

Parenting Stress And Psychological Distress Among Mothers Of Children With Autism In Johor Bahru And Hangzhou

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ABSTRACT: This study compared the parenting stress and psychological distress among mothers of children with autism in preschools and elementary schools from Johor Bahru and Hangzhou, as well as identified the significant factors associated with parenting stress and psychological distress. A total of 128 mothers comprised of 64 from Johor Bahru, Malaysia and 64 from Hangzhou, China involved in this study. Three instruments were used for data collection, namely the Childhood Autism Rating Scale Modified for Parents (CARS-P), Parental Stress Scale (PSS), and Depression Anxiety Stress Scale-21 (DASS-21). Results of the t-tests showed that mothers of children in Hangzhou with preschool children experienced a significant higher level of parenting stress and psychological distress compared to the mothers in Johor Bahru. No significant difference between parenting stress and psychological distress was found between mothers of elementary children in Johor Bahru and Hangzhou. No significant difference was found in parenting stress and psychological distress among mothers in Johor Bahru. For mothers of children in different age groups in Hangzhou, there was a significant higher level of parenting stress among mothers of preschool children than those with elementary school children. Analysis on factors influencing parenting stress and psychological distress in Johor Bahru and Hangzhou showed that for parenting stress, mothers' perceived autism symptoms and spousal relationship were the cross cultural factors. For psychological distress, the cross cultural factor was spousal relationship. There was a significant correlation between parenting stress and psychological distress among three groups of mothers except the mothers of elementary school children in Johor Bahru. The results portrayed the possibility of environmental influence that may need further research.

Keywords: *Parenting Stress, Psychological Distress, Autism, Mothers*

ABSTRAK: Kajian ini bertujuan untuk membandingkan tahap stres keibubapaan dengan tekanan psikologi dalam kalangan ibu yang mempunyai anak autisme di prasekolah dan sekolah rendah di Johor Bahru dan Hangzhou. Di samping itu, kajian ini juga mengenal pasti faktor-faktor yang mempengaruhi stres keibubapaan dan tekanan psikologi. Sebanyak 128 orang ibu yang mempunyai anak autisme, iaitu 64 orang dari Johor Bahru, Malaysia dan 64 orang lagi dari Hangzhou, China terlibat sebagai sampel dalam kajian ini. Tiga instrumen digunakan dalam kajian ini, iaitu Childhood Autism Rating Scale Modified for Parents (CARS-P), Parental Stress Scale (PSS), dan Depression Anxiety Stress Scale-21 (DASS-21). Analisis keputusan ujian-t menunjukkan bahawa kalangan ibu yang mempunyai anak autisme di prasekolah di Hangzhou mengalami tahap stres keibubapaan yang lebih tinggi berbanding dengan golongan ibu di Johor Bahru. Kajian ini juga mendapati tiada perbezaan signifikan antara stres keibubapaan dengan tekanan psikologi antara ibu yang mempunyai anak autisme di sekolah rendah di Johor Bahru dengan Hangzhou. Dari aspek perbezaan usia kanak-kanak pula, kajian mendapati bahawa tahap stres keibubapaan lebih tinggi dalam kalangan ibu di Hangzhou yang mempunyai anak autisme di prasekolah daripada ibu yang mempunyai anak autisme di sekolah rendah. Setetusnya, didapati tiada perbezaan signifikan antara stres keibubapaan dengan tekanan psikologi dalam kalangan ibu yang mempunyai anak autisme di prasekolah dan sekolah rendah di Johor Bahru. Analisis faktor-faktor yang mempengaruhi stres keibubapaan dan tekanan psikologi di Johor Bahru dan Hangzhou menunjukkan bahawa

tanggapan ibu mengenai simptom autisme dan hubungan suami-isteri merupakan faktor pengaruh bagi Johor Bahru dan Hangzhou. Bagi tekanan psikologi pula, faktor pengaruh bagi Johor Bahru dan Hangzhou ialah hubungan suami-isteri. Hubungan yang signifikan antara stres keibubapaan dengan tekanan psikologi terdapat antara ketiga-tiga kumpulan ibu kecuali ibu anak sekolah rendah di Johor Bahru. Keputusan kajian menggambarkan kemungkinan wujudnya pengaruh persekitaran, justeru memerlukan kajian lanjutan bagi memperoleh dapatan yang lebih menyeluruh lagi.

Katakunci: *Stres Keibubapaan, Tekanan Psikologi, Autisme, Ibu*

1.0 INTRODUCTION

To be a parent is a long-time commitment as well as full of challenges but could also bring a great deal of satisfaction or otherwise. Responsibilities of parents are not as simply as providing physical needs (for example, food, clothes), but also psychological, social interactional, and educational needs. Mother as a main caregiver in the parent role, are usually the first teacher of children's lives, gestate their children, create an environment for children to foster their development in literacy, communication, cognition, motor skills, and establish first social relationship with them. Children in different developmental stages have different needs. Mothers need to learn the skills to fulfill the various needs of their children.

Everything happens on a child would influence mothers' emotion, behaviour, thinking and so on. When a child has problems such as disabilities and physical health, a mother would get worried, feel anxious, and even fall sick. Maternal health was related to behavioral problems such as hyperactivity and conduct problems in the child (Allik, Larsson & Smedje, 2006). When the academic achievement of their children are not as good as his or her peers or the children do not finish his or her homework, mothers may get angry, feel upset or disappointed, and some may seek professional help to enhance their children's performance. When the child performs better or only a little progress parents feel happy, satisfied and proud of their child's achievement.

It seems that the responsibility of mothers occupy a main part of their life. It's a natural duty to people. Parenting a typically developing three-month-old child, mothers ($M=2.16$, $SD=0.46$) was reported having a significantly higher level of parenting stress than fathers ($M=1.99$, $SD=0.46$) (Scher & Sharabany, 2005), but even more when mothers have to bring up children with disabilities or problems such as physical disease, autism, mental illness, developmental problems. Compare to typically developing ones, parents or caregivers of children with disabilities or problems shoulder more economic cost, troubles, responsibilities, and time engaged. Parents of children with developmental delays experienced greater levels of stress than children without delays (Lopez, Clifford, Minnes & Ouellette-Kuntz, 2008). It was found that mothers experienced more stress as they take more responsibilities on taking care of their children's daily life (Tehee, Honan & Hevey, 2009; Hastings, Kovshoff, Brown, Ward, Degli Espinosa & Remington, 2005a).

The level of stress and distress among parents of children with disabilities such as autism is undeniably higher than parents of children without disabilities. Autism is a neurodevelopment disorder that can impair communication, socialization and behavior. It is usually diagnosed within the first three years of life and is four times more common in boys than in girls. Parenting a child with autism would make parents or caregivers suffer high level of stress and feel extremely high level of psychological distress, due to the child's lack of communication skills, abnormal behaviors, social isolation, and difficulties in self-care (Estes,

Munson, Dawson, Koehler & Zhou Abbott, 2009; Schieve, Blumberg, Rice, Visser & Boyle, 2007).

