USAGE OF MANDALA ART THERAPY TOWARD SOCIAL INTERACTION SKILLS OF CHILDREN WITH AUTISM SPECTRUM DISORDER

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USAGE OF MANDALA ART THERAPY TOWARD SOCIAL INTERACTION SKILLS OF CHILDREN WITH AUTISM SPECTRUM DISORDER

ABSTRACT

Individuals with Autism Spectrum Disorder (ASD) have impairments in language developments and social interactions; they are not able to relate well to people, they have trouble expressing their emotions and sustaining conversations. These tendencies make it difficult for parents and caregivers to understand the emotional state of children with ASD. This case study investigates the advantage of mandala art therapy in helping parents and caregivers recognize the emotional state of children with ASD without pressuring them to verbalize their feelings. Mandala art therapy is known widely in the study of art therapy as an approach that provides a safe environment for clients to explore their inner self. It was introduced by Carl Gustav Jung as a way to express feelings in the field of psychology. The data obtained in this case study were collected within twelve weeks, for one session per week. Subjective and objective methods of data collection were implemented. The subjective analysis employs Jungian psychotherapist Susanne F. Fincher's interpretation of colours in a mandala. It also includes an in-depth analysis describing the behavioural changes of the two participants throughout the twelve-week mandala art therapy sessions. For the objective analysis, Autism-Spectrum Quotient (AQ) questionnaire was used before and after the intervention to determine whether there is an improvement in their social interaction skills after going through twelve sessions of mandala art therapy. After twelve weeks of observation, it is concluded that mandala art therapy would be beneficial for parents and caregivers as an intervention tool that explores the emotional conditions of children with ASD.

Keywords: Autism Spectrum Disorder (ASD), Mandala Art Therapy (MAT), Social Interaction Skills (SIS), Autism-Spectrum Quotient (AQ)

PENGGUNAAN TERAPI SENI MANDALA TERHADAP KEMAHIRAN INTERAKSI SOSIAL KANAK-KANAK AUTISME

ABSTRAK

Individu dengan sindrom Autisme Spectrum Disorder (ASD) mempunyai masalah dalam komunikasi dan interaksi sosial; mereka mempunyai masalah untuk mengekspresikan emosi mereka dan membuat sebarang perbualan yang normal. Keadaan ini menjadikan ibu bapa dan pengasuh sukar untuk memahami keadaan emosi kanak-kanak dengan ASD. Kajian ini ingin menyelidik kebolehan terapi seni mandala dalam membantu ibu bapa dan pengasuh untuk mengenalpasti keadaan emosi kanak-kanak dengan ASD tanpa memberi mereka tekanan untuk mengekspresikan emosi mereka. Terapi seni mandala digunakan secara meluas dalam bidang terapi seni sebagai salah satu terapi yang memberikan suasana yang selamat bagi klien untuk meneroka diri mereka sendiri. Data yang diperolehi dalam kajian kes ini dikumpulkan dalam tempoh dua belas minggu. Kaedah pengumpulan data subjektif dan objektif telah digunakan. Kaedah pengumpulan data subjektif dikumpulkan dengan merujuk kepada pemahaman maksud warna dalam mandala oleh seorang psikoterapi bernama Susanne F. Fincher. Analisis perubahan tingkah laku kedua peserta sepanjang sesi terapi seni mandala selama dua belas minggu juga telah dikumpulkan. Untuk analisis objektif, borang soal selidik Autisme-Spectrum Quotient (AQ) digunakan sebelum dan selepas intervensi untuk menentukan sama ada terdapat peningkatan dalam kemahiran interaksi sosial mereka setelah melalui dua belas sesi terapi seni mandala. Selepas dua belas minggu pemerhatian, data yang diperolehi menyimpulkan bahawa terapi seni mandala boleh memberi manfaat kepada ibu bapa dan penjaga sebagai satu kaedah untuk mengenalpasti keadaan emosi kanak-kanak dengan ASD.

Kata kunci: *Autism Spectrum Disorder* (ASD), Terapi Seni Mandala (TSM), Kemahiran Interaksi Sosial (KIS), *Autism-Spectrum Quotient* (AQ)

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MAT	:	Mandala Art Therapy
ASD	:	Autism Spectrum Disorder
SIS	:	Social Interaction Skills
AQ	:	Autism-Spectrum Quotient

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CHAPTER 1: INTRODUCTION

1.1 Introduction

Social Interaction Skills (SIS) are the skills a person use to communicate and interact with each other. Verbal communication skills represented by expressive and receptive language skills and non-verbal communication skills expressed by body language and facial expressions are examples of SIS. Such skills are evident when a person is able to establish a social relationship with others in normal circumstances. Unfortunately, children diagnosed with Autism Spectrum Disorder (ASD) face difficulties interacting with society. The problems faced by children with ASD are lacking of interest in initiating or responding to a conversation, having poor eye contact, and difficulties to interpret nonliteral languages such as metaphors or sarcasm. Although children with ASD are known to have less desire for establishing interpersonal relationships they still yearn for social acceptance in society. It is therefore important to fill up the void in the lives of children with ASD since they experience a sense of isolation from their childhood. Therefore, various types of therapy must be conducted for the children with ASD to enhance their SIS.

Mandala Art Therapy (MAT) has been utilized extensively as a tool in clinical settings to resolve issues dealing with emotional or psychological disorders. Research about MAT had been done to investigate its usage in understanding the psychological and emotional status of therapy recipients. Brancheau (2013) conducted a study that involved a child with ASD. Throughout the study, she discovered that the child was able to convey his emotion throughout the MAT process and his level of anxiety was reduced. Curry and Kasser (2005) underwent a study that involved undergraduate students. The findings of the study found that MAT reduced the students' level of anxiety. This study examined the use of MAT to improve the SIS of children with ASD. To determine the progress of the autistic children's SIS, the researcher analysed a case

study of twelve sessions of MAT applied to children with ASD. Throughout this paper, a detailed description of the implementation of MAT for the children with ASD is discussed.

1.2 Problem Statement

The core difficulties faced by children with ASD are an inadequate development of communication and social skills. Children with ASD find difficulties to start a conversation with others, and this impediment makes them experience the feelings of frustration, anxiety, and depression, as they cannot interact well with the public. Hence children with ASD are often facing difficulties to connect with their family members, teachers, caregivers, and other children. The deficiency of communication caused an absence of establishing an emotional connection between the children with ASD and the society.

By conducting sessions of MAT to a selected number of children with ASD, the researcher will create a safe environment for the children with ASD to explore their inner self and reach out to them. The benefits derived from MAT are helping children with ASD to explore their emotions, feelings, encouraging creativity, connecting with the environment, reconciling emotional conflicts, fostering self-awareness, improving self-esteem, establishing self-regulation, developing self-worth, motivates, enhances reality orientation and personal growth. MAT is a bridge between the researcher and the children with ASD where they can express their inner self-thoughts and emotions through their mandala artworks. The researcher makes interpretations from the mandala artworks expressed by children with ASD. The researcher can also observe the behaviours of children with ASD undergoing MAT. From the benefits derived from MAT, children with ASD may fit better into their regular programs conducted by special development centres and daily activities in their homes. The whole intervention

is an intuitive process to establish the understanding of their emotional status and to help them to find a balance between consciousness and unconsciousness. Subsequently, this helps them to fit better into society. When the children with ASD have reached an emotional balance, it is expected that their SIS will be improved gradually and therefore enhance their daily performance and active life.

The researcher documented and recorded the behaviour of children with ASD undergoing MAT sessions and give feedback on their progress to the special development centre's principal and teachers. The special development centre will use the progress records of children with ASD to provide advice for parents' to perform an out-of-school intervention.

1.3 Significance of Study

This study is intended to explore the usage of MAT as a useful medium to connect or to reach out to children with ASD. The knowledge gained from the study will be helpful in many ways. Firstly, the mandala produced by the children with ASD acts as a useful medium for the teachers to understand their current emotional state. Knowing their current emotional state is essential for teachers to apply appropriate strategies toward the learning process in the school. From there, the teachers will be able to produce reports on the progress of the children undergoing MAT sessions and share the results with the children's parents. Secondly, parents of the children with ASD can use MAT as an additional tool to connect with their children. O'Brien (2007) stated that parents of children with ASD often feel challenging to connect and interact with their children effectively. The activity to create mandalas by both parents and their children together will develop a deeper understanding of their children's emotional state without having the need of establishing verbal communication. The usage of MAT to children with ASD will generate not only therapeutic benefits but also provide visual feedback on

their growth towards SIS. MAT is used as an instrument to bolster interaction between the society and the children with ASD, therefore it is proven as an applicable method to improve their SIS. Therefore, this research is not only useful for parents and caregivers of children with ASD, but also pertinent to researchers in the field of ASD in general, and more specifically for practitioners and researchers of Art Therapy.

1.4 Research Objective

The primary objective of this study is stated as below:

To discover if MAT will foster SIS based on the performance score of the AQ Assessment. These are the variables of SIS: social skills, attention switching and details, communication, and imagination.

1.5 Research Question

Based on the problems stated previously, this research attempts to examine a question as mentioned in the followings:

Do twelve sessions of MAT help children with ASD to improve SIS based on the performance score of the AQ Assessment in Special Development Centre? How do these sessions affect the four aspects of SIS – namely, social skills, attention switching and details, communication, and imagination?

1.6 Scope of Research

The area of study focuses on how MAT intervention can help the children with ASD to enhance their SIS in a controlled setting of a training centre for special needs in Sabah. Twelve sessions of MAT will be conducted over a period of one session per week. The aspects of study and research are analysing the participants' cognitive level, balancing between 'values' versus 'feelings,' meditative interaction, an assessment on the improvement of their SIS, and other expected effects.

Participants are carefully selected from a population that forms a sample of two participants. Participants consisted of an eleven-year-old boy and a fifteen-year-old girl. Two caregivers and one assistant are needed to assist the art therapist to intervene and help the participants to focus on the MAT session held in a controlled environment in the classroom. The main objective of MAT intervention is for the researcher to understand the participants by using the MAT as a communication tool. MAT as an intervention tool can be used to analyse the enhancement of participants' SIS. The changes of participants' SIS will be assessed through the AQ assessment. This study analyses the usage of MAT on the two participants over a controlled environment in the classroom. By providing a safe environment, participants feel comfortable to receive the intervention of MAT. Twelve sessions of MAT are conducted on the participants over twelve weeks to analyse and study on the progress of SIS of the participants. Simple designs to complicated geometric designs of the mandalas are used to incite the children with ASD interests to colour on the mandalas given.

Through the process of MAT, the researcher can study the progress of SIS of the children with ASD with the help from the caregivers and teachers. The teachers can give invaluable insights about the children with ASD to the researcher since the teachers spent longer time with the children in the special centre. The feedback from the teachers about the children with ASD, the progress of MAT, and the social interaction between the children and the researcher will develop a better understanding of the children with ASD, and these will improve the SIS of the children.

1.7 Limitation and Delimitation of Research

1.7.1 Limitation

A limitation that was present in this study was further observations could not be done in different settings other than in the classroom for MAT sessions. Initially, other than

the classroom for MAT sessions, the researcher wanted to further observe the behaviour of participants during their regular school activities and in their home. However, the teachers of the special development centre did not encourage observations to be made during the regular classes, as it will interrupt the flow of their teaching routine. On the other hand, the participants' parents are busy with their daily schedules throughout the entire day. Therefore, it was difficult for the parents to find spare time for the researcher to make observations at their home. Due to this limitation, further observations could not be carried out to investigate how SIS can help participants to improve their performance in the school activities and the participants' home.

1.7.2 Delimitation

The participants in this study were delimited to high-functioning children with ASD. Although high-functioning children with ASD is characterized by an impaired ability to engage in social situations, they have intelligence and language within the normal range of functioning (Rao, Beidel & Murray, 2008). Therefore, the participants were able to understand and execute directions and instructions given by the researcher. Other than that, it is also important for participants to be able to handle art equipment well, especially colour pencils so that the colour choices that they made can reflect their emotions during the sessions. Hence, this will provide the researcher with valid information of the colour choices that participants made in their mandalas.

CHAPTER 2: RESEARCH BACKGROUND AND LITERATURE REVIEW

2.1 Research Background

2.1.1 Art Therapy

Art therapy is defined as a method whereby art therapist conducts therapy on patients to explore their emotions, feelings, develop social skills, manage emotional conflicts, encourage self-awareness, establish self-worth, motivates, and improves reality orientation through visual image creation (McNiff, 1981). The art therapists, who have studied arts and healing process, apply therapy on patients as their first intervention. The art therapists will facilitate the process by using art media and forms to help these patients (Pratt & Wood, 2015).

The early theoreticians in art therapy stood by the quote of a famous novelist, Theodore Dreiser who said "art is the stored honey of the human soul, garnered on wings of misery and travail" (Wix, 2000). The making of art represents a healing function or as diagnostic tools for clients and patients (McNiff, 2004; Turner, 2006). Artwork bridges the gap between the mind and reality; it is a metaphor for how one perceives the world around one's self (Lark, 2005; McNiff, 2004). The integration of two disciplines: art and psychology is what makes up art therapy (Hass-Cohen & Carr, 2008; C. A. Malchiodi, 2003; Rubin, 2005).

Art has therapeutic effects that heal and give meaningful experiences to the clients and patients through the creation of artworks or artefacts (Keyes, 1983). During the process, clients and patients are given the opportunity to express themselves genuinely and spontaneously (De Botton & Armstrong, 2013; Kramer, 2001). On the other hand, art in psychotherapy is based on the concept that art is a tool of representative communication (Schaverien, Gilroy, & McNeilly, 2000). This concept focuses more on

the artworks produced by the clients and patients to attain insights of their inner emotions and feelings (Leitch, 2008).

Art therapy uses various forms of visual images, art media, creative art processes, colouring, painting, and even music to create a therapeutic sensation to the clients (Warren, 2008). From the responses through the final artefacts or drawings, analysis can be made of the client's emotion, ability, individuality, interest, conflict, concern, and improvement (Dalley, Rifkind, & Terry, 1993). There are many studies that had been done to obtain the benefits of art therapy as to communicate, express, identify, heal, self-explore to individuals in need. Art therapy is important especially for those who are poor in verbal communication (C. Malchiodi, 2006). The process of creating artefacts helps clients express hidden feelings and brings awareness of their thoughts (Landgarten, 2013). It helps to develop their creativity and interest while they are enjoying the process (Waller, 2006). Art therapy can be in various forms according to the clients' problems, setting, and the goals of the therapist (Rogers, 2012).

Art therapy aids tremendously in individuals who have difficulties in verbal communication (Reynolds, Nabors, & Quinlan, 2000). The groups included in communication deficit are the illiterate individuals whom reading and writing are insufficient, children with the social communication disorder and individuals with learning difficulties (Berenbaum, Kerns, Vernon, & Gomez, 2008; Hymes, 1972; Wiener & Mehrabian, 1968). Traditional talk therapy requires clients to verbally explain their situation and emotion (Kohlenberg, Tsai, & Dougher, 1993). Individuals with communication problem faced difficulties in therapy that involves verbal interaction since there are difficulties to choose vocabularies and expressions that exactly represent their emotions (Fisher et al., 2014). As expressing their emotions verbally is a

challenging task, art therapy gives an opportunity for the client to turn their emotions into a visual expression (Lusebrink, 2010).

Art therapists utilize creative expressions to determine the hidden feelings that are difficult for clients to express (Avrahami, 2005). Emotions that are explained through linguistics often are filtered with clients' limitations of expression, low self-esteem or fear of disapproval (Stephenson, 2006). Artistic expression brings forward emotions from the deepest part of the unconscious in visual depiction (Pearson & Wilson, 2009). Not only does the artistic process helps in communicating with the unconscious mind, but art therapist also can monitor their clients' progress (Stuckey & Nobel, 2010). It will enable art therapist to identify clients' complication, which in turn will aid in the rehabilitation process.

In the process of healing, clients can bring themselves into a state of mindfulness (Blomdahl, Gunnarsson, Guregård, & Björklund, 2013). This state helps clients in creating awareness to accept the present moment. When clients are in the state of mindfulness, there is an inclination to contemplate deep into emotion and uncover the essence of emotion (Garland, Carlson, Cook, Lansdell, & Speca, 2007). Once it is identified, clients are capable of transforming the emotion (Ledesma & Kumano, 2009). Once this is achieved, clients can free themselves from negative energy (Bohlmeijer, Prenger, Taal, & Cuijpers, 2010).

In a setting where a safe territory is provided, opportunities for individual development are also provided to clients (Pifalo, 2002). Art therapy provides opportunity especially for developing children and adolescents to make a choice, to self-initiate in choice making and foster problem-solving strategies in the process of creating artworks (Shen & Armstrong, 2008). It includes making choices in art materials, setting a theme for artworks and planning on colour choice and placement for their artworks

(Riley, 1988). Children and adolescents gain a sense of venture and feel less dependent on working with art as the art making evoke the senses regularly used during infancy period.

For instance, some art therapists felt more comfortable with an intuitive approach compared to other mental health practitioners because as artists they "pride themselves on their innate sensitivities, and tend to be anti-authoritarian and anti-theoretical" (Rubin, 1999). One of them was Mary Huntoon, who maintained faith in the creative process of her students and clients. She offers the future art therapist an aesthetic approach to art therapy grounded in artistic rather than psychiatric tenets (McNiff, 2004). "Diagnosis is not art therapy, therapy is in 'the process' and in the patient's seeing his ideas expressed; sometimes the meaning of the painting becomes clear as the student contemplates it after he has finished it, and this process, which she called art synthesis, may be very dramatic, amounting to a revelation" (Wix, 2000).

Art therapy intervention has been demonstrated in numerous studies to enlighten people with detrimental problems that affect them throughout their life. Art therapy contributed in reducing anxiety to children who are going through medical treatment and children with asthma (Beebe, Gelfand, & Bender, 2010; Favara-Scacco, Smirne, Schiliro, & Di Cataldo, 2001). Art therapy also reliefs post-traumatic stress symptom for children who have gone through war, poor uprisings, or terrorism (Eaton, Doherty, & Widrick, 2007; Klingman, Koenigsfeld, & Markman, 1987), foster academic adaptation of children with learning difficulties (Freilich & Shechtman, 2010), and help schizophrenic patients to accept the real world with fewer traumas (Ruddy & Milnes, 2005).

When it comes to practising as an art therapist or training people in one of the creative arts therapies, both psychology, and the art form are essential, and that neglect

of either is a serious mistake (Rubin, 1984). There is an art part and a therapy part, both of which are essential. The basic elements of the art part that comprise of the processes, art materials, products, forms, contents, and the visual effects of the art form; work harmoniously with each other (Madden, Mowry, Gao, McGuire Cullen, & Foreman, 2010). The therapy part includes the knowledge that any therapist must have: development (normal and abnormal), dynamics (intrapsychic and interpersonal), and the nature of therapeutic change (the framework, the relationship, and the process over time) (Rubin, 1984).

An art therapist pioneer in Britain, Susan Bach carried out the exploration in meanings of paediatric patients' spontaneous paintings at the University Neurosurgical Hospital in Zurich, Switzerland. Through her art therapy sessions, she found that the usage of colours by paediatric patients brought a huge role as a means of communication between the child, doctor, and parents (Edwards, 1999). Among studies that dealt with patients diagnosed with cancer and leukaemia, a similar significant of colour meaning was identified to represent their emotion such as dark green (healing and strength), red (fear and nervous), blue (lonely and isolated), orange (energy and optimism), purple (mystical power and spirituality), black (destruction and death), white (chastity and sanctity), and yellow (shock and disturbance) (Hogan, 1996).

2.1.2 Mandala

A mandala is a circular form that is composed of symbolic, intricate, and elaborate designs or patterns (Buchalter, 2012). The process of creating a mandala provides an opportunity to explore the subconscious mind, in an attempt to discover conflicts and consequently reach an optimal state of our self (Chambers, 1985). Buddhist monks exercise the creation of mandala as a form of meditation (Boord, 1999). Mandala is utilized as a form of offering to a Buddhist master to show undivided commitment to

appreciate the teaching received (Stoddard, 2003). Mandala is also a medium for Buddhist monks to engage in repetitive mandala practices to achieve a higher level of meditation (Anderson, 2002). Some notable art therapists employed mandala in their therapy because that creating mandala itself produce a therapeutic impression and calmness to clients (C. Malchiodi, 2006).

The meaning of the word *mandala* varied to a few experts in the mandala. A Jungian psychotherapist, Susanne F. Fincher wrote a mandala workbook where mandala is described as a "magic circle" which derived from Sanskrit word (Fincher, 2000). The founder of Mandala Assessment Research Instrument, Joan Kellogg characterized the mandala as "the great round" (Thayer, 1994). Mandala is also commonly defined as the "divination ring," "of which is vital" or "as a repository for the energy and vibrancy" (Hwang, 2011; Leidy, 2008; South, 2007).

Questions may arise from the selection of circular shape to represent the mandala. The mandala is straightforwardly seen as a circle shape or ring often gives a human a sense of protection and safety feeling (Gerteisen, 2008). The continuous line of the edge form acts as a symbol of never-ending protection to the contents of the circle (Arnheim, 1954). Circles are to be seen extensively; from the flower shape in nature, the human eyes, the animal eyes, the clock that portrays time, religious buildings, to the moon and planets, and earth that we live in (Dubos, 1973). The human eyes perceive the simplicity of the circular forms effortlessly (Adelson, 2001). Once detected by the human eyes, a circle is interpreted straightforwardly as a clear data to the brain without going through the transitional stage of the visual procession (Göksun, Kranjec, & Chatterjee, 2014).

The feature of the human eyes in a circular form correlates that human sees a thing in a circular visual field with ease (Marr & Poggio, 1979). As the human eyes are physically shaped in a spherical form; a human can look at the corner of the eye in a

curve direction rather than in an angular direction. It is well acclaimed in the graphic design industry that rounded corners pose more natural sensation to the eyes (Koenderink & van Doorn, 1979). Jürg Nänni, a German scholar expertise in the field of visual cognition reveals that a part of a location in the human's retina responsible for visual keenness – the fovea – manifest the circle faster compared to a rectangle (Wyatt & Pola, 1979). An extended effort of cognition execution is taking place when the fovea receives the image of an angled shape (Rubichi, Nicoletti, Umiltà, & Zorzi, 2000).

It was shown in a study by Slater, Morison, and Rose (1983) that infants have higher inclination to gaze at circle shapes compared to other shapes. When a range of shapes was provided, such as the circles, triangles, stars, and triangles with circular edges, squares, and sharp-edged stars, a group of male and female infants aged twelve to twenty-four months scored a higher percentage of preferences to circle shapes. Shapes with circular edges scored the second highest in shape preferences. Data showed huge differences of a gazing span between angular shapes and circle shapes. There was also an experiment to test the visual preferences of new-borns on different types of patterns (Fantz, 1967). Twelve black stripes with the same size were positioned into four various forms. The form positions consist of a star-shaped form, a ripple-like form, a grating form and an unarranged form of black stripes. The outcome of the study indicated that four months old baby infants have higher preferences to fix longer gaze to the ripple-like form compared to other three forms.

