauma. *Personnel Journal*, 70(7), 47-50.
- Worley, J. A., Fuqua, D. R., & Hellman, C. M. (2009). The survey of perceived organisational support: Which measure should we use? *SA Journal of Industrial Psychology*, *35*(n.1).

- Yahaya, A., Ing, T. C., Lee, G. M., Yahaya, N., Boon, Y., Hashim, S., & Taat, S. (2012). The impact of workplace bullying on work performance. *Archives Des Sciences*, 65(4), 18-28.
- Yeoh, O. C. (2016). Medical graduates and the pressure they face. New Straits Times.
- Yildirim, A., & Yildirim, D. (2007). Mobbing in the workplace by peers and managers: mobbing experienced by nurses working in healthcare faciities in Turkey and its effects on nurses. *Journal of Clinical Nursing*, *16*(8), 1444-1453.
- Yusoff, M. S. B., Tan, Y. J., & Esa, A. R. (2011). Stress, stressors and coping strategies among house officers in a Malaysian hospital. ASEAN Journal of Psychiatry, 12(1), 85-94.
- Zanon, C., Bastianello, M. R., Pacico, J. C., & Hutz, C. S. (2013). Relationships between positive and negative affect and the five factors of personality in a Brazilian sample. *Paidéia (Ribeirão Preto)*, 23(56), 285-292.
- Zapf, D. (1999a). [Mobbing in organisations. A state of the art review.]. Zeitschrift für Arbeits and Organisationspsychologie, 43(1), 1-25.
- Zapf, D. (1999b). Organisational, work group related and personal causes of mobbing/bullying at work. *International Journal of Manpower*, 20(1/2), 70-85.
- Zapf, D., Einarsen, S., Hoel, H., & Vartia, M. (2003). Empirical findings on bullying in the workplace. In S. Einarsen, H. Hoel, D. Zapf & C. L. Cooper (Eds.), *Bullying and emotional abuse in the workplace*. London: Taylor and Francis.
- Zapf, D., Escartin, J., Einarsen, S., Hoel, H., & Vartia, M. (2011). Empirical findings on prevalence and risk groups of bullying in the workplace. In S. Einarsen, H. Hoel, D. Zapf & C. L. Cooper (Eds.), *Bullying and harassment in the workplace*. London: Taylor and Francis.
- Zapf, D., & Gross, C. (2001). Conflict escalation and coping with workplace bullying: A replication and extension. *European Journal of Work and Organizational Psychology*, 10(4), 497-522.
- Zapf, D., Knorz, C., & Kulla, M. (1996). On the relationship between mobbing factors, and job content, social work environment, and health outcomes. *European Journal of Work and Organizational Psychology*, 5(2), 215-237.

Zwick, W. R., & Velicer, W. F. (1986). Comparison of five rules for determining the number of components to retain. *Psychological Bulletin*, *99*(3), 432-442.

LIST OF PUBLICATIONS AND PAPERS PRESENTED

1. Publication in the European Journal of Work and Organisational Psychology (ISI indexed journal, Q1 for Applied Psychology and Q1 for Organisational Behavior and Human Resource Management, 2017 impact factor 2.638)

EUROPEAN JOURNAL OF WORK AND ORGANIZATIONAL PSYCHOLOGY https://doi.org/10.1080/1359432X.2018.1502171



Check for updates

The prevalence, risk factors and outcomes of workplace bullying among junior doctors: a systematic review

Ely Zarina Samsudina, Marzuki Isahaka and Sanjay Rampala

*Population Health and Preventive Medicine Unit, Faculty of Medicine, Universiti Teknologi MARA, Selangor, Malaysia; ^bDepartment of Social and Preventive Medicine, Faculty of Medicine, University of Malaya, Kuala Lumpur, Malaysia

ABSTRACT

Junior doctors' exposure to bullying may impact their training and compromise quality healthcare, yet little is known in relation to its predictors and effects. The aim of this paper is to assess the prevalence, factors and outcomes of workplace bullying among junior doctors. Literature search was performed to identify all primary studies examining workplace bullying among junior doctors using the following electronic databases: Medline, Scopus, Web of Science, PsycINFO and Cochrane Library. A total of 18 articles were included, reporting on a total of 9,597 junior doctors. The quality of evidence can be rated as moderate according to the Newcastle Ottawa Scale. From the review, a wide range (30–95%) of bullying prevalence, significant differences in bullying rates according to gender, age, height, ethnicity and subspecialty, and significant associations between bullying and mental strain, job dissatisfaction, burnout, and increased accidents at work were observed. Concurrently, heterogeneity in the terms and methodologies used to examine workplace bullying as well as definitional issues in relation to the persistency of negative interactions were noted. Evidence suggests that workplace bullying is a serious occupational hazard for junior doctors, and more research is waranted to better understand this phenomenon and address its definitional and methodological issues.