Therefore, mothers of children with autism have to be more patient, spend time and energy to face the huge challenge from their children. Most mothers of children with autism are under stress. Continuous research should be carried out to study the level of stress in parenting a child with autism, psychological distress, well-being and the mental health states of these mothers, as well as their coping strategies. Findings from these researches could provide useful information to help mothers enjoy family life while coping with their children's behavior and problems.

Different countries do not only differ in nature environment (for example, climate, geologic), history, but also the culture, cultural belief, government law, rules, morality, and value system. The role of mother, such as responsibilities, parenting method, affection pattern, punishment use, attitude, education belief, may vary a lot as well. All of these factors may affect the level of stress and distress perceived by mothers. DeLambo, Chung and Huang (2010) in the study of parents with developmental disability children found that Asian American parents experienced a significantly higher level of stress compared to their non-Asian counterparts, which was related to children's characteristics of disability. The researchers considered two cultural reasons may account to this finding. One is culture belief conflict between traditional Asian culture (Confucian philosophy) and mainstream U.S. culture. The other is the traditional Asian culture, in which parents hold high academic achievement expectation on their children. Another finding in this research indicated that when children got old, parenting stress in non-Asian American parents decreased, but no change in Asian American parents. Researcher concluded it that "instead of training their children to be independent, Asian American parents tend to be protective and actively involved with the lives of their children due to the culture of collectivism." Then, the Asian American parents experienced continuous high level of stress as their children with developmental disabilities become older.

As Kwok and Wong (2000) stated, "Culture may have also played a part in the stress experienced by some parents. This is an area that has not been fully explored. Nor has this information been put to use in educating parents on effective child-rearing practices". Continuous research should be encouraged to find out the effective factors of cultural belief, religion, policy, and custom in different countries or ethnicities to help mothers or family with autism.

1.1 Statement Of Problem

The prognosis of some children with autism is not effective. Although early education intervention may improve social development and reduce undesirable behaviors, but very few of them can have a normal life expectancy, most people with autism cannot live independently. Families of children with autism not only endure the high expenses, but also feel painful, distress, frustrated in coping with these special children. Family members, especially mothers who usually take more responsibilities on taking care of their children get more stressed up. Many researches pointed that mothers of children with autism were in the high risk of physical and psychological problems. Researches on mothers or families of children with autism were conducted to find out ways or strategies to improve the conditions of these mothers or alleviate their distress. Realizing the high levels of stress and distress among mothers of children with autism and the vital need to help children with autism, many centers were set up to provide information, education, training and counseling to mothers and children with autism. Special education teachers in schools were trained to provide effective

special education services to help children with autism to overcome their challenges and get most of life.

Children with autism in preschool period are very different from children in elementary school period in many aspects, such as physical status (motor skills). Most of their autism symptoms do not change, but the presentation of these symptoms does change when they grow up, such as autistic children at early childhood has almost no language but having communication in their elementary school although they may still have difficulties develop a normal conversation with others.

While children with autism showing changes in developmental aspects when they grow up, mothers of children with autism experience different levels of stress and distress. Findings from past research have identified the varied concerns of mothers towards preschool and elementary school children. The findings on comparing parents with children in different developmental stages were no consistent (Bebko, Konstantareas and Springer, 1987; Hastings et al., 2005a; Smith et al., 2008).

This study is aimed to compare parenting stress and psychological distress of mothers with preschool and elementary school children with autism, to find out the difference in concerns and psychological status of mothers between preschool and elementary school children with autism. Due to the various characteristics of children in different age groups, the challenges and children's developmental status perceived by mothers should vary. Research in this area is limited and produces varied results.

Malaysia and China are different in many aspects, such as government policy and educational system. Mothers who rear children in these two different environment have their own unique difficulties and benefits, such as multiple choice of education (government, private, and international school) in Malaysia, single choice in China(government school). Most of the studies discussed above mainly focus on the comparison among different developmental disorder or typically developing samples. It is difficult to find a study on aims to compare the parents of children with autism in Johor Bahru and Hangzhou to investigate the difference in parenting stress and psychological distress in these two cities. Cities in different countries have many differences, such as culture, history, and environment. Therefore, people from different countries have their own specific traits such as behavior, thinking pattern, problem solving skills, sense and response of stress. The study, which aims to find out the similarities and diversities in parenting stress and psychological distress, discover the cross-culture commonness and specific characteristics of these two cities can impel Johor Bahru and Hangzhou to get more relative communication and learn the advantages from each other.

1.2 Research Objectives

Based on the main objective of the study, the following objectives are set:

1. To identify the level of autism symptoms perceived by mothers of preschool and elementary school children with autism in Johor Bahru and Hangzhou.
2. To identify the level of parenting stress and psychological distress among mothers of preschool and elementary school children with autism in Johor Bahru and Hangzhou.
3. To identify the difference in parenting stress and psychological distress among mothers of preschool and elementary school children with autism in Johor Bahru and Hangzhou.

4. To investigate the factors (from mothers, children, and family) influencing parenting stress and psychological distress among mothers of children with autism in Johor Bahru and Hangzhou.
5. To identify the relationship between parenting stress and psychological distress among mothers of preschool and elementary school children with autism in Johor Bahru and Hangzhou.

2.0 LITERATURE REVIEW

2.1 Autism

The word autismus (New Latin, in English is autism) was produced by the Swiss psychiatrist Eugen Bleuler in 1910 as he was defining symptoms of schizophrenia. In 1943, Leo Kanner, a doctor from Johns Hopkins University, first described autism as a developmental disease, present from birth, in which reciprocal social behavior, language, and communication are impaired and patients display restricted interests and repetitive behaviors.

Autism was once recognized as a type of mental retardation. Indeed, some individuals with autism do have mental retardation, but not all of them are mentally incapable. Some are smarter, with special ability; some are emotional, although don't know how to express correctly (Fombonne, 2003; Eaves & Ho, 2008).