Carl Gustav Jung, an influential psychiatrist who established analytical psychology, utilizes the mandala to investigate his subconscious mind during a turbulence time of his life (Coward, 1996). Mandala plays a big role in recording symbols and codes of his dreams that hold significant meanings to his internal affairs at the time (Casement, 2001). To be able to record his dreams he sketched a mandala every single morning to

observe the revolution of his psyche from day to day (Piotrowski, Sherry, & Keller, 1985). Jung began to compile mandalas that contained his dreams after he withdrew from his teaching career and started to devote his attention to explore the nature of his subconscious mind (Fordham, Gordon, & Hubback, 2017).

Progressively Carl Jung realizes a climacteric occurrence that creating mandalas truly are a way to get together the mind, to transform the mind and also a way to bring a recreational peace to mind (C. G. Jung, 1972). The main venture of life itself is to seek wholeness of our psyche instead of reaching for perfection (Russell-Chapin, Rybak, & Copilevitz, 1996). Carl Jung believed the stability between the conscious and subconscious is a way to reach for the wholeness of the self (Semetsky & Delpech-Ramey, 2012). The use of mandala to realize the sequence of dreams is the way to seek for the missing part or key of our balance equation of mind (Gaines, 1994).

Apart from utilizing mandala for solving the conflict of his personal life, Carl Jung applied the usage of the mandala on his patients to explore their subconscious mind (Johnson & Daumer, 1992). He is not only conducting experiments on his patients but also reaching out to them. The recordings of dreams of his patients are prime tools in his analytical psychology practice, which the images collected are the instinctive and congenital images residing in the patients' subconscious mind (Leeming, 2001). The use of mandala is a catalyst to reach individuation, which is a lifetime's venture to harmonize the conscious and unconscious mind (C. Jung, 1939). He is creating a means to bridge the conscious and unconscious minds as one. As the conscious and unconscious are united, psychic equilibrium will occur, which leads to a greater sense of inner peace (Bauer, 2014).

Individuation is a conversion process where there is an understanding of the subconscious mind and a realization that it governs the behaviour, thoughts, and

decisions of human in the present and future (Goldbrunner, 1956). Disregarding the façade of the human self, the task is to encounter the real person of one individual (Pennachio, 1992). Individuation is also the change in the individual's psyche as being discrete from the collective psychology (Davis, 2016). Though intimidating in the early stage, the unveiling of these lifetime dominating factors will lead to a path of healing (Donlevy, 1996). Carl Jung stated that almost all his clients come to the ultimate revelation of euphoria-filled life when clients are willing to face their unconscious mind (Friedman, 1985).

2.1.3 Autism Spectrum Disorder (ASD)

ASD is recognized as a widespread presence of developmental disorder that emerged early in childhood and prolonged for the whole life of the person affected by autism (Ozonoff, Heung, Byrd, Hansen, & Hertz-Picciotto, 2008; Micheal Rutter, Greenfeld, & Lockyer, 1967; Ting, Neik, & Lee, 2014; Wing, 1969; Yeo & Teng, 2015). There is no bound of race, ethnic, and socioeconomic groups to affect children at an early age across the globe; it is a pandemic phenomenon (Johnson, 2014; Ticher, Ring, Barak, Elizur, & Weizman, 2014). All individuals affected by ASD will experience different perspectives of autism, as no two individuals on the autism spectrum are identical. While certain individuals are only mildly affected, others can be significantly affected by the presence of ASD symptoms in their lives (Hill, Berthoz, & Frith, 2004).

All individuals that are affected by ASD experience common difficulties such as making interaction with others, strong interests in a single subject, and unusual response to things that they perceive around them (Bernard, Enayati, Redwood, Roger, & Binstock, 2001; Capps, Yirmiya, & Sigman, 1992; Wing, 1969). This type of disorder causes impairment on individual interactions and communication skills with others. Three broad groups of symptoms were found in almost all children diagnosed as

suffering from infantile autism (Rutter, 1978; Rutter, Greenfeld, & Lockyer, 1967). Infantile ASD symptoms such as lack of social skills, impaired verbal skills, compulsive disorder, unusual behaviour, and over-attachment to objects found in children before the age of two and a half. Each group posits four characteristics that total to twelve behaviours distinct to autism. The child is diagnosed as belonging to the ASD when a child has a total of six or more symptoms of the twelve behaviours (Robins, Fein, Barton, & Green, 2001).

The first of the three broad groups is autistic students have impairments in social interactions (Robins et al., 2001). Most of the autistic children are having problems with non-speech or cognitive behaviour in society (Hobson, 1986). Examples of autistic behaviours are having problems in social skills – no direct eye contact, slow in response, unable to comprehend to instructions, lacking emotional expression, and poor narrative ability (Siegel, Minshew, & Goldstein, 1996). They may lose the spontaneity to seek achievements, the joy of sharing, and having fun with others. A normal developing student will seek to be praised after they complete a difficult task given to them (Bellini, 2004). However, children with ASD may only approach others in an attempt to get something they want (Green, Luce, & Maurice, 1996).

Children with ASD are not sensitive to social or emotional responding (Dawson et al., 2004). When others try to get their attention, they are not able to respond (Braverman, Fein, Lucci, & Waterhouse, 1989; Capps et al., 1992). It is also difficult for children with ASD to respond when people around them show emotions (Downs & Smith, 2004). For example, when someone near children with ASD had a small accident and expressed pain, the children with ASD may not notice the small accident that had just happened (Hill, Berthoz, & Frith, 2004). Children with ASD will face problems

bonding with their immediate family members resulting in lack of affection and social interests (Green et al., 1996).

In the second group, the autistic child confronts difficulties in communication (Robins et al., 2001). A child at an early age of three years that are slow or showing no interest in talking showed symptoms of autism (Volkmar, Stier, & Cohen, 1985). It is difficult for the children with ASD to start or continue a conversation (Gray, 1998). There is no interest that is shown to bring up topics of conversation (Hsiao Yun & Bernard-Opitz, 2000). Usually, children with ASD will show no interest in questions asked and will not respond to a conversation initiated (Gray, 1998; Ingvarsson & Hollobaugh, 2010). Their response may be short and concise as they lack in vocabulary.

Children with ASD will also exhibit inflexible or repetitive use of language that is called echolalia (Filipek et al., 1999). There is a tendency to repeat what another person around them said or what they heard on the radio or television (Prizant & Duchan, 1981). Children with ASD cannot mimic actions of an adult or be taught how to act or behave according to values set (Lord, Rutter, & Lecouteur, 1994). It is found as difficult for children with ASD to be involved in a make-believe play setting as this often involves communication (Hsiao Yun & Bernard-Opitz, 2000; Volkmar et al., 1985).

The third broad group of the autistic characteristic is repetitive or inflexible behaviours (Robins et al., 2001). Repetitive behaviours, also known as stereotypy are non-functional body movements such as body rocking, hand flapping, jumping in place, or use of the body to make items move (e.g., cup rotating, pencil spinning) (Lewis & Bodfish, 1998). Children with ASD also displayed few forms of compulsions, whereby there is an intentional ordering, stacking or touching behaviours in certain rules (Cuccaro et al., 2003).

Additionally, children with ASD insist upon restricted patterns of behaviour and activities (Lewis & Bodfish, 1998). These consist of preoccupation with rigid patterns of attentiveness in abiding by routines and rituals, and stereotyped and repetitive motor manifestations with parts of items (Militerni, Bravaccio, Falco, Fico, & Palermo, 2002). Children with ASD may spend most of their time on these rituals, and affected individuals tend to become anxious, upset, or riotous if these rigid patterns are interrupted (R M Foxx & Azrin, 1973; Lam & Aman, 2007).

To current date, there is no functional cure to autism, which leads to a critical need for rehabilitation and therapies to minimize the severity of autistic characteristics within individuals with ASD (Ozonoff, Cathcart, Bourgondien, Reichle, & Schopler, 1998). There are many therapies that are developed to help the developmental growth of children with ASD (Wong & Smith, 2006). Therapies implemented includes intervention that optimizes the environment in order for children with ASD to learn in a "natural" manner, usage of pictures to help children with ASD to initiate of exchange in a conversation, frequent session of sensory engagement for children with ASD with sensory complexity, and sessions of producing artistic creations (Alvarez, 1992; Charlop-Christy, Carpenter, Le, LeBlanc, & Kellet, 2002)

Utmost cares given in the early years of children with ASD can bring large enhancement in social and living competencies as well as increasing intelligence quotient (Corsello, 2005). While early involvement during preliminary years is vital, it is important to give continuous attention and care while individuals with ASD reaches to the adolescent stage (Fong, Wilgosh, & Sobsey, 1993). Constant care through the adolescent period of an individual with ASD will increase the chance of an independent life during adulthood (Persson, 2000).

Leo Kanner, who is an Austrian-American child psychologist, made the initial findings of autism as a disorder in 1943. Kanner conducted a significantly detailed study upon eleven children who were initially speculated to possess schizophrenic traits (Blacher & Christensen, 2011; Greydanus & Toledo-Pereyra, 2012; Lyons & Fitzgerald, 2007; Schopler, Chess, & Eisenberg, 1981). Kanner discovered outstanding skills that these eleven children possessed; exceptional mathematical-solving skills and memorization far exceeded their actual age (Bishop, 1989; King & Lord, 2011). The remarkable characteristics that were discovered indicated a different component with schizophrenia (Konstantareas & Hewitt, 2001). The terminology "autism" which denotes "to retreat from the actuality of real life" was how Kanner described his perspective of the eleven children studied (Rimland, 1964).

It has been more than half a century since Kanner's remarkable discovery of the symptom of autism (Bryson, Rogers, & Fombonne, 2003; Rizzolatti & Fabbri-Destro, 2010). Since then, there are improvements in understanding the symptoms of autism as many types of researches were conducted to clarify a vast range of crucial questions (Rutter, 1985). Individuals with ASD faced problems in social interaction, self-awareness, the difficulty using gestures, facial expressions, verbal and non-verbal communication, and exhibits restricted interests and behaviours (Schaaf, Toth-Cohen, Johnson, Outten, & Benevides, 2011).

In the recent years, behavioural modification is the treatment frequently used to treat individuals with ASD in the early years (Whalen & Schreibman, 2003). However, a combination of several disciplines is believed to give greater results in shaping and controlling the behaviour of children with ASD (Tissot & Evans, 2003). Art therapy aids in improving children to practice self-expression, self-awareness, and addressing subdued emotional problems they may have (Martin & Lawrence, 2009).

Art therapy had stood firm against the test of time as one of the most effective interventions for children with ASD (Evans, 1998). An intense session of imagery, counselling, and touch stimulation brings supplementary benefit as it stimulates creative quality within their characteristics while engaging with artworks (C. A. Malchiodi, 2003). The artistic process will allow feelings and emotions of children with ASD to be escorted to the surface while consequently pave the way for art therapists to access the unconscious mind of their clients (Hass-Cohen & Findlay, 2015; Tipple, 1992).

Art therapy sessions that engage art creation with children with ASD bring opportunities for self-expression, self-awareness, and development of better self-esteem (Field & Hoffman, 1999). The artistic process is a favourable and nurturing set of circumstances for children with ASD to convey the inner emotions in a more relaxed and approachable setting (Abbott, Bernard, & Forge, 2013). Art-making sessions do not emphasize verbal communication and total execution of cognition capability, giving a flexible channel to render suppressed emotions (Hairston, 1990). The children with ASD are given a chance to put complete focus on interest, which is cognitive and creating a sense of curiosity. While being in this process, autistic behaviours are tuned out and can be conscious and focus, while immersing in their work (Case & Dalley, 2014). When work is completed, they will achieve a sense of accomplishment after giving an intense focus to their work (Tustin, 2013). Constant self-achievement will help to enhance their self-esteem, self-awareness, and emotional discovery (Koegel & Kern Koegel, 2006).

To provide children with ASD in a safe and comfortable environment with therapy will help them to feel relaxed and be more outspoken to express themselves (Epp, 2008). The process of creating a mandala, a circle shape medium in which is utilized widely among art therapist will aid in producing a therapeutic environment for children

with ASD (Kagin & Lusebrink, 1978). The circle shape is well known in many perspectives as a shape that brings a sense of comfort to the human eyes (Meihoefer, 1973). Providing children with ASD a medium that brings consoling sensation for them to self-express is a great method in the progress of digression from the autistic bubble.

Since one of the presiding challenges of individuals with ASD is communication difficulty, mandala stands as a significant medium to help them voice out their inner expression (Malchiodi, 2006). The reflection of individuals' internal world can be projected through colours and symbols according to their current well-being (Brancheau, 2013). By using colour pencils and a copy of the mandala provided, the individuals with ASD can structure a choice of colours on the mandala. Which part of the intricate designs they started colouring, the pressure they applied to the paper and the choice of colours can help the art therapist to interpret their thoughts (Fincher & Johnson, 1991). Constant engagement with mandala activity helps the creator's inner state to be in a meditative state (Stuckey & Nobel, 2010). Mandala activity will also promote emotional growth while fostering social interaction in a pleasurable setting (Gazeas, 2015).

The instrumental value mandala brings as a medium to psychological wellness is worth to be implemented to individuals with ASD (Graybill & Esquivel, 2012). Morgan (2004) and Swinton (2001) stated that the starting point of the strength in the lives of individuals with ASD comes from the spirituality. Helping individuals with ASD to nurture their psychological wellness will help to sustain self-regulation and enhance the performance in life to shape a better future that awaits them.

2.2 Literature Review

2.2.1 Mandala Art Therapy (MAT)

The establishment of art therapy was initialized in the United States (Hogan, 2001). The number of art therapy research in this country is far greater as compared to other countries from across the globe. MAT as one of the interventions of art therapy is widely used by researchers and art therapist in the United States as the main instrument in their research (Junge, 2010). Key scholars who have published significant findings on MAT include Joan Kellogg (1977) and Susanne Fincher (1991). Kellogg based her studies on Mandala Assessment Research Instrument (MARI), while Fincher emphasized colours and symbols inspired by Carl Jung's theory of analytical psychology in her extensive work of mandalas.

Pre-eminently known in the art therapy field as the prime investigator of the mandala, Joan Kellogg developed the Mandala Assessment Research Instrument (MARI) (Frame, 2002). She studied mandalas that were created by her clients and discovered that there was a repetitive and cyclic pattern in the mandalas that they created (Hyde, 2015). The main purpose of conducting the MARI in a therapy session is to assess the personality of a client through the selection of symbol cards in mandalas to explore the psychological progression of the client's mind (Bruscia, Shultis, & Dennery, 2007). An extensive choice of symbols and colours are for clients' to choose in stages of thirteen that is developed in arranged sequences (Cox & Frame, 1993). The relationship of clients' choice of symbols and colours in different stages may reveal the existing conflict in the clients' inner reality (Penton, 2016).

The mechanism of how the symbol works in a mandala is explained in a thorough approach by a Jungian psychotherapist, Susanne Fincher in her book, *Creating Mandalas: For Insight, Healing, and Self-Expression* (Fincher & Johnson, 1991).

Fincher embraces herself on the exploration of Tibetan Buddhism knowledge and the Jungian psychology, making herself known internationally for the exploration of mandalas (Ratcliffe, 1992). She discovered that art is practised in psychology as a healing tool by art therapists (Fincher & Johnson, 1991). During her time as an art therapist, she came across the work of Kellogg who utilizes circular drawings as a guide to explore her clients' current psychological condition. Kellogg's ideas on circular drawings were based on the work of Carl Jung, who mentioned circular drawings as "mandalas." Fincher began initial studies of the mandala, incorporated Kellogg's ideas and started including mandalas in her art therapy sessions.

According to Fincher, the usage of colours in a mandala is necessary to make the exploration of self-wholeness complete (Zammit, 2001). The investigation to find the message behind colours used will help one to understand more about subconscious thought. Fincher pinpointed the meaning behind the choice of main colours and colours of choice applied in the centre of the mandala as a representation of the hidden thought of a person (O'Donnell-Allen, 2005). The choice of colours can also reflect the inner emotion that is suppressed in an individual's soul (Bühnemann, 2017).

Other scholars who conducted studies on MAT included Curry & Casser (2005) who investigated whether MAT is able to reduce anxiety on college students, Van der Vennet & Serice (2012) who made a replication study of Curry and Kasser's study, Coar (2010) who examine how MAT can help teenagers to cope the loss of their loved ones, Dunbar (2011) who examined the uses of the mandala to create a higher quality of relationship in a working environment, Cox & Cohen (2011) who explored the thematic images that were illustrated in the mandala drawings of dissociative identity disorder (DID) patients, and Brancheau (2013) who incorporated MAT as a tool to help a child with ASD to express his emotions through mandalas.

Curry and Kasser (2005) investigated the effectiveness of MAT to reduce anxiety on college students. Eighty-four undergraduate students were appointed to colour mandalas, chequered design sheet, or a plain sheet of paper after they went through a writing session to stimulate anxiety. Results revealed that students who coloured on a plain sheet of paper did not demonstrate any decrease in anxiety. However, the group of students who coloured mandalas displayed a decrease in the measurement of their anxiety. On the other hand, the group of students who coloured plaid design sheets demonstrated an approximately similar decrease in anxiety as compared to the group of students who coloured mandalas. The findings of this study proposed that the activity of colouring complex geometric designs might help individuals suffering from anxiety to be in a meditative state.

Van der Vennet and Serice (2012) made a replication study of Curry and Kasser. This study had a similar aim to Curry and Kasser's study, which is to test whether MAT could reduce anxiety on university students. Fifty psychology students went through a writing activity to induce anxiety. The fifty university students were randomly appointed in groups of three that were given a sheet of paper with a choice of a mandala design, a plaid pattern, or an empty paper. The results are similar to Curry and Kasser found where colouring mandalas reduced a significant amount of participants' anxiety than colouring on a blank paper. However, the results of this study are contrasted from Curry and Kasser's study where the participants who coloured the plaid designs did not demonstrate any reductions in anxiety. This finding supports Curry and Kasser's initial statement that the round shape may be intrinsically meditative, given that it has been utilized by early civilizations as a ritual and spiritual device throughout the eras (Jung, 1990).

Coar (2010) examined how MAT can aid fourteen grieving students to cope experience of loss of their loved ones in life experience. The fourteen female high school students operated as a group and individually on different visual art techniques. Coar stated that the environment where participants worked in a group setting encouraged them to express their feelings among themselves. Eight sessions were conducted, and the group developed a visual language of colours and shapes in a mandala and applied them to ceramic tiles. The students displayed the tiles on a school wall that provides them with space for contemplation. Coar concluded that MAT could be helpful for grieving high school students to accept and acknowledge the losses of their loved ones.

Dunbar (2011) investigated if mandala can influence the quality of the bond between supervisors and trainees in clinical counselling settings. Trainees in a clinical counselling setting were asked to create mandalas on a piece of paper during supervision sessions. Interviews with trainees were also conducted to investigate if mandala creation brings impact to their relationship with their supervisors. The result of this study supported the application of MAT as an effective intervention for solidification in the working alliance and achieving positive results in supervision and counselling. The activity of sharing opinions, feelings, and thoughts through MAT strengthened the bond between supervisors and trainees.

Cox and Cohen (2011) conducted a study to explore the thematic images that were illustrated in the mandala drawings of dissociative identity disorder (DID) patients. During the exploratory research, one of the tools used by the researchers to understand the nonverbal languages of the DID patients was the Mandala Assessment Research Instrument (MARI). In the study, the thirteen stages of the MARI had helped the DID patients to express the significant life events that had changed their lives. The examples

of the life events that DID patients portrayed are the period when they interchange between multiple identities, their painful childhood period, and the period of self-confrontation that had led some of the patients to demonstrate self-harm. The findings of the study showed that MARI is a useful tool that psychiatric clinicians can use to explore the nonverbal languages of DID patients.

Among all studies in the usage of MAT, there is only one study that incorporated MAT onto a child with ASD. Brancheau (2013), an art therapist from George Washington University, wrote a review on a case study of the usage of the MAT to a child with ASD. In the early sessions of the study, Brancheau observed that when the child with ASD was instructed to do free drawings, he was not able to connect the artwork to himself well. However, when MAT was applied, he was able to convey his emotion to the mandala, and his level of anxiety was reduced. Brancheau observed that MAT provided him with a more suitable medium for self-expression in the art-making process. She also specified that MAT helped the child with ASD to transfer the tension that he often carried onto the mandala provided. Through many sessions of MAT, he was able to integrate his internal world to the external world while having the privilege to engage in an activity that interests the child with ASD (Robb, 2015).

2.2.2 Application of Art Therapy

It is noteworthy to review the literature on the application of art therapy to individuals with ASD, due to the fact that there is insufficient literature on the application of MAT to children with ASD. Some notable literature includes the study of Emery (2004), who investigated whether art therapy could encourage a child with ASD to initiate joint attention, and also Elkis-Abuhoff (2008) who explored the effects of art therapy to improve the confidence of an adolescent with a high-functioning ASD. In addition, the study of Martin (2008) should also be addressed, in which the researcher

investigated whether portrait drawing can help children with ASD with attentiveness, and the study of D'Amico & Lalonde (2017), whom tested whether a group setting art therapy is able to improve the SIS of children with ASD. Further, Cavolo (2016) conducted a biographical case study to an adolescent with a high-functioning ASD, while Round, Baker & Rayner (2017) investigated the potential of art therapy to stimulate children with ASD to communicate their feelings and emotions.

Emery (2004) conducted a study to see how art therapy could help a child with ASD to improve his SIS, particularly his capacity to relate to other people. The participant of the study was a six-year-old boy who was diagnosed with ASD. The art therapy process consisted of activities of playing dough, drawing and painting. The result of this study showed that the participant started to interact with the art therapist by sharing joint attention with her at the end of the therapy session. Joint attention is essentially commenced by a person to engage with another person in a social experience. It is significant that his joint attention started to improve as it affects the development of his social skills.

Elkis-Abuhoff (2008) explored the effects of art therapy implemented to an adolescent with a high-functioning ASD. The participant of the study was an eighteen-year-old female high school student. The participant was reported to have difficult times to socialize with adolescent similar to her age in her school. In the study, the participant's first art activity was a collage that contained images of her. Initially, the collage that she made did not contain any human figures. The collage portrayed her social isolation and her preference for non-social situations. The second art activity was an "expression collage". In the activity, the participant was asked to find photos that represented a list of facial expressions that was given. As the therapy progressed and neared closure, the participant expressed feeling more connected with people. When the

therapist asked the participant to repeat doing the first art activity, she was able to include human figures in her artwork. At the end of the sessions, the participant described that the art therapy sessions helped her to socialize better with her peers at school.

Martin (2008) investigated whether children with ASD can be attentive with the drawing activity that focuses on drawing human faces. Drawings of human faces by twenty-five children with ASD and fifteen typically developing children were collected for Portrait Drawing Assessment. The observation during the study showed that the participants with ASD were more attentive and engaged to draw human faces compared to the typically developing participants. The results of this study showed a contradiction of the hostile traits of individuals with ASD. Portrait drawing was found to be beneficial as a tool to improve the face recognition skills of children with ASD.

D'Amico & Lalonde (2017) conducted quasi-experimental research to test whether art therapy is effective as a teaching tool to improve the SIS of children with ASD. The participants were structured in a group to help them practice social skills. The group settings also were designed to create an environment that the participants feel safe to make social interactions towards other children of the same age group. The findings of the study revealed that art therapy helped to improve the SIS of the participants by engaging more with other children who shared the same experience. The study also revealed that art therapy helped to reduce the inattentiveness and hyperactivity traits of the participants in this study.