ARTICLE HISTORY

Received 4 February 2018 Accepted 13 July 2018

KEYWORDS

Workplace bullying; occupational safety and health; medical education; junior doctors; systematic review 2. Poster presentation for 1st Conference of the Asia Pacific Academy for Psychosocial Factors at Work, from 29-30 November 2018, in Auckland, New Zealand

UNIVERSITY THE PREVALENCE, RISK FACTORS AND OUTCOMES **OF MALAYA OF WORKPLACE BULLYING AMONG JUNIOR** DOCTORS: A SYSTEMATIC REVIEW <u>Ely Zarina Samsudin¹,</u> Marzuki Isahak², Sanjay Rampal² ¹Population Health and Preventive Medicine Unit, Faculty of Medicine, Universiti Teknologi MARA, Selangor, Malaysia. BACKGROUND **RESULTS AND DISCUSSION (Cont.)** Workplace bullying has emerged as an important workplace health and safety problem, with marked prevalence in nations across the globe¹. Exposure to workplace bullying is strongly correlated with deleterious effects on employees' health and work behaviour^{2,4}. Junior doctors (JD) may be at risk of such mistreatment due to the traditional hierarchical structures of hospitals and culture of medical training in which intimitating teaching methods are widely considered to be an acceptable practice³. JD' propensity to experience bullying musical their locations are used to the bind the total consider of a notice considered on a structure of the solution are used to be a succeptable practice⁵. JD' propensity to experience Table 1: Quality of Stu Author/ Year Study Design LOE Selection atic Revi lysis Q3 Q1 Q3 bullying may impact their learning as well as their ability to provide safe patient care To date, examination of the correlates of workplace bullying among JD and conceptualizing a framework based on empirical findings has not been attempted. Additionally, workplace bullying remains a difficult problem to define and measure accurately⁶⁻⁷, and greater insight into how bullying is assessed is warranted. . • **RESEARCH QUESTIONS** How is workplace bullying among JD termed, defined, operationalized, and measured, and does this affect the prevalence rates reported? Are there certain target characteristics and organizational factors that are associated with an increased risk of exposure of workplace bullying among JD? What impact has workplace bullying had on victims of workplace bullying as well as on comparison. ninologies, Definitions and Methodologies Employed by Previous Studie "Mistreatment", "abuse", "harassment and discrimination,", "aggression", "bullying", and "mobbing" have been used to describe negative interactions experienced by JD. Despite this heterogeneity, closer examination of the definitions of the terms used by authors organizations? of studies included in this review similarly described bullying behaviours. Operational definition issues are still apparent as persistence of negative actions was highlighted in authors' definitions of bullying or mobbing, though not strictly operationalized **METHODOLOGY** by majority of authors. Similarly, persistency was not explicitly stated in the authors' definitions of mistreatment, abuse, harassment and discrimination and aggression, nor was it Search Strategy: Boolean search of Medline, Scopus, Web of Science, PsycINFO operationalized as such. (PsychARTICLES), and Cochrane Library were performed using the following search terms operationalized as such. These findings are consistent with literature whereby previous authors note that hostile workplace behaviours such as workplace harassment and bullying all measure repetitive negative actions, and even though the aspect of duration is included in their definitions, it has been ignored from a measurement perspective in literature³⁰ and duration appears nout restrictions to date or publication without restrictions to date or publication: (mobbing OB bullying OP victimisation OR victimization OR harassment OR "emotional abuse" OR aggression) AND (iii: (prevalence OR factor OR cause OR risk OR "risk factor" OR relationship OR antecedent OR effect OR outcome OR consequence) AND (juntor doctor" OR intern OR "house officer" OR "foundation doctor" OR "trainee doctor" OR "doctors in training" OR resident) primarily as a time frame without anchoring the frequency scales to specific time referents such as daily, weekly or monthly9. Similarly, methodologies used by studies to measure negative interactions at work also varied. After searches were performed, articles were then organized into EndNote X7 Software and with only 28% of studies utilizing instruments with established psychometric properties evalence of Workplace Bullying Reported by Previous Studies: Studies reported a wide range of prevalence (30% to 95%), depending on t operationalization of negative interactions and research strategy applied, as noted by oth studies¹⁰. duplicates were identified and removed. Study Selection: Articles were assessed for eligibility on the basis of their title and abstract **tudy Selection:** Articles were assessed for eligibility on the basis of their title and abstract. Inclusion criteria: Any primary studies in English examining the prevalence, factors and/ or