The incidence of autism is increasing. Most recent reviews of epidemiology estimate a prevalence of one to two cases per 1,000 people for autism, and about six per 1,000 for ASD. In the Camberwell study, children who have three major symptoms of autism were found to be approximately 21 in every 10,000 children (Wing & Gould, 1979). Gillberg et al. (1986) in Gothenburg, Sweden, found very similar result. A14 sites investigation in the United States revealed that the prevalence of ASD is 3.3 (1 in 303) to 10.6 (1 in 94) per 1,000 eight-year-old children. Overall average ASD prevalence: 6.6 per 1,000 children, or approximately one in 150 children. Boys: 5.0 to 16.8 per 1,000 8-year-old children, while girls: 1.4 to 3.1 per 1,000 8-year-old children. White, non-Hispanic: 3.3 to 12.5 per 1,000 eight-year-old children, Black, non-Hispanic: 3.4 to 7.7 per 1,000 8-year-old children and Hispanic: 0.3 to 9.7 per 1,000 8-year-old children (CDC, 2002)

In the United Kingdom, Rutter (2005) confirmed a major rise in the rate of diagnosed autism in his study of aetiology of autism. A study of nearly 57,000 British nine to ten years old reported a prevalence rate of 3.89 to 11.6 per 1,000 for ASD in London (Baird et al., 2006). In Hong Kong China, the estimated incidence of autism spectrum disorder was 5.49 per 10,000. The prevalence was 16.1 per 10,000 for children less than 15 years old for the same period. The male to female ratio was 6.58:1. The incidence rate is similar to those reported in Australia and North America and is lower than Europeans (Wong & Hui, 2008). In Malaysia, the prevalence of autism is 1.6 per 1,000 among children aged 18 months to three years. Annually a total of 1500 to 1800 new cases of disabilities are diagnosed among children less than seven years and more than 50% of them are intellectually challenged.

Similar increasing tendency was found in China Mainland. A sample survey of six provinces in 2001 revealed an incident of 1.225 per 1,000 among children aged zero to six years old in Jiang Su Province (Wang et al., 2003). Among the 7345 children investigated in Tianjin, the prevalence of autism disorder was 1.10 cases per 1000 children aged two to six years (95% CI=0.34 to 2.54). All the children suffering from autistic disorder were intellectually disabled. Half of the autistic children had never received any rehabilitative service (Zhang & Ji, 2005). In 2006, a survey on PDD (pervasive developmental disorder) in the age of 2 to 6 children in Beijing showed a prevalence rate of 1.53 ‰ (14 cases for

childhood autism, one case for atypical autism and one for Rett's syndrome) (Yang et al., 2007). Hangzhou now own about 3000 children with autism and experiences a 20% increase per year. There are now an estimated 1 to 1.5 million autistic people in China.

During the 1980s and 1990s, behavior therapy and the use of highly controlled learning environments emerged as the primary treatments for many forms of autism and related conditions. Nowadays, the treatments on children with autism do not rely on sole approach, people use combined interventions (for example, applied behavior analysis, medication, occupational therapy, physical therapy, speech-language therapy) according to children's different condition. In China, traditional Chinese medicine therapy, such as acupuncture, point massage and Chinese medicine is applied to alleviate some symptoms of autism, which has been confirmed to get certain positive effect (Liu et al., 2009; Yan & Lei, 2007; Yuan, Chai, Lang, Wang, & Wu, 2007).

2.2 Parenting Stress and Autism

Bebko et al. (1987) studied the relationship between the stress and characteristics of autism, which let mothers, fathers, and therapists separately, rate the severity of common autism symptoms of their child, and rate the stress level for each corresponding item. The result revealed that parent's stress was related to the overall severity of the child's autism symptoms. The correlation efficient was very strong for mothers ($r = 0.927$, $p < .001$) and less for fathers ($r = 0.629$, $p < .005$). The all raters judged the cognitive and language impairment of autistic children as the most severe and stressful items. Parents of older children judged lower severity symptoms, but fathers' stress did not decrease.

A study investigated the relationship between behaviours of children (two-seven years old) with pervasive developmental disorders (particularly autism), and maternal stress levels. Mothers were asked to complete the Parenting Stress Index (short-form) (PSI-SF), the Aberrant Behavior Checklist (ABC), Adaptive Behavior Scales (AAMR) and a demographic questionnaire. Two-thirds of the participants reported clinically significant level of parenting stress score. The study revealed that child maladaptive behaviour and child adaptive behaviour were the important predictors for the maternal stress, contributing a significant part of the variance. (Tomanik, Harris & Hawkins, 2004).

A qualitative comparative study on parenting experiences of mothers in a family having a child with autism spectrum disorder (ASD) and a typically developing (TD) child found clear differences among mothers of children with ASD and TD on parenting cognitions. Mothers reported significantly higher levels of stress related to parenting incompetence and role restrictions and more symptoms of depression and lower sense of self-efficacy concerning their child with ASD, compared to their TD sibling. Mothers' symptoms were strongly associated with depression, and their parenting cognitions about both their children (Meirsschaut, Roeyers & Warreyn, 2010). The study suggested that family interventionists should consider parenting experiences and aware of interfering maternal feelings and cognitions, such as guilt or low parental self-efficacy beliefs in order to extend intervention outcome.

A study examined the impact of autism severity and parental coping strategies on stress among parents of children with ASD, which reported that the strongest and most consistent predictor of stress was the child's autism severity (measured by the CARS-P). More parent and family problems was related to emotion-oriented coping and the lower physical incapacity score was associated with task-oriented coping. Moreover, emotion-oriented coping was a moderator between pessimism stress and autism symptomatology, and

distraction coping moderated the relationship between parent and family stress and autism symptoms (Lyons et al., 2010).

2.3 Psychological distress and Autism

A study examined the relationship between parenthood and depression conducted by Evenson and Simon (2005) reported that fullnest parents (persons who only have coresidential biological and/or adopted children under the age of 18) were significantly more depressed than their childless peers, controlling sociodemographic and status variables. It is known that parenting a child is a challenge and longititude work. Parents or caregivers with a child with autism suffered an extremely high level of stress has been comprehended by many researchers as aforementioned. So, the psychological distress felt by parents and caregivers can be predicted. A study assessed the effects of social support and hardiness on the level of stress in mothers of typical children and children with developmental disabilities (120 mothers include 40 mothers of children with autism, 40mothers of children with mental retardation, and 40 mothers of typically developing children). Measures on depression, anxiety, somatic complaints and burnout showed that parents of autistic children got significant higher level than mothers of children with mental retardation or mothers of typically developing children. The feeling of depression, anxiety and depersonalization was predicted by the control, challenge and total hardiness scores (Weiss, 2002).

In the study of psychological well-being of mothers of youth with fragile X syndrome, Lewis et al. (2006) found that more challenges to maternal psychological well-being were found on fragile X syndrome compared with Down syndrome, especially the combination of fragile X syndrome and autism. Additionally, mothers of sons with fragile X syndrome and co-morbid autism reported lower levels of reciprocated closeness than the other two groups of mothers.

McCabe (2008) did a qualitative study among parents of children with autism in Beijing China, which found that almost half of the mothers reported elevated stress, continuous feelings of anxiety and worry, and being depressed and often coupled with increased challenges and difficulties on the spousal relationship. Similar result found by Phetrasuwan and Miles (2009), which revealed that more depressive symptoms and lower well-being were found among mothers of children with autism who reported more parenting stress. The study suggested that interventions on helping mothers manage their children's behavior should be applied to reduce stress and improve their well-being.

