

UNIVERSITY OF MALAYA
ORIGINAL LITERARY WORK DECLARATION

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Title of Thesis “this Work”: **THE EFFECTS OF STRESS ON LACTATION
AMONG WORKING AND NON-WORKING MALAYSIAN MOTHERS**

Field of Study: **Physiology**

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ABSTRACT

Lactation impairment is commonly blamed on stress despite mothers' determination and knowledge on breastfeeding. This research is carried out to determine the association between perceived stress and serum cortisol and prolactin levels in working and non-working mothers during the first, second, third and fourth postpartum months. It is hypothesised that working mothers would be under more stress and thus have higher cortisol level but lower prolactin levels as compared to non-working mothers. Fifty-nine postpartum mothers at two health clinics within the Kuala Lumpur urban area were recruited. However, only nine working and seven non-working participating mothers manage to complete the study. The mothers were asked to complete a Depression, Anxiety and Stress Scales (DASS) questionnaire that assesses perceived stress, and thereafter blood samples were taken for cortisol and prolactin measurements. These procedures were repeated at monthly intervals during the first four postpartum months. There was no significant association between perceived stress and serum cortisol and prolactin levels in working mothers as well as non-working mothers. However, it was interesting to note that during the second postpartum month (end of confinement period for Malaysian mothers), the non-working mothers had significantly higher stress scores ($p < 0.05$) with increased cortisol level ($p < 0.05$) than the working mothers. However, there was no significant difference in the prolactin levels. Possible explanations for this finding were strong family or social support and financial stability. In conclusion, conventional wisdom suggests that the postpartum period of new mothers would be a period of great adjustment but the data collected here demonstrate otherwise. Indeed, for new Malaysian mothers with strong family support, they appear to pass this period quite calmly and relatively stress-free, even for those mothers who need to work outside their homes. More research is necessary to reveal the underlying reasons for this unexpected finding.

ABSTRAK

Masalah penghasilan susu ibu sering dikaitkan dengan tekanan walaupun para ibu berpengetahuan mengenai susu ibu dan mempunyai semangat untuk meneruskan penyusuan terhadap bayi mereka. Kajian ini dijalankan untuk mengenalpasti hubungan antara tekanan yang dialami oleh para ibu dan tahap hormon kortisol dan prolaktin di antara ibu yang bekerja dengan yang tidak bekerja. Ketiga-tiga parameter ini dikaji pada bulan pertama, kedua, ketiga dan keempat selepas bersalin. Hipotesis kajian ini ialah ibu yang bekerja akan mengalami lebih banyak tekanan, mempunyai tahap hormon kortisol yang lebih tinggi dan tahap hormon prolaktin yang lebih rendah berbanding ibu yang tidak bekerja. Lima puluh sembilan ibu dari dua buah klinik kesihatan di kawasan Kuala Lumpur telah mengambil bahagian dalam kajian ini. Hanya sembilan ibu yang bekerja dan tujuh ibu yang tidak bekerja berjaya menamatkan kajian. Mereka melengkapkan soal selidik dan aras hormon kortisol dan prolaktin diukur setiap bulan. Hasil kajian mendapati tiada hubung kait secara statistik di antara tekanan yang dialami dengan tahap hormon kortisol dan prolaktin. Namun begitu, satu penelitian didapati pada bulan kedua selepas bersalin iaitu bertepatan dengan berakhirnya waktu pantang, para ibu yang tidak bekerja mengalami tahap tekanan ($p < 0.05$) dan hormon kortisol yang lebih tinggi ($p < 0.05$) berbanding ibu yang bekerja. Manakala bagi hormon prolaktin, tiada perbezaan ketara di antara ibu yang tidak bekerja dengan ibu yang bekerja. Keputusan ini menunjukkan bahawa kekuatan sokongan keluarga dan sosial serta kestabilan ekonomi boleh mempengaruhi tahap tekanan. Kesimpulannya, tempoh selepas bersalin adalah waktu penyesuaian yang sukar, namun hasil kajian ini menunjukkan sebaliknya. Para ibu baru di Malaysia yang mempunyai sokongan keluarga yang teguh dapat mengharungi tempoh ini dengan tenang walaupun ibu perlu bekerja di luar rumah. Lebih banyak kajian lanjutan perlu dilakukan untuk mengenalpasti sebab sebenar disebalik hasil yang tidak dijangka ini.

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List of Abbreviations

ACTH	Adrenocorticotrophic hormone
AVP	Argininevasopressin
BF	Breastfeeding
CRH	Corticotrophin-releasing hormone
DASS	Depression, Anxiety and Stress Scale
EBF	Exclusive breastfeeding
ELLSCS	Elective lower segment caesarean section
EMLSCS	Emergency lower segment caesarean section
HPA	Hypothalamic-pituitary-adrenal
KKIA	<i>Klinik Kesihatan Ibu dan Anak</i>
LC	Locus ceruleus
NHMS	National Health and Morbidity Survey
NMRR	National Medical Research Register
PRL	Prolactin
PVN	Paraventricular nuclei
SVD	Spontaneous vaginal delivery
UM	University of Malaya
WHO	World Health Organization

Definition of terms

Breastfeeding	Feeding the infant directly at the breast.
Exclusive breastfeeding	Infant receives only breast milk (including the expressed or from a wet nurse). No other liquids or solids are given – not even water – with the exception of oral rehydration solution, or drops/syrups of vitamins, minerals or medicines.
Infants	Infants referred to throughout here are healthy, singleton, term (37-40 weeks gestation) with birth weight of more than 2500 gram.
Lactation failure	Low milk output in the mother, inadequate to meet infant's requirement and leads to poor weight gain.
Lactation performance	Defined from measurements of milk volume and infant growth.
Lactation	Secretion or formation of milk by the mammary glands.
Mixed feeding	Infant receives other liquids including formula milk and/or foods together with breast milk under 6 months of age.
Mothers	Malaysian women aged between 20 to 40 years old, with no known medical illness and have established exclusive breastfeeding up to four months postpartum period. Also mentioned as subjects in this study.
Multipara	A woman who has completed two or more pregnancies to viability.
Non-working mothers	Malaysian women who stayed at home and do not do any work from home which earn some income.
Primipara	A woman who has delivered only once of a foetus or foetuses who reached viability.
Working mothers	Malaysian women with full time job. Must be away from infant during working hours (from 8am to 5pm).

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