THE RELATIONSHIPS BETWEEN PARENTING STRESS, CHILD CHARACTERISTICS, PARENTING SELF-EFFICACY, AND SOCIAL SUPPORT IN PARENTS OF CHILDREN WITH AUTISM IN TAIWAN

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ABSTRACT

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Children with autism often place increased demands on their families due to the nature of their disorders. Research has repeatedly shown that parents of children with autism experience higher levels of stress and lower levels of overall well-being than parents of children with other disabilities, or parents of typical children. Compared to research on Western families of children with autism, research on Taiwanese families is limited. In addition, the role of parenting self-efficacy and social support and their relationship with parenting stress has remained unclear in the field of autism. The purpose of this study was to compare parenting stress (as measured by the Parenting Stress Index and the Family Stress and Coping Interview-Adapted) in parents of primary school-age children with autism (6-12 years) and parents of adolescent children with autism (13-18 years) in Taiwan. This study also explored the relative contribution of the children’s characteristics, including autism severity, communication skills, socialization skills, daily living skills, and problem behaviors, as well as parenting self-efficacy and social support in relation to parenting stress among parents of children with autism in Taiwan. Moreover, the mediating and moderating effects of parenting self-efficacy and social support on the relationship between behavior problems and parenting stress were
also examined. Lastly, some qualitative data were reported at the end of this study to expand the understanding of the sources of stress that Taiwanese parents of children with autism may be experiencing.

A total of seventy-nine parents of children with autism between the ages of six and eighteen years old participated in the study. In addition to face-to-face interviews, the participants completed four self-report measures and a demographic questionnaire. The results of Independent Samples t-tests showed no significant differences on the two parenting stress measures between parents of school-aged children with autism and parents of adolescent children with autism in Taiwan. The results of correlational analyses revealed that parenting self-efficacy, social support, autism severity, and behavior problems were significantly correlated with parenting stress for Taiwanese parents of children with autism. Moreover, in stepwise regression analyses, parenting self-efficacy, social support, and behavior problems were found to be the best set of predictors of parenting stress for Taiwanese parents of children with autism. A series of multiple regression analyses indicated that both parenting self-efficacy and social support demonstrated partial mediation as they both mediated the relationship between behavior problems and parenting stress among Taiwanese parents of children with autism. However, both parenting self-efficacy and social support failed to moderate the relationship between behavior problems and parenting stress. Lastly, qualitative data were reported based on responses to an open-ended question requesting parents to list the most important aspects that they would like to see change in rearing their children with autism.
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CHAPTER I

Introduction

Background and Need

Autism Spectrum Disorders (ASD), as specified in the DSM-IV-TR (American Psychiatric Association, 2000), involve limitations in social relatedness, difficulty acquiring verbal and nonverbal communication, and the presence of restrictive and repetitive patterns of behavior. Currently, there are three specific autism spectrum diagnoses, including: autistic disorder, Asperger syndrome, and Pervasive Developmental Disorder not Otherwise Specified (PDD-NOS). To meet criteria for a diagnosis of Autistic Disorder, or “autism” as articulated in the DSM-IV-TR (American Psychiatric Association, 2000), by the age of three, a child must display a developmental delay or abnormal functioning in social interaction, impairments in communication, and restricted interests, stereotypical, and repetitive behaviors. Recent epidemiological surveys indicated that, when appropriate measures of intelligence are used, approximately 40% to 55% of children with autism have cognitive impairment (Chakrabarti & Fombonne, 2005; Edelson, 2006). Asperger syndrome shares the social disabilities and restricted, repetitive behaviors of autism, but language abilities are well developed and cognitive functioning is not impaired (American Psychiatric Association, 2000). Nevertheless, in the DSM-V, which is expected to be published in May 2013, a revision in the definition of autism has been made that would redefine and consolidate the Autism spectrum, so that Asperger syndrome and PDD-NOS will be removed from the category of ASD (Shah, 2012).

Parenthood, stress, and joy are distinct concepts that at the same time are
connected in the experiences of parents around the world. As teachers, socializing agents, and service providers for children’s many fundamental needs, parents are critical to the health and development of their children. It is likely that parenting stress more strongly affects parenting behavior and children’s development than does stress in other domains of life, such as work-related stress (Coleman & Karraker, 1997). For parents of children with special needs, parenting stress may be particularly powerful as a cause and consequence of the variation that is found in parenting behaviors and children’s outcomes, and this is especially true for parents of children with ASD (Hastings, 2002). The pressure and strains of parenting a child with ASD are increasingly recognized in professional and academic fields. Parenting a child with developmental disabilities, especially ASD, is uniquely challenging and can be extremely stressful. The challenges involved in raising a child with ASD have been well-documented in the literature.


In addition, compared to parents of children with other disabilities, numerous studies suggest that not only are parents of children with ASD experiencing high levels of stress but those high levels of stress may have an impact on the progress that a child can make in his or her treatment or early intervention program (Osborne, McHugh, Sanders,
& Reed, 2008). Moreover, the prevalence of ASD is increasing at an alarming rate both in the United States and Taiwan. A December 2009 report by the Centers for Disease Control and Prevention (CDC, 2009) indicates that the average prevalence of ASDs identified among eight-year-old children has increased 57% in 10 sites studied from the 2002 to the 2006 surveillance year. At the same time, the number of individuals being diagnosed with ASD has increased annually by approximately 700 in Taiwan (Ministry of Interior, 2010). Given the fact that more parents are raising children with a diagnosis of ASD than ever before and the critical role that parents play in the treatment for their children with ASD, examining and understanding parents’ stress and needs in parenting their children with ASD becomes of utmost importance.

A body of literature sheds light on the challenges that many parents face when their children are diagnosed with a disability, such as autism. Parents of children with ASD may endure high levels of stress, often reported to be in the clinical range as scored on standardized measures (Baker-Ericzen et al., 2005; Kuhn & Carter, 2006; Tomanik, Harris, & Hawkins, 2004). In addition, without proper supports, these parents may experience higher levels of psychological distress. Mothers and fathers of children with ASD consistently score higher on measures of stress, depression, and anxiety than parents of typically developing children (Baker-Ericzen et al., 2005; Dumas et al., 1991; Hastings & Johnson, 2001; Rodrigue et al., 1990). Moreover, stress and depression affect both parents and children negatively as children and parents reciprocally influence each other, and so child development is affected by parenting behavior which is subject to child effects on parents (Brofenbrenner, 1992; Coleman & Karraker, 1997). For example, parental psychological distress, such as depression, is consistently related to negative
parenting practices, such as harsh and punitive parenting responses (Teti, O’Connell, & Reiner, 1996), and decreased interaction with the child (Kasari & Sigman, 1997). In addition, high levels of parenting stress may affect a parent’s ability to learn new parenting skills (Hastings & Beck, 2004). Furthermore, a number of studies show that parenting stress and child behavior problems correlate with one another (Estes et al., 2009; Hasting & Brown, 2002; Lecavalier, Leone, & Wiltz, 2006; Osborne & Reed, 2009; Osborne & Reed, 2010; Plant & Sanders, 2007). Specifically, researchers have found that it is parents’ limit setting skills that mediate the relationship between parenting stress and child behavior problems in parents of children with ASD (Osborne, McHugh, Saunders, & Reed, 2008; Osborne & Reed, 2010).

While the relationship between having children with ASD and parenting stress levels is well-documented, the association between parenting stress and parenting behavior has received less research attention. Bandura’s theory and research on self-efficacy (Bandura, 1997) have influenced research on parenting self-efficacy beliefs as a central correlate of parenting behavior (Coleman and Karraker, 1997; 2000; Mash and Johnston, 1983; Osborne & Reed, 2010), with evidence suggesting that parenting self-efficacy may mediate the effects of a number of parent and child variables on the quality of parenting (Coleman & Karraker, 1997; Teti & Gelfand, 1991). In the context of ASD, Hastings and Brown (2002) found evidence that a high level of parenting self-efficacy may serve as a protective factor toward parents’ overall well-being when caring for children with ASDs. These findings are consistent with Lazarus and Folkman’s (1984) transactional stress and coping model in which the concept of stress is the result of interactions between a parent and his or her environment and that parenting self-efficacy can serve as a coping resource.
to reduce the levels of parenting stress.

To date in the United States, since parents of children with ASD tend to suffer from higher than average rates of anxiety, depression, and stress due to greater child care-taking responsibilities, the apparently increasing prevalence of ASD has became a concern for both parents and service providers. The CDC (2011) reported that the prevalence of ASD, including childhood autism, Asperger syndrome, pervasive developmental disorders, and other autistic-like conditions is estimated as 1 in 88 children in the United States.

In order to improve understanding of the prevalence, population characteristics, and public health impact of autism, the Taiwan government has named ASD as one of the registered disabilities according to the Physically and Mentally Disabled People Protection Act (1997). Data collected by the Department of Statistics, Ministry of the Interior, Taipei, Taiwan, showed that the registered number of people with ASD drastically increased from 2062 to 7207 from the year 2000 to 2007 and to 10707 in 2011 (Ministry of Interior, 2011). According to the 2010 annual report, among the autism population, 87.1% were male and 12.9% were female. In terms of severity of autism, 57.6% were mild, 27.1% were moderate, 13.6% were severe, and 1.8% were extremely severe in year 2010 (Ministry of Interior, 2010). The number of individuals being diagnosed with ASD has increased annually by approximately 700.

Despite the fact that the rate of ASD is continuously rising in Taiwan, professional services and resources for children with disabilities still have not been well developed in Taiwan (Chang & Hsu, 2007; Ho & Huang, 2007). For example, in a qualitative study, Chang and Hsu (2007) found that not only were professional services lacking as reported
by the majority of Taiwanese parents of children with disabilities who participated in their study, but also there was widespread dissatisfaction with professional services. Kuo and Yu (2006) suggested the Taiwan government should integrate social and medical resources together and establish a system that provides effective services to serve families of children with special needs.

In working with a condition that affects behavior, language, and social interactions as significantly as ASD does, one can easily overlook questions about the contributions of cultural background to the parents’ and children’s needs. Chang and Hsu (2007) suggested two important factors that may contribute to parenting stress of Taiwanese parents of children with special needs: social stigma and the lack of supports and effective resources for families of children with disabilities. Indeed, Chinese families (e.g., Hong Kong, China, Taiwan) face challenges relating not just to lack of appropriate services, but also to the stigma regarding disabilities. For example, Fong and Huang (2002) found that family members in Hong Kong as well as mainland China were far more unwilling to admit to having a family member with epilepsy due to shame or fear of discrimination compared to those in Western culture. Within families themselves, there is often a feeling of shame about having a child with disability. As Chinese culture places high value on familialism and motherhood, disabilities are seen by many families as the result of something the mothers have done, and therefore they are to be blamed (Holroyd, 2003). Consequently, in order to understand the impact of an atypically developing child in the family system and to develop strategies for helping Taiwanese parents, educators and other related professionals must take the effort to understand the unique difficulties experienced by these parents of children with disabilities (Chang & Hsu, 2007; Ding,
Yang, Slayer, Harper, Guo, Liu, & Feng, 2010; Ho & Huang, 2007).

**Statement of Problem**

Research has repeatedly shown that parents of children with ASD experience higher levels of stress and lower levels of overall well-being than parents of children with other disabilities or parents of typical children. It has been shown that a parent’s stress may negatively affect a child’s development and effectiveness of treatment programs (Osborne et al., 2008). In addition, researchers also found that as parenting stress levels increased, the quality of interactions with the child decreased (Kasari & Sigman, 1997; Wang, 2008). It is essential for service providers and professionals to understand the stressors and strains that parents experience and the coping resources utilized by them while raising children with ASD. Utilizing the information gathered from such a study may allow for the design of a model of treatment or intervention that can effectively teach parents how to more effectively cope with the distressing aspects of raising a child with ASD.

Compared to research on Western families of children with ASD, research on Taiwanese families is scarce. Neither the search engines in United States (i.e., ERIC, Educational Full Text) nor the search engines in Taiwan (i.e., Chinese Electronic Periodical Services, Airiti library) produced many results in finding articles related to Taiwanese families of children with ASD. Moreover, the role of parenting self-efficacy and social support and their effects on parenting stress, has remained unclear in the field of ASD. Hastings and Brown (2002) suggested that greater clarity is needed on the relative contributions of child characteristics, parental resources, parenting self-efficacy,
and potential mediating and moderating influences between parenting stress and child problems. As parental beliefs and methods of coping and approaches to parenting are likely to vary from culture to culture, this study will focus on parents of children with ASD in Taiwan. Additionally, researchers have suggested that parents may experience stress and perceive parenting self-efficacy differently depending on the stage of development of their child (Kuhn & Carter, 2006; Mash & Johnston, 1983; Tobing & Glenwick, 2002). Therefore, certain types and sources of social support may be more helpful to parents at different life stages (Tehee, Honan, & Hevey, 2009; White and Hastings, 2004).

For the purpose of the present study, ASD refers to the three autism spectrum diagnoses mentioned previously, including: autistic disorder, Asperger syndrome, and PDD-NOS. “Autism” on the other hand, refers specifically to “autistic disorder” only, which is one of the criteria in selecting participants in this study. Children with Asperger syndrome and PDD-NOS were not included in this study. The present study compared parenting stress and stress related specifically to caregiving in parents of primary school-age children with autism (6 - 12 years) and parents of adolescent children with autism (13 - 18 years) in Taiwan. This study also explored the relative contributions of the children’s characteristics, including autism severity, communication skills, socialization skills, daily living skills, problem behaviors, as well as parenting self-efficacy and social support in relation to parenting stress among parents of children with autism in Taiwan. Moreover, the effects of parenting self-efficacy and social support on parenting stress were examined. Specifically, whether parenting self-efficacy and social support serve as a mediator or a moderator in relation to child’s characteristics on parenting stress was explored. And lastly, an open-ended question requesting parents to state the most
important aspects that they would like to see change in parenting their child with autism asked.
CHAPTER II

Review of the Relevant Literature

The literature review in this chapter is divided into five parts. The first part of the literature review focuses on the theoretical framework for this study. In this section, parenting stress is first defined within Lazarus and Folkman’s (1984) stress and coping model and discussed in the context of ASD and Abidin’s (1991) parenting stress model. The second part of the literature review focuses on the stressors associated with parenting of children with ASD. In this part, child characteristics including autism severity, social communication impairment, behavior problems, and adaptive skills deficits are discussed in relation to parenting stress. The third part of the literature review focuses on coping resources, which includes detailed discussion of social support and the concept of parenting self-efficacy and their relationships with parenting stress. The fourth part of the literature review discusses how children’s age may be a variable affecting parenting stress and parenting self-efficacy. The last part of the literature review addresses the research and issues related to parenting stress research in Taiwan. Finally, this chapter ends with the rationale for the current study and the research questions being examined.