Ingersoll and Hambrick (2010) examined the relationship between child symptom severity, parent broader autism phenotype (BAP), and stress and depression in parents of children with ASD, which found that compared with general population, parents of children with autism experienced a great level of stress and depression, 55.7% of parents were found in the clinical significant level of depression and 85% of parents were in the clinical significant level of parenting stress. A path analysis indicated that both child symptom severity and parent BAP were negatively correlated to social support and positively correlated with outcomes. The direct effects of child symptom severity on parent depression and parenting stress were 0.18 and 0.28 respectively. While the direct effect of parent BAP was only found on parent depression (0.16).

3.0 DAPATAN KAJIAN

3.1 Research Design

This research used sample survey to assess the parenting stress among mothers of children with autism. Gavin (2008) in the book “Understanding Research Method and Statistics in Psychology” wrote that a survey is a research method for gathering data in a non-experimental way, and can include the use of questionnaires, interviews or unobtrusive observations. A properly constructed survey can allow us to gather a great deal of information about a large number of people.

A self-report questionnaire (self-administered questionnaires), which is filled out by participants in the absence of an investigator and easily distributed to a large number of people, was generated in this study to fulfill the study objectives (Mitchell & Jolley, 2010). Researcher used developed scales in this questionnaire to examine the severity of autism symptoms, parenting stress and psychological distress perceived by mothers of children with autism. Modifications on items of questionnaire were made to fit the requirement of this study.

Data was collected by researcher and further analyzed by SPSS version 17. The collected data was examined the validity first. Then researcher described the data outline by using descriptive analysis approach, such as mean and deviation. Correlation, inferential type of analysis was applied to answer the research questions.

3.2 Research Instruments

The questionnaire in this study consists of four sections. Section A requires mothers to provide some background information related to this study. Section B, C and D are developed scale/index to examine the severity of autism symptom, parenting stress and psychological distress. Scales in section B was modified by the researcher for parents.

3.3 Research Site

This study was conducted in two big cities which are Johor Bahru, Malaysia and Hangzhou, China. In Johor Bahru, there were two special education centers, one education center and one parents’ organization assisted the researcher to get the sample, which were Calvary Victory Center Special Education for Autism, Keiki Brain Works Centre, CA Christian Resource Training center and Northern Mother Support Group. The research data in Hangzhou was taken from six special elementary schools and three special centers for preschool children, which were Hangzhou Zi Jing Hua School, Hangzhou Hu Shu Special School, Hangzhou Yang Ling Zi School, Hangzhou Jian Kang Lu School, Hangzhou Xiaoshan Special School, Hangzhou Yuhang Special School, Zhejiang Disabled Rehabilitation Center for Autism and Mental Retardation, Hangzhou Carnation Rehabilitation Center for children, Hangzhou Xiaoshan Disabled Rehabilitation Center.

There are two reasons to choose Johor Bahru and Hangzhou as the research site. First, Johor Bahru and Hangzhou are one of the biggest cities in Malaysia and China respectively. Second, the family’s SES of these two cities is in similar level.

3.4 Research Population

A population is the wider group of individuals about which the researcher wants to make statements (Lodico, 2006). The ideal populations (Lodico, 2006) in this study are the children with autism and their mothers in Johor Bahru and Hangzhou. And the realistic populations (Lodico, 2006) are a portion of the children with autism and their mothers in Johor Bahru and Hangzhou. Mothers are the key respondents who should provide the information of autism symptoms of their children, and the stress, distress they are suffered, via answering the questionnaires developed for this investigation.

To get the response from a special research population in this study, mothers of children with autism as research samples are selected using purposive sampling. Purposive sampling is a non-probability sampling, which is applied when a specific type of person is recruited for study (Goodwin, 2002).

Sample size is encouraged to be more than 30 for each group. Because normal distribution is fulfilled when sample size is above 30. In this study, the samples are mothers of children with special conditions; the amount of cases is limited. According to the realistic situation, the researcher arranged sample size as 64 in Johor Bahru and Hangzhou respectively.

4.0 DATA ANALYSIS

4.1 Analysis Data For Mother's Age

Table 1 : Frequency Distributions for Basic Information of Research Samples for Mother's age

Mother's age	Preschool In Hangzhou	Elementary In Hangzhou	Preschool In Johor Bahru	Elementary In Johor Bahru
	Frequency & Percentage	Frequency & Percentage	Frequency & Percentage	Frequency & Percentage
	N=32	N=32	N=32	N=32
≤20y	2(6.2)	4(12.5)	1(3.1)	1(3.1)
21-30y	26(81.3)	15(46.9)	16(50.0)	14(43.8)
31-40y	3(9.4)	10(31.2)	15(46.9)	17(53.1)
≥41y	1(3.1)	3(9.4)	0(0.0)	0(0.0)

Mother's age in these four groups was quite consistent, mainly between 31 to 40 years old. As for the self-report knowledge of autism from mothers, most mothers of elementary school children in Johor Bahru rated the knowledge "much" and above that (53%), and more than 50% of mothers in other three groups (mothers of preschool and elementary school children in Hangzhou, and mothers of preschool children in Johor Bahru) reported having "a little" or "little" autism knowledge, especially mothers of preschool children in Hangzhou (more than 85%).

4.2 What's the level of autism symptoms perceived by mothers of preschool and elementary school children with autism in Johor Bahru and Hangzhou?

The perceived autism symptoms were reported by mothers on the measure of Childhood Autism Rating Scale modified for parents (CARS-P) to examine the mothers' assessment on the severity of their children's autism symptoms. To show the level of autism symptoms perceived by four groups of mothers, the means and standard deviations were obtained and shown in Table 2. This descriptive analysis showed that mothers in Hangzhou rated a higher level of autism symptoms of their children than mothers in Johor Bahru. Mothers of preschool children in Hangzhou (mean=55.81) reported the highest level of perceived autism symptoms following by mothers of elementary school children in Hangzhou and preschool children in Johor Bahru, who achieved the mean score of 50.91 and 50.47 respectively. The lowest mean score was found in mothers of elementary children in Johor Bahru.

4.3 What's the level of parenting stress and psychological distress among mothers of preschool and elementary school children with autism in Johor Bahru and Hangzhou?

In this study, parenting stress on four groups of mothers was examined by the measure of Parental Stress Scale (PSS) and psychological distress was assessed by Depression Anxiety Stress Scale-21 (DASS-21). Both of them were completed by the mothers involved in this study. Table 2 shows the means and standard deviations of Parental Stress Scale (PSS) and Depression Anxiety Stress Scale-21 (DASS-21), which represent parenting stress and psychological distress respectively. The higher score reveals a higher level of stress and distress for both scales.

Measures on parenting stress by using Parental Stress Scale (PSS) showed that mothers of preschool children in Hangzhou have the highest level, followed by mothers of elementary school children in Johor Bahru, elementary school children in Hangzhou, and preschool children in Johor Bahru.