Cavolo (2016) carried out a biographical case study that focused on the usage of art as an expressive practice to an adolescent with a high-functioning ASD. The participant was given a sketchpad as a medium for him to express his inner thoughts throughout the study. The collection of twenty-eight pieces of artwork, informal conversations and

formal interview were used as the data findings of the research. At the end of the study, it was found that the participant was able to make use of the language of visual art to frame his inner thoughts in a composed and structured representation through drawings in the sketchpad. The usage of sketchpad as documentation for the participant's inner thoughts was useful to encourage him to share his daily life experiences autobiographically. The result of the study supports the use of art as an expressive practice by individuals with ASD to support self-expression.

Round, Baker & Rayner (2017) investigated the potential of art therapy to stimulate children with ASD to communicate their feelings and emotions. A descriptive case study was implemented to two boys aged seven and ten years old for six art therapy sessions. Multiple data were collected during the study that included interviews, questionnaires, observation notes, video recordings, and the artworks of the participants. The outcome of the study indicated that art therapy is useful as an alternative outlet for the children with ASD to express their inner thoughts at school. The inclusion of art therapy in school can help to reduce the challenges that children with ASD face when attempting to communicate their feelings and emotions. The study proposed that art therapy is suitable as an intervention tool for the groups of children with ASD due to the reason that art therapy can be modified to suit the different level of the children's autistic diagnosis.

2.2.3 MAT and Art Therapy in Malaysia

In Malaysia, there is a lack of literature on the application of MAT as the primary intervention in research. However, two studies were found to include the creation of mandala as one of the activities in the therapy program. The two studies mainly tested cognitive behaviour therapy (Ahmadi & Sharif, 2015) and expressive arts therapy (Baranovich & Lau, 2015) on high school students respectively.

Ahmadi and Sharif (2015) explored the effectiveness of cognitive behaviour therapy to alleviate the anxiety of high school students. The study was conducted in six sessions. The participants were given a few different art activities in all six sessions of the therapy. In the second and third sessions, the creation of mandala was implemented. The participants were asked to write or draw the current emotions and thoughts that can cause anxiety to them. At the end of the six-session study, the participants reported that the mandala activity in the second and third session helped them to reduce anxiety and to be more mindful.

Baranovich and Lau (2015) conducted qualitative action-based research to explore whether expressive arts therapy can aid sheltered home teenagers in preparing themselves for the adult living after they are released from the care centre. Ten teenagers participated in the sixteen-session study over the period of nine months. The study comprised of three stages of activities. The first stage was expressive arts projects, the second stage was exploring personal resources and self-efficacy, and the last stage was a simulation to independent living. MAT was included in the first stage where the participants were asked to fill the mandalas with their favourite colours and shapes. After selecting their preferences, the researcher guided the participants to explore meanings behind the colours and shapes that were drawn in their mandalas. The results of the study brought participants to gain insights about their personalities and to think about careers that are compatible with their personalities. All participants became more aware in preparing themselves mentally for adulthood in the future.

Although no research on MAT in the Malaysian context could Dr, there has been a growing number of literature on art therapy in Malaysia. These included literature on computer-assisted art therapy (Zhagan, Ooi, & Sethaalaxmi, 2017), art therapy that focuses on anger management (Tiang and Ting, 2009), art journal therapy (Al Sayed

Mohamad & Mohamad, 2014), clay therapy (Ahmad and Latiff 2015), and assessment of bullying through art therapy (King, 2009). As the literature on MAT is limited, it is significant to review the literature of the existence of the practices of art therapy in Malaysia.

Zhagan, Ooi, and Seethalaxmi (2017) conducted a study to examine whether computer-assisted art therapy (CAT) can enhance the creativity, communication, and emotional development of children with ASD. Participants in the study were two male and one female child with ASD between the ages of six to nine years old. The findings of the study concluded that the inclusion of technology to create works of art were beneficial as participants' interest to engage in the art-making activities will help to enhance their creative skills. Besides that, the findings of the study also showed that CAT is a useful tool to improve the social skills of children with ASD.

Tiang and Ting (2009) carried out a study to explore whether the cause of angry emotion of a ten-year-old child could be investigated through art therapy. The participant was a ten-year-old child who attended a primary school in Kuching. The child was asked to draw about the daily events that occurred in her class that caused her angry emotion towards her classmates. The art therapist conducted a conversation with the child before she started to draw on a piece of paper. These activities were repeated for seven sessions. At the end of therapy seven, the child was asked to observe all seven drawings and to find a similar item in her drawings. She was able to find that in all the drawings, the representation of her being angry without a strong reason was always present. The findings indicated that the art therapy conducted on the child was able to help in identifying the problem and solution to the anger management of the child.

Al Sayed Mohamad & Mohamad (2014) carried out a study to test whether the inclusion of art therapy is beneficial in exploring the causes of juvenile delinquency

among seven female students between the ages of twelve to eighteen years old. In the period of eight sessions, participants were asked to create artworks in their journal that symbolizes the events that caused pain and grief in their life. At the end of the study, prominent feelings that led to the students' delinquent behaviour were discovered through the artworks that participants created. The emotions of anger, hatred, trauma, and frustration are expressed towards the individuals who caused destructions in their lives. The results of the study are significant to counselling practitioners as it brings insights that art therapy is a beneficial tool to understand individuals who face difficulties in expressing their emotions.

Ahmad and Latiff (2015) conducted a study to determine whether clay therapy is capable of helping six slow learners and developmentally delayed students to improve alphabet recognition. The participants were divided into two groups of clay making and colour splashing respectively. After three months of the therapy, it was found that the group of participants that learned the alphabet through clay making were able to learn alphabet faster than the group of participants who learned through colour splashing. The study also suggests the incorporation of clay therapy as a support for teachers in introducing alphabets to students with learning disabilities.

King (2009) implemented an observational study upon a primary school student who suffered from peer bullying of his classmates. In the study, Draw-a-Person and House-Tree-Person drawing assessment were implemented for three sessions. Through the three sessions, the participant's psychological condition from the effect of being bullied by his classmates was portrayed through the drawings. The results of this study showed that intervention to explore the experience of the bully victim would help to reduce bullying in the school environment. The exploration of their experience will help the victims to express their feelings in the future to protect themselves from being bullied.

Further literature included studies with minor inclusion of the investigation of art therapy in their studies. Abbas and Gahazali (2010) investigated the quality of optimum healing environment through art therapy for paediatric wards among Malaysian hospitals. The result of this study found that although there are positive results on the integration of arts to the physical accommodation of paediatric wards sampled in the study, there were only one out of eight hospitals that practised art therapy to create a healing environment to its paediatric patients. The result showed a lack of emphasis placed on the healing benefits of art therapy in Malaysian hospitals.

A study by Shafie (2008) was conducted for art teachers in Johor primary schools to determine the depth of understanding towards art therapy. Through quantitative descriptive analysis approach, it was found that respondents are aware of art therapy but did not have the deeper knowledge to implement it in their teaching practice. Respondents demonstrated a positive attitude towards the application of art therapy and acknowledged that art therapy was beneficial in terms of identifying students' emotional state.

Overall, the existing literature related to MAT indicated that most participants were based in the United States, with very little research published outside of this country. In this sense, it remains to be seen if MAT is an approach that can be applied universally to participants from diverse cultural or ethnic backgrounds. Therefore, the limited literature on MAT interventions to children with ASD justified the need for the current research. Existing research showed positive opportunities for the use of MAT to children with ASD (Brancheau, 2013). Therefore, the primary aim of this research is to explore the efficacy of MAT to help children with ASD to improve their SIS.

CHAPTER 3: METHODOLOGY

3.1 Introduction

In this chapter - the recruitment process, assessment used to collect data, description of participants, settings of study, and the implementation of data collection are described. This study aims to discover if MAT is beneficial as a therapeutic tool to enhance social interaction skills for the children with ASD. The findings are based on the comparison of participants' AQ score before and after MAT together with a qualitative analysis of participants' behaviour and colouring activities in every session. This study uses pre-drawn mandalas, and the participants' colour choices, a sequence of colours, colouring techniques, a combination of colours, placement of colours, and dominant colours are analysed according to the interpretation of the researcher refers to Jungian's colour analysis. Behavioural analyses to describe changes in two participants throughout MAT sessions will also be used.

3.2 Research Design

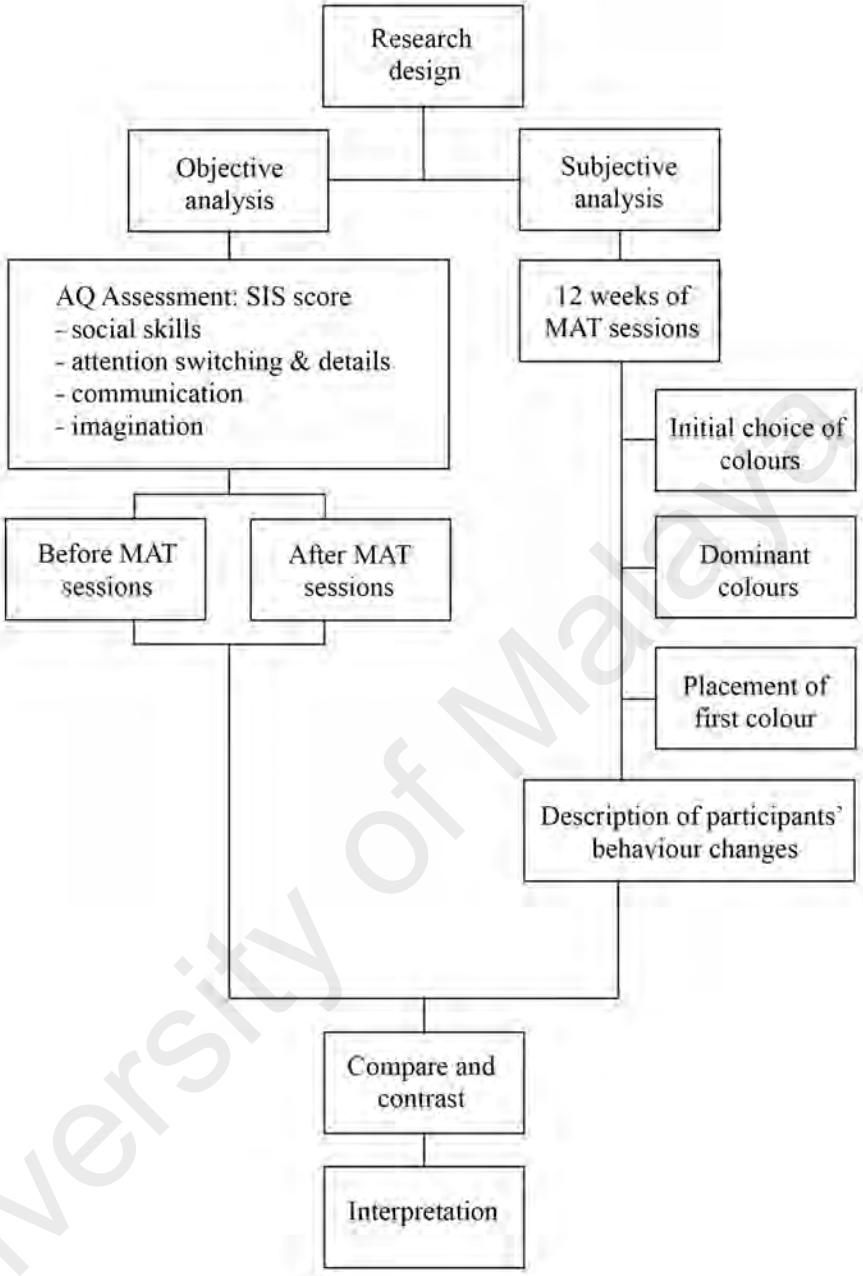

Figure 3.1: Flow chart of the research design

This study is an exploratory case study that applied the usage of MAT to improve the SIS of the two children with ASD. In the early stage of this study, the objective and subjective methods of data analysis were gained throughout the twelve sessions of MAT. The incorporation of objective and subjective analysis can deliver an extensive

result to show the usage of a therapeutic tool to improve the condition of the clients (Boston & Lush, 1994). Further explanation of data collection will be described in section 3.7 of Chapter 3. Four variables of SIS that were investigated comprised of social skills, attention switching and details, communication, and imagination of the two children with ASD. The independent variable is the twelve MAT sessions that were conducted throughout the study, while the dependent variable is the SIS of the two children with ASD. In this study, the independent variable brings a change in the SIS of the two children with ASD, while the dependent variable does not cause a change in the MAT sessions. At the final stage of this study, data gained from the objective and subjective analyses were then compared, contrasted and interpreted in the discussion section of Chapter 5.

3.3 Recruitment Process

The research was carried out in Seri Mengasih, a special needs centre established in Kota Kinabalu, Sabah. The institution provides an extensive range of training programs for students with learning and behavioural disabilities (e.g., ADHD, dyslexia), physical disabilities (e.g., epilepsy, cerebral palsy), and developmental disabilities (e.g., autism, Down syndrome). The researcher approached the principal of the special developmental centre to inquire whether the study could be conducted in their institute. The principal expressed interest in taking part in the research.

The principal was briefed about the nature of the research and the requirement that needs to be met to find suitable participants. The researcher sent a formal letter that described research particulars (Appendix A) to provide further information to the special needs centre. The researcher scheduled an additional appointment with the principal to have a visit around the centre to become familiar with the place. Identification of potential participants was also made on the same day. At this stage,

two children were identified by the principal as meeting the first set of inclusion criteria of having an ASD diagnosis, and able to manage colouring activity.

The researcher began the second stage of the inclusion criteria process by asking the teacher to send out the information of the research and parental consent forms to the parents of the two children. The teachers gave an explanation of research to the children's parents and made certain that they fully understood the process of giving consent on the consent form. When the children's parents had given their informed consent to the teachers, the researcher came to the institute and examined further for the children's understanding of the research. After the children had consented to participate in the study, a researcher gave the two teachers who are responsible for the two children the Autism-Spectrum Quotient (AQ) to assess the level of the children's autistic traits. The score of the AQ assessment for two children is crucial as an initial data for this study.

3.4 Assessment Tool

3.4.1 Autism-Spectrum Quotient (AQ)

The Autism-Spectrum Quotient (AQ) is a set of questionnaire that measures autistic patterns and way of function comparable to the recognition of autistic individuals in clinical studies. There are few versions of AQ assessment that is available for different types of group subject. However, this study adapted the AQ assessment for the children with ASD (aged 11.3 and 15.3). The AQ questionnaire is comprised of five fields related to the intellectual complication of ASD: (i) social skill, (ii) attention switching, (iii) attention to detail, (iv) communication skills, and (v) imagination (Baron-Cohen et al., 2011). Each field is composed of ten items, with all fifty items arranged randomly within the questionnaire to avoid a bias inclination towards a particular field.

All items' sentences are not direct descriptions of their disability, but rather inquire the participants to agree or disagree with personal preferences and habits of the autistic individuals. Few examples of items from the five fields respectively includes: 'S/he finds it difficult to work out people's intentions'; 'S/he frequently gets so strongly absorbed in one thing that s/he loses sight of other things'; 'S/he often notices small sounds when others do not'; 'S/he frequently finds that s/he doesn't know how to keep a conversation going'; and 'When s/he was younger, s/he used to enjoy playing games involving pretending with other children'. A total score of 32 or higher suggests that there is a significant level of autistic traits of the individual (Baron-Cohen, Hoekstra, Knickmeyer, & Wheelwright, 2006).

Some relevant studies that showed the efficiency of the AQ assessment had been done. A study with samples from Austrian (Voracek & Dressler, 2006), Japanese (Baron-Cohen, Tojo, Wakabayashi, & Wheelwright, 2006) and Italian groups (Baron-cohen, Mazzone, Mazzone, & Ruta, 2017) had been proven to be coherent. AQ scores have also been tested on studies involving cognitive activities in social situations (Bayliss & Tipper, 2005), the relationship between Asperger's Disorder (AD) and Schizotypal Personality Disorder (SPD) (Hurst, Nelson-Gray, Mitchell, & Kwapil, 2007) and the quality of life in high-functioning ASD (Renty & Roeyers, 2006). The AQ assessment is proven to be an adequate measurement tool and appropriate for assessment purposes (Baron-Cohen, Robinson, Wheelwright, & Woodbury-Smith, 2005).

For this study, each participant was evaluated through the AQ assessment for his or her autistic traits. Two teachers who are in charge of the two participants were given the questionnaires before the first session and after the twelfth session. The initial and after score collected from the questionnaires were compared to determine whether there is an

improvement of their autistic traits after going through twelve sessions of mandala art therapy. The changes of the five domains in the questionnaire for all participants will be analysed in the findings section of this paper.

3.5 Participants

The participants in this study were two children with ASD from the same special development centre. Participants were aged twelve years and three months and fifteen years and three months when the MAT sessions were implemented. Participants will be referred to BR and JX respectively.

3.5.1 Sample 1 - BR

BR scored an overall point of 33 on the AQ assessment. He scored more or less a similar score among the five fields in the AQ questionnaires, where ‘attention switching,’ ‘communication, and imagination’ scored 7 points, while ‘social skills and attention to detail’ scored 6 points. BR did not have a problem to make eye contact with people around him. He can communicate functionally to request preferred items. However, when given a question, he often repeats the same question that was given (echolalia). When he is feeling anxious or happy, he will demonstrate hand flapping and body rocking as self-stimulatory behaviours.

3.5.2 Sample 2 - JX

JX scored an overall score of 38 on the AQ assessment. She scored a full score of 10 for the field of ‘social skills and communication,' 8 points for ‘attention switching,' 7 points for ‘imagination' and 3 points for ‘attention to detail.' JX has limited use of language for communication; she approaches teachers only to express wants and needs. She possesses an exceptionally high skill in colour usage, however academic subjects do not appeal to her. She exhibited a repetitive behaviour of elbow thump on the table for approximately every ten to fifteen minutes during MAT sessions. She possesses a

high sensitivity to textures that lead to a habitual tendency to peel uneven texture on any surface she touches. This behaviour leads to numerous minor wounds on her arm as she is frequently peeling irregular textures on her skin.

3.6 Settings of Study

The special development centre consists of a two-story residential building that is surrounded by spacious areas for students' outdoor activities. It is located next to a beach, which contributed to the serene sensation to the centre's atmosphere. The centre's residential building that is located next to the seaside provided the impression of cosiness rather than a feeling of a welfare environment. The setting for MAT sessions was conducted in one of the classrooms on the lower ground of the building. The researcher requested that the classroom is chosen from one of the rooms used daily by the two children to provide a familiar environment so that focus can be given to the MAT sessions. To create a familiar environment, additional two to four students participated in with BR and JX as the centre's classes conducted for the minimum number of four or six students.

The teachers arranged the classroom to comprise of limited objects to avoid distractions during daily learning sessions. There are three long tables approximately six feet by two feet at the centre of the classroom. It was arranged in a manner that BR and JX would not sit next to each other to prevent copy each other's work. Two cabinets are located at the edge of the room to facilitate appliance of MAT materials and one cabinet to place a video recorder. During every session, the researcher stands among the three tables to observe students behaviours.

3.7 Data Collection

3.7.1 Research Procedures

The research was given ethical approval (Appendix B) by University Malaya Research Ethics Committee (UMREC) on 20th January 2017. The documentation of data was done in the period of two months from July to August 2017.

Table 3.1: Research procedures

Process	Date
IRB application	December 2016
Approval of IRB	January 2017
Recruitment of participants	January 2017
Preliminary study	February 2017
Collection of AQ data prior to commencement of study	March 2017
12 weeks of MAT	March 2017 – June 2017
Collection of AQ data after completion of study	June 2017
Documentation of data (thesis completion)	July – August 2017

3.7.2 Data Analysis

The data was collected over twelve weeks, one session per week. Subjective and objective methods of data collection were implemented. The subjective analysis comprised of two data collections. The first subjective data collection was the choice of colours that participants applied in the pre-drawn mandala. The initial choice of colours, dominant colours, and placement of the first colour was analysed. The second subjective data collection is an in-depth analysis describing the behaviour changes of two participants throughout the twelve-week MAT sessions.

For the objective analysis, each participant was evaluated through the AQ assessment for his or her autistic traits. Two teachers who are in charge of the two participants were given the questionnaires before the first session and after the twelfth session. The initial and after score collected from the questionnaires were compared to determine whether there is an improvement of their SIS after going through twelve sessions of MAT. The changes of the five domains in the questionnaire for two participants were analysed after MAT sessions were completed.

CHAPTER 4: FINDINGS

4.1 Introduction

In this chapter, a full account of participants' mandala creation will be given by presenting the mandala analysis observed during the analytic process. The process of MAT as described in Chapter 3 was undertaken to develop these analyses for each, and these will first be presented. Next, tables that describe the sequence of colour choices, dominant colours used, and placement of the first colour, are presented. A comparison of participants' AQ score according to the five areas obtained from the AQ assessment is also shown in the following data. The last table is a description of Absolute evaluation and relative evaluation chart of MAT on concentration versus distraction. The most significant behavioural changes of the two participants are also analysed and discussed in the final section of this chapter.

4.2 Mandala Art Therapy for Sample 1 - BR

4.2.1 MAT: Session 1

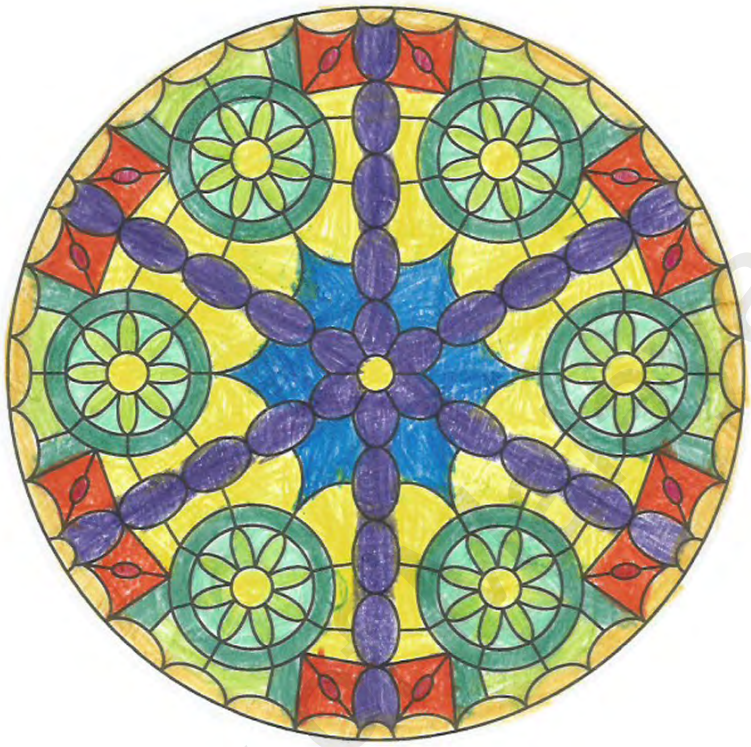

Figure 4.1: Sample 1 - BR's MAT session 1

BR chose the yellow colour as his first choice. He applied yellow at the centre of the mandala. BR's behaviour of the colour application at the centre indicated a stable state of self-esteem. He proceeds with applying purple colour to the three lines made up of connecting ovals that overlapped in the centre of the mandala. BR's mandala is predominantly filled with yellow colour as he filled the background and edge of the mandala with yellow. The colour combination of yellow and purple are complementary, as both colours are located opposite each other in the colour wheel.