Theoretical Framework

Of the many theoretical models of stress in the literature, Lazarus and Folkman’s model of stress, appraisal, and coping (1984), seems particularly useful in understanding issues of parenting stress among parents of children with disabilities. According to Lazarus and Folkman (1984), the concept of stress is not a variable, but a term consisting of many variables and processes. Stress is defined as “a relationship between the person and the environment that is appraised by the person as taxing or exceeding his or her
resources and endangering his or her well-being” (Lazarus & Folkman, 1984, p.21). In other words, Lazarus and Folkman (1984) described stress as a construct in which a person’s experience of an event as stressful, and his or her reactions to the event, are mediated by a series of cognitive appraisals about the event and the availability of resources to deal with it. The stress process usually begins with an environmental event or stressor. The individual then interprets the event, judging whether or not it is benign or stressful. If the event is stressful, the primary appraisal process considers whether it constitutes harm (damage has already been sustained), threat (harm that has not yet taken place but is anticipated), or challenge (there is a perceived potential of harm, but also for gain if the event is successfully managed). Once the threat or challenge has been identified, a secondary appraisal takes places in which the person evaluates the available options, resources, or strategies for dealing with the threat and challenge and the likelihood that the person will be successful (Lazarus, 1993; Lazarus and Folkman, 1984).

When applied to parenting a child with ASD, the threats or challenges that a parent faces may include many situational factors related to raising the child, such as financial burden and increased child-care responsibilities. If the threats or challenges of raising a child with ASD have not been coped with adequately due to the lack of effective strategies, resources, or supports, then the parent will experience “the stress response” which may include anxiety, fear, grief, anger, and depression. In general, the core feature in the theory of parenting stress is the idea of a balancing act between the parent’s perceptions of the demands of his/her role and access to available resources for meeting these demands. Accordingly, parenting stress arises when the parent’s expectations about the resources needed to meet the demands of parenting are not matched by available
resources. In fact, drawing on Lazarus and Folkman’s stress and coping model (1984), Abidin (1990; 1992) proposed a parenting stress model in which he postulated that initial parenting stress is seen as the result of a parent’s primary appraisal that a threat or a challenge is posed by potential stressors, in the context of their relevance to their parenting role. In a process analogous to Lazarus and Folkman’s (1984) stress and coping model, in terms of parenting, the relevant stressors such as situational variables (work, marital relationship), parent characteristics, and child characteristics may all become potential threats to a parent. Parenting stress, which Abidin (1992) considered a motivating variable (primary appraisal), prompts the parent to assess available resources including social support, parenting alliance, parenting self-efficacy, and material resources (secondary appraisal) in support of his or her parenting role, which in turn influences parenting behaviors at a later time. Abidin (1990; 1992) further postulated that, in his model of parenting stress, there are bi-directional parent effects on the child, and child effects on the parent. Parenting stress in Abidin’s model (1990; 1992) posits three separate components: parent domain, child domain, and parent-child dysfunctional relationship domain. Parent domain stress is most strongly associated with problems in the parent’s own functioning, such as depression and anxiety. Child domain stress is most strongly linked with attributes of the child, such as social skills, adaptive skills, and behavior problems. The parent-child dysfunctional relationship domain is tied primarily to the degree of conflict in the parent-child relationship. These three domains of parenting stress can cause further decrements in many aspects of the quality and effectiveness of parenting behavior, which then in turn can promote further increases in child emotional and behavior problems.
Stressors Associated with Parenting of Children with ASD

Parenting stress and psychological distress among parents of children with ASD.

Children with special needs are often dependent upon parents to meet their needs. Parents may therefore find caregiving tasks more burdensome, and as a consequence, they experience higher levels of stress. Indeed, numerous research studies have demonstrated that parents of children with developmental delays are likely to experience significantly higher levels of child-related stress than parents of typically developing children (Baker, Blacher, Crnic, & Edelbrock, 2002; Baker-Ericzen et al., 2005; Beck, Daley, Hastings, & Stevenson, 2004; Dumas et al., 1991; Eisenhower, Baker, & Blacher, 2005; Hastings & Beck, 2004; Plant & Sanders, 2007; Rodeigue et al., 1990; Smith, Matthew, Oliver, Mark, & Innocenti, 2001). However, despite the broad findings, researchers also found that parents of children with disabilities vary considerably in the levels of stress they experience and that their stress levels are associated with a wide range of variables, such as family support and family resources (Boyd, 2002; Keen, Couzens, Muspratt, & Rogers, 2010), difficult child behavior (Estes et al., 2009; Griffith et al., 2010; Hastings, 2002; Hastings and Brown, 2002; Lecavalier, Leone, & Wilts, 2006; Osborne and Reed, 2009; Plant & Sanders, 2007) and level of child’s disability (Baker-Ericzen et al., 2005; Hastings & Johnson, 2001; Plant & Sanders, 2007).

Numerous research studies have found that, as a group, parents of children with ASD appear to be the most adversely affected by the stressors that result from raising children with disabilities. For example, mothers of children with autism have been found to report more stress than parents of children with other developmental disabilities, including Downs syndrome (Dabrowska, & Pisula, 2010; Dumas et al., 1991; Griffith et
al., 2010; Kasari & Sigman, 1997), cerebral palsy (Blacher, & McIntyre, 2006); and fragile X syndrome (Abbeduto, Seltzer, Shattuck, Krauss, Orsmond, & Murphy, 2004). The general finding is that the mothers of children with ASD report poor attachment, more behavior problems, and less gratification from their children than do mothers of children with other disabilities. In addition, using multivariate analyses of covariance, with children’s chronological age as the covariate, Rodrigue et al. (1990) found that mothers of children with autism (n = 20) reported less parenting self-efficacy, less marital satisfaction and reduced family adaptability, compared with the mothers of Down syndrome children (n = 20) and children without disabilities (n = 20). Specifically, mothers of children with autism reported a lower level of perceived competency in dealing with challenging behaviors compared to mothers of children with Down syndrome and mothers of typically developing children, which suggests that mothers of children with autism may feel more uncertain about whether they possess the skills necessary to be a good parent relative to mothers of children with Down syndrome and mothers of typically developing children. The authors argued that mothers may question their own competence as parents because their children with autism do not respond to them in a manner that was expected. More recently, the findings of Griffith et al. (2010) provided further support to Rodrigue et al.’s. (1990) study that mothers of children with autism reported significantly higher levels of maternal stress than mothers of children with Down syndrome and mothers of children with mixed etiology intellectual disabilities. There were 19 mothers in each group with children who ranged in age from 4 years to 18 years old and all had intellectual disabilities. Child behavior problems were assessed using the Behavior Problems Inventory (BPI; Rojhan, Matson, Lott, Ebensen, &
Small, 2001) and the social competence scale of the Nisonger Child Behavior Rating Form (NCBRF: Aman, Tasse, Rojahn, & Hammer, 1996) was used to assess children’s positive behavior, such as calm/compliant behaviors and adaptive/social behaviors. Parenting stress was measured by the Questionnaire on Resources and Stress-short form – The Parent and Family problems subscale (QRS-F; Fredrich, Greenburg, & Crnic, 1983), and parents’ psychological distress was measured by the Hospital Anxiety and Depression Scales (Zigmond & Snaith, 1983). The study implemented a matched group design on child (a) gender, (b) age, and (c) the communication standard score measured by the Vineland Adaptive Behavior Scales (VABS; Sparrow, Balla, & Cincchetti, 1984). Using a between-subjects ANOVA, the results showed that mothers of children with autism scored significantly higher on maternal stress than mothers of children with Down syndrome, and significantly lower on positive perceptions than both mothers of children with Down syndrome and mothers of children with mixed etiology. Furthermore, the difference for maternal stress remained even after controlling for child behavior problems and positive behaviors. They also found that mothers of children with autism rated their child as having significantly lower positive behaviors, as well as engaging in more problem behaviors when compared to mothers of the other two groups. Parallel to Rodrigue et al. (1990), such findings may imply that parents of children with autism feel they lack the necessary skills to handle the challenging behaviors that their child brings to the family.

In a large scale National Survey of Children’s Health, parents of children with autism (N = 459) were compared with parents of children with special health care needs, including emotional, developmental, or behavioral problems other than autism (N =
parents of children with special health care needs without developmental problems (N = 11,475), and parents of children without special health care needs (N = 61,862). The children ranged from 4 to 17 years old. The outcomes related to parenting stress and aggravation were assessed using the Aggravation in Parenting Scale developed by the National Survey of America’s Families studies (Ehrle & Moore, 1997). The researchers found that parents of children with autism reported high levels of stress and aggravation. Specifically, their level of Aggravation in Parenting was significantly higher than that observed for parents in the other three groups. Moreover, the parents of children with autism and with recent special service needs were substantially more likely to have high aggravation than parents of children with recent special service needs in each of the three comparison groups (Schieve, Blumberg, Rice, Visser, and Boyle, 2007). These findings suggested that characteristics of autism which may be uniquely related to parenting stress, include a wide range of characteristics, such as severity of autism behavior difficulties and/or cognitive functioning, lack of the child’s daily living skills, and social communication problems.

The birth of any child may change a family structure, but the usual stresses accompanying change are exacerbated when a child’s disability requires a special kind of care. As discussed previously, parents often face enormous stress in having a child with ASD. For many, there are complex stressors associated with parenting a child with ASD (Baker-Ericzen, et al., 2005; Davis & Carter, 2010; Donenberg & Baker, 1993; Hastings & Brown, 2002; Hastings & Johnson, 2001; Lecavalier et al., 2006; Ling, 2011; Osborne & Reed, 2009; Rao & Beidel, 2009; Tobing & Glenwick, 2006). The extraordinary demands of daily life with a child with ASD can challenge and drastically reduce the
strength of the most competent parents. Not only does the child require frequent attention and skilled intervention in his or her eating, sleeping, toileting, dressing, and play-time activities, the child’s behavior patterns, both inside and outside the home, tend to limit and interfere with the usual course of family functioning. Moreover, parents of children with ASD may also need to deal with the guilt arising from others attributing the social and behavior difficulties to the parents’ “mismanagement” of their child with ASD, which is especially true among Chinese societies (Holroyd, 2003). In attempting to explain why parents of children with ASD experience higher levels of stress, researchers have examined the associations between various child variables and parenting stress in parents of children with ASD. The following section discusses the possible stressors in detail.

**Child characteristics as stressors.**

**Severity of child's symptoms.**

Logically, the severity of the child’s autistic symptoms would be expected to have much to do with the degree of stress experienced by their family. Indeed, Hastings and Johnson (2001) reported that higher levels of symptomatology and severity of impairment involved with ASD were associated with higher levels of reported parenting stress. One hundred and forty-one parents from the United Kingdom participated in the study. The Autism Behavior Checklist (ABC: Krug, Arick, & Almond, 1980) was used to examine an overall index of the severity of autism. The Questionnaire on Resources and Stress – Short Form (QRS: Friedrich et al., 1983) was used to measure parenting stress. Multiple regression analyses were used to explore predictors of parenting stress.
within the sample. The results showed that the primary source of stress for parents of children with ASD is the severity of autistic characteristics of the child. Similarly, with a sample of 97 mothers of children with various forms of pervasive developmental disorders, Tobing and Glenwick (2006) investigated the relationships between parenting stress, psychological distress, and the levels of impairment in their children. The Childhood Autism Rating Scale-Parent Version (CARS-P: Shopler, Reichler, DeVellis, & Daly, 1980) was used to assess mothers’ views of their children’s level of impairment in verbal/nonverbal communication and relatedness with others. The Parenting Stress Index/Short Form (PSI-SF: Abidin, 1995) was employed to assess mothers’ levels of parenting stress and the Brief Symptom Inventory-18 (BSI-18: Derogatis, 2000) was used to measure mothers’ psychological distress such as anxiety, depression, and somatization. They found that mothers who reported greater levels of impairment in their children reported higher levels of parenting stress and psychological distress.

**Social communication impairment.**

It is known that children with ASD often have social communication difficulties. They also engage in repetitive and stereotypic behaviors that present challenges to parents who find it difficult to interact with their children in a more socially appropriate manner, especially in a public setting. In addition, another problem of social interaction in children with ASD centers on a characteristic lack of reciprocity. Although many children with ASD may demonstrate emotional attachments to their parents or other primary caregivers, they may not respond to love and affection in the way in which the parents expected (Kasari & Sigman, 1997). In addition, children with ASD often seem to ignore or misinterpret people’s emotional behavior, and so show lack of awareness of the
feelings of others (Sigman, Kasari, Kwon, & Yirmiya, 1992). Together, this lack of social reciprocity and lack of awareness of other’s feelings can result in inappropriate social behavior and an obvious lack of empathy in children with ASD and has been shown to correlate with parenting stress and psychological distress in parents of children with ASD.

Baker-Ericzen et al. (2005) investigated the child characteristics that may predict stress levels in mothers and fathers of children with ASD. The participants were fathers and mothers of toddlers with ASD (n=37) and fathers and mothers of typically developing toddlers (n=23). The Gilliam Autism Rating Scale (GARS: Gilliam, 1995) was employed to assess the severity of autistic symptoms as well as child’s stereotyped behaviors, communication, and social interaction. The Parenting Stress Index (PSI: Abidin, 1995) was used to assess parenting stress in two domains: parent domain and child domain. The Bayley Scales of Infant Development (BSID-II: Bayley, 1993) was used to measure children’s development. The study found that both mothers and fathers of toddlers with ASD reported significantly higher stress levels on Child Domain Stress than parents of typically developing toddlers. Specifically, for mothers of children with ASD, the results showed that child cognitive functioning and symptoms of autism significantly predicted scores on Child Domain stress for the mothers. However, only the Social Interaction score was a significant independent predictor of total stress score of the mothers. Although this study suggested the importance of a focus on social deficits in children with ASD in order to increase both child and parent overall functioning, it is not known which specific aspects of social interaction deficits affect parental stress levels.