Psychological distress measured by Depression Anxiety Stress Scale-21 (DASS-21) showed the highest mean score among mothers of preschool children in Hangzhou. Mothers of elementary school children in Johor Bahru have the second highest score on PPS, but reported the lowest score on DASS-21.

Table 2: Means and Standard Deviations of CARS-P, PSS, DASS-21 and its subscale

Scale/subscale		mothers of preschool children in Hangzhou (n=32)	mothers of elementary school children in Hangzhou (n=32)	mothers of preschool children in Johor Bahru(n=32)	mothers of elementary school children in Johor Bahru(n=32)
CARS-P	Mean	55.81	50.91	50.47	43.66
	Std. Deviation	12.40	8.39	13.11	13.91
PSS	Mean	56.22	51.41	48.66	52.38

	Std. Deviation	9.26	8.68	10.78	7.90
DASS-21	Mean	45.00	34.87	29.00	24.63
	Std. Deviation	28.67	23.94	19.63	22.35
DASS-21-stress	Mean	16.13	14.06	12.63	10.06
	Std. Deviation	9.61	9.50	6.27	8.15
DASS-21-depression	Mean	18.06	12.56	8.88	7.81
	Std. Deviation	10.87	9.12	7.77	9.30
DASS-21-anxiety	Mean	10.81	8.25	7.50	6.75
	Std. Deviation	10.04	7.50	6.78	6.70

CARS-P, Childhood Autism Rating Scale Modified for Parents; PSS, Parental Stress Scale; DASS-21, Depression Anxiety Stress Scale-21

4.3 Is there a significant difference in parenting stress and psychological distress among mothers of preschool children and elementary school with autism between Johor Bahru and Hangzhou?

To compare the level of parenting stress and psychological distress between mothers of preschool children in Johor Bahru and Hangzhou, independent samples t-test was applied. The result showed that there was a significant difference between mothers of preschool children in Johor Bahru and Hangzhou on PSS and DASS-21 total scores (Table 3). Mothers in Hangzhou reported a higher level of parenting stress and psychological distress (mean score of PSS: Hangzhou 56.22 and Johor Bahru 48.66; mean score of DASS-21: Hangzhou 45.00 and Johor Bahru 29.00). However there was no significant difference found in the CARS-P score between these two groups ($t=1.675$, $P=0.099$), which can be inferred to mean that mothers of preschool children in these two cities were on a similar level.

For the scores on the DASS-21 subscale, a significant difference was found on the depression subscale score, which indicated that mothers of preschool children with autism in Hangzhou have a significantly higher level of depression than mothers in Johor Bahru (mean score of DASS-21-depression: Hangzhou 18.06 and Johor Bahru 8.88). There was no significant difference between mothers of preschool children in Johor Bahru and Hangzhou on stress and anxiety subscale scores.

Table 3: t-test result for mothers of preschool children in Johor Bahru and Hangzhou on CARS-P, PPS, DASS-21

Scale/subscale		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig.(2-tailed)
CARS-P	Equal variances assumed	0.222	0.639	1.675	62	0.099
	Equal variances not assumed	--	--	1.675	61.810	0.099
PSS	Equal variances assumed	0.608	0.439	3.012	62	0.004
	Equal variances not assumed	--	--	3.012	60.620	0.004
DASS-21	Equal variances assumed	3.109	0.083	2.605	62	0.011
	Equal variances not assumed	--	--	2.605	54.827	0.012
DASS-21 Stress	Equal variances assumed	2.281	0.136	1.725	62	0.089
	Equal variances not assumed	--	--	1.725	53.351	0.090
DASS-21 Depression	Equal variances assumed	3.484	.067	3.891	62	0.000
	Equal variances not assumed	--	--	3.891	56.132	0.000
DASS-21 Anxiety	Equal variances assumed	2.944	0.091	1.547	62	0.127
	Equal variances not assumed	--	--	1.547	54.385	0.128

CARS-P, Childhood Autism Rating Scale Modified for Parents; PSS, Parental Stress Scale; DASS-21, Depression Anxiety Stress Scale-21

Table 4: t-test result for mothers of elementary school children in Johor Bahru and Hangzhou on CARS-P, PPS, DASS-21

Scale/subscale		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig.(2-tailed)
CARS(P)	Equal variances assumed	7.150	0.010	2.524	62	0.014
	Equal variances not assumed	--	--	2.524	50.921	0.015

PSS	Equal variances assumed	0.524	0.472	-0.467	62	0.642
	Equal variances not assumed	--	--	-0.467	61.455	0.642
DASS-21	Equal variances assumed	0.171	0.681	1.770	62	0.082
	Equal variances not assumed	--	--	1.770	61.711	0.082
DASS-21 Stress	Equal variances assumed	1.292	0.260	1.808	62	0.075
	Equal variances not assumed	--	--	1.808	60.608	0.076
DASS-21 Depression	Equal variances assumed	0.703	0.405	2.064	62	0.043
	Equal variances not assumed	--	--	2.064	61.979	0.043
DASS-21 Anxiety	Equal variances assumed	0.061	0.806	0.844	62	0.402
	Equal variances not assumed	--	--	0.844	61.227	0.402

CARS-P, Childhood Autism Rating Scale Modified for Parents; PSS, Parental Stress Scale; DASS-21, Depression Anxiety Stress Scale-21

A marked different finding was found in mothers of elementary school children with autism. As shown in Table 4, although there was a significant difference in CARS-P score (perceived autism symptoms) ($t=2.524$, $P=0.014$), no significant difference was found in PSS and DASS-21 total score between mothers of elementary school children with autism in Johor Bahru and Hangzhou.

The P value comparing DASS-21 total score between mothers in Johor Bahru and Hangzhou, which is 0.082, did not meet the significance level (0.05). In addition, the t-test result for comparing depression subscale score showed a significant difference between mothers of elementary school children with autism in Johor Bahru and Hangzhou ($t=2.064$, $P=0.043$). High level of depression was found among mothers of elementary school children in Hangzhou compared to their counterparts in Johor Bahru (mean score of DASS-21-depression: Hangzhou 12.56 and Johor Bahru 7.81). For the other two DASS-21 subscales-stress and anxiety, there was no statistically significant difference between mothers from Johor Bahru and Hangzhou on the rating on both subscales.

4.4 What are the factors significantly influencing parenting stress and psychological distress among mothers of children with autism in Johor Bahru and Hangzhou?

To find out the significant factors which influence parenting stress and psychological distress, two stages of multiple regression analysis were used. In first stage, three aspects of potential independent variables-mother, child, family, were introduced separately into the equation using stepwise regression analysis, in order to find out the significant factors among mother, child, and family variables respectively. The potential independent variables in the mother's

aspect are mother's age, income, time spend with their child, educational level, and spousal relationship. For child aspect, the potential factors which may influence parenting stress and psychological distress, are child's age, gender, years been diagnosed, and perceived autism symptoms. On family aspect, father's income, treatment cost, financial support, and numbers of children in home are the potential factors. In the second stage, hierarchical regression analysis was applied to identify the power of significant predictors obtained in the first stage on predicting parenting stress and psychological distress. Parenting stress and psychological distress are the two dependent variables in this study, which were analyzed separately.