During every interval of switching to different colour pencils, BR tends to do hand flapping and body rocking as self-stimulatory behaviours. BR's motion tic was

repetitive in every five to ten minutes for the duration of one or two minutes. BR gave an absolute focus in the first fifteen minutes of the MAT session. However, his focus began to subside after he finished colouring the eight petals of the six-flower pattern in the first fifteen minutes. BR spent the next thirty minutes looking around to other participants next to him and walking around the room. When the researcher and the two teachers encouraged him to continue colouring the mandala, he filled the background of the mandala quickly with yellow colour.

As BR chose yellow as the background and the edge of the mandala, it subsequently overtakes the overall impression of the mandala. It portrayed BR's mixed emotions when he refused to finish the mandala, but by completing the mandala would release him from the task given. There are no signs of interaction between BR and the researcher, as this is the first time the researcher interacted with BR.

4.2.2 MAT: Session 2

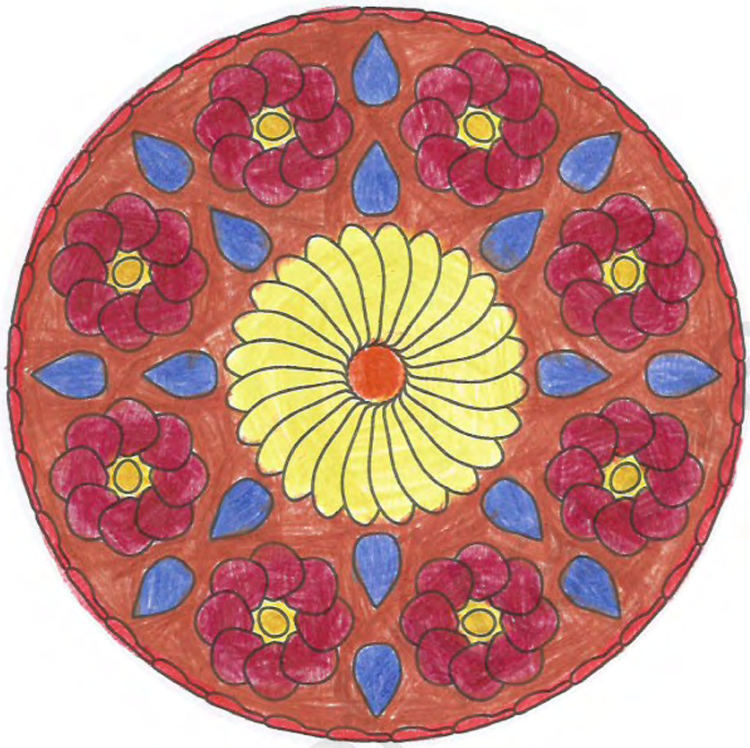

Figure 4.2: Sample 1 - BR's MAT session 2

BR began working on the mandala by filling in all the petals of flowers that encircled the mandala with an intense maroon colour. He then combined the maroon colour with the yellow colour. He continued colouring with the yellow colour for the larger flower located at the centre of the mandala. Then he coloured the water droplet shapes that are placed between the eight flowers. Water droplets were filled with blue colour, a logical association with the colour of water. It shows that BR was conscious about the shape of the water droplets in the mandala.

After he completed colouring the water droplets' shapes, he suddenly pointed to his sandals that he was wearing during the MAT session. He mentioned, "No shoe, the shoe is wet." The two teachers that participated in the session explained that he is not wearing the pair of shoes that he often wears every day to school. He came to school

crying and refusing to get out of his father's car because his shoes were wet. After a long period of persuading by his father, he eventually had no choice but to wear a pair of sandals.

Lastly, he filled the background of the mandala with brown colour and encircled the edge of the mandala with the red colour. According to Lüscher (1969), a preference for brown suggests the need for release from some situation that is bringing about a feeling of discomfort. BR was uncomfortable because he was wearing a pair of sandals instead of his pair of shoes that he used to wear to school. It shows that he was either conscious about his look or reflecting on his obsessive-compulsive disorder. While he is colouring the water droplet shapes, he paused and looked down at his pair of sandals and triggered his memory of his pair of shoes being wet. It shows that the water droplet shapes reminded him of his wet pair of shoes that indicated a good sign of his self-awareness. This behaviour happens to individuals without ASD on the self-awareness aspects. However, the researcher convinced BR that it is no problem for him to wear a pair of sandals and to continue finishing his task. His final choice of colour was brown to fill the background area of the mandala. It shows a promising sign that he can still calm himself down to continue colouring the mandala. It was the first attempt of SIS that BR showed as a response to the researcher.

4.2.3 MAT: Session 3

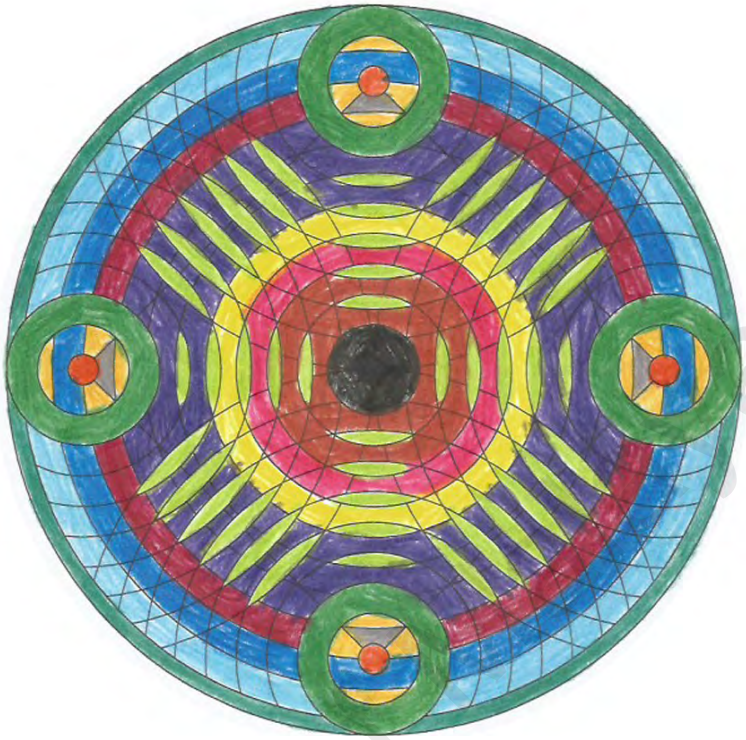

Figure 4.3: Sample 1 - BR's MAT session 3

BR was excited to start the session as soon as he reached the MAT session room. He immediately coloured the centre of the mandala with a black colour. After colouring the centre of the mandala, he proceeded to the edge of the mandala by using a green colour. Once he chose the green colour, he started humming to himself happily. His humming lasted until he finished colouring all the four circles with a green colour. He managed to use other colours choices until he completed colouring the whole mandala although there were signs of hesitation choosing the colours. As a result, he made a more complicated colour selection as compared to the previous sessions.

BR initiated his first conversation with the researcher. He started with a short narration, “Train to Busan?” The researcher replied, “Yes, it’s a thriller film about

zombies." However, BR started to repeat the same sentence such as "Train to Busan, you know?" and "You watch Train to Busan?" as if he wanted a specific answer from the researcher. He continued repeating the same question in the interval of five to ten minutes. This behaviour showed that BR is trying his best to socially interact with the researcher with eye contact, although his sentence was short.

The researcher noticed that BR's usage of a green colour showed that BR was happy while smiling and humming a tune. Fincher (1991) stated that the association of green with nature and concrete reality explains its frequent choice as a symbol for the function of awareness. Jung (1973) also saw green used to represent sensation and awareness in the mandala artwork. BR's SIS showed that he was comfortable with the researcher by his constant attempt of communication by asking short questions. The design of the mandala for this session may have an image of the wheel of the train with circles and axis of the wheel that incited BR's interests towards the train. As he started to show better interaction skills to the researcher, the researcher tried to find the relationship between BR's interests and colouring activities.

4.2.4 MAT: Session 4

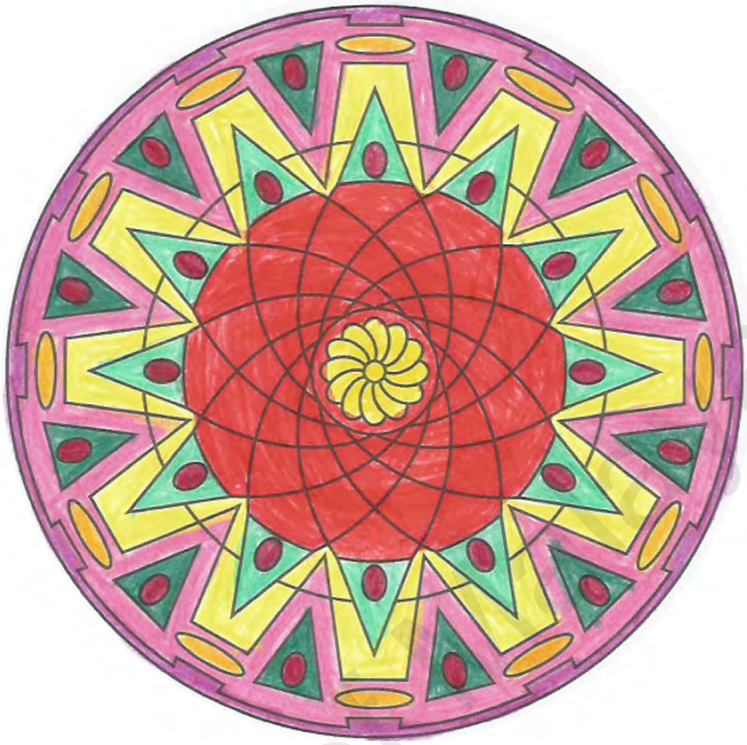

Figure 4.4: Sample 1 - BR's MAT session 4

BR chose the yellow colour as his first choice and applied it to the centre, where an image of a flower is placed. He then applied the red colour to the circle that is encircling the flower. Lüscher (1969) stated that red is an energetic colour that gave a sense of stimulation to the people. BR's choice of the red colour may show that he was excited for some unknown reason that he felt so restless and energetic. He kept losing his focus frequently for this session, and it took longer time for him to complete the colouring of the mandala as compared to the previous sessions. During the first five minutes of the session, BR was uninterested in the colouring of the mandala given. Instead, he started to gaze at the printed images on the colour pencil box, while his fingers fiddled with the colour pencils. The researcher tried to converse with him to gain his interest in

colouring the mandala. However, he responded through echolalic behaviour by repeating the same sentences that the researcher had asked.

After five minutes of persuasion from the researcher, he finally took the yellow colour pencil, but he was not paying full attention to this session. Ten minutes later, he started to gain more focus on colouring after he received encouragement from the two teachers. For this session, BR's self-stimulatory behaviour of hands' flapping and body rocking continued throughout the session. However, it was observed that his motion tic happened more frequently when he started colouring with the red colour. Throughout this session, BR did not show any signs of SIS.

4.2.5 MAT: Session 5

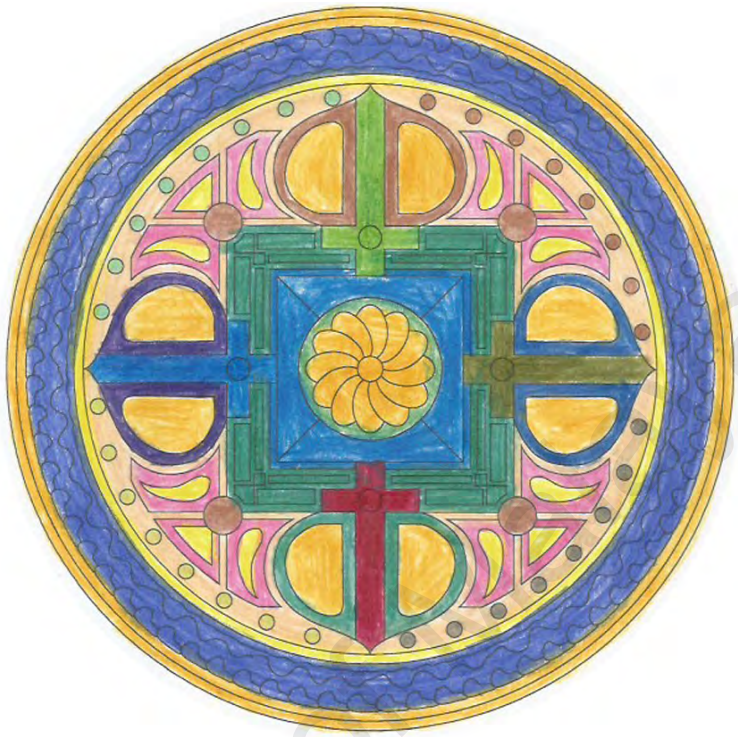

Figure 4.5: Sample 1 - BR's MAT session 5

The mandala for this session had the same image of a flower design in the centre of the mandala as compared to session four. BR coloured with a yellow colour pencil starting from the centre of the mandala as similar to the previous session. He continued choosing a yellow colour to start his colouring since his previous session. As the centre of mandala portrays the level of self-esteem, it is paramount importance to pay more attention to his colour placement and choice. The prominent symbols for this mandala are the square in the middle and the crosses. The square gave an impression of balance and stability with its four equal sides (Cirlot, 1962). BR applied green, blue and red colours to the square and crosses in the inner part of the mandala.

Seventeen minutes after the session started, BR showed an expression of exhaustion as he was giving full attention to applying full colour to the inner part of the mandala. He rested for five minutes and walked around the room. The researcher and the teachers deliberately did not pay attention to his behaviour. Six minutes later when he realised that he had not received the attention that he expected, and the other participants had almost completed colouring their mandala, he walked back to his seat to continue colouring his mandala. The researcher announced, “Session will end in five minutes.” He then proceeded to colour the edge of the mandala without following the details of contour lines at the edge, as he wanted to complete the mandala within the given time. BR showed an improvement of focus span as compared to the first session as he continued to finish the mandala on his own will. The colour choices made were gloomy, depressing and not well balanced. In this session, he loses focus, as he did not take any initiative to interact with the researcher and the two teachers. Even though he was peeping his classmates’ mandalas while he was walking around the classroom, he did not attempt any conversation with his classmate. BR seemed unfocused on this MAT session for the first seventeen minutes. He used darker tones of green, and he was restless.

4.2.6 MAT: Session 6

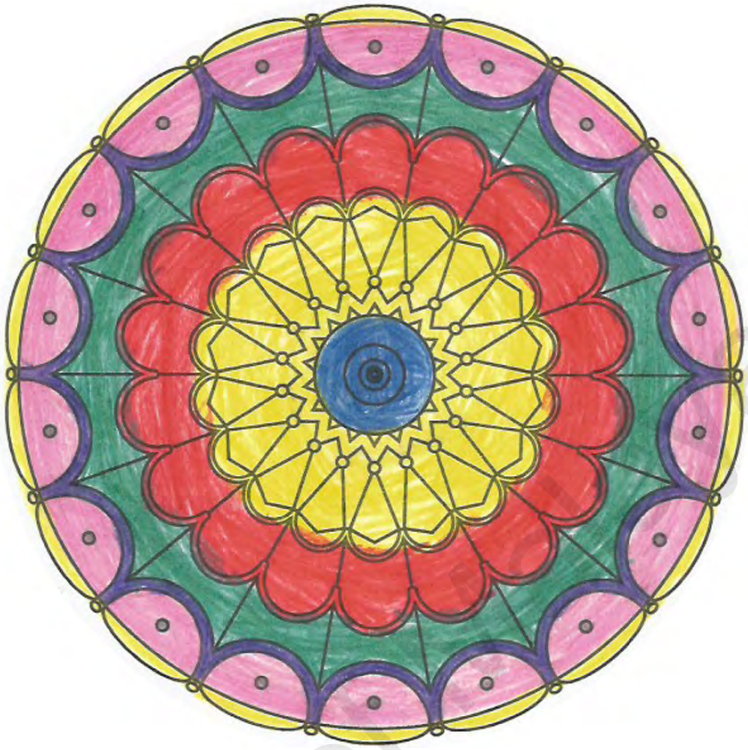

Figure 4.6: Sample 1 - BR's MAT session 6

BR made a shift of colour choice from a yellow colour that he frequently used from his previous two sessions at the centre of the mandala to a dark blue colour choice. His colour technique formed a flower shape, where the outer layer of the flower is red and the dark blue at the centre. The dark green colour that surrounds it contrasted with the background of the mandala. Lastly, the pink colour was applied on the edge of the mandala with thin yellow stripes encircling the mandala.

On this session, BR still tends to do hand flapping and body rocking as self-stimulatory behaviours. When he was applying a red colour, his behaviour was similar to that of session four. It is still too early to say that a red colour can trigger his motion tic as it is important to look closer to identify any relationship between a red colour and

motion tic. While he was showing motion tic, he did not show any intention to interact with anyone. As he applied the colour to the mandala with a simple colour's combination, he completed his work early. As a result, he walked and played around more during this session similar to that of session five. While he was roaming around the room, he suddenly and repeatedly said: "Train watch every Thursday, I love the train." A researcher noted that whenever BR expressed ‘Train to Busan’ on session three and ‘Train watch every Thursday’ in this session, this was an important sign of interaction with the researcher. The words ‘Busan,’ ‘Movie,’ and ‘Thursday’ may not have any significant meaning to BR, but the word ‘Train’ expressed his attempt to convey his interest in interacting with the researcher. It can be speculated that through this behaviour, BR was attempting to communicate with the researcher since session three. It is still difficult to find any relationship between his colour choice and his topic related to ‘Train Watch.’

As the researcher continued to talk about trains, it prompted BR to smile brightly throughout the conversation. He showed more emotions to express his thoughts as he said, “I don’t like to go to shopping mall.” The teachers revealed to the researcher that the special development centre scheduled a visit to the shopping mall every two weeks to improve the students’ social skills in the public area. BR dislikes participating on visits to the shopping mall, as this made BR worried that the visit to the mall might clash with his activity of watching the train crossing with his father on Thursday afternoons. This session was significant as BR expressed his attempt to convey his interest to the researcher. This behaviour showed that he is beginning to complain to the researcher about the other two teachers’ instruction. BR’s echolalic behaviour and motion tic were less displayed during this session after he started talking about ‘Train Watch.’

4.2.7 MAT: Session 7

Figure 4.7: Sample 1 - BR's MAT session 7

BR was given a selection of mandalas with animal images during this session. Animals included were the swan, tiger, owl, butterfly, and dolphin. He chose the mandala with butterflies' images. According to Fincher (1991), the butterfly is a symbol of transformation because of its dramatic life cycle. BR's choice of butterfly may indicate his experience of change throughout the MAT sessions.

BR initiated a colour application to the images of butterflies. He proceeded to fill a green colour to the edge of the mandala. Lastly, he coloured the flower shape in the centre of the mandala with a yellow colour. He did not apply multiple colours to the flower but instead applied yellow colour to the whole flower image. The positive energy of the yellow colour of the flower in this mandala was harmoniously merged with the

colours of the butterflies. BR chose the green colour for the edge of the mandala. The green colour is the result of mixing equal amounts of blue and yellow colours. Lüscher (1969) stated that green became symbolic of a desirable state of harmony. BR was showing a calm and stable emotion while he was colouring with the green colour.

BR displayed a blissful facial expression as soon as he took his mandala sheet. He sat down and chose four-colour pencils that consisted of blue, green, red, and yellow colours. His face lit up when he looked at the butterflies in his mandala and started colouring the large butterflies followed by the smaller butterflies. BR coloured with the same colour for one pair of large and small butterflies that are placed next to each other – four different colours were used for the four pairs of butterflies. For the first ten minutes, BR did not show any motion tic. After he completed colouring the eight butterflies, he started to show hesitation to choose a colour for colouring the background of the mandala. The hesitation moment led to a display of repetitive behaviour and eventually his attention was interrupted. After a few minutes of hesitation, he picked a red colour and coloured the background with a very rough stroke, which is quite unusual. He suddenly started to show his motion tic quite frequently after he chose and coloured with a red colour.

Suddenly, he started to wander around the classroom. One of the teachers asked him to go back to his seat. After hearing the teacher's comment, he approached the researcher and said, "I don't like the teacher." Upon hearing BR's expression, the teacher asked, "Why you don't like me?" BR answered looking at the researcher "I don't like mathematics." The teacher later explained that BR had mathematics class before he attended MAT session. BR did not pay full attention during mathematics class. Due to his inattentive behaviour, the teacher told him, "If you don't do your

calculation, I won't bring you to MAT class." BR was unhappy that the teacher imposed intimidating approach regarding mandala therapy sessions. The teacher also revealed that BR had repeatedly asked whether MAT session would still be held. By choice of the red colour, it may trigger him to recall his earlier experience with his mathematics teacher.

BR was making considerable progress, he felt more comfortable as compared to the earlier sessions of MAT and his eye contact has improved, as he was able to keep his eye contact fixed to the researcher while he was talking. He coloured the centre of the mandala for this session last as compared to previous MAT sessions. Fincher (1991) stated when the individuals have low self-esteem; they usually colour the centre of the mandala last. As he was harbouring fear and anxiety from mathematics class, his self-esteem seemed low at the beginning of the session. Although he did not start colouring the centre of the mandala for this session, he chose a yellow colour to colour the centre of the mandala just like previous MAT sessions. BR's SIS has improved as he took the initiative to communicate with the researcher as he complains about one of his teachers. From this observation, BR's SIS had improved as he showed direct interaction to the researcher when BR stated out his case without hesitation.

4.2.8 MAT: Session 8

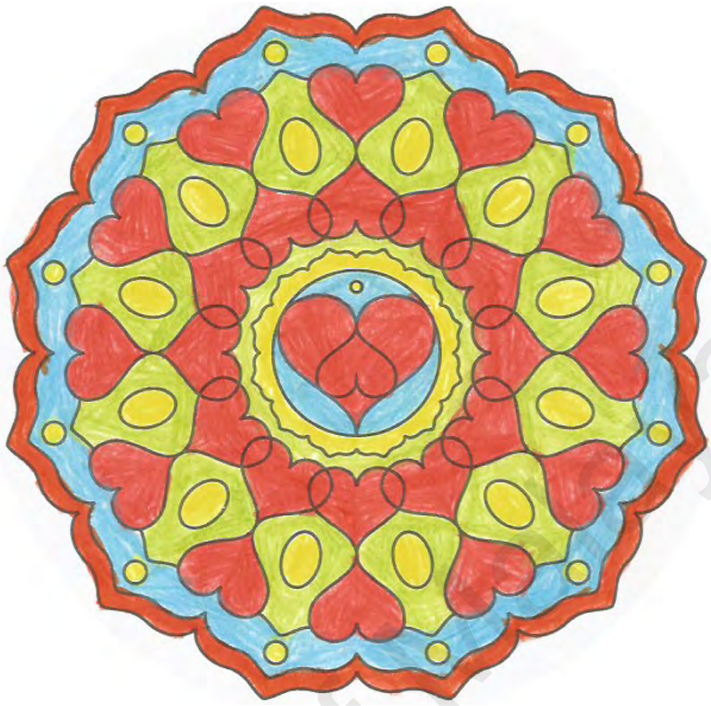

Figure 4.8: Sample 1 - BR's MAT session 8

As soon as he entered the therapy session, he was quite talkative and made an accurate response to the researcher. The two teachers who joined the session explained that he could not wait to enter the classroom for this session. He picked the orange colour – Vermilion - as a representation of heart shapes in the mandala, filling in every heart shape with the same colour. He continued with the orange colour at the edge of the mandala, and it showed that he is cheerful during this session. He continued to fill with a light green colour to the background of the mandala. At this time, he gave an utmost concentration when he was about to complete his mandala. He completed the mandala with blue colour at the second outermost layer of the mandala. It was clear that he showed happy emotions from the beginning until the end of the session.