In a large study of 880 parents of children with moderate and severe
developmental delays, Smith, Oliver, and Innocenti (2001) found that of the five aspects of child functioning assessed by the Battelle Development Inventory (BDI: Newborg, Stock, Winck, Guidubaldi, & Svinick, 1984), only personal/social development was significantly related to parent stress. This finding suggested that decreased social responsiveness or reciprocity in children with autism may be related to higher levels of parenting stress. In fact, Kasari and Sigman (1997) compared parenting stress levels of parents of young children with autism, intellectual disabilities, and typically developing children in relation to the child’s temperament. They found that parents who reported greater stress had children with autism who were less responsive in social interactions with others and with the parents themselves. Furthermore, in a population-based study, mothers of 6,1772 children who were 4 to 17 years of age were surveyed by the National Survey of Children’s Health (2003) to study the psychological functioning in these mothers. Mothers of children with autism (n = 364) were compared with other mothers on the mental health and other psychological functioning variables. Maternal mental health, parenting stress, coping, parent support, and family communication were measured by questions created for the survey study. Child social skills were measured by the sum of four items adapted from the Positive Behavior Scale, which scale was validated by the CDC, according to the researchers. The study found that mothers of children with autism in the United States had high levels of parenting stress and were more likely to report mental or emotional health issues compared with the general population. The results indicated that parenting stress was specifically related to the child’s poor social skills as mothers in the study reported that they were less likely to be able to communicate with their child, even when compared with mothers of children with
similar social skills. Moreover, association between child’s behavior and parenting stress was no longer significant after controlling for demographic variables and the child’s social skills. (Montes & Halterman, 2007). This is consistent with the findings of Baker-Ericzen et al. (2005) and Kasari and Sigman (1997) that the child’s poor social skills may be an important reason for why mothers of young children with ASD experienced higher levels of stress compared with mothers of children with other disabilities or typically developing children.

Adaptive skill deficits.

Apart from having problems in social interaction and communication, and stereotyped behaviors, many children with ASD also have difficulties in learning self-care skills. Children with ASD often find daily living skills difficult to master, and they are sometimes unable to perform these functions without assistance, especially when the children are young. In fact, Weiss, Sullivan, and Diamond (2003) have found adaptive behaviors to be associated with parenting stress in parents of children with developmental disabilities (n = 97). The PSI (Abidin, 1995) was used to assess mothers’ and fathers’ stress and the Adaptive Behavior Scales – Residential and Community Editon (Nihira, Leland & Lambert, 1993) was used to assess the child’s adaptive impairment. The results indicated that lower levels of adaptive skills were predictive of higher parenting stress. Similarly, Plant and Sanders (2007) investigated the factors that impact the level of parent stress associated with caring for a preschool-aged child with developmental disability. With 105 families of children with various developmental disabilities, the authors were able to replicate Weiss et al.’s (2003) findings that higher levels of parenting stress were reported in parents of children with lower adaptive skills. In
addition, the results also showed that the presence of the more difficult caregiving tasks and the presence of child behavior problems while completing caregiving tasks were the most significant contributors to the levels of parent stress.

**Behavior problems.**

The majority of the research on ASD and parenting stress has focused on children’s externalizing behaviors (i.e., assaultive behavior, self-injury, hyperactivity). Donenberg and Baker (1993) compared the impact on families of young children with externalizing behavior problems (n=22), children with autism (n=20), and typically developing children (n=22) on several measures of family functioning. The authors found that parents of children with externalizing behavior problems and autism experience higher child-related stress than parents of typically developing children.

Lecavalier et al. (2006) provided further evidence that children’s behavior problems may predict parental stress. The researchers examined the effect of children’s behavior problems and adaptive skills with a total of 293 parents and teachers of young children with ASD. The findings suggested that conduct problems, such as disobedient, non-compliant, and aggressive behaviors of both children and adolescents with ASD were the factors most strongly associated with parenting stress. Moreover, they found that the associations of behavior problems of their children with ASD and parenting stress were quite stable over the one-year interval and children’s behavior problems and parenting stress exacerbated each other over time. On the other hand, children’s adaptive skills were not significantly associated with parenting stress. Further support comes from Tomanik and his colleagues (2004). They found that aberrant behavior of a child with autism is a strong predictor of parenting stress. The participants in this study consisted of
60 mothers of children ranging from 2 to 7 years of age diagnosed with a pervasive developmental disorder including includes autism and Asperger syndrome. Mothers completed the Parenting Stress Index (PSI; Abidin, 1990), the Aberrant Behavior Checklist (ABC; Aman & Singh, 1986), and AAMR Adaptive Behavior Scales (Nihira et al., 1993) and a demographic questionnaire. Regression analysis was performed in order to determine if aberrant and adaptive behavior of the child would predict maternal stress as measured by the PSI. The results showed that mothers of children with ASD reported the greatest stress when their children were more irritable, lethargic/socially withdrawn, hyperactive/non-compliant, unable to take care of themselves, and unable to communicate or interact with others. This finding is consistent with Baker et al. (2002) and other studies that have demonstrated a relationship between the behavior of children with autism and parenting stress levels (Donenberg & Baker, 1993). However, the researchers did not support the findings of Lecavalier et al. (2006) in that children’s adaptive functioning was not found to be a significant predictor of parenting stress.

Osborne and Reed (2009) reported interesting results on the relationship between the children’s behavior problems, autistic symptomology, and parenting stress. The authors of the study examined the interaction between parenting stress and behavior problems in children with ASD. In the study 165 parents of children with ASD with an age range from 2.6 to 4.0 years old were recruited to participate in the study. The child measurements included several instruments targeting different aspects of child characteristics. The Gilliam Autism Rating Scale (GARS; Gilliam, 1995), which was used to assess the degree of the child’s autistic severity, the British Abilities Scale (BAS; Elliott, Smith, & McCulloch, 1996), which tested for children’s cognitive abilities, the
Vineland Adaptive Behavior Scale (VABS; Sparrow et al., 1984), which assessed children’s day-to-day adaptive functioning, and lastly, the Conners’ Parent Rating Scale (CRS-R; Conners, 1997), which assessed children for behavior problems, were employed in the study. The Questionnaire on Resources and Stress (QRS-F Friedric et al., 1983) was utilized to assess parental stress levels. The researchers administered the same tests to all children at Time 1 and then at Time 2, after 9 to 10 months. The results showed that when the child was younger at Time 1, autistic severity was the best predictor of parenting stress. However, at Time 2, when the child became older, parent-rated child behavior problems were the best predictors of parenting stress. The second study, conducted to replicate the findings of Study 1, examined the relationship between parenting stress and child behavior problems. Study 2 used a group of children with ASD who represented a wider age range than those in the first study. A total of 83 children with ASD whose age ranged from 5.0 to 16.0 years old, participated in the study. The parents of these children were also recruited to assess their parenting stress levels. The results again showed a strong relationship between child behavior problems and parenting stress. Specifically, the relationship was especially strong for externalizing and disruptive-type child behavior.

Children’s behavior problems can negatively affect the family’s daily living situation by limiting engagement in leisure or recreational activities. For example, if a child has tantrums in public areas (e.g., a restaurant), the family may avoid taking their child into the community. For these reasons, families can develop feelings of social isolation and choose not to engage in such activities. For a family that enjoys spending time in community settings, having a child who engages in disruptive behaviors can be
quite stressful and overwhelming. In turn these areas of family stress can inevitably lead to a lowered quality of life for the children and for their family members. Indeed, the association between the behavior problems in children with ASD and parenting stress and psychological distress is well established (Baker et al., 2002; Beck et al., 2004; Donenberg & Baker, 1993; Dumas et al., 1991; Hastings & Brown, 2002; Lecavalier et al., 2006; Osborne & Reed, 2009; Tomanik et al., 2004). Moreover, researchers further showed that behavior problems predict parenting stress when salient child factors, such as child age, child gender, and communication skills were controlled (Griffith et al., 2010). Furthermore, the relationships between parenting stress and child behavior problems can be bi-directional. With 138 parents of children with ASD, Osborne and Reed (2010) found that parenting stress was closely linked with self-perceived involvement, communication, and limit setting parenting behaviors. The researchers suggested that parenting stress may influence parenting behaviors (i.e., communication with the child, limit setting), which, in turn, would impact on child behavior problems. The results also explain the findings that high parenting stress is associated with higher levels of child behavior problems (Osborne & Reed, 2009), as well as with poor intervention outcomes for children with ASD (Osborne et al., 2008).

In terms of parents’ psychological outcomes and problem behaviors, Hastings and Brown (2002) also found that parents of children with autism, especially mothers, showed high levels of potential mental health problems, as shown on the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983), when the levels of children’s problem behavior were also high. In addition, the extent of the child's behavior problems (e.g., frequency, severity) significantly predicted the parent's level of anxiety and
depression. Thus, not only are behavior problems in a child with a disability one of the major predictors of parenting stress, it appears as though the extent of behavior problems can be used to predict the extent of parent psychological distress (Dumas et al., 1991; Hastings & Brown, 2002).

The association between behavior problems and parent psychological distress has also been explored by Beck, Hastings, and Daley (2004) in their investigation of behavior problems and pro-social behavior. With a sample of 74 mothers of children with intellectual disabilities, they found that, as predicted, a lack of adaptive behavior skills in children did not significantly predict maternal stress. Alternatively, the children's behavior problems and social behavior significantly predicted maternal stress. Both increased behavior problems and decreased pro-social behaviors were associated with increases in maternal stress. The study did not, however, provide strong support for the findings of Hastings and Brown (2002), in that mothers of children with intellectual disabilities appeared not to experience particularly high levels of psychological problems when compared with normative data (Beck et al., 2004).

A study conducted by Estes et al. (2009) investigated how the children’s adaptive behavior and behavior problems may influence maternal parenting stress and psychological distress among parents of children with ASDs (N = 51) and parents of children with general developmental delay (N = 22). All children in the study were preschool aged. In addition, the children in each group did not differ in terms of child age, race, or non-verbal mental age. The Questionnaire on Resources and Stress (QRS: Konstantareas, Homatidis, & Plowright, 1992) was used to assess stress and burden of care in families of children with disabilities. The Brief Symptom Inventory (BSI:
Derogatis and Melisaratos, 1983) was used to measure parents’ symptoms of psychological distress. The Aberrant Behavior Checklist (ABC: Aman and Singh, 1986) was employed to measure problem behaviors of children with disabilities, and finally, the Vineland Adaptive Behavior Scales Interview Edition (Sparrow et al., 1984), the daily living skills domain, was utilized to assess children’s adaptive skills. The authors found that mothers of children with ASDs reported higher levels of parenting stress and psychological distress than mothers of children in the developmental delay group. Furthermore, child problem behavior was associated with increased parenting stress and psychological distress in both mothers of children with ASDs and children with developmental delay. Neither child diagnosis nor child’s adaptive skills was significantly related to parenting stress or mother’s psychological outcome. These findings are supported by some previous research that found no significant relationship between child’s adaptive functioning and stress in parents of children with developmental disabilities (Beck et al., 2004; Lecavalier et al., 2006), but contradicted Tomanik’s et al. (2004) findings. The authors further suggested that the elevations of parenting stress may be related to decreased parental quality of life and self-efficacy (Donnenberg and Baker, 1993; Hastings and Brown, 2002; Rodrigue et al., 1990).

In conclusion, studies have found a connection between children’s problems or limitations and parenting stress and psychological distress in parents of children with ASD. Overall, individual differences over a wide range of children’s social/communication skills, levels of disabilities, adaptive skills, and behavior problems are associated with parenting stress and psychological distress, with greater child skill and ability associated with less stress. Data from studies indicated a positive relationship
between symptoms of autism and parenting stress (Hastings & Johnson, 2001; Osborne & Reed, 2009; Tobing & Glenwick, 2006). Some researchers have found that social communication impairments are associated with parenting stress (Baker-Ericzen et al., 2005; Kasari and Sigman, 1997; Montes & Halterman, 2007; Smith et al., 2001). However, a study by Griffith et al (2010) did not support such results. Instead, the authors found that behavior problems alone predicted maternal stress levels when child’s gender, age, and communication skills were controlled. In addition, while numerous studies have demonstrated that child behavior problems may be strongly correlated with parenting stress and restricted family functioning (Baker et al., 2002; Donenberg & Baker, 1993; Dumas et al., 1991; Estes et al. 2009; Lacavalier et al., 2006; Rao & Beidel, 2009), there is mixed evidence on the relationships between child’s adaptive functioning and parenting stress. Some researchers have found adaptive skills deficits to be associated with parental stress (Plant & Sanders, 2007; Weiss et al., 2003; Tomanik et al., 2004). Other researchers have found no significant relationship between adaptive skills deficits and maternal stress (Beck et al., 2004; Estes et al., 2009; Lecavalier et al., 2006).

**Coping Resources**

As mentioned earlier, models of parenting stress that are influential in the developmental disability field emphasize the role of appraisal processes and the resources that parents may have to cope with their child’s disabilities. In other words, parents will become stressed if they do not have the resources to cope with the child’s developmental impairment. Based on Lazarus and Folkman’s stress model (1984), the psychological experience of stress results from the balance between the primary appraisal: what is at
stake (producing a state of arousal), and the secondary appraisal: what resources are perceived to be available for coping (materials, emotional, social, or cognitive). Therefore, when assessing parenting stress, the meaning of the potential threat (primary appraisal) and the availability of coping strategies (secondary appraisal) must be considered. In an application of Lazarus and Folkman’s (1984) transactional stress model, Quine and Pahl (1991) found that the strong association between children’s disabilities and parenting stress was mainly mediated via parenting coping resources.