In the first stage, three significant factors from two aspects-child and mother, were found to influence PSS score (parenting stress) among mothers of children with autism in Johor Bahru. Table 5 shows that they were spousal relationship from mothers aspect (Beta=0.462, $p=0.000$), CARS-P score (Beta=0.253, $p=0.044$) and years been diagnosed (Beta=0.373, $p=0.004$) from child aspect. No significant factor was found in family aspect on predicting PSS score.

Table 5: Summary of Stepwise Regression Analysis on PSS for Mothers of Children with Autism in Johor Bahru

Model	Independent variable	R	R ²	ΔR^2	P
model for Child aspect	Yeas been diagnosed	0.303	0.092	0.092	0.015
	CARS	0.388	0.150	0.059	0.044
model for Mother aspect	spousal relationship	0.462	0.214	0.214	0.000

PSS, Parental Stress Scale

As shown in Table 6, two significant predictors from child aspects-CARS-P and years been diagnosed were first introduced into the equation, which explained 15% of the variance in PSS score. For mother aspect, the spousal relationship contributed another 7.7% of the variance in PSS score which met the significant level of increment.

Table 6: Summary of Hierarchical Regression Analysis on PSS for Mothers of Children with Autism in Johor Bahru

Independent variable	R	R ²	ΔR^2	P
step 1 CARS-P Years been diagnosed	0.388	0.150	0.150	0.010
step 2 spousal relationship	0.477	0.227	0.077	0.022

PSS, Parental Stress Scale

As shown in Table 7, spousal relationship (Beta=0.420, $p=0.001$) and treatment cost (Beta=0.398, $p=0.002$) which were from the mother and family aspect respectively, were the

only significant factors found to influence the psychological distress of mothers of children with autism in Johor Bahru in the first stage. From the child aspect, there was no significant factor found to influence the psychological distress.

Table 7: Summary of Stepwise Regression Analysis on DASS-21 for Mothers of Children with Autism in Johor Bahru

Model	Independent variable	R	R ²	ΔR ²	P
model for Mother aspect	spousal relationship	0.420	0.176	0.176	0.001
model for Family aspect	Treatment cost	0.398	0.158	0.158	0.002

DASS-21, Depression Anxiety Stress Scale-21

As shown in Table 8, spousal relationship was the first significant factor entered into the equation, which explained 13% of variance on DASS-21 score. Treatment cost, the second predictor introduced into the equation, added another 14.6% (P=0.001) of variance on adjusting DASS-21 score, which was an important significant factor influencing psychological distress among mothers of children with autism in Johor Bahru.

Table 8: Summary of Hierarchical Regression Analysis on DASS-21 for Mothers of Children with Autism in Johor Bahru

Independent variable	R	R ²	ΔR ²	P
step 1 spousal relationship	0.361	0.130	0.130	0.005
step 2 treatment cost	0.525	0.276	0.146	0.001

DASS-21, Depression Anxiety Stress Scale-21

The same statistic procedure for Question 7 was applied to answer Question 8. For parenting stress on mothers of children with autism in Hangzhou, four significant factors were found in the first stage, which were CARS-P (Beta=0.518, p=0.000) from child aspect, spousal relationship (Beta=0.405, p=0.001) from mother aspect, father's income (Beta=-0.408, p=0.001) and treatment cost (Beta=0.232, p=0.045) from family aspect (Table 9).

Table 9: Summary of Stepwise Regression Analysis on PSS for Mothers of Children with Autism in Hangzhou

Model	Independent variable	R	R ²	ΔR ²	P
model for Child aspect	CARS	0.518	0.268	0.268	0.000
model for Mother aspect	spousal relationship	0.405	0.164	0.164	0.001
model for Family aspect	Father's income	0.428	0.183	0.183	0.000
	Treatment cost	0.487	0.237	0.054	0.045

PSS, Parental Stress Scale

Table 10 shows the second stage analysis, CARS-P was the first significant factor entered into the equation which produced a significant variance of 26.6%. The second factor entered into the equation was from the mother's aspect- spousal relationship, which contributed 3% variance. Another two factors from the family aspect-father's income and treatment cost were the last two variables to be entered into the regression model, which both contributed only 4.1%. The last three predictors from mother and family aspects did not demonstrate the significant incremental variance on PSS score after being included in the equation.

Table 10: Summary of Hierarchical Regression Analysis on PSS for Mothers of Children with Autism in Hangzhou

Independent variable	R	R ²	ΔR ²	P
step 1 CARS-P	0.516	0.266	0.266	0.000
step 2 spousal relationship	0.545	0.297	0.030	0.113
step 3 Father's income Treatment cost	0.581	0.338	0.041	0.178

PSS, Parental Stress Scale

Table 11 shows the psychological distress (DASS-21) on mothers of children with autism in Hangzhou, three significant factors were found in the first stage on predicting DASS-21 score, which were child aspect- CARS-P (Beta=0.530, p=0.000), mother aspect-spousal relationship (Beta=0.536, p=0.000), family aspect - father's income (Beta=-0.472, p=0.000).

Table 11: Summary of Stepwise Regression Analysis on DASS-21 for Mothers of Children with Autism in Hangzhou

Model	Independent variable	R	R ²	ΔR ²	P
model for Child aspect	CARS-P	0.530	0.281	0.281	0.000
model for Mother aspect	spousal relationship	0.536	0.287	0.287	0.000
model for Family aspect	Father's income	0.472	0.223	0.223	0.000

DASS-21, Depression Anxiety Stress Scale-21

The three significant factors found in the stepwise regression analysis were introduced into the hierarchical regression model in succession. The considerable 38% variance was found in the first two steps – CARS-P and spousal relationship, which also showed significant increment. Although father's income did not contribute significant incremental variance on DASS-21 score, it still added 3% variance (Table 12).

Table 12: Summary of Hierarchical Regression Analysis on DASS-21 for Mothers of Children with Autism in Hangzhou

Independent variable	R	R ²	ΔR ²	P
step 1 CARS-P	0.530	0.281	0.281	0.000
step 2 spousal relationship	0.616	0.380	0.099	0.003
step 3 Father's income	0.640	0.410	0.030	0.085

DASS-21, Depression Anxiety Stress Scale-21

4.5 Is there a significant relationship between parenting stress and psychological distress among mothers of preschool children and elementary school with autism in Johor Bahru and Hangzhou?