BR's period of focus had increased during this session. During session one, his focus to complete the mandala lasted for only fifteen minutes. He initially would complete only half of the mandala. However, during this session, he exhibited increased endurance where he managed to complete the mandala without taking a break. BR was able to complete the mandala in twenty minutes, an increase of five minutes of focus as compared to session one.

Fincher (1991) stated that orange might be seen as energy invested in relationship to the father. It is traditionally the father's task to teach the skills needed to go forth and function in the world. Orange has to do with self-assertion, pride, and ambition. Therefore, BR's combination of orange colour with heart shape may indicate that he was immediately reminded of his father when he saw the heart shape. For this session, the green colour portrayed the stable emotion that was shown by BR's joy, and he was smiling throughout the whole session. His colour balance showed a joyful mood and the colour choice was in harmony. During the conversation between the researcher and him, he answered the questions accurately and showed minimal echolalic behaviour. When BR's focus is good, and his application of colours are harmonious; with his positive emotion, his SIS improved.

4.2.9 MAT: Session 9

Figure 4.9: Sample 1 - BR's MAT session 9

BR had a period of reluctance to initiate colouring the mandala during this session, due to the additional organic pattern of the mandala. He started at the centre with strong maroon colour. BR showed an eager facial expression while contemplating to choose the next colour. The circle area surrounding the centre was filled with the yellow colour. As the pattern given to him for this session has more asymmetrical shape compared to the previous session's pattern, he had difficulties in planning his colour selection. However, he managed to resolve this difficulty by creating new contour lines to create symmetrical shapes. BR undeniably can find a solution when confronted with unfamiliar mandala patterns.

BR gave his complete attention during this session to fill colours to the organic shapes in the mandala. The unfamiliarity to organic shapes in the mandala did not refrain him to give a full focus to complete the mandala. From the initial stage to the end of the session, BR continuously worked towards the completion of the mandala. He exhibited sustainability in facing a challenging task, which introduced to him a positive experience. Through a few sessions of MAT, it was observed that when BR took red colour as his colour choice, he showed a restless emotion. The researcher assumed that the red colour has an influence on his emotion, his restless behaviour, and has a connection to his motion tic. On the other hand, BR showed a calm facial expression whenever he chose either a yellow colour or a green colour. While he was colouring with a yellow and a green colour, he expressed much comfortable expression. It is assumed that the colour choices are a direct expression of the inner states that are usually beyond an individual's conscious awareness. However, the colour balance for this session was very messy as his overall expression for this session was more to seriousness rather than relaxation. He expressed the stress he faced several times during the session, and he did not partake much of a conversation with the people around him. Fincher (1991) associated dark colours with the loss of consciousness. In psychological terms, loss of consciousness usually refers to the loss of the ego as a focus of awareness. From this session, BR's choice of red colour excited his emotion, but he still managed to complete the colouring of the mandala although the design was organic and complex.

4.2.10 MAT: Session 10

Figure 4.10: Sample 1 - BR's MAT session 10

BR remained consistent with the application of a yellow colour to the centre part of the mandala as his first colour application. From the centre, he moved to the edge of the mandala, where leaf shapes were coloured with the dark and light green colours. BR deciphered the contour lines in the inner part of the mandala as flowers. He used an orange colour as contour lines of the flowers and filled the inner petals with a yellow colour. The orange contour lines created a warm sensation to the mandala. It was found that the effects of an orange colour of the mandala would exude warmth. This mandala is similar to the mandala of session eight with the only difference was that he was very active in conversation with the researcher. The orange colour is a reflection of a positive state of his mind. From the analysis of session eight, it showed that he was more stable and happy with little SIS. But from the analysis of session ten, it showed that there was

a balance between consciousness and unconsciousness of BR. It was shown that he was actively involved in the conversation with the researcher in an appropriate manner.

For this session, he was actively trying to engage in a conversation with the researcher. As similar to the sessions three and six, he was interested in sharing about the subject on 'Train watch.' Even though BR kept talking about the train, he never stopped colouring that depicted his multi-tasking ability. When he started to create the orange contour lines, he paused to talk, hence enabling him to be more focused to complete the intricate lines. It showed that he was aware that when he engaged in a conversation, this would obstruct him to work meticulously. BR's repetition of using a word like 'Train' and his usage of warm colour that led him to happy emotion showed that he had reached a high level of SIS.

4.2.11 MAT: Session 11

Figure 4.11: Sample 1 - BR's MAT session 11

The mandala for this session appeared to have more detailed shapes, and straight lines compared to the previous sessions. BR made his colour application to appear like a spiral with colours of brown, orange, yellow, green, blue, and pink. BR applied a pink colour to the centre of the mandala in a manner that a four-pointed star appeared. BR showed a bit of stress, and it was shown from his tense facial expression. His mood and facial expression were similar to that of session nine. He showed hesitation to pick the colour pencils and finally he chose a brown colour. Fincher explained, “Brown colour may express a feeling of being oppressed between the impulse to go and the inhibition not to go. Brown can be made with orange (striving for autonomy) and blue (feminine). This combination may suggest a conflicted relationship with the mother”.

BR indicated the exhaustion he felt after an intense focus in the first twenty minutes. He gestured his hand to the researcher to request for massage to his arm. This behaviour showed that by that time, BR felt safe and comfortable with the researcher. After one minute of quick massage, he proceeds to continue working on his mandala. This session was the second time where BR showed the determination that he wanted to finish the mandala. BR did not lose attention throughout the thirty-minutes period that he spent to complete the mandala given.

BR saw her mother towards the end of the session, and talked to one of the teachers, " I don't want to go home," " I want to sleep in the school." His mother called him, but he resisted following his mother. His mother showed anger and said, "Ok, you sleep here" and then drove out from the centre. Next day the researcher called the teacher to inquire about the incident, and the researcher was told that BR slept in the centre at the teacher's quarters. He showed strong resistance not to follow his mum back to his house. The researcher did not inquire further into the causes of BR avoiding his mother as this is breaching the family's privacy. Being able to stay overnight at his teacher's quarters showed that BR might have conflicts of relationship with his mother. His request of staying in the centre showed that BR tried to escape from the current situation he faced resulted as one of his SIS.

4.2.12 MAT: Session 12

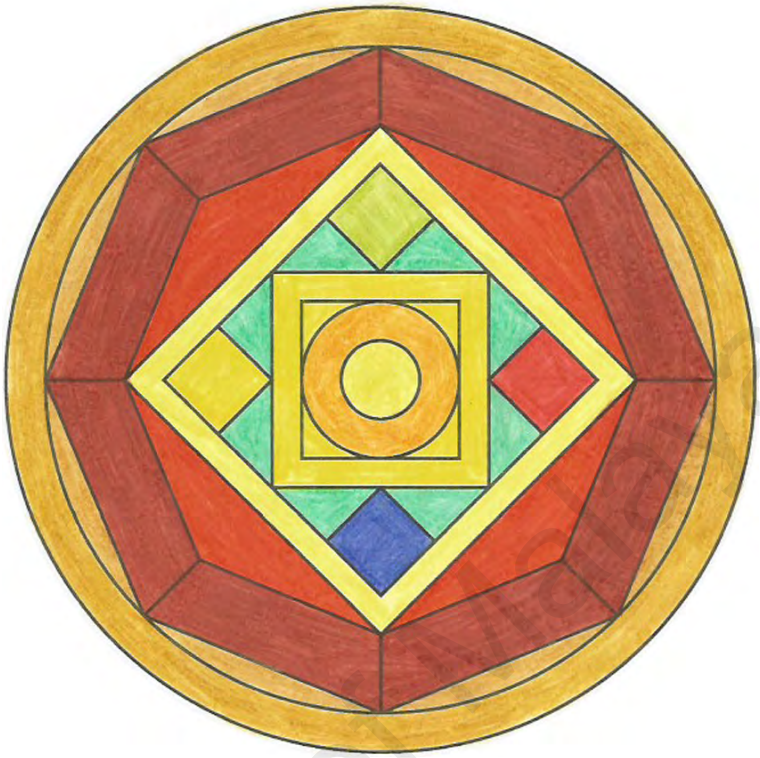

Figure 4.12: Sample 1 - BR's MAT session 12

A simple design of mandala was given for the last MAT session. BR applied a yellow colour to the circle shape in the centre of the mandala. He continued to apply yellow colour to the square shape outside of the circle in the middle of the mandala. The primary colours (red, blue, yellow) are coloured for the four small square shapes. The appearances of primary colours are significant as it symbolises the balance that BR possesses in his inner self. It is symmetrical and well balanced as his colouring techniques are fine and solid. The colours are filled up with all the spaces of the design of the mandala. Even though he used a brown colour for this session as compared to session eleven, the brown colour tone chosen is much brighter.

BR showed less echolalic behaviour throughout the entire session. He was able to give an accurate answer to the question asked. When the researcher asked, "How are you today, BR?" BR replied, "I'm fine." Another example was when the researcher asked, "How old are you?" BR was able to answer, "12 years old." When the researcher asked a question, "Do you like mandala class?" BR answered, "I like mandala class." BR showed an immense improvement in his conversation skill during this session. He completed the mandala in thirty-five minutes. He lifted the mandala sheet and observed the result of his work with a bright smile. When the researcher asked, "Do you like the mandala?" he responded, “Yes.” BR’s echolalic behaviour lessens as compared to the first few sessions of mandala art therapy.

4.2.13 Summary: MAT of Sample 1 - BR

In the first session, BR has not developed any social interaction with the researcher, as he was uncomfortable with the researcher's presence. It could be due to the researcher being a total stranger to BR, and it takes time for him to be familiar with the researcher. In spite of that, BR was a happy, good-natured, and calm boy. He usually showed interest and awareness of people around him. In the overall view, the yellow colour is a prominent colour chosen by BR, as it is the most common colour that he chose throughout all the MAT sessions. BR's SIS were identified and developed throughout the MAT twelve sessions through his colour choices, colouring techniques, colours combination, placement of colours, attentiveness, connection with his researcher, and an improved attempt at his conversation with the researcher. When he creates bright and well-balanced colour combination for the mandala, he was expressing positive emotions. His SIS with his researcher improves progressively throughout the MAT twelve sessions with evidence of him answering simple questions given and being able to initiate questions to the researcher. BR was aware of the presence of the researcher as a person in authority for the session and being able to communicate comfortably and expressed himself freely. It was reflected when BR reached out and hinted to the researcher to massage his arm. When he was having problems with his family members especially with his mother, or when he faced problems at the centre, he created dark colour combination either choosing dark colours such as maroon or dark brown. He will colour the mandala with uneven and rough strokes. BR even asked one of the teachers to allow him to stay at the staff's quarters at the centre when his mother left the centre with frustration. Whether he had good or bad moods, he was able to express it out openly through the MAT sessions.

BR's sequence of colour choices, dominant colours used, placement of the first colour, comparison of AQ score, and absolute evaluation and relative evaluation chart are shown in the tables below.

Table 4.1: Sample 1 - BR's sequence of colour choices

Table 4.2: Dominant colours in Sample 1 - BR's mandala

Table 4.3: Placement of initial colour in Sample 1 - BR's mandala

Table 4.4: Comparison of AQ score (before and after the MAT sessions)

Table 4.5: Absolute evaluation and relative evaluation chart of MAT

Table 4.1: Sample 1 - BR's sequence of colour choices

Colour / Session	First choice	Second choice	Third choice
1	Yellow	Green	Purple
2	Brown	Yellow	Maroon
3	Blue	Purple	Green
4	Yellow	Maroon	Green
5	Yellow	Green	Maroon
6	Blue	Yellow	Red
7	Yellow	Blue	Red
8	Orange	Yellow	Green
9	Maroon	Yellow	Blue
10	Yellow	Light green	Orange
11	Yellow	Pink	Brown
12	Yellow	Blue	Red
Total	1. Yellow – 7 2. Blue – 2 3. Brown – 1 4. Orange – 1 5. Maroon – 1	1. Yellow – 4 2. Green – 2 3. Blue – 2 4. Maroon – 1 5. Purple – 1 6. Light green - 1 7. Pink – 1	1. Green – 3 2. Red – 3 3. Maroon – 2 4. Purple – 1 5. Blue – 1 6. Orange – 1 7. Brown – 1
Percentage	Yellow: 58.33%	Yellow: 33.33%	Green & Red: 25.00%
Remarks	The result showed 58.33% in the selection of yellow colour for BR's first choice, 33.33% in the selection of yellow colour for the second choice, and 25.00% in the selection of green and red colour for the third choice. From this observation, it can be concluded that BR preferred to choose a yellow colour as his primary choice, followed by green and red. On the whole, BR created an overall well-balanced colour combination in the 12 mandalas he produced.		

Table 4.2: Dominant colours in Sample 1 - BR's mandala

Colour / Session	Dominant	Subdominant
1	Yellow	Green/Purple
2	Yellow	Brown/Maroon
3	Yellow	Green/Blue/Purple
4	Red	Yellow/Pink
5	Yellow	Blue
6	Yellow	Red/Green/Pink
7	Yellow	Green/Red
8	Orange	Green/Blue/Yellow
9	Maroon	Yellow
10	Red	Green/Yellow
11	Pink	Yellow/Brown
12	Yellow	Red/Brown
Total	1. Yellow – 7 2. Red – 2 3. Maroon – 1 4. Pink – 1 5. Orange - 1	1. Green – 6 2. Yellow – 5 3. Brown – 3 4. Blue – 3 5. Red – 3 6. Purple – 2 7. Pink – 2 8. Maroon – 1
Percentage	Yellow: 58.33%, Red: 16.66%	Green: 50.00%, Yellow: 41.66%
Remarks	The result showed 58.33% of the yellow colour dominance throughout the twelve mandalas that BR created. The green colour falls in the subdominant category with the percentage of 50.00%.	

Table 4.3: Placement of initial colour in Sample 1 - BR's mandala

Position / Session	North	South	East	West	Centre	Edge
1					✓	
2	✓					
3					✓	
4					✓	
5					✓	
6					✓	
7	✓					
8					✓	
9					✓	
10					✓	
11					✓	
12					✓	
Total	2	0	0	0	10	0
Percentage	16.66%	0%	0%	0%	83.33%	0%
Remarks	As shown in the data above, the percentage that BR chose the centre of the mandala as the initial placement of his colour choice is 83.33%. Fincher (1991) stated that the initial placement of colour at the centre is an indication of self-esteem by the creator of the mandala. As the rate of BR choosing the centre, as initial placement is high, it indicated that BR trusts his instincts and abilities, believe he is worthy and confident that he can accomplish any necessary or desired task.					

Table 4.4: Comparison of AQ score (before and after the MAT sessions)

Score / Area	Before	After	Variance
Social skills	6	6	0
Attention switching	7	2	0
Attention to detail	6	6	0
Communication	7	6	-1(2%)
Imagination	7	7	0
Total	33(66%)	32(64%)	-1(2%)
Remarks	The data above showed that BR had improved in the field of communication. One item had improved in the communication field, the item being, "People often tell her/him that s/he keeps going on and on about the same thing." BR appeared to exhibit less self-stimulatory behaviour, as he did not respond to the researcher the same question given to him at the twelfth session of MAT.		

Table 4.5: Absolute evaluation and relative evaluation chart of MAT

Behaviour / Session	Concentration	Distraction	Relative evaluation
Session 1 to 6	13 minutes	15 minutes	0.86
Session 7 to 12	18 minutes	12 minutes	1.5
Changes	+ 5 minutes	- 3 minutes	0.64
Remarks	The first half of the session (1 to 6): concentration 13 minutes versus distraction 15 minutes: the ratio of absolute evaluation 13 by 15 (relative evaluation ≥0.86). Second half session (7 to 12): concentration 18 minutes versus distraction 12 minutes: the ratio of absolute evaluation 18 by 12 (relative evaluation 1.5≤) improved by 0.64 (relative evaluation changes (1.5-0.86) ÷ 0.86) = 74.41%		

4.3 Mandala Art Therapy for Sample 2 - JX

4.3.1 MAT: Session 1

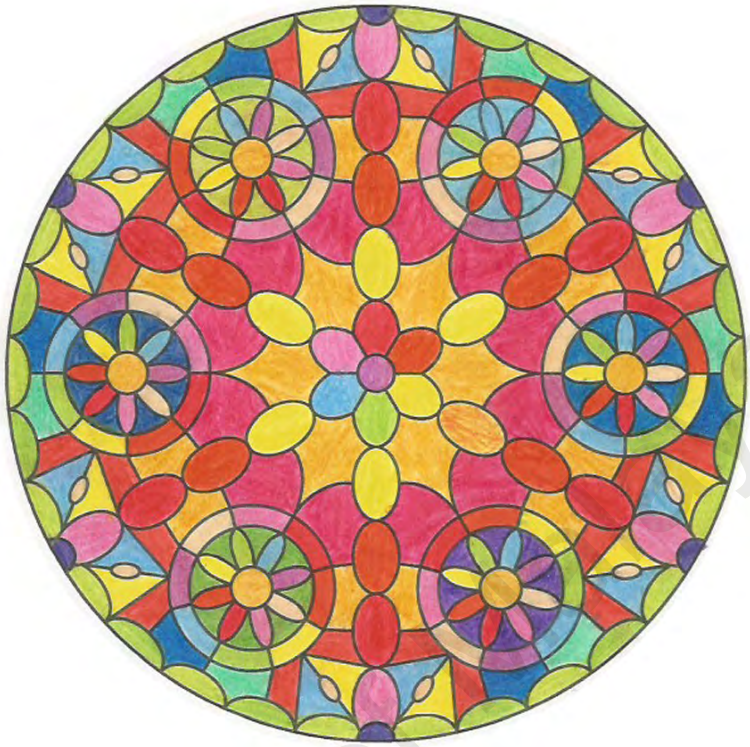

Figure 4.13: Sample 2 - JX's MAT session 1

JX selected a pink colour as her first choice. She started colouring from the centre to the outermost part of the mandala. This behaviour revealed that she was having a high level of self-esteem during the session. She gave a consistent placing of colours for the 6-flowers pattern, which formed the arrangement of rainbow colours to each one of them. Kellogg (1977) describes rainbow colours in mandalas as an indication of the "rainbow experience." "Rainbow experience" is characterized by "the use of many colours in a fragmented shattered pattern". For the background area of the six-flowers pattern, she decided to apply three colours of purple, green, and blue. At first glance, it may seem as if the colour placing to the entire mandala is in a disorganized manner. However if carefully seen, a system of arrangement can be identified. Red colours are consistently placed between orange and pink, while green colours are orderly placed

between yellow and blue colour. She did not use indigo-blue colour by the sequence of rainbow colours and only used indigo-blue for the small area of the background.

From the beginning until the end of the session, she gave an utmost concentration. While she was colouring she remained in a very calm state, but at times she showed excitement from her facial expression, as she was delighted with the colour choice that she made. JX exhibited a repetitive behaviour of elbow thump on the table for approximately every five to ten minutes during MAT session. At normal times, JX pounded her elbow on the table twice. However, when she is feeling very excited, her elbow thump's behaviour increased up to four times. She was encouraged to use indigo-blue instead of using pink by the researcher and the two teachers, but she refused. JX refused to have any conversation with the researcher. Furthermore, she showed signs of anxiety while the researcher was approaching her. When she got excited, she was spinning her head while making high pitch sound. There was no indication of SIS for the first session of MAT.

4.3.2 MAT: Session 2

Figure 4.14: Sample 2 - JX's MAT session 2

In the beginning, JX examined the layers of the four circles in the mandala sheet for a minute, and then picked a light brown colour to fill the round shape in the centre and two rings that encircled the round shape. She started to apply colours to the four petals attached to the rings that encircled the round shape. Multiple colours were applied to the nine layers in the petal shape with an arranged sequence of colour. She formulated a sequence of colour by the rainbow colour formation – red, orange, yellow, green, blue, indigo blue and violet – however; she dismissed indigo blue from the colour formation and added pink before red colour. The four ripples that surrounded the petal shape were filled with JX's formulated rainbow colour. JX selected a brown colour and applied it to the edge of the mandala. The application of a brown colour may indicate conflict or an accompaniment to the rainbow colours.

JX appeared to be deliberately ignoring the researcher and did not make eye contact when researcher tried to start a conversation with her. She showed an anxious facial expression and pounded her elbow on the table four times repeatedly for one minute. Throughout the session, JX did not move around the room. She appeared to feel insecure with the researcher. Her level of security seemed to be indicated by her body's positioning as she tried hard to move away when the researcher came near to her space boundary. Even though two teachers tried to calm her down, she kept pounding her elbow even harder and refused anyone to get near her. The researcher tried to talk to her from a distance, " JX, you like pink colour?" Then she suddenly started shouting, " Pink! Pink! Pink!" At this moment she was overwhelmed by the word 'pink.' The two teachers informed the researcher that JX likes pink colour. It is assumed the reason why JX replaced the indigo-blue colour with a pink colour of the rainbow's spectrum that may relate to her obsession with a pink colour. JX showed a basic response on her interest by shouting the same word over several times. It can be assumed as her way of interacting with the people around her.

4.3.3 MAT: Session 3

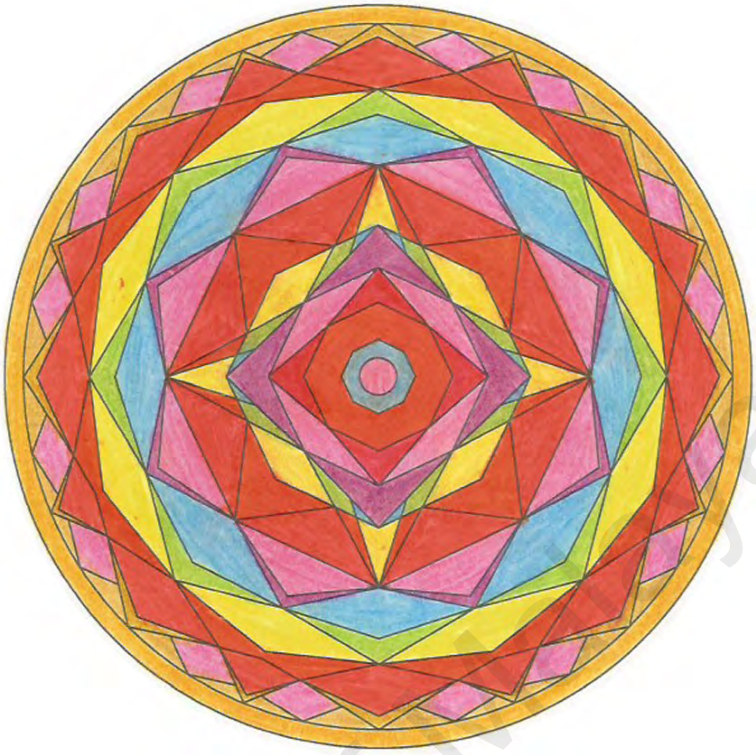

Figure 4.15: Sample 2 - JX's MAT session 3

JX chose a pink colour as her first choice and applied it to the centre, where a round shape is placed. She coloured from the centre as similar to the previous sessions. She applied the rainbow colour for this session as well. However, she did not uniformly apply the rainbow colours' sequence. All the colours are placed and spread evenly throughout the mandala. JX did not merely pick and apply colours randomly throughout the mandala. During the moment when she needs to select a new colour, she paused and scrutinized the colour pencils over fifteen seconds and made her decision. For this mandala, she arranged the colours accordingly where three, four and five colours separate pink in a sequence from the middle to the edge. It appears that pink colour is her favourite colour that she frequently used from the observations made. At the end of the session, she chose a light brown colour for the edge of the mandala.