Lazarus (1993) defined coping as “a person’s ongoing efforts in thought and action to manage specific demands appraised as taxing or overwhelming” (p.8). Thus, coping is a process by which people try to manage the perceived discrepancy between the demands made on them and their resources in a stressful situation. Coping is not defined by outcome, but is defined with the words “efforts to manage” and is not restricted to successful efforts. Two coping variables that are often discussed in the parenting stress literature are (a) social support and (b) parenting self-efficacy. The following sections will discuss these two variables in detailed.

**Social support.**

Literature suggests that parents’ social support system may offer coping strategies to confront the daily hassles that parents may experience. Additionally, social support from a variety of sources (i.e., family members, social groups, services from professionals and service agencies) can also reduce the stress that parents of children with ASD experience. It appears that the quality of parents’ experiences may be closely tied to their perceptions of the relational support they get from their social networks (Boyd,
Social support is believed to help parents cope with adversity while they raise their children with a disability (Abidin, 1992). Researchers have suggested that social support can moderate the negative impact of crisis and change on individuals and has been included in studies of adaptation in parents of children with ASD (Boyd, 2002; Meadan et al., 2010).

Dunst, Trivette, and Cross (1986) defined social support as “a multidimensional construct that included physical and instrumental assistance, attitude transmission, resource and information sharing, and emotional and psychological support” (Dunst et al., p.403). In a discussion of social support for parents of children with disabilities, Glidden and Schoolcraft (2007) described the differences between formal and informal social support. Informal support usually consists of the family unit, extended family, close friends, and people within these groups who offer support in the forms of listening and friendship. Formal support refers to social, psychological, physical, or financial services. These supports often include children’s education, parent training, parent support groups, and medical care. Boyd (2002) contended that informal support appears to be more effective in buffering stress for mothers of children with ASD than formal support. In his meta-analysis study on social support, Boyd (2002) reported that mothers of children with ASD usually first seek support from their families, particularly their spouses. Spousal support (one of the informal support sources) seems to be the most effective stress buffer for mothers of children with ASD. The most useful source of formal support for mothers of children with ASD seems to be parent support groups as opposed to other organizational services, as mothers were able to share their concerns regarding their children’s impairments without worrying about being criticized. More recently, in a meta-analysis, Meadan et al. (2010) found that families with children with ASD that
received informal support from their social networks and formal support from agencies and health care providers were more likely to show positive adjustments compared to those who did not. Likewise, White and Hastings (2004) also examined parental views about family support networks. The participants included 33 parents of 21 adolescents with severe intellectual disabilities (14 with autism; 5 with cerebral palsy; 2 with Down syndrome). The Hospital Anxiety and Depression Scale (Zigmon & Snaith, 1983) and the Carer’s Assessment of Satisfactions Index (Nolan, Grant, & Keady, 1998) were used to measure parents’ psychological distress as well as overall well-being. The Family Support Scale (Dunst et al., 1984) and the Support Function Scale (Dunst, Trivette, & Deal, 1996) were used to measure parents’ levels of support and support functions (i.e., practical support and emotional support). The results indicated that parents’ perception of the helpfulness of informal support was the only variable that was consistently associated with parents’ well-being. Parents reported informal support such as support from the spouse, friends, and extended family as being very helpful. On the other hand, the number of the informal supports as well as emotional support did not appear to have any association with parents’ distress or well-being. However, parents also reported less informal support availability during their child’s adolescent years.

Bromely, Hare, Darison, and Emerson (2004) interviewed 68 mothers of children with ASD to examine the association between levels of psychological distress reported by mothers and formal and informal sources of support received by mothers. The Family Support Scale (Dunst, et al. 1984) was used to collect information about the helpfulness of a variety of possible sources of support. The results showed that single mothers received less total social support compared to mothers who lived with a partner. In addition, the study found no associations between ethnicity (Afro-Caribbean, Asian, and
White), employment status, or household income and family support. However, the results did show that lower levels of perceived support in mothers were associated with significant psychological distress, and furthermore, findings suggested that when the family received low levels of informal support the child’s behavior problems were also higher. Hassall et al. (2005) suggested that it is the perceived helpfulness of the support received by mothers from family and friends rather than the range of supports available that appeared to be critical in predicting maternal stress and psychological well-being. This notion was further supported by the findings of Tobing and Glenwick (2006) that satisfaction with social support rather than the number of supports that mothers received was associated with lower levels of psychological distress in mothers of children with ASD.

**Social support as a mediator/moderator to parenting stress.**

Cohen and Wills (1985) conducted a meta-analysis of literature to determine whether the association between social support and an individual’s well-being is more attributable to the beneficial effect of support (direct effect model) or to a process of support protecting the individual from negative effects under stressful conditions (buffering model). The researchers concluded that the evidence was consistent with both models. The authors suggested two possible stress buffering mechanisms of social support. First, support may intervene between the stressful event (or expectation of that event) and a stress reaction by attenuating a stress appraisal response (i.e., an individual perspective on the degree to which he or she feels stress). Second, support may also intervene between the experience of stress and the onset of the pathological outcome by eliminating the stress reaction. In other words, adequate support may alleviate the impact
of stress appraisal by reducing the perceived importance of the problems, so that people are less reactive to perceived stress (Cohen and Wills, 1985).

Further evidence supporting the positive impacts of social support on parenting stress came from a study by Plant and Sanders (2007). The study investigated the degree to which variables (i.e., difficulty of caregiving tasks, time involved in child caring, child problem behaviors, level of child disabilities) associated with parenting stress, and whether social support (e.g. family/friend) mediated parenting stress of 105 families of preschool children with developmental disabilities. The authors developed questionnaires that asked mothers to rate their stress levels when completing specific caregiving tasks as well as their perceived difficulty of each care-giving task. Child problem behaviors were collected via the Developmental Behavior Checklist (Einfeld & Tonge, 1995), and social support was measured by asking mothers to rate how much support they received from friends, family, and professionals. Using hierarchical regression procedures, the researchers found that social support from friends moderated the effects of difficult child behavior during caregiving on the levels of parenting stress. Further, they found that the social support provided by professionals moderated the effect of child problem behavior on parenting stress accounting for 28% of the variance. It is important to note that the measure of social support in this study was a based on mothers’ reports of how much support each source provided and not how helpful each was. More descriptive aspects of each type of support may have revealed if a standardized measure of helpfulness of social support scale was used.
Parenting self-efficacy.

Definitions of parenting self-efficacy.

It is important to understand why parenting self-efficacy is critical in parenting stress research. An important challenge to researchers is to discover why some families cope in the face of severe stress in raising a child with disabilities whereas others do not, and to understand those factors of family functioning which make families more vulnerable to stress or resistant to stress. The exploration of parent perceived efficacy will help to understand this issue, as indicated by Lazarus and Folkman (1984), that self-efficacy can serve as a coping strategy in understanding parenting stress.

Bandura (1997) defines self-agency as acts done intentionally that reflect individuals’ beliefs that they are exercising influence over what they do, thus, self-efficacy belief is a major basis of action and people guide their lives by their beliefs about self-efficacy. In other words, the self-efficacy construct is the belief in one's ability to perform competently and effectively in a particular task or setting and has been identified as central to mediating relations between knowledge and behavior (Bandura, 1997). Bandura further states that efficacy beliefs are concerned not only with the exercise of control over action but also with the self-regulation of thought processes, motivation, and affective and physiological states. In addition, because self-efficacy beliefs are the key factor in the system of human competence, different people with similar skills may perform poorly, adequately, or extraordinarily depending on levels of their beliefs of self-efficacy (Bandura, 1997). As a result, perceived self-efficacy is concluded to be an important contributor to performance accomplishments, whatever the underlying skills might be.
According to Bandura’s theory of self-efficacy, self-efficacy beliefs are constructed from four principal sources of information. First of all, *enactive mastery experiences*, consisting of the personal accomplishment history (success and failures), may be the most influential source of efficacy because they provide the most authentic evidence of whether one can master whatever it takes to succeed. However, efficacy beliefs are also partly influenced by *vicarious experiences* mediated through modeled attainments. Watching other people similar to oneself perform successfully usually raises efficacy beliefs in observers that they themselves possess the capabilities to master comparable activities. *Verbal persuasion* serves as a further means of strengthening one’s efficacy beliefs by receiving verbal feedback from others regarding his or her potential for accomplishment in a given area. And lastly, *physiological and affective states* can also be the somatic indicators of self-efficacy. People often read their physiological activation in stressful situations as signs of vulnerability, thus high arousal can debilitate performance, conversely, lower levels of arousal are likely to be associated with success expectancies (Bandura, 1997). Numerous contextual factors, such as social, temporal, and situational circumstances under which events occur, enter into the emergence of self-efficacy from the four sources described above. Consequently, as indicated by Bandura, the means through which self-efficacy beliefs develop are complex and interrelated.

Extrapolating from these general definitions, parenting self-efficacy can be defined as a parent’s belief in his or her ability to influence his/her child and the environment in ways that would foster the child’s development and success (Coleman & Karraker, 1997). In other words, it is parents’ beliefs regarding their abilities to perform
the numerous and changing tasks associated with parenting.

According to Bandura’s definition, the construct of parenting self-efficacy should encompass both level of knowledge about child-rearing behaviors and degree of confidence in one’s ability to perform these tasks as well as perceptions of situational contingencies (Bandura, 1997). That means, in order for mothers to perceive themselves as efficacious, they must possess the following: (a) knowledge of appropriate child care responses (e.g., how to detect infant distress and how to relieve it), (b) confidence in their own abilities to carry out such tasks, and (c) the belief that their children will respond contingently (Coleman & Karraker, 1997).

As initially proposed by Bandura (1997), the concept of self-efficacy was task-specific and parenting self-efficacy is the parent’s judgment of how well he/she can function in a caregiving capacity and address specific tasks or challenges related to the parenting role (Teti, et al., 1996). Later researchers such as Sanders and Wolley (2005), however, have attempted to place task-specific parenting self-efficacy within a broader conceptual domain. Parenting self-efficacy can now be measured on the task, domain, and general levels and has been assessed exclusively by self-report (Coleman & Karraker, 1997). Task-specific parenting self-efficacy involves parents’ judgments about their ability to perform specific parenting skills, such as toilet-training or caring for a child with a disability. The items themselves are task-specific. Domain-specific parenting self-efficacy focuses on one parenting domain, such as discipline, promotion of learning, or communication. The measurements also rely on task-specific rather than more global items. The third type of measure, which is referred to as general parenting self-efficacy, focuses broadly on the extent to which a parent feels competent in the parenting role and
is not considered in relation to any specific parenting skill (Coleman & Karraker, 1997). Berry and West (1993) argue that none of the measures are better than any other. While task-specific self-efficacy measures offer precision in identifying efficacy-performance relationships, more general self-efficacy measures are likely to provide more general information regarding self-evaluation of abilities.

**The role of parenting self-efficacy in parenting competence and well-being.**

Bandura (1997) contended that self-efficacy can play a mediating role between thought and action by influencing behavioral persistence. For example, parents are more likely to persist if they believe their efforts will be successful, and reciprocally, positive efficacy expectations are reinforced by experiences of success. In addition, perceived inefficacy and negative mood states are thought to have a bidirectional relationship, as people have been shown to depress and distress themselves and impair their level of functioning with inefficacious thought (Bandura, 1997). At the same time, perceived self-infficacy to fulfill desired goals that affect evaluation of self-worth which can bring satisfaction to one's life also create negative mood states (Bandura, 1997). Indeed, literature has indicated that high parenting self-efficacy has been linked with competence and positive parenting practices, strategies, as well as behaviors (Coleman & Karraker, 1997). An expanding body of research has identified parenting self-efficacy as a key variable to study when considering the substantial variable observed in parenting skills and satisfaction (Coleman & Karraker, 1997; Jones & Prinz, 2005). In addition, parenting self-efficacy is also a major determinant of competent parenting behaviors (Jones & Prinz, 2005), which in turn are closely linked to child development and well-being (Ardelt & Eccles, 2001; Coleman & Karraker, 2003).
Ardelt and Eccles (2001) provided a model which described the interaction between parenting efficacy beliefs, promotive parenting strategies, and child’s success. They stated that parents who are high in parenting self-efficacy are more likely to be engaged in parenting practices that promote positive child adjustment, which in turn increases the likelihood for their child’s success in both academic and social-psychological domains. The model also argued that there can be a reverse effect. Parents faced with difficult child behavior problems may find it difficult to maintain high parenting efficacy beliefs, while observing success in their child might strengthen their parenting self-efficacy. High parenting self-efficacy beliefs have also been found to be related to specific positive parenting practices such as responsive, stimulating, and non-punitive caretaking (Bugental, Blue, & Cruzcosa, 1989), few maternally perceived child behavior problems (Johnson & Mash, 1989), more appropriate levels of involvement (Coleman & Karraker, 1997; 2003 Jones & Prinz, 2005), and less dyadic conflict (Jones & Prinz, 2005).

Parenting self-efficacy also appears to play a role in the psychological functioning of parents, including linkage to depression, stress, and role satisfaction. Bandura’s (1997) perspective on self-efficacy suggests that one’s perceived inability to influence situations often contributes to symptoms of both depression and anxiety or more broadly, negative affect. Anxiety often leads to decreased efficacy and anticipation of failure experiences in the future. Depression has been conceptualized as hopelessness about the future due to perceived lack of control over one’s environment based partially on past failure experiences (Bandura, 1997). Self-efficacy to cope with future challenges is undermined by these failure experiences, resulting in expectancies of future failures. When low self-efficacy exists in a domain of great personal importance, psychological distress is likely
to result (Bandura, 1997). Coleman and Karraker (2003) suggested that mothers who believe they are able to exert control over a situation report less distress even when they do not act to control the situation. Likewise, mothers high in negative affect are more likely to have negative views of their parenting abilities. That is, depressed mothers envision themselves as having less control over their children’s development than non-depressed mothers (Coleman & Karraker, 1997, 2003).