As shown in Table 13, a significant Pearson *r* was found on PSS score and DASS-21 Score, as well as its subscale score among mothers of preschool children with autism in Hangzhou. Parenting stress was positively correlated to psychological distress (stress, depression and anxiety)

Table 13: Correlation between DASS-21 Score, Subscales Scores and PSS Score for mothers of preschool children with autism in Hangzhou

Scale/subscale	PSS	DASS-21	stress	depression	anxiety
PSS Pearson <i>r</i>	1	0.527**	0.481**	0.620**	0.373*
Sig.(2-tailed)		0.002	0.005	0.000	0.036

PSS, Parental Stress Scale; DASS-21, Depression Anxiety Stress Scale-21

Table 14: Correlation between DASS-21 Score, Subscales Scores and PSS Score for mothers of elementary school children with autism in Johor Bahru

Scale/subscale	PSS	DASS-21	stress	depression	anxiety
PSS <i>r</i>	1	0.320	0.312	0.376*	0.167
Sig.(2-tailed)		0.074	0.082	0.034	0.362

PSS, Parental Stress Scale; DASS-21, Depression Anxiety Stress Scale-21

For mothers of elementary children with autism in Johor Bahru, Pearson *r* for PSS score and DASS-21 score is 0.32 ($P=0.74$) which did not meet the significant level. However, there was a significant relationship between PSS score and DASS-21-depression score ($r=0.376$, $P=0.034$), which revealed a positive relationship between parenting stress and depression (Table 14).

Table 15: Correlation between DASS-21 Score, Subscales Scores and PSS Score for mothers of elementary school children with autism in Hangzhou

Scale/subscale	PSS	DASS-21	Stress	depression	anxiety
PSS Pearson r	1	0.505**	0.476**	0.583**	0.300
Sig.(2-tailed)		0.003	0.006	0.000	0.095

PSS, Parental Stress Scale; DASS-21, Depression Anxiety Stress Scale-21

For mothers of elementary school children in Hangzhou, a significant Pearson *r* was found between PSS score and DASS-21 score, as well as its subscale – stress and depression (Table 15). The higher level of parenting stress was related to the higher level of psychological distress (stress, depression).

5.0 DISCUSSION

5.1 Parenting Stress among Mothers of Children with Autism

Previous researches findings had discovered the differences on parental style, beliefs and values among parents from different countries and cultures (Roberts, 1994; Friedlmeier, Chakkarath, & Schwarz, 2005). Some focused mainly on a special subsection of the population, i.e. parents or families who have a child with autism. Dyches et al. (2004) studied the beliefs on autism among parents from different culture groups, which found that “the members of various cultures may appraise the stressor of autism differently, and these appraisals may be considered to be negative or positive.”

The above cross culture differences were apparent in some findings of this study. One of the research findings on mothers with preschoolers in this study indicated that mothers of children with autism in Hangzhou had a significantly higher level of parenting stress compared to mothers in Johor Bahru. However, for mothers of elementary school children, this study did not show a significant difference in parenting stress between mothers in Johor Bahru and Hangzhou, which is not consistent with the findings mentioned above. A study conducted by DeLambo et al. (2010) which referred to the traditional Asian culture found that Asian American parents of children with developmental disabilities experienced a significantly higher level of stress compared to the non-Asian parents. Although Johor Bahru and Hangzhou are two cities in Malaysia and China, which are both in Asia and they share some similar culture traits and do influence each other, they also differ in many aspects. It is also difficult to find research which compares the parents between these two countries.

Another possible explanation is due to the different rules or systems governing elementary education between Malaysia and China, especially the class timetable. Private or international schools are the important members in Malaysia elementary education. Most schools practice the morning and afternoon class system, which only provide half day education to their students. Due to situation, it is not unusual for students to be educated in two schools or a training/intervention center. The elementary school children in this study were mainly from an autism center which practices the morning and afternoon class system. On the other hand, students in China are required to study for the whole day, usually starting from early morning and finishes half past four in the afternoon. Most of the schools belong to the government and have similar text books, syllabus, and instruction. The research samples of elementary school children in this study were mainly from the six special schools in Hangzhou. Mothers of elementary school children in Hangzhou are somewhat released from

the daily care of their children, as their children study regularly in the school. In contrast, the mothers in Johor Bahru need to pay more effort on their children in choosing the school or center for another half day session as well as sending and picking up their children from school.

This study also found mothers in Hangzhou with preschool children experienced a significantly higher level of parenting stress compared to mothers with elementary school children, while no significant difference was found between mothers of preschool children and elementary school children in Johor Bahru. DeLambo et al. (2010) who compared Asian and non-Asian American parents with children with developmental disabilities found that when children grew older, parenting stress of non-Asian American parents decreased, but there was no change in Asian American parents due to the “culture of collectivism”, Asian American parents practiced more protective behaviour and provided much more assistance to their children. However, similar findings did not present on mothers from Hangzhou in this study.

In this study, mothers with preschool children were under more stress than mothers with elementary school children in Hangzhou. This may be attributed to the different teaching instructions and strategies used in preschool and elementary education in China. Most early education institutions or centers catering for children with autism in China require the parents to be involved in the education or intervention activities. The majority preschool age samples were from autism centers, which encourage the parents’ involvement. Furthermore, most mothers would stay for the whole day in the center with their children. In contrast, parents are not required to participate in the school instruction at the elementary education level in China. Most schools even provide boarding service. From the basic information report, in Hangzhou, 53.1% of mothers having preschool children with autism spent more than nine hours per day with their children, while only 12.5% of mothers with elementary school children spent more than nine hours per day. Hence, mothers of elementary school children tended to report less stress for getting more personal time from non-involvement in elementary education.

5.2 Psychological Distress among Mothers of Children with Autism

This study which compared the psychological distress among mothers of children with autism from Johor Bahru and Hangzhou found similar results among mothers of preschool and elementary children groups. A comparison of mothers of preschool children showed that mothers in Hangzhou tend to report significantly higher levels of psychological distress which was mainly presented through symptoms of depression. However, no significant difference was found between mothers with elementary school children in these two cities on the whole in terms of psychological distress, yet a significant difference was found when investigating from the depression aspect, which showed that mothers in Hangzhou experienced a higher level of depression compared to mothers in Johor Bahru. The study’s findings on the comparison of mothers from Johor Bahru and Hangzhou for both children’s age levels are quite similar in that mothers in Hangzhou experienced significantly higher level of depression than mothers in Johor Bahru. Costa et al. (2006) also found a significant difference in the reporting of depression between Caucasian parents and African American parents. Previous researches had found differences in emotional well-being and distress reported by mothers from different ethnicities or cultures (Magaña & Smith, 2006; Ho. et al., 2008). However, research on comparing parents from Malaysia and China is limited.