JX was still avoiding the researcher in this session. The researcher attempted to start a conversation by saying, “How are you today?” However, JX kept her gaze to her mandala and uttered an unusual noise. Five minutes later, the researcher attempted another conversation and asked the same question. JX started demonstrating a new behaviour by humming a tune and looking at the opposite direction from the researcher. While she was humming a tune, she pounded her elbow on the table and waved her arm up and down. She demonstrated this behaviour for three minutes. When the researcher walked further from her seat, she finally stopped humming and resumed to do her work. When she calmed down, the researcher tried to start a conversation again while she was applying a pink colour onto her mandala. “ JX, what is the colour you use?” She answered “ pink,” but she still refused to make any eye contact with the researcher. She chuckled loudly and gazed at the researcher several times, but she still did not show much interest in having a further conversation. JX's first attempt having a conversation with the researcher was short, but she answered accurately. When she attempts to initiate a simple conversation related to her interest in a pink colour, she might be able to foster her SIS.

4.3.4 MAT: Session 4

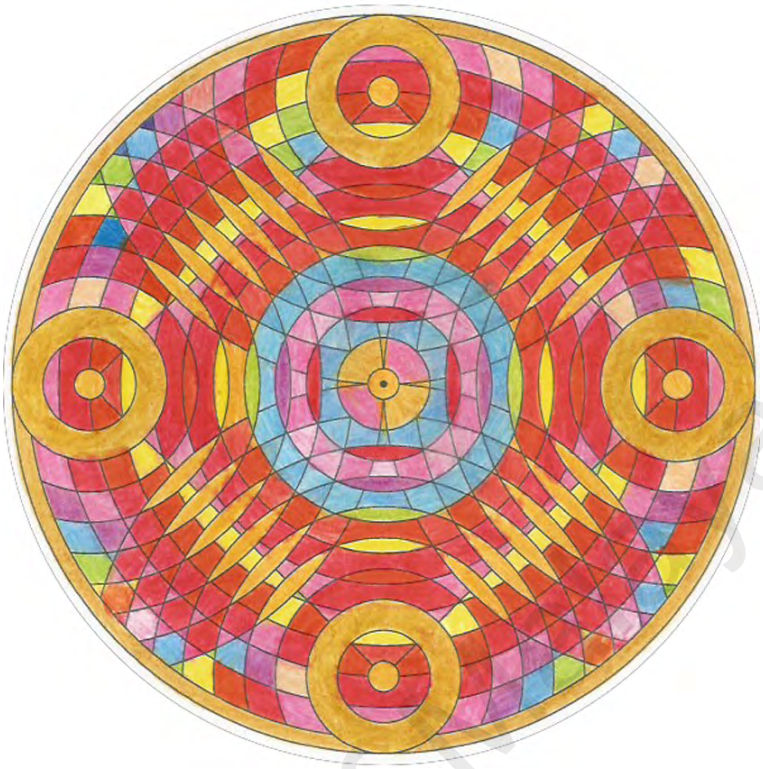

Figure 4.16: Sample 2 - JX's MAT session 4

JX took approximately one minute to select the colour that she prefers. She rocked her body back and forth while sitting, mumbling unknown words while she was interpreting the patterns in the mandala. As soon as she made her decision, she picked the light brown colour pencil to fill the round shape at the centre of the mandala. Although the design of the mandala was complicated, she did not disregard any contour lines. Every small shape was filled accordingly with an arranged order of her colour choices. JX chose to apply the rainbow colour to the edge part of the mandala. She arranged the rainbow colour in the similar sequence applied in session one and two. The red colour was applied intensively in the inner area of the mandala. Fincher (1991) described red as "the symbol of the energy we need to survive, the will to thrive, be healthy, and transform ourselves into greater inner wisdom."

JX displayed an exceptional focus throughout the session. A more complicated design of mandala given in this session led her displaying moments of hesitation to apply colours. However, her determined facial expression indicated her will to complete the mandala and finish it in time. Due to her utmost focus, she did not pay attention when the researcher and two teachers approached her. The researcher attempted to start a conversation by saying, “How are you doing today?" She did not answer the question, but she started to sing in a loud tone. The expression of her singing was bright as she lifted up her mandala and looked fixedly at her work. While JX was singing, she did not pound her elbow on the table. Fifteen minutes after the session started, she had difficulties to decide on the colour placement. Due to this stress, she started her elbow thumping behaviour, repeating it four times for three sets. After this behaviour ended, she took the colour pencils’ set and observed the selection of colours for fifteen seconds. She finally made a decision and chose a pink colour. When she was grasping onto the pink colour pencil, the researcher asked, “What colour are you holding, JX?” She looked at the colour pencil she was holding and kept quiet for five seconds. She diverted her gaze to her mandala and answered, “Pink.” Although she expressed an uncomfortable facial expression, she did not try hard to move away when the researcher came near to her space boundary. JX did not avoid the researcher while she was engaged in a simple conversation. JX seemed still uncomfortable towards the researcher although there is a slight improvement. When JX found a common word that interests her during the conversation with the researcher, she responded quite well. However, JX did not talk in a full sentence when she responded to the remarks given by the researcher.

4.3.5 MAT: Session 5

Figure 4.17: Sample 2 - JX's MAT session 5

A simple design of mandala was given to JX during this session. She chose a red colour as her first choice and applied it to the outer layer of the round shape located on the upper section of the mandala. She applied the same colour to the five round-shapes that encircled the mandala in a regular order. It was the first time she coloured with the same colour pencil systematically for the same shapes. JX usually keeps changing her colour pencils to fill the shapes next to each other. For this mandala, JX chose a grey colour for the first time since session one. The grey colour was applied to the thin layer, which is the edge of the mandala.

When the researcher came into the room, JX was glancing towards the direction of the researcher. The researcher deliberately did not look at her for the first ten minutes of the session. During the time, JX occasionally glanced towards the researcher a few

times. The researcher attempted to start a conversation without looking in her direction. The researcher said, "Hello, JX" without making any eye contact. JX turned her head to the opposite direction from the researcher upon hearing the greetings from the researcher. JX started to sing loudly in a high-pitched tone while pounding her elbow onto the table for one minute. Until now, JX expressed anxiety with the presence of the researcher. However, she started to give a quick and brief glance to the researcher when he is not looking at her. When JX chose a grey colour as the last choice, she demonstrated her elbow thumping behaviour, i.e. repeating it four times in three sets in a period of one minute. After she applied the grey colour to the edge of the mandala, she raised the mandala sheet to her eye level and looked at it for thirty seconds. In the thirty seconds of scrutinising her work, her facial expression appears to be emotionless. Upon completing the mandala, the researcher asked her from a distance, "Do you like your mandala, JX?" She kept quiet for ten seconds and finally uttered, "yes" in a low voice. JX still did not make any eye contact during this session. JX showed her curiosity towards the researcher several time by glancing at him. She responded by singing a tune when the researcher greeted her. Although it is not a norm for individuals to respond to other's greeting by singing, JX's non-verbal communication mode signifies her own personal way of SIS.

4.3.6 MAT: Session 6

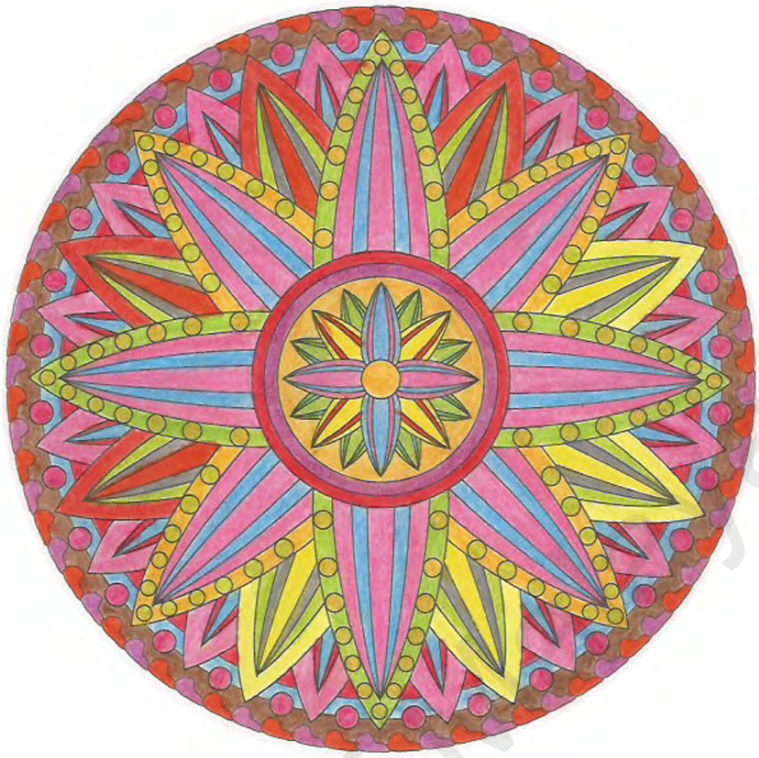

Figure 4.18: Sample 2 - JX's MAT session 6

The mandala for this session is more complicated compared to the previous mandalas. JX took a longer time to select her colour pencils than usual. She selected a yellow colour and applied it to the centre of the mandala. The colour placement that JX made for this mandala had a slight difference compared to the previous mandalas. JX consistently spread the colours evenly from the centre to the edge of the mandala. However, the third layer of the petals that surrounded the round shape in the centre was coloured with an orange and a yellow colour. The combination of orange and yellow colours may reflect her calmness and joy. Although the mandala consisted of complicated details, she did not disregard any shapes and contour lines. She made an effort to fill in all the shapes with the rainbow spectrum of colours.

At the beginning of the session, JX was sitting in an upright posture as if she was ready to carry out a task. As soon as the researcher appeared in the room, she started to sing in the manner that her words were unclear except for the word “hello.” When the researcher approached her to hand out the mandala sheet, she stopped singing and pounded her elbow on the table once and kept quiet. While the researcher handed out the mandala sheet to the others, she continued singing for two minutes. As she paid more attention to the mandala, she stopped singing and took one minute to interpret and plan the colour placement. She was able to colour for ten minutes continuously. However, her facial expression changed when she faced difficulties to make a decision due to the complexity of the design. She started to pound her elbow again with longer repetitions of four times. She stopped colouring and sang again while thumping her elbow for two minutes. After this repetitive behaviour ended, she gazed to the pencil colour box for ten seconds and selected a pink colour. She continued to work on her mandala until she completed it. When the researcher approached her to retrieve the mandala sheet, she does not demonstrate a rigid body posture. She handed the mandala sheet while making brief eye contact with the researcher. JX level of insecurity appeared to decrease gradually with the continuous presence of the researcher throughout the mandala therapy sessions. JX showed very slow progress on her SIS, but she finally made eye contact with the researcher although it is a brief one.

4.3.7 MAT: Session 7

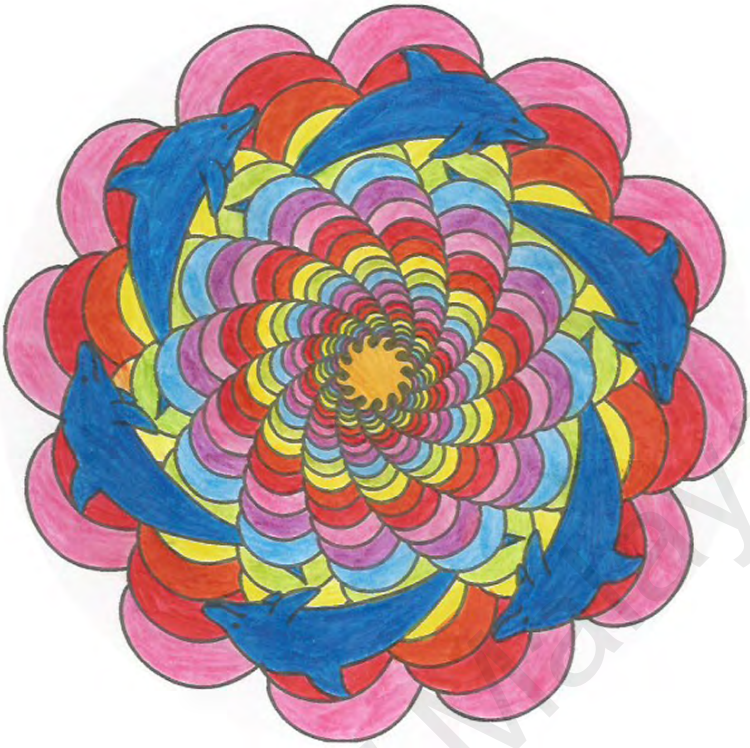

Figure 4.19: Sample 2 - JX's MAT session 7

JX was given a selection of mandalas with animal images for this session. There is a choice of images of animals such as the swan, tiger, owl, butterfly, and dolphin. She chose the mandala having dolphin images and started colouring with a darker yellow colour to the centre of the mandala. She followed next by colouring on the dolphin images with a blue colour. The background of the mandala was filled with the rainbow colours, where she coloured from the centre of the mandala towards the edge.

JX was noticeably happy and enthusiastic during this session. When the researcher asked JX to choose her favourite mandala with animal image, she reacted with excitement. She showed a gesture of joy by shaking her head side-to-side rapidly and raising her arm above her head. The researcher asked JX a question, “Which animals do you like, JX?” while showing the selection of mandalas with animal images. She chuckled with a high-pitch and shouted out delightfully, “Dolphin! Dolphin!” She then

jumped while chanting the words “dolphin! Oh yeah!” repeating the words several times. When she finally stopped jumping, she walked towards the researcher and took the mandala having dolphin images. She did not have a rigid body posture when she approached the researcher on her own to obtain the mandala. When she came back to her seat, she started working on the mandala immediately. She was smiling and giggling continuously from the beginning until the moment she completed the mandala. She gazed at her mandala and took a moment to adore it. When she felt happy with her work, she placed the mandala back on the table and looked towards the researcher’s direction. She made brief eye contact with the researcher. She was exhibiting lesser repetitive behaviour such as elbow thumping for this session.

4.3.8 MAT: Session 8

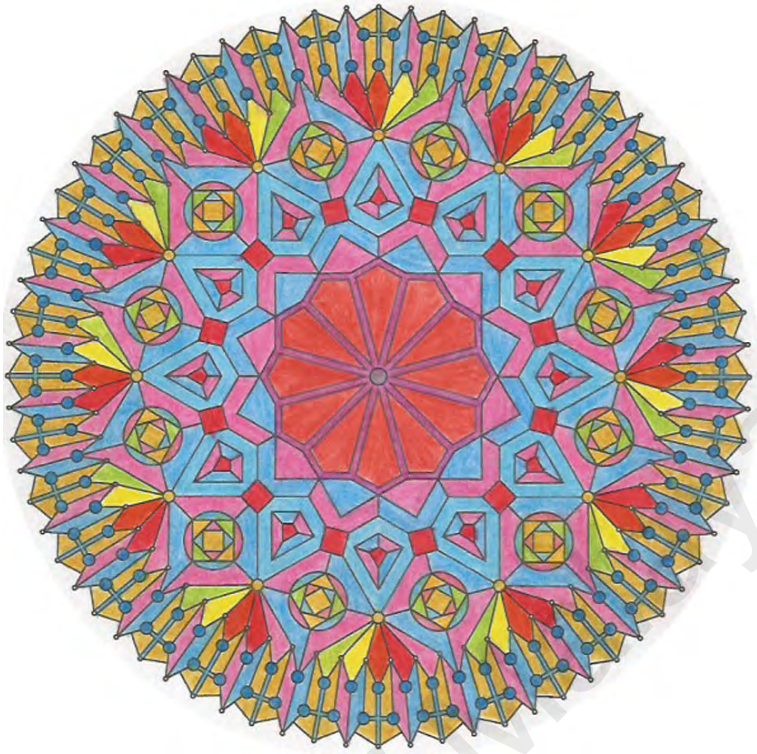

Figure 4.20: Sample 2 - JX's MAT session 8

JX started this session with excitement when she saw that the mandala for this session consists of numerous details. She began applying a pink colour to the outline of the twelve kite-shaped figure that encircled a tiny circle shape in the centre of the mandala. Her initiation to begin at the centre part of the mandala showed that she is relaxed and possessed self-assertion to her colour choice. She then applied a red colour to the twelve kite-shaped figure in the centre of the mandala. The blue colour is applied dominantly in the inner area of the mandala. Even though the patterns of the mandala for this session consisted of numerous details, she did not neglect any contour lines. All the small shapes were filled with a systematic order of her colour choices.

As soon as JX entered the MAT session room, she walked towards to the researcher and grabbed his wrist and jumped up and down while yelling “Dolphin! Dolphin! Oh yeah!” for few times. JX’s behaviour was interpreted as she was reminded of the joy

that she felt while colouring the mandala of dolphin images on her previous session. She released the researcher's wrist and pointed to few mandalas on the table. The researcher asked her, "Would you like to choose the mandala you will work on today?" JX replied in a firm tone, "Yes!" Her behaviour to approach and initiate physical contact indicated that she felt comfortable with the researcher. After selecting her preferred mandala, she returned to her seat and began to work on the mandala immediately. JX took a longer time to complete the mandala for this session, as it has a more complicated design as compared to the mandalas in the previous sessions. After fifty minutes, she completed the mandala, and she stood up and jumped with joy. She finally approached the researcher and submitted the mandala on her own without the researcher asking her to submit. On the way to her seat, she jumped and sang in a high-pitched voice as a sign of celebration that she has completed her mandala. It was observed that JX's SIS improved when she expressed the positive state of mind.

4.3.9 MAT: Session 9

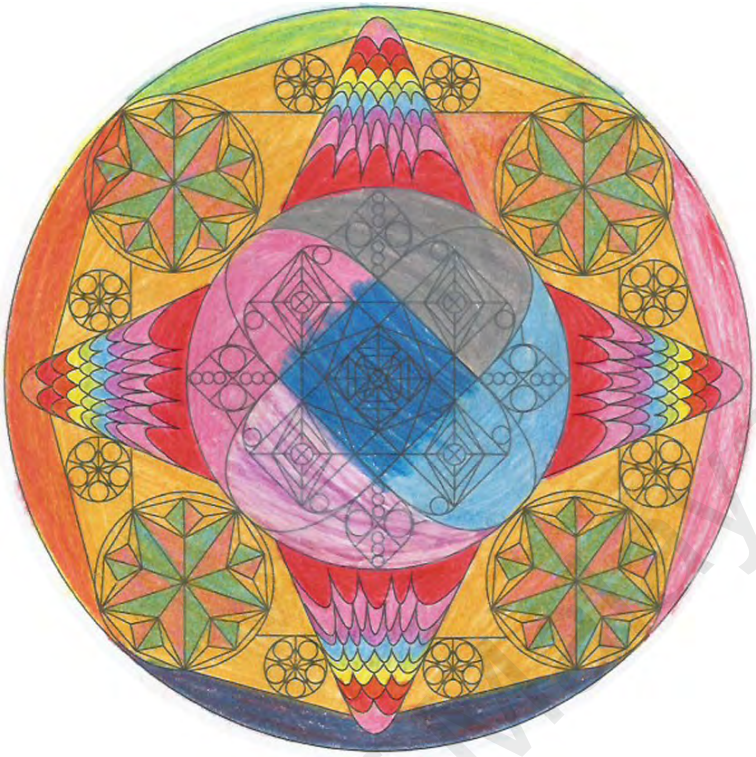

Figure 4.21: Sample 2 - JX's MAT session 9

JX showed a deadpan facial expression when she entered the MAT session room. She started to work immediately as soon as she was given the mandala. She chose a pink colour and applied it to the tip of the cone shapes of four that are located at the top, bottom, left, and right sides of the mandala. She started to colour each layer of the cones with the rainbow colours. All the frilled layers located on the top, bottom, left, and right sides of the mandala were given the identical rainbow colours' combination. Next, she applied a combination of pink and blue colours to the four-star shapes located in between the four cone shapes of the mandala. While JX was immersed in her work, her mother came and looked through the classroom's window from outside of the session room. JX saw her mother when she lifted her head to pick a different colour pencil. After she saw her mother, she chose a grey colour and applied it to the top-right side of the round shape in the centre of the mandala. She continued to fill the round shape with colours of a light blue, a pink, a white and a purple (JX tried to blend white and purple

together) with the rough stroke. She left the diamond shape in the centre area blank and proceeded to the background part and coloured with a light brown. JX's behaviour was exceptionally unusual, as she did not colour small details at all. She was neglecting the details in the background, which she did not normally do on previous MAT sessions. She coloured a light brown colour to overlap the pink and blue colours that were coloured earlier for the four-star shapes. On the edge parts of the mandala, she applied two colours, i.e. orange and yellow on the left, blue and red on the bottom, white and pink on the right, and yellow and green on the top. Lastly, she took indigo blue and applied it to the diamond shape in the centre part of the mandala with the rough stroke.

Earlier, the two teachers met JX's mother and found out that there was an incident that happened at JX's home and they mentioned this to the researcher. The day before session eight was held, JX's mother insisted that JX finish her academic homework before she could start her colouring activity. However, JX refused to listen to her mother. As a result, her mother kept the art paper and colour pencils away and out of her sight. The incident upset her, and she showed her frustration by throwing a chair on the floor. JX's mother reported to the two teachers that JX was in a gloomy mood ever since the incident happened. JX's mother came to the special development centre for an appointment with the centre's principal on the same day session eight was held. When JX saw her mother peeking at her through the window, her repetitive behaviour occurred as she pounded her elbow on the table four times each for several sets. At the time when she applied indigo blue to the diamond shape, she pounded her elbow once more for four times, even stronger than before. JX's application of indigo blue in a rough stroke manner in the centre of the mandala may indicate her anger towards her mother still remains. Fincher (1991) stated, "The colour blue is linked with the feminine, especially the aspects of the archetype of the mother." JX carried the stress

she faced from her home to the classroom, as a result averting her strong tendency of colouring normally. It is a remarkable finding that her state of emotion can be reflected clearly on her mandala. JX's SIS can be seen through her colouring skills.