Studies examining parenting characteristics of low efficacious mothers have provided ample evidence for strained interactions between low efficacious mothers and their children which in turn may impact mothers’ psychological health. Low maternal efficacy has been correlated with maternal depression (Bandura, 1997; Teti & Gelfand, 1991), maternal perceptions of child difficulty (Johnston & Mash, 1989), high levels of stress, negative affect, elevated autonomic arousal, and feelings of helplessness and frustration in the parenting role (Coleman & Karraker, 1997; Jones & Prinz, 2005). Indeed, the work of Bugental et al. (1989) revealed that low parent self-efficacy is associated with the parent’s tendency to focus on parent-child relationship difficulties, negative affect, feelings of helplessness in the parenting role, and use of coercive disciplinary techniques. A research study conducted by Kuhn and Carter (2006) investigated the relationship between parenting self-efficacy and various parent variables, specifically, mothers’ cognitions such as depression, parenting stress, maternal agency, guilt, and autism knowledge among mothers of children with autism. One hundred-seventy mothers of children (M = 6.5 years of age) with autism participated in this study. Using a hierarchical linear regression technique, the researchers found parenting self-efficacy to be inversely related to levels of parental stress and depression in mothers of
children with autism, supporting the findings of Coleman and Karraker (1998) on parents with typically developing children. Furthermore, self-efficacy was positively correlated with maternal sense of agency (engaging in activities to promote her child’s development) and negatively correlated with maternal sense of guilt. Sense of self-efficacy also increased as time elapsed from the time of diagnosis. In addition, maternal self-efficacy was not correlated with knowledge of autism alone, although small statistical correlations were found between autism knowledge and agency and between agency and sense of guilt.

A study by Teti and Gelfand (1991) suggested that parenting self-efficacy may mediate the relationship between parenting competence behaviors and other psychosocial variables such as depression. In their study, 48 mothers with depression and 38 non-depressed mothers were observed in their interactions with their infants to test whether maternal self-efficacy beliefs mediate the effects on parenting behavior of variables such as depression, perception of child difficulties, and social-marital support. Maternal self-efficacy belief was measured by an instrument developed by the authors. The results of hierarchical multiple regression analysis showed that maternal self-efficacy correlated significantly with maternal competence, perceptions of infant difficulty, social-marital support and depression after controlling for the demographic variables, however, maternal self-efficacy remained significantly associated with maternal competence even after controlling for all other predictors. This study is particularly noteworthy because it provides evidence that diverse psychosocial variables (i.e. depression, social-marital support, child temperament) do not directly impair parental functioning, but do so through their ability to undermine competency perceptions. That is, for parents of
children with ASD, parenting self-efficacy may operate as a mediator (intervening variable) between child characteristics and parenting stress. This finding also suggests the possibility of an intervention to attenuate the effects of non-manipulable variables, such as child behaviors or social support and socio-economic status on parenting quality by increasing parents’ self-efficacy through various types of parent training.

**Parenting self-efficacy and child characteristics.**

As previously discussed, Bandura (1997) suggested that self-efficacy beliefs develop in four ways: enactive mastery experiences, vicarious experiences, verbal persuasion, and physiological and affective states. When applied to parenting self-efficacy, these include (a) actual experience and feedback from the child; (b) observing other parents who are similar perform similar behavior; and (c) verbal persuasion; and (d) childhood experience that creates relationship schemas and expectations of interpersonal effectiveness (Bandura 1997). Among all four factors, the first, actual experience and feedback from the child, has been the most studied and researched. For example, the work of Freed and Tompson (2011) showed inverse relationships between parental perceived control (a more general measure of parenting self-efficacy) and child externalizing behaviors with 160 mother-child dyads. They found that child problem behavior and maternal depression negatively influenced mothers’ parenting self-efficacy. Further, as children grew older, mothers tended to feel less efficacious about their parenting skills. Moreover, a number of socio-demographic variables, such as maternal education, family income, and maternal age, also demonstrated relationships with parenting self-efficacy. Like Colman and Karraker (2003), Freed and Tompson (2011) also suggested that the relationship between parenting efficacy and child behavior was
bidirectional, as mothers’ reduced feelings of control over child behavior predicted future child problem behavior.

The early work from Mash and Johnston (1983) also provided support for the relationship between child behaviors and parenting efficacy beliefs with parents of hyperactive children. The study examined the relationships between maternal stress, parenting self-efficacy and their perception of child behavior problems. Forty mothers of children with hyperactivity and 51 mothers of typically developing children participated in this study. For the hyperactive group, children were divided into “younger” (n = 15; M age = 5 years, 1 month) and “older” (n = 24; M age = 8 years, 4 months) age groups. Parental perceptions of child behavior problems were assessed using the Child Behavior Checklist (CBCL: Achenbach, 1978; Achenbach & Edelbrock, 1981). Maternal stress was assessed with the Parenting Stress Index (PSI; Abidin & Burke, 1978). Lastly, parenting self-efficacy was assessed using the Parenting Sense of Competence Scale (PSOC; Gibaud-Wallston & Wandersman, 1978 as cited in Johnston and Mash, 1989).

The results showed that parenting self-efficacy was lower in mothers of hyperactive children than in mothers of typically developing children. Parallel to Freed and Tompson’s (2011) findings, the authors also found that as the hyperactive children aged, their mother’s self-efficacy scores decreased, but as the typical children aged, their parent’s self-efficacy score increased. This suggests that relationships between child age and parenting self-efficacy beliefs may be moderated by child difficult behaviors. Furthermore, parents of the older hyperactive children rated themselves as lacking the skills, knowledge and ability to manage their child’s behavior. Mash and Johnston (1983) concluded that the finding that mothers of older hyperactive children reported the lowest
levels of self-efficacy may be due to their history of unsuccessfully managing their children’s problem behavior, which is the *enactive mastery experiences* in Bandura’s (1997) theory.

Other child characteristics that have been associated with low parenting self-efficacy include high emotionality, high activity level, and limited interest in social interactions with typically developing toddlers (Coleman & Karraker, 2003). It is important to note that these characteristics are present in many children with ASD. Many children with autism have limited interest in social interaction, and researchers have showed that the degree to which children find social attention rewarding has been related to parenting self-efficacy (Rodrigue et al., 1990). Frequently, these children are not as motivated by social attention or praise as typically developing children might be, thus making parenting a more difficult task. As a result, researchers suggested that parents of children with autism may develop low parenting self-efficacy (Rodrigue et al., 1990). However, not all researchers agree with these findings. For example, Harty, Alant, and Uys (2006) studied the relationships between maternal self-efficacy beliefs and maternal perception of their child’s language abilities, where the child has a communication disability. Twenty-five mothers of preschool children with language disabilities participated in the study. The Self-Efficacy for Parenting Tasks Index (Coleman 1998) was used to measure mothers’ self-efficacy beliefs. The Receptive-Expressive Emergent Language Test 2nd edition (Bzoch & League, 1991) was utilized to assess maternal perception of child’s language abilities. Counter to the expectation, the results failed to show any significant relationships between mothers’ efficacy beliefs and mother-rated child language disabilities. The literature does indicate a close link between child
characteristics and parenting self-efficacy beliefs. However, Harty et al. (2006) contended that it is not the presence of a communication disability itself that impacts on parenting efficacy levels. The authors suggested that the link between communication ability and child behavior may not be strong enough to impact self-efficacy beliefs with this population. In addition, the presence of an acknowledged disability as a chronic stressor may have unique impact on maintenance of parenting self-efficacy. The authors argued that when parents realize they are unable to change the child’s condition or when complete resolution for the child’s problems is unavailable, parenting self-efficacy is no longer strongly linked to perception of a stressor, rather, it is linked to the ability to experience positive outcomes and implementation of coping strategies. In other words, for some parents, the basis for judging their self-efficacy in parenting a child with a disability may rely on parents’ ability in creating positive events and experiences and implementing the coping strategies rather than their ability to deal with the child’s condition. Therefore, the relationship between child characteristics and parenting self-efficacy becomes weaker.

Overall, the literature suggests that child characteristics, particularly child behavior problems (Coleman & Karraker, 2000; 2003; Freed & Tompson, 2011; Mash and Johnston, 1983), child lack of social skills (Coleman and Karraker, 2003), parental depression (Bugental et al., 1989; Freed & Tompson, 2011) may have an impact over time on parent’s sense of self-efficacy. However, some researchers did not find the associations between parenting self-efficacy and child behavior problems or communication disabilities (Harty et al., 2006). It should be noted that none of these studies have included mothers of adolescent children, therefore the relationship between
parenting self-efficacy and child characteristics during the adolescent stage has remained unclear. Moreover, the likelihood of such relationships has remained unknown with parents of children with ASD as research on parenting self-efficacy is extremely limited with this population. Additionally, it is plausible that cultural factors may influence the relationship between parenting self-efficacy and child adjustment and development. For example, the Ardelt and Eccles’ (2001) study raised the possibility that parenting self-efficacy may interact with contextual factors such as ethnicity, economic disadvantage, and parent and child gender in relation to child academic success. Thus, it is worth studying factors related to parenting self-efficacy with Taiwanese parents.

**Parenting self-efficacy as a mediator and a moderator on parenting stress.**

According to Lazarus and Folkman (1984) and Bandura (1997), parenting self-efficacy can be a coping resource variable because a high level of self-efficacy to exercise control over aversive threats and taxing environmental demands such as taking care of a child with special needs can effectively reduce a parent’s stress reactions in parenting. If parents believe they can deal effectively with environmental stressors (e.g., child’s lack of social communication skills or self-help skills, behavior problems), then they are not disturbed by them. If they believe they cannot control these circumstances, parents are likely to feel distressed which can impair their level of functioning.

Evidence that parenting self-efficacy can serve as a mediator and a moderator for the relationship between behavior problems and parenting stress with parents of children with ASD has been provided by Hastings and Brown (2002). Twenty-six mothers and 20 fathers participated in this study. The child’s behavior problems were measured by the
Developmental Behavior Checklist (Einfeld & Tonge, 1995). Parenting self-efficacy was measured by a domain-specific self-efficacy instrument developed by the authors. The scale contained five efficacy items: feelings of confidence, control and satisfaction in dealing with their child’s problem behaviors, a perception that they have a positive impact on their child’s problem behaviors, and a rating of how difficult they find it to deal with their child’s problem behaviors. Each item was rated on a 7-point scale.

Finally, the Hospital Anxiety and Depression Scale (Zigmond & Snaith, 1983) was used to assess parents’ psychological distress such as depression and anxiety. The results of regression analyses showed that, concurring with existing literature on the varying experiences of parents, differing results were found for mothers and fathers, with self-efficacy mediating the effect of child behavior problems on anxiety and depression in mothers but not in fathers. However, self-efficacy had a moderating effect on fathers’ level of anxiety. Specifically, fathers with high self-efficacy experienced less anxiety than fathers with low self-efficacy when the child exhibited a high level of behavior problems. There was no evidence of this moderating effect on mothers’ anxiety or depression. The authors speculated that these differences may have been partly due to the possibility that fathers may be more involved out of necessity when child behavior problems are more severe.

The study conducted by Hastings and Brown (2002) is especially noteworthy because it provides evidence that parenting self-efficacy may act as an intervening variable in the relationship between child behavior problems and parent psychological distress. The findings based on the mothers’ data further support the findings of other research studies (Coleman & Karraker, 1998; Teti & Gelfand, 1991) in that self-efficacy
was identified as an important variable in understanding the relationship between child behavior problems and parents’ mental health outcomes. In addition, although analyses of fathers’ data showed that parenting self-efficacy was not a mediating variable for them, parenting self-efficacy was a moderator variable for fathers, which in turn, may counter the risk to psychological distress associated with high levels of child behavior problems for fathers.

Meirsschaut and Warreyn (2010) investigated the association between the parenting cognitions about a child with ASD and about a typically developing child. Seventeen parents of children with ASD and with a typically developing child (sibling of the child with autism) participated in this study. The children with ASD ranged in age from 46 to 84 months and the typically developing siblings ranged in age from 29 to 83 months. For both their child with ASD and typically developing child, mothers were asked to answer questions from the Maternal efficacy scale (Teti & Gelfand, 1991), the Maternal agency questionnaire (Kuhn and Cater, 2006), and the Maternal guilt questionnaire (Kuhn & Carter, 2006). In addition, the Nijmeegse Ouderlijke Stress Index (NOSI; De Brock, Vermulst, Gerris, Abidin, 1992) was used to assess parental incompetence, role restriction, and depression. The results were consistent with the findings of other researchers that mothers reported a significantly lower sense of self-efficacy about parenting their child with ASD than about parenting their typically developing child (Coleman & Karraker, 1997; Hassall et al., 2005). In addition, mothers’ beliefs of self-efficacy and agency about parenting one of their children were significantly correlated with the beliefs about her other child. Furthermore, depressive feelings about the child with ASD were also negatively related with mothers’ self-
efficacy beliefs about parenting their typically developing child, however, this association appeared to be mediated by maternal self-efficacy beliefs about the child with ASD. The results supported the evidence of the meditational role of parenting self-efficacy in Coleman and Karraker’s (1997) and Teti and Gelfand’s (1991) studies. The findings also suggested that the mediating role of self-efficacy goes beyond the mother-child dyad. Based on the findings, the authors suggested that mothers have different parenting cognitions about their child with ASD and about their typically developing child, furthermore, mothers are also capable of differentiating in their parenting cognitions. The results also indicated the importance of addressing mothers’ self-efficacy beliefs about parenting their child with ASD and their typically developing child in interventions.

Feldman, McDonald, Serbin, Stack, Secco, and Yu (2007) conducted a study to investigate the buffering effects of parenting self-efficacy and social supports on child behavior problems and parents’ depressive symptoms of parents of preschool children with developmental delay. A total of 178 families participated in the study. The Beck Depression Inventory II (BDI: Beck, Steer, & Brown, 1996) was used to measure caregiver depressive symptoms. Child behavior problems were assessed by the Child Behavior Checklist (CBCL-ages 2 to 3: Achenbach, 1992). The Interpersonal Support Evaluation List (ISEL: Cohen & Hoberman, 1983) assessed availability of social support. Finally, caregiver’s perceived self-efficacy was measured by the Child Behavior Management Survey, which was developed by the researchers. The moderation effects of social support and caregiver self-efficacy on the relationship between child behavior problems and caregiver depressive symptoms were examined by using Baron and Kenny’s (1986) procedure. Consistent with Plant and Sanders’ (2007) findings, social
support served as a mediator and moderator of the relationship between parenting stress and child behavior problems. Parenting self-efficacy, on the other hand, did not function as a mediator or moderator of the relationship between child behavior problems and parents’ depressive symptoms, which is contrary to the Hastings and Brown (2002) findings. In addition, the researchers found that child behavior problems, escape-avoidance coping strategies, and social support predicted parent psychological distress.