outcomes of workplace bullying among ID. Exclusion criteria: Studies focusing on constructs denoting hostile workplace behaviours not considered to be workplace bullying, studies focusing on aggression from non-employees, studies conducted among non-ID workers, studies examining variables other than variables of interest, and non-primary studies. Prevalence rates were observed to become more deflated as the operational definition for workplace bullying became more conservative. Of the two studies that measured bullying via the self-labeling and behavioural experience methods, the behavioural experience method led to a much higher figure compared to the self-labeling method, consistent with the findings of Nielsen (2009) meta-analysis¹¹. The per cent agreement and Cohen's Kappa for the study selection process are 98.3% and 0.88, respectively Diek Feeters Bullying Behaviours Outo Factors and Outco Workplace Bullying Reported by Previous Data Extraction and Analysis: Data on author, publication year, study population, study Data Extraction and Analysis: Data on aution, pouncation year, study population, study location, study design, sample size, study instruments used, study variables, prevalence reported, associated factors, associated outcomes and study conclusion, as well as the study bulking-related term, authors' definition of bulking-related term, and validity and reliability of study instrument. Data was analyzed qualitatively due to the heterogeneity of the anticident of the study study instrument. As outlined in Figure 2. the studies **Quality Assessment Tool:** Table of Evidence Levels from Cincinnati Children's Hospital Medical Center The (CCHMC) (2009) was used to classify level of evidence for individual studies by doma and study design and study design. Studies were further subclassified by assigning quality rating according to the Newcastle-Ottawa Scale (NOS) that was adapted for use in cross-sectional studies by Herzog et al. (2013)⁴ and further adapted for this study, as follows: i. 1–3 stars "poor" and 4–5 stars "moderate" as "o" (i.e. lesser quality study) ii. 6–7 stars "good" and 8–10 stars "excellent" as "a"(i.e. good quality study) н Figure 2. A Model of Workplace Bullying Among Junior Doctors Based on the Findings of the Systematic Review CONCLUSIONS **RESULTS AND DISCUSSION** Evidence suggests that workplace bullving is a serious occupational bazard for junior doctors. and more research is warranted to better understand this pheno definitional and methodological issues. its Descriptive Findings and Assessm of Methodological Quality: • A total of 18 articles were inclu-Identification Medline (n = 669) Web of Science (n = 1,454) Cochrane Library (n = 47) Scopus (n = 1,893) REFERENCES Branzen, S., & Stogetzi, A. (1996), Bullyng at work: Epidemiological findings in pilke and private organizations. European Journal of Work and Organizational Psychology, 18:3–00. Branzen, S., & Stogetzi, A. (1996), Bullyng at work: Epidemiological findings in pilke and private organizations. European Journal of Work and Organizational Psychology, 18:3–00. Branzen, K. B., & Binstein, J. (2002), Outcomes of esponyer to workplace bullying: A systematic review of risk factors and outcomes. Theoretical Issues in Strange Mark 2012, Discourses of esponyer to workplace bullying and systematic review. Work & Strenz, 24, 200–312. Stetts, M. (2004), Funder far assessing Branzes and core diversite bullying parential of the Stochard Conference on Depinational and transmission. J 19:101, Discourses of esponyers workplace bullying parential of the Stochard Conference on Depinational and transmission. J 2015, 18:16. Stoch, K. M., Caldeell, P. H. Y., Barnet, E., K. & Barnet, L. (2013). "Reaching by humalitation" and mitratement of modified taddeets in linical contractions: A part of dynamic and and and analysis. J 2012, Bindian and Antonia Bullying and the social balance and mitratement of modified taddeets in linical contractions: A part of dynamic and and analysis. J 2014, Bindian and Antonia Bullying and the social balance. The social balance and the social contraction and analysis. J 2014, Bindian and Antonia Bullying and the social balance. The social balance and the social balance and the social contraction and analysis. J 2014, Bindian and Antoniana Bullying and the social balance and the social contraction and analysis. J 2014, Bindian and Antoniana Bullying and the social balance. The social balance and the social contraction and analysis. J 2014, Bindian and Antoniana Bullying and the social balance. The social balance and the social contraction and analysis. J 2014, Bindian and Antoniana Bullying and the social balance. The social balance and the social in this review, reporting on a total Screening of 9,597 JD. Studies were published from 1995 to 2016 from studies conducted in North America (USA and Canada), DISHIN North America (USA and Canada), Europe (UK, Irelan, Turkey), Asia (Saudi Arabia, Oman, Pakistan, India, Japan), and Australia and New Zealand. Overall, according to the NOS, studies were of of moderate quality (Table 1).

В

l