4.3.10 MAT: Session 10

Figure 4.22: Sample 2 - JX's MAT session 10

When JX walked into the room, she ran her fingers through her hair anxiously. She continued doing so repeatedly for five minutes. As soon as she saw the choice of mandala designs in front of her, she stopped her action of running her fingers through her hair. She briefly looked at every mandala and picked out one quickly. She picked a pink colour and began to apply colour to the leaf shapes at the edge of the mandala. She continued with the usage of pink colour to the edge of the flower shape located at the inner area of the mandala. The thin layer at the edge of the flower shape was coloured with a brown colour. JX maintained focus as she applied a blue colour to the leaf shapes at the edge of the mandala and followed by the application of a light brown colour at the background of the mandala. When she finished colouring the background of the mandala, she started to run her fingers through her hair again. She continued applying the colours of green, light brown and a red colour to the inner parts of the mandala that had petals attached to the twelve-pointed star in the middle. The researcher tried to have

a conversation with her by mentioning about her hair. She showed a despondent facial expression when she heard the researcher said, “Your hair looks good today, JX.” She started to colour a grey colour with rough stroke on the petal shapes at the inner area of the mandala. It was followed by the application of colours consisting of a light brown, a red and a purple in the petals formation and twelve-pointed star with rough strokes. She started to disregard the details in the petals formation and twelve-pointed star, as similar to her behaviour on the previous session.

JX came to the room for the session with a new haircut. She was showing the same despondent expression as compared to session nine. The two teachers informed the researcher that due to the incident that happened last week, she persisted showing frustration to her mother by cutting her hair. Her mother had no choice but took JX to the hair saloon for trimming her hair short. The two teachers said that JX prefers having a hairstyle with a longer length. It may be the reason that she was in a despondent expression when she came into the room. The researcher tried to divert her attention from her hair by asking her to choose the selection of mandalas that was provided. She finally showed a streak of motivation and started to colour the mandala. She did not apply the rainbow colours that she used to apply in the previous sessions. She was able to keep herself calm and work with the mandala continuously for twenty minutes. However, as soon as the researcher talked about her hair, she started to show anxious facial expression. She did not look at the researcher and started to hum in a flat, toneless voice while making rough stroke towards the end of her MAT session. As she is about to complete the mandala, she raised her voice and squealed in a high-pitched noise. JX still carried the stress as a result averting her strong tendency of colouring normally. It is a remarkable finding that her state of emotion can be reflected clearly on her mandala. JX’s SIS can be seen through her colouring skills.

4.3.11 MAT: Session 11

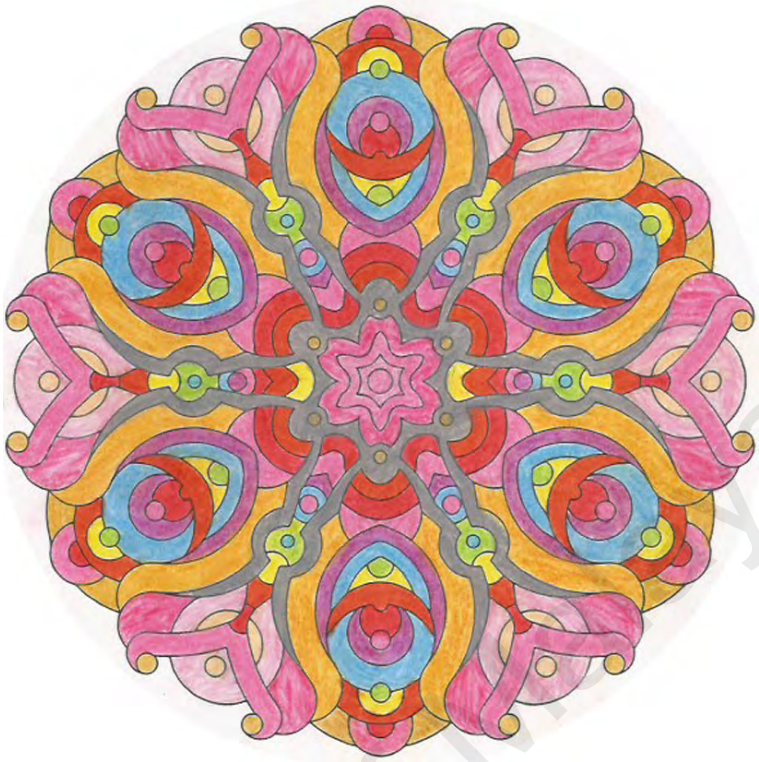

Figure 4.23: Sample 2 - JX's MAT session 11

JX showed a significant improvement during this session as compared to sessions nine and ten. Her facial expression was blissful and she was excited to begin colouring on her mandala. The first colour that she picked was a pink colour, and she coloured it to the centre of the mandala. JX gradually applied a consistent colour arrangement from the centre to the edge of the mandala. She applied the rainbow colour to the organic patterns in the mandala with an orderly sequence. Although JX was in a blissful mood at this session, she still picked a grey colour pencil to apply to her mandala with a smooth stroke. It was believed that the application of grey colour to her mandala may signify the affected emotion that may still reside deep in her psyche but the assumption might be wrong.

JX was in a blissful and cheerful mood during this session. She arrived at the room wearing a pink-coloured hairpin attached to her hair. When she walked into the room, she was smiling broadly and approached the researcher immediately. She stood in front of the researcher and pointed at her pink-coloured hairpin. The researcher responded, “The pink hairpin suits very well with your hair, JX!” She jumped in delight upon hearing the researcher’s comment on her new hairpin. The two teachers explained that her mother had stopped insisting that JX do her academic work at home. Her mother allowed JX to do the colouring activities for the entire day instead. Her mother took her to the shopping mall and bought hair accessories for JX to cheer her up. She picked a pink colour pencil and pointed the pencil at her hairpin and yelled, "Pink! Pink!" She stood up and walked towards the researcher and took his hand and danced along to the tune of her singing. It built cohesion and paved the way for a better rapport between her and the researcher. After she completed the mandala, she went towards the researcher again and held his hands and started singing cheerfully. It represented a significant milestone in the therapy, as JX’s level of security towards the researcher increased. The whole session for the day showed that JX was having a good and positive sentiment of herself reflected by her smile, her cheerful gesture, and her association with the pink hairpin. JX’s gestures, blissful mood, and positive responses towards the researcher signified that she could show an appropriate manner of SIS.

4.3.12 MAT: Session 12

Figure 4.24: Sample 2 - JX's MAT session 12

JX was given a flower-shaped mandala for this session. She appeared to be delighted when she saw the pre-drawn mandala. A pink colour pencil was chosen as her first choice, and she coloured at the centre of the mandala with it. After that, she coloured the nine petals that were located on the edge of the mandala. The rainbow colours were applied to the fish-scale patterns that were drawn in the nine petals. She did not arrange the rainbow colour in the original sequence. However, rainbow colours are applied in an orderly manner between the seven elongated petals shape in the centre area of the mandala. The use of primary colours in JX's mandala is significant as it symbolises the emotional stability that JX was experiencing in this session.

She showed excitement that the mandala handed out was pre-drawn with a flower shape. She started to sing with a chant that recited the words “flower,” “pink,” and “oh yeah!” When the researcher was standing next to JX, she leaned forward and sniffed the

researcher's hand. As JX rarely initiated physical contact, this non-verbal behaviour was interpreted as a significant means of communication. JX wanted to express this manner as having an interaction with the researcher. The two teachers informed the researcher that JX would sniff the hands of the people whom she felt safe, hence validating her behaviour. The researcher asked her, "Do you like mandala therapy?" Upon hearing this, she jumped out from her seat and shouted cheerfully, "Yes! Mandala I like! I like!" Up to this session, JX was still exhibiting the repetitive behaviour of elbow thump on the table. She improved on making eye contact with the researcher for three seconds, while she was holding his hand. Although JX has limited use of words for communication, her gestures and facial expression demonstrated that mandala therapy session provided her with a safe environment to express her emotions. JX managed to construct a sentence with fours words that makes the longest sentence over the twelve MAT sessions. Even though at times her behaviour was inappropriate as for normal SIS, but this is the manner that she connected to people that she finds comfortable with. This is her way of SIS by far found in the progress of MAT sessions.

4.3.13 Summary: MAT of Sample 2 - JX

In an overview, JX was able to convey the current emotional state that she was experiencing in every session. She possesses an exceptionally high skill in colour usage, however academic subjects do not appeal to her. JX has limited use of words for communication. However, the researcher was able to interpret her current emotional state through nonverbal communication such as body language and facial expressions. She highly favoured a pink colour and was inflexible with the colour sequence of the rainbow that she created. She has very rigid behaviour in the manner that a disrupted routine will make her upset and anxious. Through the end of the MAT sessions, JX managed to participate in a mini art exhibition in the special development centre. The event gave her an opportunity to display her artworks. Therefore, considering that JX

possesses an exceptionally high skill in colouring, it would be beneficial to encourage JX to carry on her interests in art that will help her to further develop her skills in the future. If she developed her art skills that can be transformed in art works that can be displayed for public viewing, this would enhance her exposure to SIS.

JX's sequence of colour choices, dominant colours used, placement of the first colour, comparison of AQ score, and absolute evaluation and relative evaluation chart are shown in the tables below.

Table 4.6: Sample 2 - JX's sequence of colour choices

Table 4.7: Dominant colours in Sample 2 - JX's mandala

Table 4.8: Placement of initial colour in Sample 2 - JX's mandala

Table 4.9: Comparison of AQ score (before and after the MAT sessions)

Table 4.10: Absolute evaluation and relative evaluation chart of MAT

Table 4.6: Sample 2 - JX's sequence of colour choices

Colour / Session	First choice	Second choice	Third choice
1	Pink	Orange	Red
2	Light brown	Pink	Red
3	Pink	Blue	Orange
4	Light brown	Pink	Blue
5	Red	Orange	Yellow
6	Yellow	Pink	Blue
7	Yellow	Indigo blue	Red
8	Pink	Red	Blue
9	Pink	Red	Orange
10	Pink	Brown	Blue
11	Pink	Red	Orange
12	Pink	Red	Blue
Total	1. Pink – 7 2. Light brown – 2 3. Yellow – 2 4. Red – 1	1. Red – 4 2. Pink – 3 3. Orange – 2 4. Blue – 1 5. Indigo blue – 1 6. Brown – 1	1. Blue – 5 2. Red – 3 3. Orange – 3 4. Yellow – 1
Percentage	Pink: 58.33%	Red: 33.33%	Blue: 41.66%
Remarks	The result showed 58.33% in the selection of pink colour for JX's first choice, 33.33% in the selection of red colour for the second choice, and 41.66% in the selection of blue colour for the third choice. From this observation, it can be concluded that JX preferred to choose a pink colour as her primary choice, followed by red and blue. On the whole, JX colour choice was primarily based on the rainbow colours in the twelve mandalas he produced. However, the usage of the indigo blue by JX in her mandala may require further observation as she uses indigo blue at times when she was feeling distressed. Her behaviour on session nine may provide further insight into her colour choice of indigo blue.		

Table 4.7: Dominant colours in Sample 2 - JX's mandala

Colour / Session	Dominant	Subdominant
1	Red	Orange
2	Red	Brown
3	Red	Pink/Yellow
4	Red	Brown
5	Red	Pink/Brown
6	Pink	Red
7	Indigo blue	Pink
8	Red	Blue/Pink
9	Indigo blue	Brown
10	Pink	Brown
11	Pink	Brown/Red/Blue
12	Red	Brown
Total	1. Red – 7 2. Pink – 3 3. Indigo blue – 2	1. Brown – 7 2. Pink – 4 3. Blue – 2 4. Red – 2 5. Orange – 1 6. Yellow – 1
Percentage	Red: 58.33%, Pink: 25.00%	Brown: 58.33%, Pink: 33.33%
Remarks	The result showed 58.33% of the red colour dominance throughout the twelve mandalas that JX created. The brown colour falls in the subdominant category with the percentage of 58.33%. As pink 25.00% for the dominant colour, the symbolization of red and pink may relate well to the psyche state of JX.	

Table 4.8: Placement of initial colour in Sample 2 - JX's mandala

Position / Session	North	South	East	West	Centre	Edge
1					✓	
2					✓	
3					✓	
4					✓	
5	✓					
6					✓	
7					✓	
8					✓	
9						✓
10						✓
11					✓	
12					✓	
Total	1	0	0	0	9	2
Percentage	8.33%	0%	0%	0%	75.00%	16.66%
Remarks	As shown in the data above, the percentage that JX chose the centre of the mandala as the initial placement of her colour choice is 75.00%. The initial placement of her colour choice is also a strong indication of her current emotion, as seen in the initial placement of colour for session nine and ten were at the edge, where she had a distressing emotion at the current time.					

Table 4.9: Comparison of AQ score (before and after the MAT sessions)

Score / Area	Before	After	Variance
Social skills	10	10	0
Attention switching	8	7	-1(2%)
Attention to detail	3	3	0
Communication	10	10	0
Imagination	7	7	0
Total	38(76%)	37(74%)	-1(2%)
Remarks	The data above showed that JX had improved in the field of attention switching. In the field of attention switching, one item had improved, which is, "S/he frequently gets so strongly absorbed in one thing that s/he loses sight of other things." For this one item, JX was extremely absorbed to apply the rainbow colour that she had formulated in an orderly sequence. However, towards the end of the mandala therapy sessions, she was still applying the rainbow colour formation, but she was able to change the sequence of the rainbow colours without rigidly following its original sequence.		

Table 4.10: Absolute evaluation and relative evaluation chart of MAT

Behaviour / Session	Concentration	Distraction	Relative evaluation
Session 1 to 6	24 minutes	4 minutes	6
Session 7 to 12	25 minutes	3 minutes	8.33
Changes	+ 1 minutes	- 1 minutes	2.33
Remarks	The first half of the session (1 to 6): concentration 24 minutes versus distraction 4 minutes: the ratio of absolute evaluation 24 by 4 (relative evaluation ≥6). Second half session (7 to 12): concentration 25 minutes versus distraction 3 minutes: the ratio of absolute evaluation 25 by 3 (relative evaluation 8.33≤) improved by 2.33 (relative evaluation changes (8.33-6)÷6) = 38.83%		

4.4 Data Analysis of Autism-Spectrum Quotient (AQ) Score

Table 4.11: AQ test result for Sample 1 - BR before the MAT sessions

	Social skills	**Score**
1	S/he prefers to do things with others rather than on her/his own.	0
2	S/he finds social situations easy.	0
3	S/he would rather go to a library than a party.	0
4	S/he finds her/himself drawn more strongly to people than to things.	1
5	S/he finds it hard to make new friends.	0
6	S/he finds it easy to work out what someone is thinking or feeling just by looking at his or her face.	1
7	S/he enjoys social occasions.	1
8	S/he finds it difficult to work out people's intentions.	1
9	S/he enjoys meeting new people.	1
10	S/he is a good diplomat.	1
	Total score	**6**

	Attention switching	**Score**
1	S/he prefers to do things the same way over and over again.	1
2	S/he frequently gets so strongly absorbed in one thing that s/he loses sight of other things.	1
3	In a social group, s/he can easily keep track of several different people's conversations.	0
4	S/he tends to have very strong interests, which s/he gets upset about if s/he can't pursue.	1
5	It does not upset him/her if his/her daily routine is disturbed.	0
6	S/he finds it easy to do more than one thing at once.	1
7	S/he enjoys doing things spontaneously.	1
8	If there is an interruption, s/he can switch back to what s/he was doing very quickly.	1
9	S/he likes to plan any activities s/he participates in carefully.	0
10	New situations make him/her anxious.	1
	Total score	**7**

	Attention to detail	**Score**
1	S/he often notices small sounds when others do not.	1
2	S/he usually notices car number plates or similar strings of information.	0
3	S/he is fascinated by dates.	0
4	S/he tends to notice details that others do not.	1
5	S/he is fascinated by numbers.	0
6	S/he notices patterns in things all the time.	1
7	S/he usually concentrates more on the whole picture, rather than the small details.	1
8	S/he is not very good at remembering phone numbers.	0
9	S/he doesn't usually notice small changes in a situation, or a person's appearance.	1

10	S/he is not very good at remembering people's date of birth.	1
	Total score	**6**

	Communication	**Score**
1	Other people frequently tell her/him that what s/he has said is impolite, even though s/he thinks it is polite.	1
2	S/he enjoys social chit-chat.	0
3	When s/he talks, it isn't always easy for others to get a word in edgeways.	0
4	S/he frequently finds that s/he doesn't know how to keep a conversation going.	1
5	S/he finds it easy to "read between the lines" when someone is talking to her/him.	0
6	S/he knows how to tell if someone listening to him/her is getting bored.	1
7	When s/he talks on the phone, s/he is not sure when it's her/his turn to speak.	1
8	S/he is often the last to understand the point of a joke.	1
9	S/he is good at social chit-chat.	1
10	People often tell her/him that s/he keeps going on and on about the same thing.	1
	Total score	**7**

	Imagination	**Score**
1	If s/he tries to imagine something, s/he finds it very easy to create a picture in her/his mind.	1
2	When s/he is reading a story, s/he can easily imagine what the characters might look like.	0
3	S/he finds making up stories easy.	0
4	When s/he is reading a story, s/he finds it difficult to work out the characters' intentions.	1
5	S/he doesn't particularly enjoy reading fiction.	1
6	S/he would rather go to the theatre than a museum.	0
7	When s/he was younger, s/he used to enjoy playing games involving pretending with other children.	1
8	S/he likes to collect information about categories of things (e.g. types of car, types of bird, types of train, types of plant, etc.).	1
9	S/he finds it difficult to imagine what it would be like to be someone else.	1
10	S/he finds it very to easy to play games with children that involve pretending.	1
	Total score	**7**

Overall total score: 33

Table 4.12: AQ test result for Sample 1 - BR after the MAT sessions

	Social skills	Score
1	S/he prefers to do things with others rather than on her/his own.	0
2	S/he finds social situations easy.	0
3	S/he would rather go to a library than a party.	0
4	S/he finds her/himself drawn more strongly to people than to things.	1
5	S/he finds it hard to make new friends.	0
6	S/he finds it easy to work out what someone is thinking or feeling just by looking at his or her face.	1
7	S/he enjoys social occasions.	1
8	S/he finds it difficult to work out people's intentions.	1
9	S/he enjoys meeting new people.	1
10	S/he is a good diplomat.	1
	Total score	**6**

	Attention switching	Score
1	S/he prefers to do things the same way over and over again.	1
2	S/he frequently gets so strongly absorbed in one thing that s/he loses sight of other things.	1
3	In a social group, s/he can easily keep track of several different people's conversations.	0
4	S/he tends to have very strong interests, which s/he gets upset about if s/he can't pursue.	1
5	It does not upset him/her if his/her daily routine is disturbed.	0
6	S/he finds it easy to do more than one thing at once.	1
7	S/he enjoys doing things spontaneously.	1
8	If there is an interruption, s/he can switch back to what s/he was doing very quickly.	1
9	S/he likes to plan any activities s/he participates in carefully.	0
10	New situations make him/her anxious.	1
	Total score	**7**

	Attention to detail	Score
1	S/he often notices small sounds when others do not.	1
2	S/he usually notices car number plates or similar strings of information.	0
3	S/he is fascinated by dates.	0
4	S/he tends to notice details that others do not.	1
5	S/he is fascinated by numbers.	0
6	S/he notices patterns in things all the time.	1
7	S/he usually concentrates more on the whole picture, rather than the small details.	1
8	S/he is not very good at remembering phone numbers.	0
9	S/he doesn't usually notice small changes in a situation, or a person's appearance.	1
10	S/he is not very good at remembering people's date of birth.	1
	Total score	**6**

	Communication	Score
1	Other people frequently tell her/him that what s/he has said is impolite, even though s/he thinks it is polite.	1
2	S/he enjoys social chit-chat.	0
3	When s/he talks, it isn't always easy for others to get a word in edgeways.	0
4	S/he frequently finds that s/he doesn't know how to keep a conversation going.	1
5	S/he finds it easy to "read between the lines" when someone is talking to her/him.	0
6	S/he knows how to tell if someone listening to him/her is getting bored.	1
7	When s/he talks on the phone, s/he is not sure when it's her/his turn to speak.	1
8	S/he is often the last to understand the point of a joke.	1
9	S/he is good at social chit-chat.	1
10	People often tell her/him that s/he keeps going on and on about the same thing.	0
	Total score	**6**

	Imagination	Score
1	If s/he tries to imagine something, s/he finds it very easy to create a picture in her/his mind.	1
2	When s/he is reading a story, s/he can easily imagine what the characters might look like.	0
3	S/he finds making up stories easy.	0
4	When s/he is reading a story, s/he finds it difficult to work out the characters' intentions.	1
5	S/he doesn't particularly enjoy reading fiction.	1
6	S/he would rather go to the theatre than a museum.	0
7	When s/he was younger, s/he used to enjoy playing games involving pretending with other children.	1
8	S/he likes to collect information about categories of things (e.g. types of car, types of bird, types of train, types of plant, etc.).	1
9	S/he finds it difficult to imagine what it would be like to be someone else.	1
10	S/he finds it very to easy to play games with children that involve pretending.	1
	Total score	**7**

Overall total score: 32

Table 4.13: AQ test result for Sample 2 - JX before the MAT sessions

	Social skills	Score
1	S/he prefers to do things with others rather than on her/his own.	1
2	S/he finds social situations easy.	1
3	S/he would rather go to a library than a party.	1
4	S/he finds her/himself drawn more strongly to people than to things.	1
5	S/he finds it hard to make new friends.	1
6	S/he finds it easy to work out what someone is thinking or feeling just by looking at his or her face.	1
7	S/he enjoys social occasions.	1
8	S/he finds it difficult to work out people's intentions.	1
9	S/he enjoys meeting new people.	1
10	S/he is a good diplomat.	1
	Total score	**10**

	Attention switching	Score
1	S/he prefers to do things the same way over and over again.	1
2	S/he frequently gets so strongly absorbed in one thing that s/he loses sight of other things.	1
3	In a social group, s/he can easily keep track of several different people's conversations.	1
4	S/he tends to have very strong interests, which s/he gets upset about if s/he can't pursue.	1
5	It does not upset him/her if his/her daily routine is disturbed.	1
6	S/he finds it easy to do more than one thing at once.	1
7	S/he enjoys doing things spontaneously.	0
8	If there is an interruption, s/he can switch back to what s/he was doing very quickly.	1
9	S/he likes to plan any activities s/he participates in carefully.	0
10	New situations make him/her anxious.	1
	Total score	**8**

	Attention to detail	Score
1	S/he often notices small sounds when others do not.	0
2	S/he usually notices car number plates or similar strings of information.	0
3	S/he is fascinated by dates.	0
4	S/he tends to notice details that others do not.	1
5	S/he is fascinated by numbers.	0
6	S/he notices patterns in things all the time.	1
7	S/he usually concentrates more on the whole picture, rather than the small details.	1
8	S/he is not very good at remembering phone numbers.	0
9	S/he doesn't usually notice small changes in a situation, or a person's appearance.	0
10	S/he is not very good at remembering people's date of birth.	0
	Total score	**3**

	Communication	Score
1	Other people frequently tell her/him that what s/he has said is impolite, even though s/he thinks it is polite.	1
2	S/he enjoys social chit-chat.	1
3	When s/he talks, it isn't always easy for others to get a word in edgeways.	1
4	S/he frequently finds that s/he doesn't know how to keep a conversation going.	1
5	S/he finds it easy to "read between the lines" when someone is talking to her/him.	1
6	S/he knows how to tell if someone listening to him/her is getting bored.	1
7	When s/he talks on the phone, s/he is not sure when it's her/his turn to speak.	1
8	S/he is often the last to understand the point of a joke.	1
9	S/he is good at social chit-chat.	1
10	People often tell her/him that s/he keeps going on and on about the same thing.	1
	Total score	**10**