In summary, the review of the literature indicates that both social support and parenting self-efficacy may be negatively associated with parenting stress for parents of preschool children with disabilities. However, conclusive evidence of the mediating and moderating effects of social support and parenting self-efficacy on parenting stress have not yet been established with parents of older children with ASD. It is possible that social support levels or parenting self-efficacy may play different roles for parents with a younger child and parents with an older child. The review of the literature suggests that the field would certainly benefit from the inclusion of a wider age group of children with ASD in order to provide more comprehensive informational resources and support services that are appropriate to life stage and meet the needs of parents.

**Child Age, Parenting Stress, and Parenting Self-Efficacy**

Although there does not appear to be a straightforward or robust association between parenting stress and child age, child age may have an impact on the extent to which child variables contribute to parenting stress (Osborne & Reed, 2009). Literature suggests that child age matters enormously in terms of *what* it is that children do, and *how* those behaviors influence parenting stress (Mash & Johnson, 1983; Tobing & Glenwick, 2002). Parents’ expectations for child self-control and self-help skills become more prominent as
the child grows older, because they are aware of the child’s developing capabilities. This has implications for the kinds of appraisals that parents make about their children’s behaviors, which in turn may influence parenting stress. Evidence of the positive association between child age and parenting stress came from Tobing and Glenwick (2002). They studied the relationships between severity of functional impairment on the Childhood Autism Rating Scale-Parent Version (CARS-P) to diagnosis, parenting stress, and child age. The participants included 22 mothers of children with autism and 19 mothers of children with PDD-NOS with child age ranged from 2 to 12 years old. The CARS-P was used to measure mothers’ perceptions of their children’s level of functional impairment and the Parenting Stress Index (Abidin, 1995) was used to assess mothers’ levels of parenting stress. The authors found that for the PDD-NOS group, child functional impairment was positively associated with age and child-related parenting stress, however, such relationships were not found in the autism group. The findings indicated that mothers of older children with PDD-NOS tend to perceive their children as having greater functional impairment as the child aged, which then had a negative impact on parenting stress. The association between parenting stress and child age may be an indicator that mothers of children with PDD-NOS expect their child to outgrow behaviors that appear to be atypical or that mothers’ expectations of their child’s level of functioning increase with child age while the child’s actual functioning become more discrepant as the child gets older. Similarly, Mash and Johnson (1983) and Freed and Tompson (2011) found that maternal self-efficacy decreased as their children with behavior problems became older.

While researchers provided evidence of the positive relationship between child age
and parenting stress, some parents may actually experience decreases in parenting stress or increases in parenting self-efficacy over time as they discover new and more effective ways of coping while raising their child with an ASD. For example, when the sample shifted from preschoolers to young adults, Greenberg, Seltzer, Krauss, Chou and Hong (2004) did not find that mothers of young adults with autism experienced higher levels of parenting stress compared to mothers of young adults with other types of disabilities. Greenberg et al. (2004) investigated the effects of the quality of parent-child relationship on maternal well-being of mothers of young adult children with disabilities. The sample consisted of mothers aged 55 and older with the adult child age 22 or older in three groups: Down syndrome (N=126), schizophrenia (N=292), and autism (N=102). The study took measures of mothers’ psychological and physical well-being and the results showed no differences in overall level of optimism, depression, or health among mothers of all three groups. Greenberg et al. (2004) suggested that of aging mothers with an adult son or daughter with a disability, many could speak of ways that their lives had been positively transformed as a consequence of their struggles with their son’s or daughter’s disability. For example, having a child with a disability had caused them to re-evaluate their priorities and goals in life and become more assertive as well as advocates for child over time. The researchers suggested that as parents of children with disabilities age, they may find meaning and opportunities for personal growth and may have developed effective coping styles even in the face of ongoing parenting challenges, which in turn affect their overall well-being and parenting efficacy outcomes. This conclusion was also supported by Kuhn and Carter (2006) who found that time elapsed since diagnosis and child age positively correlated with higher levels of maternal self-efficacy but not with
parenting stress or depression with mothers of young children with autism.

In general, previous research has reported mixed results regarding the relationship between child age and parenting stress and parenting self-efficacy for parents of children with disabilities. Some studies suggested increased parenting stress and decreased parenting self-efficacy as the child aged for parents of children with PDD-NOS or hyperactivity (Freed & Thompson, 2011; Mash & Johnson, 1983; Tobing & Glenwick, 2002), and some studies reported a positive relationship between child age and maternal self-efficacy for mothers of children with autism (Kuhn & Carter, 2006). Little research has investigated the relationships between child age on parents’ support and perceived stress with parents of children with ASD. Tehee, Honan, and Hevey (2009) conducted a study to include a wide age range of children with ASD and examined the relationships between child age, parents’ perceived stress, stress and coping related to caregiving, child-rearing involvement, perceived support, and amount of education/information accessed around ASD. The sample consisted of 23 mothers and 19 fathers of 24 children with ASD throughout Ireland. The mean age of children was 9.3 years and the child age was categorized as the following groups: 3-6 years, 7-10 years, 11-14 years, 15-18 years. The Perceived Stress Scale (Cohen, Kamarck, & Mermelstein, 1983) was used to measure parents’ general perceived stress. The Involvement and Responsibility Questionnaire (Konstantareas & Homaditis, 1992) was employed to measure parents’ child-care involvement and responsibility. The Family Stress and Coping Questionnaire (adapted from the Family Stress and Coping Interview, Minnes & Nachshen, 2003) to measure parents’ stress and coping related to caregiving of their child with ASD. A Support Questionnaire was developed by the authors to assess the helpfulness of sources
of support received by parents. Inconsistent with many past studies, the mean scores for general perceived stress and stress and coping related to caregiving for the overall sample were relatively low. However, significant differences were found between parents according to child age group. Specifically, parents of 15-18 years age group reported receiving significantly lower amounts of education information and helpfulness of supports than parents in the other child age groups. Data for the 15-18 years age group also showed strong positive relationship between parents’ involvement and stress and coping related to caregiving. The authors suggested that parents of adolescents aged 15-18 years are particularly vulnerable as they may experience lack of resources because of their changing needs as their children are transitioning into adulthood. This finding is consistent with that of White and Hastings (2004) that parents of children with severe intellectual disabilities may experience lower levels of informal support as their children reach adolescence.

In sum, researchers suggested that the effects of child age on parenting stress may lie not in a child’s chronological age per se but in the discrepancy between a child’s age and his or her levels of functioning or behavioral competence and maturity (Freed & Tompson, 2011; Mash & Johnston, 1983; Tobing & Glenwick, 2002). On the other hand, it is possible that as the time elapsed since diagnosis gets longer and as parents of children with ASD age, parents may become more comfortable and have greater acceptance of their child’s condition and have developed effective coping styles (i.e. increased parenting self-efficacy or social supports) to alleviate parenting stress (Greenberg et al., 2004; Kuhn & Carter, 2006). At the same time, studies have shown that levels of support received varied according to the life stage of the child and findings
suggested a specific group of parents of children with ASD whose service and support needs were not being met. Finally, although Tehee et al.’s (2009) study was informative, their findings may not be conclusive due to a relatively small sample size. The current study aims to compare general parenting stress as well as specific stress related to caregiving, parenting self-efficacy, and social supports experienced by Taiwanese parents who are raising children with ASD at different stages of development with a larger sample size.

**Parenting Stress Research in Taiwan**

Parents’ stress levels may be influenced by how their culture views disabilities. The culture and beliefs of Taiwanese people are very much influenced by the traditional value of Chinese culture. Under the influence of Confucianism, the Chinese value modesty, social obligation, and reciprocity. They believe in harmony and tend to avoid confrontation. Chinese parents will push and sacrifice for their children, but at the same time, Chinese children must respect and obey their parents, in particular their fathers, and children are expected to return care and services to their parents once they reach adulthood (Holroyd, 2003). However, children with disabilities in the Chinese culture may represent disruptions to the flow of reciprocity, especially those with intellectual disabilities or ASD. Cultural values such as bestowing respect or being “good” may not be transmitted to them from their parents thus disturbing the harmony in family relationships and causing stress in parenting (Holroyd, 2003).

In the past, Chinese culture used to view disability as “handicap” or “useless”. In Taiwan, especially in rural areas, disability or sickness is sometimes viewed as a punishment for the person’s sins in a past life or the sins of the person’s parents, particularly the mothers (Holroyd, 2003); therefore, disability is often viewed as a stigma
and children with disabilities are often viewed as bringing shame to the family. The stigma attached to disability may result in the family’s fear of exposure to criticism and disgrace. Guilt might be felt by the family members, especially the mothers, toward the individual with disability, as well as toward ancestors. These feelings often create conflicts and barriers to acceptance among family members (Chang & Hsu, 2007). In addition, these families often feel inferior to other people, do not want to take part in social gatherings or activities, and therefore, gradually become isolated from society (Pearson & Chan, 1993).

Chinese culture also emphasizes social and family obligations; and many parents of children with special needs prefer to take care of their children by themselves. Researchers have indicated that more than 90% of individuals with intellectual disabilities, including autism, live with their family members (Chou & Schalock, 2007). As suggested by Western literature, characteristics of individuals with a disability are typically considered primary stressors that are strongly associated with parenting stress and psychological distress. Indeed, Chinese parents of children with learning disabilities were found to have significantly more stress and significantly less support than Chinese parents of typical developing children (Pearson & Chan, 1993). In a cross-cultural study, researchers also found that, compared to mothers of children with autism in the United States, Taiwanese mothers of children with autism reported significantly lower levels of family cohesion and higher levels of depressive symptoms (Lin, Orsmond, Coster, Cohn, 2011). Chang and Hsu (2007) conducted a study exploring the stressors of Taiwanese families who have children with learning disabilities. Semi-structured interviews were employed with 117 parents of children with learning disabilities and the results showed
that the stressors of these parents included worries about their child’s future, other’s insults, child difficult behaviors, and siblings’ emotional confusion.

Ho and Huang (2007) further reported that parenting stress of Taiwanese parents of children with disabilities was associated with the severity of symptoms as well as the time and responsibilities needed for child care-taking in a literature review study. The researchers also found that these parents’ health conditions and mental wellness were affected by the lack of social and family support. The authors contended that the lack of effective resources was the cause for parenting stress of parents with children with disabilities in general. The researchers suggested that parenting stress as well as needs and experience of parents of children with disabilities are fluid over the life span, and therefore, a better understanding of factors related to parenting stress and parenting self-efficacy in parents of children with special needs is greatly needed in Taiwan. Likewise, in a cross-sectional study, Chung, Pan, Cheng, and Kuo (2010) compared parenting stress in mothers of young children (N=30) with developmental delay and mothers of typically developing young children (N=30). All children were under six years of age and mothers’ age ranged from 30 to 35 years old. All mothers in the study filled out the PSI (Abidin, 1995) as well as a demographic questionnaire. The authors found that compared to mothers of typically developing young children in Taiwan, mothers of young children with developmental delay reported greater levels of parenting stress, and parenting stress levels were associated with mothers’ employment status. No correlations were found between parenting stress and mothers’ marital status, religion, mothers’ age, educational levels, number of children in the family, or family income.

In regard to ASD, Wang (2010) examined parenting stress of parents with preschool
children with autism and school-age children with ASD in Taiwan. Parents of preschoolers with ASD and parents of school-age children with ASD were compared in terms of parenting stress and other demographic variables. A total of 108 parents participated in the study. The Parenting Stress Index-short form (PSI-SF, Abidin, 1995) was used to measure the overall parenting stress of the participants. The target participants were Taiwanese parents of male children with ASD between 3 to 13 years old. The researcher found that parents of preschool children with ASD reported higher levels of stress than parents of school-age children with ASD on the “Difficult Child” subscale of PSI-SF. In addition, “family income” was found to be negatively correlated with parenting stress in parents, although the findings were not sufficient to infer a causal relationship between parenting stress and family income.

Similarly, Chung (2008) compared levels of parenting stress of mothers of preschool children with ASD and mothers of typical preschool children in Taiwan. The children in this study ranged from 3 to 6 years old with a total of 66 parents of preschool children with autism and 55 parents of typically developing preschool children participating in the study. The Parenting Stress Index (PSI, Abidin, 1995) was again used to measure levels of parenting stress, the Brief Symptom Rating Scale (BSRS-5, Lung & Lee, 2008) was implemented to measure levels of psychological distress, and Vineland Adaptive Behavior Scales (VABS, Sparrow, 1986) was employed to measure child’s adaptive functioning. The study found that family income and child adaptive skills were significantly related to parenting stress among mothers of preschoolers with ASD, moreover, mothers of children with ASD reported significantly higher levels of parenting stress than mothers of typically developing preschoolers.
These findings of Chung (2008) and Wang (2010) parallel the research in the United States indicating that mothers of children with ASD were found to experience elevated levels of stress relative to mothers of typically developing children. However, compared to research on Western families of children with ASD, research on Taiwanese families is limited. Only one recent study examined the specific relationships between child characteristics and caregiving burden and pessimism of mothers with children with ASD in Taiwan. Ling (2011) recruited 50 mothers of adolescents who ranged in age from 10 to 18 years, with a mean age of 13.8 years with ASD in Taiwan. All the children lived at home with the family. Caregiver burden was examined by the Caregiver Burden Scale, which was developed in Chinese by Song (2001) in Taiwan. The Questionnaire on Resources and Stress (QRS; Friedrich et al., 1983) was employed to assess specific worries and pessimism that mothers have about the future of their child with an ASD. Behavior problems in the children were measured by Scales of Independent Behavior-Revised (SIB-R; Bruininks, Woodcock, & Weatherman, 1996). In addition, child daily living skills were measured by Activities of Daily Living (ADL; Seltzer & Krauss, 1989). Multiple regression analysis was used to determine the extent of the relationship between caregiving burden and specific characteristics of the child with ASD. The results showed that functional independence, maladaptive behaviors, and severity of the adolescent with an ASD were associated with caregiving burden, with functional independence of the child with ASD being the main characteristic related to both caregiving burden and maternal pessimism for Taiwanese mothers. In addition, like Chang and Hsu (2007), Ling (2011) found that mothers reported heavy caregiving burden and high levels of pessimism about the child’s future as the employment and independent living services for
children with disabilities are not well developed in Taiwan.