Fitzgerald et al. (2002) reported that parents of older children with autism experienced better maternal mental health and less care giving burden in comparison to parents of younger children. Different findings were discovered by Feldman et al. (1997) who pointed that

parents with school-age children reported higher stress than parents of infant/toddlers and preschool children. This study also compared the mothers of children with autism in different age groups, and did not find significant difference in the psychological distress between mothers with preschool and elementary children both in Johor Bahru and Hangzhou. However, from the depression aspect, there was a significant difference among mothers of children with autism in Hangzhou, which can be concluded to signify that mothers of preschool children experienced significantly more depression than mothers of elementary school children. On the other hand, no significant difference was found among mothers in Johor Bahru on the rating on the depression subscale.

Lounds et al. (2007) indicated that the maternal well-being was highly improved when children enter the education stage of high school. Evenson and Simon (2005) also pointed that when children were young and living at home, parents reported significantly more depression than nonparents. These findings were verified again in this study among mothers in Hangzhou. When children were educated regularly in the day time, mothers in Hangzhou tend to be less depressed compared to mothers of preschool children who were required to participate in the teaching or intervention activities. As discussed above in the section regarding parenting stress, the half-day education system in most Malaysian schools may be related to the fact that no significant difference in psychological distress was found among mothers in Johor Bahru.

The inconsistent findings among previous researches and this study in comparing parents of children in different age groups revealed that child's age or developmental traits are not the sole factor which may influence parents. Explanations on this research's findings should be caution and related to other information. The following part will discuss the further effect of child's age and other important factors which may influence parenting stress and psychological distress.

5.3 Factors Influencing the Parenting Stress

This study introduced an array of potential variables from the child, mother and family aspect to identify the significant factors which influence parenting stress among mothers of children with autism. For Malaysian mothers in Johor Bahru, the most important factors found in this study were perceived autism symptoms, spousal relationship and years been diagnosed. All of these three factors produced significant incremental variation and explained 21.4% of variation on parenting stress.

For Chinese mothers in Hangzhou, the most important factor found in this study was perceived autism symptoms of their children, which is the same with mothers in Johor Bahru. The other three factors were spousal relationship, father's income and treatment cost. They only contributed 7.1% of variation and the increment was not significant to the hierarchical regression model. All these four factors in total made up 33.8% of variation on parenting stress.

The two significant factors found in this study among mothers in both Johor Bahru and Hangzhou, i.e. perceived autism symptoms and spousal relationship may be the cross-cultural factors influencing parenting stress. Phetrasuwan and Miles (2009) found that severity of the child's autistic symptoms was not related to parenting stress. However, this study found that autism symptoms were significant and the most important factor influencing parenting stress of mothers in both cities. The strong consistent finding in Johor Bahru and Hangzhou was supported by majority of researches in different places and periods, which showed that the child's issues such as behavioural problems, and autism symptoms were

related to parenting stress (Tomanik, Harris & Hawkins, 2004; Wong, 2004; Lecavalier et al., 2006; Mak, Ho & Law, 2007; Osborne & Reed, 2009; Hoffman, 2009).

The different picture of parenting stress related factor between mothers in Johor Bahru and Hangzhou may be associated with the different education system between two countries. For mothers in Johor Bahru, they need to undergo the hassle of choosing the appropriate schools and shorting out the transportation problems of their children, as their children grow older. On the other hand, mothers in Hangzhou are released from their daily care giving work as their children are educated regularly in the daytime in the elementary schools, and the parenting stress was significantly decreased at the same time as discussed above in comparing mothers of preschool children and elementary school children. Although the results in Chapter 4 did not show any significant difference between mother with preschool children and elementary school children in terms of on parenting stress, the descriptive analysis did show that the PPS mean score of mothers of elementary school children was higher than mother of preschool children in Johor Bahru.

5.4 Factors Influencing the Psychological Distress

The significant factors influencing psychological distress were obtained for mothers in Johor Bahru and Hangzhou respectively. For mothers in Johor Bahru, there was no significant factor found in the child aspect for psychological distress. Only two factors were found to be significant in both the first and second stage, namely spousal relationship and treatment cost, which explained 27.6% of variation. Mothers in Johor Bahru with worse spousal relationship and higher treatment cost on their children tended to suffer more psychological distress.

For mothers in Hangzhou, two factors from the child and mother aspect – perceived autism symptom and spousal relationship (same factor with mothers in Johor Bahru), were found to be the significant and most important predictors to psychological distress. The third factor – father's income, which was found as the significant predictor only in the first stage, added only 3% of variation to psychological distress in the second stage. All of these three factors explained 41% of variation to psychological distress.

One possible explanation which can be put forth to explain the different picture of psychological distress related factors between mothers in Johor Bahru and Hangzhou, is related to the value assessment on their children with autism. In China, most family only have one child (one child family of research sample: 68.8%) due to the one-child policy. Parents and grandparents usually provide the best to their only child, such as toys, education. Hence, although the only child has been diagnosed with autism, they will still put in their best effort to treat them. According to the descriptive analysis, in this research samples, 60.3% of families paid above middle level of treatment cost which is above RM1001 per month, while in Johor, 42.2% of families paid above this level. Families in Johor Bahru did not spend so much treatment cost compared to mothers in Hangzhou on their children with autism, as most families do not only have one child; they usually have two or three or more than that (79.1% of families have two or more than two children in this research samples). Parents in Johor Bahru need to consider their other children without autism and provide similar amount of resources to them. In this situation, the treatment cost becomes an important factor contributing to their difficulties and distress.

5.5 Relationship between Parenting Stress and Psychological Distress

Prior research findings have found a relationship between parenting stress and maternal psychopathology as well as psychological well-being (Anastopoulos, et al., 1992; Johnston et al., 2003). This study also found a significant correlation between parenting stress and psychological distress (stress, depression and anxiety) among three groups which were mothers of preschool children in Johor Bahru, mothers of preschool and elementary school children in Hangzhou. For mothers of elementary school children in Johor Bahru, no significant correlation was found between parenting stress and the total psychological distress, but a significant correlation was found between depression and parenting stress.

Although findings in this study is not consistent in terms of the correlation of parenting stress and the total psychological distress for the four groups of samples, the findings on the correlation of depression and parenting stress were similar, which indicated that parenting stress was correlated to the psychological distress, especially on the depression aspect. Furthermore, the correlation coefficient on depression and parenting stress was higher compared to other two psychological distress aspects – stress and anxiety, which showed that a higher level of parenting stress was more strongly related to depression. This finding is consistent with other researches. Wolf et al. (1989) examined the psychological effects of parenting stress on parents of autistic children, and subsequently found that parenting stress was significantly related to depression.

Hastings et al. (2005) studied the psychological functioning in families of children with autism, and also found that maternal depression was a significant predictor to parental stress. Mothers with higher overall parenting stress tended to experience more depressive symptoms and lower levels of well-being (Phetrasuwan & Shandor Miles, 2009).

The relationship between parenting stress and psychological distress, especially the strong correlation on depression, was demonstrated by numerous past researches as mentioned above, as well as in this study. This consistent finding in past researches and this study implies that further study on the relationship between parenting stress and depression of parents of children with autism is necessary.

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