	Imagination	Score
1	If s/he tries to imagine something, s/he finds it very easy to create a picture in her/his mind.	1
2	When s/he is reading a story, s/he can easily imagine what the characters might look like.	1
3	S/he finds making up stories easy.	1
4	When s/he is reading a story, s/he finds it difficult to work out the characters' intentions.	1
5	S/he doesn't particularly enjoy reading fiction.	0
6	S/he would rather go to the theatre than a museum.	0
7	When s/he was younger, s/he used to enjoy playing games involving pretending with other children.	1
8	S/he likes to collect information about categories of things (e.g. types of car, types of bird, types of train, types of plant, etc.).	0
9	S/he finds it difficult to imagine what it would be like to be someone else.	1
10	S/he finds it very to easy to play games with children that involve pretending.	1
	Total score	**7**

Overall total score: 38

Table 4.14: AQ test result for Sample 2 - JX after the MAT sessions

	Social skills	Score
1	S/he prefers to do things with others rather than on her/his own.	1
2	S/he finds social situations easy.	1
3	S/he would rather go to a library than a party.	1
4	S/he finds her/himself drawn more strongly to people than to things.	1
5	S/he finds it hard to make new friends.	1
6	S/he finds it easy to work out what someone is thinking or feeling just by looking at his or her face.	1
7	S/he enjoys social occasions.	1
8	S/he finds it difficult to work out people's intentions.	1
9	S/he enjoys meeting new people.	1
10	S/he is a good diplomat.	1
	Total score	**10**

	Attention switching	Score
1	S/he prefers to do things the same way over and over again.	1
2	S/he frequently gets so strongly absorbed in one thing that s/he loses sight of other things.	1
3	In a social group, s/he can easily keep track of several different people's conversations.	1
4	S/he tends to have very strong interests, which s/he gets upset about if s/he can't pursue.	1
5	It does not upset him/her if his/her daily routine is disturbed.	0
6	S/he finds it easy to do more than one thing at once.	1
7	S/he enjoys doing things spontaneously.	0
8	If there is an interruption, s/he can switch back to what s/he was doing very quickly.	1
9	S/he likes to plan any activities s/he participates in carefully.	0
10	New situations make him/her anxious.	1
	Total score	**7**

	Attention to detail	Score
1	S/he often notices small sounds when others do not.	0
2	S/he usually notices car number plates or similar strings of information.	0
3	S/he is fascinated by dates.	0
4	S/he tends to notice details that others do not.	1
5	S/he is fascinated by numbers.	0
6	S/he notices patterns in things all the time.	1
7	S/he usually concentrates more on the whole picture, rather than the small details.	1
8	S/he is not very good at remembering phone numbers.	0
9	S/he doesn't usually notice small changes in a situation, or a person's appearance.	0
10	S/he is not very good at remembering people's date of birth.	0
	Total score	**3**

	Communication	Score
1	Other people frequently tell her/him that what s/he has said is impolite, even though s/he thinks it is polite.	1
2	S/he enjoys social chit-chat.	1
3	When s/he talks, it isn't always easy for others to get a word in edgeways.	1
4	S/he frequently finds that s/he doesn't know how to keep a conversation going.	1
5	S/he finds it easy to "read between the lines" when someone is talking to her/him.	1
6	S/he knows how to tell if someone listening to him/her is getting bored.	1
7	When s/he talks on the phone, s/he is not sure when it's her/his turn to speak.	1
8	S/he is often the last to understand the point of a joke.	1
9	S/he is good at social chit-chat.	1
10	People often tell her/him that s/he keeps going on and on about the same thing.	1
	Total score	**10**

	Imagination	Score
1	If s/he tries to imagine something, s/he finds it very easy to create a picture in her/his mind.	1
2	When s/he is reading a story, s/he can easily imagine what the characters might look like.	1
3	S/he finds making up stories easy.	1
4	When s/he is reading a story, s/he finds it difficult to work out the characters' intentions.	1
5	S/he doesn't particularly enjoy reading fiction.	0
6	S/he would rather go to the theatre than a museum.	0
7	When s/he was younger, s/he used to enjoy playing games involving pretending with other children.	1
8	S/he likes to collect information about categories of things (e.g. types of car, types of bird, types of train, types of plant, etc.).	0
9	S/he finds it difficult to imagine what it would be like to be someone else.	1
10	S/he finds it very to easy to play games with children that involve pretending.	1
	Total score	**7**

Overall total score: 37

Table 4.15: The Autism Spectrum Quotient (AQ) Scoring Key

	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
Communication				
1. Other people frequently tell her/him that what s/he has said is impolite, even though s/he thinks it is polite.			1	1
2. S/he enjoys social chit-chat.			1	1
3. When s/he talks, it isn't always easy for others to get a word in edgeways.	1	1		
4. S/he frequently finds that s/he doesn't know how to keep a conversation going.	1	1	1	
5. S/he finds it easy to "read between the lines" when someone is talking to her/him.			1	1
6. S/he knows how to tell if someone listening to him/her is getting bored.			1	1
7. When s/he talks on the phone, s/he is not sure when it's her/his turn to speak.	1	1		
8. S/he is often the last to understand the point of a joke.	1	1		
9. S/he is good at social chit-chat.			1	1
10. People often tell her/him that s/he keeps going on and on about the same thing.	1	1		
Social skill				
1. S/he prefers to do things with others rather than on her/his own.			1	1
2. S/he finds social situations easy.			1	1
3. S/he would rather go to a library than a party.	1	1		
4. S/he finds her/himself drawn more strongly to people than to things.			1	1
5. S/he finds it hard to make new friends.	1	1		

	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
6. S/he finds it easy to work out what someone is thinking or feeling just by looking at his or her face.			1	1
7. S/he enjoys social occasions.			1	1
8. S/he finds it difficult to work out people's intentions.	1	1		
9. S/he enjoys meeting new people.			1	1
10. S/he is a good diplomat.			1	1
Attention switching				
1. S/he prefers to do things the same way over and over again.	1	1		
2. S/he frequently gets so strongly absorbed in one thing that s/he loses sight of other things.	1	1		
3. In a social group, s/he can easily keep track of several different people's conversations.			1	1
4. S/he tends to have very strong interests, which s/he gets upset about if s/he can't pursue.	1	1		
5. It does not upset him/her if his/her daily routine is disturbed.			1	1
6. S/he finds it easy to do more than one thing at once.			1	1
7. S/he enjoys doing things spontaneously.			1	1
8. If there is an interruption, s/he can switch back to what s/he was doing very quickly.			1	1
9. S/he likes to plan any activities s/he participates in carefully.	1	1		
10. New situations make him/her anxious.	1	1		
Attention to detail				

	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
1. S/he often notices small sounds when others do not.	1	1		
2. S/he usually notices car number plates or similar strings of information.	1	1		
3. S/he is fascinated by dates.	1	1		
4. S/he tends to notice details that others do not.	1	1		
5. S/he is fascinated by numbers.	1	1		
6. S/he notices patterns in things all the time.	1	1		
7. S/he usually concentrates more on the whole picture, rather than the small details.			1	1
8. S/he is not very good at remembering phone numbers.			1	1
9. S/he doesn't usually notice small changes in a situation, or a person's appearance.			1	1
10. S/he is not very good at remembering people's date of birth.			1	1
Imagination				
1. If s/he tries to imagine something, s/he finds it very easy to create a picture in her/his mind.			1	1
2. When s/he is reading a story, s/he can easily imagine what the characters might look like.			1	1
3. S/he finds making up stories easy.			1	1
4. When s/he is reading a story, s/he finds it difficult to work out the characters' intentions.	1	1		
5. S/he doesn't particularly enjoy reading fiction.	1	1		
6. S/he would rather go to the theatre than a museum.			1	1

	Definitely Agree	Slightly Agree	Slightly Disagree	Definitely Disagree
7. When s/he was younger, s/he used to enjoy playing games involving pretending with other children.			1	1
8. S/he likes to collect information about categories of things (e.g. types of car, types of bird, types of train, types of plant, etc.)	1	1		
9. S/he finds it difficult to imagine what it would be like to be someone else.	1	1		
10. S/he finds it very to easy to play games with children that involve pretending.			1	1

CHAPTER 5: CONCLUSION

5.1 Introduction

The literature review presented in Chapter 2 outlined the beneficial effects of art therapy that support improved SIS in children with ASD. However, research on the application of MAT to children with ASD is sparse, particularly in the region of Malaysia. Therefore, this study intends to investigate whether MAT can gradually improve SIS and consequently improve the daily performance and active life of the children with ASD. As seen through the positive responses of the colour choices and behavioural changes of two participants in Chapter 4, it is admissible to affirm that MAT is a potentially sufficient tool to improve the SIS of children with ASD. This chapter includes the discussion of the findings to this study, the limitations that were encountered throughout conducting the twelve sessions of MAT, implications of findings for the parents of children with ASD and teachers of the special development centre, recommendations for future research, and a concluding summary of the overall results of the study.

5.2 Discussions

MAT was intervened and applied to two children with ASD to investigate whether it is an effective tool to reach out to them and to improve their SIS. The subjective methods of data collection include the observation of the participants' colour application and in-depth analysis of participants' behavioural changes throughout the twelve sessions of MAT. The objective method includes the comparison of the initial score and the after score of the participants' AQ assessment. Both methods are used to determine whether there is an improvement of their SIS after going through twelve sessions of mandala art therapy. Research question has been answered with the data collected and the findings of the study, addressing the question: do twelve sessions of

MAT help children with ASD to improve SIS based on the performance score of the AQ Assessment in Special Development Centre?

5.2.1 Discussion for sample 1 – BR

The SIS of BR improved after going through the twelve sessions of MAT. Based on the AQ score obtained before MAT was conducted, BR scored 33 for the overall score of the AQ assessment. However, after the MAT sessions completed, BR's score had decreased to 32, where out of the five fields in the AQ questionnaires, he improved in the field of communication. One item improved in the communication field, which was "People often tell her/him that s/he keeps going on and on about the same thing." Although the initial and after the score of BR's AQ assessment did not show major changes where it had an overall improvement of 2%, there is a significant improvement of BR's SIS. BR's improvements on SIS are supported by the behavioural changes and his colour choices that were observed throughout the twelve sessions of MAT.

Throughout the observation of BR's behavioural changes, the most significant changes were the improvement on his SIS through the interaction with the researcher, the increased length of his attention span, and a decrease of his demonstration of self-stimulatory behaviour (hand flapping and body rocking), echolalia, and motion tic. In the first and second session of MAT, BR showed unfamiliarity with the researcher. BR did not show any verbal response when the researcher attempted to interact with him. BR also showed a demonstration of hand flapping, body rocking, and motion tic while he was colouring. Besides that, his concentration lasted for only thirteen minutes.

However, BR started to show improvement on his SIS from the third session onwards, where he initiated the first conversation with the researcher. BR started the conversation by mentioning about "train," the subject that he was most interested in. The improvement of BR's SIS changed significantly when he initiated more

conversation by expressing his dislike towards one of the teachers to the researcher on the sixth and seventh sessions. BR's feeling of comfort and reliance towards the researcher was seen when he was beginning to complain about that event that distressed him. He also felt safe and comfortable as he requested for physical contact by indicating to be massaged by the researcher. By the tenth session, BR was able to be in a conversation with the researcher while at the same time keeping his focus to colour the mandala given. It showed great improvement of BR's behaviour, as he was able to show a high level of SIS while performing his multi-tasking ability. By the twelfth session, BR's echolalic behaviour was reduced to a great extent, as he was able to give accurate answers to the questions asked, instead of repeating the same question given. Table 5.1: Absolute evaluation and relative evaluation chart of MAT, shows the ratio of BR's concentration level versus distraction level: The first half of MAT (session 1 to 6) shows the ratio of absolute evaluation 13 by 15 (relative evaluation ≥0.86). The second half of MAT (session 7 to 12) shows the ratio of absolute evaluation 18 by 12 (relative evaluation 1.5≤) improved by 0.64 (relative evaluation changes (1.5-0.86) ÷ 0.86) = 74.41%. It shows that BR's concentration level improved remarkably over the twelve sessions of MAT.

Susanne Fincher (1991) stated that the colours chosen are a direct expression of inner states of mind that are usually beyond conscious awareness. The colour choices made by BR throughout the MAT sessions showed a direct expression of the current emotion that he is experiencing. BR selected red and brown colours when he was feeling upset, restless, loss of focus, and demonstrating constant motion tic. For example, during the second session, he was upset that he could not wear a pair of shoes that he often wears daily. He selected red and brown colours at once after he was reminded of the situation that disturbed him previously. On the fourth, sixth, and seventh session, motion tic and loss of focus are followed after BR applied a red colour and colouring with rough

strokes to the mandala given. Particularly on the seventh session, after he applied a red colour to his mandala, he initiated a conversation with the researcher to express his dissatisfaction with the teacher who scolded him during a mathematics class. The brown colour may also indicate his conflict with his mother as Fincher explained, "Brown colour may express a feeling of being oppressed between the impulse to go and the inhibition not to go. The mandala on the eleventh session was dominated by brown, as BR demonstrated strong resistance to obey his mother's will to go home.

BR selected a yellow, an orange, or a green colour when he is experiencing the emotion of happiness, joy, and comfort towards the researcher. During the third, eighth, and tenth session, BR was actively engaging in conversations with the researcher after he selected a green and an orange colour. BR's expression of joy and comfort in conversing with the researcher was seen in his facial expression. BR's colouring of an orange colour to the heart shapes during the eighth session portrayed his affection to his father where Fincher stated that orange might be seen as energy invested in relationship to the father. Throughout all the MAT sessions, 58.33% of BR's first choice of colour among the twelve mandalas was yellow colour. The yellow colour was observed as BR's favourite colour considering that yellow colour was the most frequent colour throughout the MAT sessions. The yellow colour was also seen to dominate BR's twelve mandalas by 58.33% while the green colour was the second colour to dominate his mandalas by 50%.

5.2.2 Discussion for sample 2 – JX

Throughout the twelve sessions of MAT, JX showed a progressive improvement of her SIS. Before MAT sessions were conducted, JX scored 38 for the overall score of the AQ assessment. However, after the MAT sessions completed, JX's score had decreased to 37. Out of the five fields in the AQ questionnaires, she improved in the field of

‘attention switching.’ The questionnaire under the category of ‘attention switching’ is, “S/he frequently gets so strongly absorbed in one thing that s/he loses sight of other things.” At the beginning of the MAT sessions, JX persisted in applying the rainbow colour that she had formulated in the sequence that she preferred. However, towards the end of the MAT sessions, she was still applying the rainbow colour sequence, but she was gradually becoming more flexible to change the sequence of the rainbow colours. It was shown from her colouring behaviour that she did not rigidly follow the original sequence. As similar to BR’s change of AQ score, JX’s initial and after scores of AQ assessment did not show major changes where it had an overall improvement of 2%. Despite the minor changes to the score, there is a significant improvement of JX’s SIS through the observation of her behavioural changes and her colour application.

Two prominent changes from the observation of JX’s behavioural changes were the interaction with the researcher and a decrease of her repetitive behaviour (elbow thumping). It was shown as an improvement on her SIS. From the first until the fourth session of the MAT, JX expressed signs of anxiety whenever the researcher approached her. She refused to respond to the researcher’s question and avoided looking at the researcher. There was no eye contact given to the researcher as she was completely focusing on the mandalas given. From the fifth session onwards JX level of insecurity decreased as the researcher continued presence paid more attention to JX. She made a few attempts to glance at the researcher, and tried to greet him in her way by singing. During the sixth, seventh and eighth sessions, JX appeared to be more cheerful and more comfortable with the presence of the researcher. It was proven by JX’s positive response to the researcher’s questions by giving short and accurate answers. She finally dares to make eye contacts with the researcher during these sessions that marked the improvement of her SIS.

JX showed a significant improvement during the eighth session, as she approached the researcher on her own will and initiated her first physical contact. It was the first time JX showed her happiness after she finished her task on the MAT by jumping and singing delightfully. JX followed her rainbow colour sequence to colour her mandala when she was feeling happy and self-motivated. Although she coloured her mandalas with the rainbow colours, she placed great preference for the pink colour. When she is feeling happy, the conversation initiated by the researcher to JX by using the word "pink" was able to trigger positive emotions in her, and she expressed excitement very well.

On the contrary, when she was feeling unhappy by the incident of having a conflict with her mother, her colouring behaviour changed for the ninth and the tenth session. During these two sessions, there were observations of JX making rough strokes on her mandala and frequently exhibiting motion tic behaviour. When JX conflicted with her mother, she applied grey colour to her mandalas in rough strokes and not following the design and contour lines of the pre-drawn mandala. JX's application of colour with rough strokes can be comprehended as a direct reflection of her state of emotion. Although a grey colour was also used in the fifth, eleventh, and twelfth sessions, but the strokes were finer as compared to the ninth and tenth session. The assumption made from this observation is that grey colour is not reflecting her unhappiness, but the rough texture caused by her colouring on the mandala may be caused by her present state of mind caused by an incident with her mother. This behaviour of JX was observed as her way of SIS.

After JX's mother had resolved the conflict with JX, she attended the eleventh and twelfth sessions with a cheerful mood. She approached the researcher on her own will and tried to initiate an interaction by non-verbal communication. JX pointed to her pink

hairpin and requested the researcher to hold her hands and jump with her. JX's concentration was exceptional throughout the twelve sessions of MAT. As seen from Table 4.10: Absolute evaluation and relative evaluation chart of MAT, shows the ratio of JX's concentration level versus distraction level: The first half of MAT (session 1 to 6) shows the ratio of absolute evaluation 24 by 4 (relative evaluation ≥6). The second half of MAT (session 7 to 12) shows the ratio of absolute evaluation 25 by 3 (relative evaluation 8.33≤) improved by 2.33 (relative evaluation changes (8.33-6) ÷ 6) = 38.83%. It shows that there is a slight improvement of JX's concentration level, as JX was already exhibiting good concentration level from the first session.

Throughout all the MAT sessions, 58.33% of JX's first choice of colour among the twelve mandalas was a pink colour. The pink colour was observed as JX's favourite colour considering that she showed excitement and joy whenever pink colour was mentioned in the interaction that she had with the researcher. Despite the fact when she faced a negative state of mind, she coloured her mandala with rough strokes creating a coarse texture with other colours including a pink colour that is her favourite colour. She even ignored the contour lines and did not follow the fine lines and details while colouring. While BR expressed his state of emotion by colour choices either bright or dark, JX expressed her state of emotion through her strokes in colouring either with fine or rough strokes.

5.3 Implications

This research explored and obtained insights on how MAT was able to develop the SIS of children with ASD. The MAT that was implemented on the two children with ASD provided information about how these children were able to express their state of emotions and to interact with the researcher. The research has helped to enhance the knowledge and skills of the teachers at the special development centre. Throughout the

MAT sessions, the two teachers that participated as caregivers gained an understanding of the emotional state of the children with ASD. The results and conclusion of this study had been discussed with the principal and the teachers of the special development centre to include MAT as a regular course that can be implemented in their centre. MAT can also be recommended to apply to other children with ASD and other groups of individuals with various impairments.

Parents of children with ASD can benefit from this program as well. It is because when the parents are actively involved and understand the MAT, they can see an improvement in their children's SIS. The teachers can write up reports about the progress of the children and share with the children's parents to give them better insights of MAT. Children with ASD cannot relate well to the general public, and the public easily misunderstands them. With their autistic behaviours, children with ASD often experience the feelings of frustration, anxiety, and depression, as they cannot interact with the public. The usage of MAT to address the psychological needs of the children with ASD surpassed from other interventions such as occupational therapy, behavioural therapy, or recreational therapy. It was shown from the MAT sessions that children with ASD progressively associated the colours to apply on their mandalas that showed the patterns of their preferences from their state of emotion. With MAT, children with ASD improved their focus and span of attention to complete colouring their mandalas. The applications of MAT to children with ASD are not only about the therapeutic activities but also to provide visual feedback on their progress towards SIS. MAT is used as a 'medium' to strengthen interaction between the society and the children with ASD; it is an effective method to improve their SIS.

5.4 Limitations

The duration of the MAT session of one hour in a classroom is too short for better observations to be made. Hence, this is a limitation of the research carried out, as more time is needed to observe and study the children with ASD. The researcher proposed to conduct MAT sessions for two hours per session, but there are two factors that restrict this proposal. The parents' availability to pick-up their children were limited. Therefore it was necessary that the sessions ended one hour after their regular classes at the centre. The second factor was the difficulty to reach an agreement between the researcher and the special development centre's schedule. The special development centre could not fit the MAT into their regular schedule. Therefore, the MAT has to be held after the children finished their regular classes.

The one-hour observation used by the researcher on studying the usage of MAT on the children with ASD was the only time the researcher could study on the progress of the children's SIS. Studies cannot be made on the progress of the children's SIS on the other activities in the special development centre and their homes. It is presumed that MAT is an effective method of developing the children with ASD's SIS. Nonetheless, in-depth monitoring activity was restrained by time restrictions. Consequently, the overall results of this study were only based on the behavioural changes that occurred during the twelve sessions of MAT held for twelve weeks.

5.5 Recommendations

The main purpose of MAT is to improve the quality of lives for the children with ASD by providing them with an avenue to interact with society by expressing their state of mind and emotion. As this research was conducted in a controlled environment with a time constraint, observations were limited to the session. Therefore further study needs to be carried out to investigate how their SIS is reflected in their homes or even

other activities conducted in the special development centre. After the MAT sessions, the researcher should spend more time to observe whether the children with ASD can apply SIS in their daily activities. The alternative setting includes the special development centre, the school or a home environment is needed to observe whether the SIS shown during MAT can be reflected in these settings. As the children with ASD undergo a few sessions of MAT, they will be familiar with the MAT sessions. Thus, the SIS of children with ASD could certainly be cultivated, as the sense of familiarity will be gained throughout the MAT sessions. Therefore, it is crucial to take them to a public environment to validate whether they could apply their developed SIS when confronted with a new environment. Instead of solely obtaining the feedback of the development of the children with ASD through teachers and parents, it is more advantageous if the researchers can observe the children with ASD on their own. By personally observing the children with ASD in a real setting, a more in-depth result can be obtained where it can verify the assertion that MAT is efficient to improve the SIS of children with ASD.

5.6 Summary

This study provided positive opportunities for children with ASD to engage with their inner emotions and feelings through MAT. The findings that emerged from the MAT sessions appear to indicate that MAT is useful in the development of SIS and psychological welfare of children with ASD. The prevalence of the issues related to the SIS of children with ASD leads to the importance to offer support for the psychological welfare of children with ASD. The study provides a significant tool that can be undertaken by parents and teachers of the children with ASD to address issues or problems that they may encounter with the children on a daily basis. Finally, MAT brings benefits to help individuals with ASD to communicate, express, identifies, heal, and explore their hidden feelings bringing awareness to their thoughts. MAT also helps parents and caregivers to have a better understanding of the behaviour of individuals

with ASD to ensure that their needs are well served. Thus, this research has made positive contributions to the lives of the children with ASD who participated in this study. This study shows that the potential and benefits of applying MAT may be highlighted to promote it as a therapy session for other children with ASD to improve their SIS.

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