Literature from Taiwan also indicates that parents of children with disabilities often have a weaker social support network compared to parents of typically developing children (Ho & Huang, 2007) and this is largely due to social stigma and the lack of support services and resources for children with disabilities. Chang and Hsu (2007) conducted a qualitative study to explore the perceptions of 117 Taiwanese parents of children with learning disabilities. From the semi-structured interviews, the authors found that in addition to the widespread dissatisfaction with professional services, the majority of parents emphasized that formal professional support was lacking in their community. Moreover, in terms of informal support, although the majority of parents reported that the encouragement they received from families and friends was more helpful than that received from professionals, the family’s relationships could be a source of stress for these parents as the findings indicated that parents experienced stress whenever they made use of social support. The results showed that, due to social stigma, parents reported that they felt cut off from all friends and could not always get help from their extended family. The authors concluded that although people’s attitudes toward individuals with disabilities are becoming more accepting and open, families with children with disabilities are still being criticized in Taiwan. Ko and Yu (2006) further provided evidence of the association between maternal stress and lack of social support in Taiwanese mothers of birth-6 year old young children with developmental delays. Two hundred and thirty-five mothers of children with developmental delay from Keelung and Taipei cities were recruited in this study to examine the relationships between maternal stress and levels of social supports. Two questionnaires were used in their study. A locally developed social support scale was used to measure mothers’ levels of social
support. The Parenting Stress Index (PSI; Abidin, 1995) was used to assess maternal stress levels. The results indicated that mothers of children with developmental delay experienced average levels of stress compared to the norm. Specifically, low socio-economic status was also correlated with higher levels of parenting stress, particularly in the *parent domain* and the *parent-child dysfunctional relationship domain* in the PSI. However, contrary to Bromely et al.’s. (2005) findings which showed no association between social support and household income, Ko and Yu (2006) found that Taiwanese mothers from low-income backgrounds were found to use less informational support (e.g., advice, suggestions), emotional support (e.g., empathy, caring trust), and instrumental support (e.g., money, actual aid in time) compared to mothers from the middle and upper-income backgrounds.

In general, a body of Taiwanese literature focuses on the challenges that many parents face if their child is diagnosed with a disability such as ASD. Yet, not many researchers have studied the effects of social support on parenting stress in Taiwanese parents of children with ASD. In Shu and Lung’s (2005) experimental study, 27 mothers of children with autism were randomly assigned to either a control group or the intervention group. Mothers in the intervention group received 10 sessions of a parent support group program in which mothers shared issues related to the child and offered suggestions with one another. Mothers’ mental health and quality of life were measured before and after the intervention. The results showed that although the intervention failed to make a significant difference in mothers’ mental health and quality of life after the completion of the support group program, the authors reported that the effect of the support group on the mothers’ mental health score was of borderline significance; a larger sample may demonstrate a more obvious effect. The authors further recommended that
the primary caregivers of children with ASD in Taiwan need access to regular support
group meetings and training services provided during these gatherings to cope with the
unique issues they face. The review noted the dearth of conclusive evidence on the
effects of social support on parenting stress in Taiwan ASD literature. More research is
needed in this area to clarify the issues.

**Summary and Rationale**

There is strong evidence in the literature that the stressors and strains that a parent
experiences and the coping resources and strategies utilized by him or her can influence
the overall well-being of the parents as well as the child. Based on the Lazarus and
Folkman’s stress model (1984), the psychological experience of stress results from the
balance between the primary appraisal, or what is at stake (producing a state of arousal),
and secondary appraisal, or what resources are perceived to be available for coping
(materials, emotional, social, or cognitive). Therefore, when assessing parenting stress,
the meaning of the potential threat (primary appraisal) and the availability of coping
strategies (secondary appraisal) must be considered as the concept of stress is the result of
interactions between a parent and his or her environment where it is recognized that one
cannot cope with the demands of the situation.

Two coping resources that often have been discussed in the literature were
parenting self-efficacy (Bandura, 1997; Colman & Karraker, 1997, 2003; Kuhn & Carter,
2007; Hastings & Brown, 2002) and social support (Cohen & Wills, 1985; Boyd, 2002;
Bromely et al., 2004; Ling et al., 2011; Plant & Sanders, 2007; White & Hastings, 2004).
Hastings and Brown (2002) found that a child’s disabilities may directly affect parenting
stress but this effect may also be partially mediated by parenting self-efficacy; thus,
parenting self-efficacy may become an intervening variable (mediator). Moreover, parenting self-efficacy may also serve as a protective factor (moderator) to parenting stress. Contrary to Hastings and Brown’s (2002) findings, Feldman et al. (2007) found that, with parents of children with developmental disabilities, only social support served as a mediator and moderator of the relationship between parenting stress and child behavior problems. Parenting self-efficacy, on the other hand, did not function as a mediator or moderator of the relationship between child behavior problems and parents’ depressive symptoms. Because research that focused on the relationships between autism and parenting self-efficacy is extremely limited, the possible buffering effects of parenting self-efficacy have remained unclear. Hastings (2002) suggested that more research is needed to examine whether psychological resource variables such as parenting self-efficacy and social support, will mediate and/or moderate the impact of children’s behavior problems on parental well-being.

It is known that different parenting styles have very different effects on child outcomes, depending on the cultural background of the family and its peer group (Ardelt & Eccles, 2001). Parent characteristics and characteristics of the child’s disability form a complex dynamic interaction. This interaction is certainly influenced by cultural beliefs. For example, Ling et al. (2011) found that although social support was associated with higher levels of family adaptability and maternal well-being in U.S. mothers, no such evidence was found with Taiwanese mothers. For Taiwanese mothers, levels of family cohesion were not associated with social support or coping strategies. Thus, what is documented in the parenting stress and ASD literature in the U.S. may not apply to Asian families. Moreover, as discussed, parenting self-efficacy has emerged in the literature as
an important variable when exploring variance in parenting stress and parenting skills. Despite this, little is known about the role of parenting stress for parents of children with autism in both Western and Chinese literature. Furthermore, children over 13 years of age are entering into the adolescent stage, in which parents of children with autism may face a whole different aspect of stressors related to parenting such as puberty as well as issues related to sexuality and transitioning to middle-high schools. However, most of the studies that have examined parenting stress or parenting self-efficacy in the Western literature have focused on young children such as toddlers or preschoolers. Relatively little is known about parenting stress or parenting self-efficacy in primary school-age children or adolescent children with autism. Studies have suggested that although parents of children with disabilities may experience a high level of stress or psychological distress, this stress may increase and decrease during different phases throughout the child’s life (Greenberg et al., 2004; Kuhn & Carter, 2006; Mash & Johnston, 1983; Tehee et al., 2009; Toby & Glenwick, 2002). Researchers have also indicated that child age may have an impact on the extent to which child variables contribute to parenting stress (Osborne & Reed, 2009).

Given limited research on parenting stress, parenting self-efficacy, and levels of social support of parents with older children with autism, this study thus compared parenting stress and stress related specific to caregiving in parents of primary school-age children with autism (6-12 years) and parents of adolescent children with autism (13-18 years) in Taiwan. This study also explored the relative contribution of the child’s characteristics including autism severity, communication skills, socialization skills, daily living skills, problem behaviors, as well as parenting self-efficacy and social support in relation to parenting stress among parents of children with autism in Taiwan. Moreover,
the role of parenting self-efficacy and social support in parenting stress was examined. Specifically, whether parenting self-efficacy and social support serve as a mediator or a moderator in relation to child’s characteristics on parenting stress was explored. And lastly, an open-ended question requesting parents to list the most important aspect that they would like to see change in parenting their child with autism was asked.

**Research Questions**

The current study examined the following eight research questions:

1. Will parents of primary school age children (6-12 years old) differ from parents of adolescent children (13-18 years old) in terms of parenting stress as measured by the (a) Parenting Stress Index (PSI) and (b) Family Stress and Coping Interview-Adapted (FSCI-A)?

2. Are there relationships between the following variables in parents of children with autism in Taiwan?
   
   (a) parenting stress (as measured by PSI)
   
   (b) parenting self-efficacy
   
   (c) social support
   
   (d) severity of autism symptoms
   
   (e) child communication skills
   
   (f) child socialization skills
   
   (g) child daily living skills
   
   (h) child behavior problems
3. What are the best predictors of parenting stress (PSI) of parents of children with autism in Taiwan?

4. Does parenting self-efficacy mediate the relationship between child’s characteristics and parenting stress levels (PSI) among parents of children with autism in Taiwan?

5. Does social support mediate the relationship between child’s characteristics and parenting stress levels (PSI) among parents of children with autism in Taiwan?

6. Does parenting self-efficacy moderate the relationship between child’s characteristics and parenting stress levels (PSI) among parents of children with autism in Taiwan?

7. Does social support moderate the relationship between child’s characteristics and parenting stress levels (PSI) among parents of children with autism in Taiwan?

8. What would parents like to see change that would help make their experience in parenting their child with autism easier?
CHAPTER III

Method

This chapter describes the demographic characteristics of the sample, setting and participants of the study, materials and instruments, research design, and procedures, as well as the data analysis and scoring.

Participants

The participants were recruited from four social service agencies serving parents and children with ASD in Taiwan, four autism associations located in the Northern, Middle, and Southern parts of Taiwan, and seven schools (one was a special education school) located mainly in the Northern part of Taiwan. In addition, a few participants also introduced and encouraged their friends who also had a child with autism to participate in the study. In Taiwan, children are typically diagnosed with ASD by a medical or mental health professional according to the DSM-IV (APA, 2000)/ICD-10 (WHO, 2010). Once a child is diagnosed with a disability, parents can choose to apply for a physical and mental disability card for their child. The physical and mental disability card is issued by the Department of Social Welfare of the Taiwanese government according to the diagnosis from the health professionals. Parents were asked to give the child’s exact diagnosis information as shown on the disability identification card when filling out the demographic sheet for this study.

In order to participate in the study, a potential participant had to meet the following criteria: 1) must be the main caregiver of the child with autism, 2) the child must be diagnosed with autism, 3) the child must be within the age range of 6 to 18 years, and 4) the child must have an Autism Index Score of 70 or above in Gilliam Autism
Rating Scale-II (GARS-II: Gilliam, 2006). Out of a total of 83 Taiwanese families of children with autism who agreed to participate in the study, two children did not meet the GARS criterion (Autism Index below 70), which indicated that the child was unlikely to have autism. One mother decided to withdraw from the study after the GARS had been administered. Lastly, the researcher initially included a mother who had a child of age 20 studying in Grade 12, and although the mother participated in the entire study, the researcher later decided to exclude the child from her study due to the age cut off, and therefore only 79 of the families remained. The participants included 45 (57.0%) parents of primary-school children with autism with ages ranging from 6.00 to 12.11 years and 34 (43.0%) parents of adolescent children with autism with ages ranging from 13.00 to 18.11 years. For the entire sample, 18 (22.8%) parents reported that their child had “mild autism”, 20 (25.3%) parents reported that their child had “moderate autism”, 19 (24.1%) parents reported that their child had “severe autism”, 14 (17.7%) reported their child had “autism” without the specification of the severity levels, and 8 (10.1%) reported that their child had “autism and others” (such as mental retardation, genetic abnormality, multiple disabilities). Sixty-four (81%) parents reported having a male child and 15 (19%) reported having a female child. Approximately 92% of the participants were biological mothers (n=73) and the remaining 8% were biological fathers (n=6).

Sixty-five (82.3%) participants were between 35 to 49 years of age, 9 (11.4%) were at least 50 years old, and 5 (6.4%) were younger than 34 years of age. In terms of education level, 44 (55.7%) parents reported that they had a college degree, 28 (35.4%) parents reported having a high school degree, 5 (6.3%) reported having a graduate degree, and 2 (2.5%) parents reported a below high school degree. As for marital status,
73 (92.4%) participants reported being married, 5 (6.3%) reported being divorced, and only 1 (1.3%) reported being separated.

In regard to employment status, 29 (36.7%) parents reported being employed full-time, 14 (17.7%) parents reported being employed part-time, and 36 (45.6%) were unemployed. With respect to monthly household income, 38 (48.1%) parents reported income in the middle category (NT$55,001-90,000; approx. $1833-$3000 USD), 23 (28.5%) parents reported income in the low category (below NT$35,000-55,000; approx. $1166 - $1832 USD), and 18 (22.8%) parents reported income in the high category (NT$95,001 and over; approx. $3166 USD and over). The data showed that the sample represented a range of socioeconomic status.

With regard to parent training that the participants had received, thirty-nine (49.4%) parents reported having moderate amount of parent training experiences, 21 (26.6%) reported having a lot of parent training experiences, 17 (21.5%) reported having little parent training, and 2 (2.5%) parents did not participate in any type of parent training at all.

In addition to personal demographics, participating parents provided demographic information for the child on which their responses were based. Age of children for which survey responses were made ranged from 6 to 18 years of age with a mean age of 12.21 years and a SD of 3.35. Among the 79 children, forty-two (53.2%) children either studied in a special education class within a regular education school or a class in a special education school. Thirty-five (44.3%) children studied in an inclusive setting and participated in resource classes if available within a regular education school. Two children (2.5%) had reached age 6 but due to their delayed development, they were still at
a day-care center.

Demographic variables of the two age groups of children and parents were compared using chi-square statistics. Child demographic variables included: gender and school placement. Parent variables included: parent age, marital status, educational levels, employment, income levels, and parent training experiences.

The children in each age group did not differ in terms of gender and school placement. Parents did not differ in terms of educational level, employment status, income levels, and parent training experiences. However, data showed a pattern that the parents of adolescent children were in an older age range compared to the parents of school-aged children. While there were five parents of school-aged children ranged from 25-35 years old, all of the parents of adolescent children were between 35-50 years old. This result was expected since the school-aged group of children (mean age = 9.83) were much younger than the adolescent group of children (mean age = 15.36). For the school-aged children, twenty-four percent of the children ranged between 6 – 8 years, twenty-five percent of the children ranged between 9 – 11 years, and fifty-one percent of the children ranged between 11 – 12 years. For the adolescent group, thirty-two percent of the children ranged between 13 – 14 years, forty-seven percent of the children ranged between 15 -16 years, and twenty-one percent of the children ranged between 17 – 18 years. Moreover, while six parents of school-aged children were separated or divorced, none of the parents of adolescent children were divorced or separated. A summary of child and parent demographic variables for each age group with the results of the Chi-square analyses are presented in Table 1.
Table 1
Frequencies, Percents, (in parentheses) and Chi-Square Analyses for Demographic Variables Comparing Parents with School-Aged and Adolescent Children

<table>
<thead>
<tr>
<th>Variable</th>
<th>School-Aged</th>
<th>Adolescent</th>
<th>Chi-Square value</th>
<th>df</th>
<th>Sig (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Child’s Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>38 (84%)</td>
<td>26 (76%)</td>
<td>.801</td>
<td>1</td>
<td>.371</td>
</tr>
<tr>
<td>Female</td>
<td>7 (16%)</td>
<td>8 (24%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Child’s Placement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regular education</td>
<td>21 (47%)</td>
<td>14 (41%)</td>
<td>.237</td>
<td>1</td>
<td>.627</td>
</tr>
<tr>
<td>Special education/Day-Care</td>
<td>24 (53%)</td>
<td>20 (59%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ high school</td>
<td>14 (31%)</td>
<td>16 (47%)</td>
<td>2.09</td>
<td>1</td>
<td>.148</td>
</tr>
<tr>
<td>≥ College</td>
<td>31 (69%)</td>
<td>18 (53%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full-time</td>
<td>18 (40%)</td>
<td>11 (32%)</td>
<td>1.33</td>
<td>2</td>
<td>.515</td>
</tr>
<tr>
<td>Part-time</td>
<td>9 (20%)</td>
<td>5 (15%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployed</td>
<td>18 (40%)</td>
<td>18 (53%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>13 (29%)</td>
<td>10 (29%)</td>
<td>.173</td>
<td>2</td>
<td>.917</td>
</tr>
<tr>
<td>Middle</td>
<td>21 (47%)</td>
<td>17 (50%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>11 (24%)</td>
<td>7 (21%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parent Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Little-None</td>
<td>12 (27%)</td>
<td>7 (21%)</td>
<td>2.19</td>
<td>2</td>
<td>.335</td>
</tr>
<tr>
<td>Moderate</td>
<td>19 (42%)</td>
<td>20 (59%)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
A lot | 14 | 7  
---|---|---
(31%) | (21%) | 

**Research Design**

This study gathered both qualitative and quantitative data on Taiwanese parents of children with autism to better understand the levels of stress, parenting self-efficacy and social supports and their relationships with child characteristics. A qualitative method was employed to analyze one open-ended question adapted from the Family Stress and Coping Interview (FSCI-A; Nachshen, Woodford, & Minnes, 2003) that describe parents’ experiences in rearing a child with autism (research question 8).

Quantitative methods were used to explore the relationships between parenting stress and parenting self-efficacy, social support, and child characteristics such as autism severity, communication skills, socialization skills, daily living skills, and behavior problems, as well as other demographic variables of parents with primary-school children and parents with adolescent children with autism in Taiwan (research question 1-7). The dependent variable of primary interest in this study was parenting stress. The independent variables in this study were social support, parenting self-efficacy, and child’s characteristics (autism severity, communication skills, socialization skills, daily living skills, behavior problems, and age), as well as some child and parent demographic variables. Figure 1. Depicts the theoretical model of child characteristics, parenting stress with parenting self-efficacy and social support in this study.
Figure 1. The Mediating and Moderating Effects of Parenting Self-Efficacy and Social Support on Child's Characteristics and Parenting Stress
Materials and Instruments

This study utilized two instruments to assess child’s characteristics. The Gilliam Autism Rating Scale-II (GARS-II: Gilliam, 2006) was used to assess autism symptom severity. The Vineland Adaptive Behavior Scales – Interview Edition: Survey Form (VABS-Survey Form; Sparrow, Balla, Cicchetti, 1984) was used to measure child’s communication skills, social skills, daily living skills, and problem behaviors. For the parents, the Parenting Stress Index/Short Form (PSI/SF; Abidin, 1995) was used to measure overall parenting stress. The Parenting Sense of Competence Scale (PSOC; Gilbau-Wallston & Wandersman, 1978; cited in Johnston & Mash, 1989) was employed to assess parenting self-efficacy. The Family Support Scale (FSS; Dunst et al., 1984) was used to measure parents’ levels of social support. And finally, an adapted version of Family Stress and Coping Interview (FSCI-A; Nachshen et al., 2003) was used to measure perceived stress related to caregiving in parents of children with autism.

The GARS-II (Gilliam, 2006), VABS-Survey Form (Sparrow et al., 1984), FSS (Dust et al., 1984), PSOC (Gilbau-Wallston & Wandersman, 1978 as cited in Johnston & Mash, 1989), and FSCI-A (Nachshen et al., 2003) were not readily available in Chinese. The GARS-II, VABS, FSS, PSOC, and FSCI-A were all translated by the investigator of this study using the back-translation method. First of all, the researcher translated the original instruments into Chinese with consideration of the definition of the original terms and attempted to translate each item in the most relevant way. The initial Chinese version of each measurement was then given to a professional English-Chinese translator who had no knowledge of the questionnaire and he translated the instrument back into English. The original English version of each measurement and the back-translation were then compared by the translator and the researcher. Discrepancies
between the two versions were discussed and translated again by the professional translator to ensure maximum accuracy. However, with the PSOC, according to Johnston and Mash, (1989), parents should be asked to complete the PSOC thinking about the target child, as a result, “my child with special need” was substituted for “my child” in the wording of items in this study.

**Child measures.**

**Symptom severity.**

The GARS-II (Gilliam, 2006) was used as an index for child’s autism symptom severity, despite the fact that it is not a preferred measure of autism symptomology. The GARS-II consists of 42 items divided into three subscales, Stereotyped Behaviors, Communication, and Social Interaction, and is designed to be completed by a parent or other caregiver/professional familiar with the child’s behavior. It can be completed in 5 or 10 minutes. The GARS-II is designed to identify individuals with autism from age 3 through 22. It provides standardized scores for each of the three subscales and an overall autism composite standard score (Autism Index), which can also be used in estimating the severity of the disorder.

According to Gilliam (2006), The GARS-II has been normed on 1,107 representative participants with autism from 48 states with the sample covering a wide range of ages: from age 2 through 28. For reliability, the coefficient alphas were found to be .84 for the Stereotyped Behavior subscale; .86 for Communication; .88 for Social Interaction; and .94 for the total score. The test-retest reliability was reported as .88 for the overall Autism Quotient with a sample of 37 parents of children with autism completed the GARS at the beginning and end of a 2-week interval. The criterion-related validity was established by correlating the test with the Autism Behavior Checklist in a
sample of 63 children, the results the two checklists were significantly correlated. The GARS was translated into Chinese by the researcher using the back-translation method (the researcher translated the original English version into Chinese then the professional English-Chinese translator translated it back into the English, see *Materials and Instruments*).

*Communication skills, socialization skills, daily living skills, and problem behaviors.*

The VABS-Survey Form (Sparrow et al., 1984) is a survey for a parent or caregiver using a semi-structured interview format that assesses a child’s communication skills, socialization skills, daily living skills, behavior problems, and motor skills (for those under 6 years of age and the motor skills scale was not utilized in this study), which yields a total adaptive behavior composite score with all the subdomains together. It is a standardized instrument and has normative data for all the domains. The VABS-Survey Form contains a total of 297 items. Parents were asked to respond to statements describing the behaviors of their child with autism by answering either (a) usually, (b) sometimes or partially, or (c) never. Additionally, the response “Don’t Know” was assigned when the parent had no knowledge of whether the child could perform the activity, and the response “No Opportunity” was assigned when the activity is not performed because of limiting circumstances. Each domain was subdivided into categories. The Socialization domain refers to those skills required to get along with others, regulate emotions and behaviors, and play and leisure activities. The Communication domain refers to those skills required for receptive, expressive and written language. The Daily Living Skills domain includes the practical skills necessary for taking care of oneself and contributing to the household and the community, and the
Maladaptive Behavior domain refers to the problem behaviors that the child emitted. The VABS-II has good internal consistency reliability with a coefficient alpha of .80 to .95, and a split-half reliability of .90 across domains. The validity of the VABS is supported by correlations between VABS scores and scores from other adaptive behavior scales and intelligence scales. The content validity was supported by the procedures used in the original development of the items. Construct validity was established through the developmental progressions of VABS scores and two types of factor analysis.

This study utilized the Communication, Socialization, Daily Living Skills, and the Maladaptive Behavior domains to assess children’s communication skills, social skills, daily living skills, and problem behaviors. According to Sparrow et al. (1984), the Survey Form may be administered in any language by a bilingual interviewer. Due to the nature of a semi-structured interview, the interviewer may ask questions and probes in the interviewer’s own words. Nevertheless, the VABS-Survey Form was translated into Chinese by the researcher for the purpose of consistency. While translating the VABS-Survey Form, the Chinese Version of VABS-Classroom edition was used as a reference since most of the items in the two surveys were overlapping and the Chinese translation of the Classroom edition has been validated by a group of researchers in Taiwan prior to the present study (Wu, Chang, Lu, & Chu, 2004).

Parent measures.

Social support.

The Family Support Scale (FSS; Dunst et al., 1984) was used as a measure of the social support available from various sources to the parents. It provided an overall score for total level of social support, as well as five weighted subscale scores covering parents’ perceptions of helpfulness of partner/spouse support, informal kinship support,
formal kinship support, social organizations and professional services. The FSS also provided a measure of the total number of sources of support available to parents. The scale includes 19 items that are rated on a 5-point scale from not at all helpful (1) to extremely helpful (5). Dunst et al. (1984) reported an alpha coefficient for internal consistency of .79, and coefficients for test-retest reliability over a 1-month period of .91 for the whole scale and .75 for the average of the separate items. The concurrent validity of the FSS was demonstrated through the correlations between the FSS total helpfulness scores and selected personal and familial well-being scales on the Questionnaire on Resources and Stress (QRS; Holroyd, 1974). The results were all in the predicted direction with higher levels of support associated with lower levels of personal and family problems. The FSS was translated into Chinese by the researcher using the back-translation method.

**Parenting self-efficacy.**

The Parenting Sense of Competence Scale (PSOC, Gibaud-Wallston & Wandersman, 1978 as cited in Johnston & Mash, 1989) consisted of 17 items initially developed by Gibaud-Willston & Wandersman (1978, as cited in Johnston and Mash, 1989) to assess parents’ perceived competence with their infants. The PSOC was regarded by Gibaud-Willson and Wandersman as consisting of two subscales: Valuing/Comfort and Skill/Knowledge. The authors reported evidence of concurrent validity as PSOC scores correlated with parents’ perceived difficulties with their infants, social support, and psychological well-being (as cited in Ohan, Leung, & Johnston., 2000). To increase its applicability, Johnston and Mash (1989) changed the item wording from “infant” to “child” and administered it to parents of typical developing
primary school-age children and primary school-age children with hyperactivity to measure parents’ self-esteem. Johnston and Mash’s (1989) factor analysis of PSOC scores extracted two factors: Satisfaction and Efficacy, and the findings were generally consistent with what Gibaud-Willson and Wandersman had found, with the exception of two items (item 8 and 17). Item 8 that was originally conceptualized in the “Efficacy scale” (in Johnston & Mash’s term) had a higher factor loading on the “Satisfaction” factor and was therefore moved to the Satisfaction scale by Johnston and Mash. Item 17, “Being a good mother/father is a reward in itself” did not load on any scale and has been removed from the PSOC. According to Johnston and Mash (1989), Satisfaction is an affective dimension which involves parenting motivation, frustration, and anxiety. An example of an item on the Satisfaction subscale is “I do not know why it is, but sometimes when I’m supposed to be in control, I feel more like the one being manipulated.” Efficacy is an instrumental dimension which includes competence, problem-solving, and familiarity in parenting. An example of an item in the Efficacy subscale is “Being a parent is manageable, any problem can be easily solved.”

The researcher got the items of the PSOC directly from Johnston and Mash’s (1989) article (Appendix A). To confirm the scoring method, the PSOC scoring instructions were downloaded from an Appendix of a doctoral dissertation (Fyta, 2008) from ProQuest. The PSOC has been translated using back-translation method into Chinese by the researcher and a professional English-Chinese translator prior to the study and was employed to assess parents’ perceptions of their efficacy in the parenting role. The PSOC is the most frequently used instrument measuring parenting self-efficacy throughout the literature (Jones & Prinz, 2005). The PSOC measures general parental
self-efficacy, which focuses broadly on the extent to which a parent feels competent in the parenting role, without focusing on specific parenting tasks or particular domains of parenting. The psychometric assessments for the PSOC have demonstrated good reliability and validity. Johnston and Mash obtained alpha reliability coefficients of .79 for the Total score, .79 for the Satisfaction factor, and .76 for the Efficacy factor (Johnston & Mash, 1989). Ohan et al. (2000) replicated Johnston and Mash’s factor structure, validating the two factors of Satisfaction and Efficacy. They reported a coefficient alpha of .80 for both the Satisfaction and Efficacy scales for mothers of typically developing children. In addition, the researchers found significant negative correlations between mothers’ Satisfaction scores and Child Behavior Checklist (CBCL; Achenbach & Edelbrock, 1982) Internalizing and Externalizing scores and between mothers’ Efficacy scores and CBCL Externalizing scores. Moreover, Donenberg and Baker (1993) found that higher CBCL Internalizing scores were negatively correlated with PSOC Satisfaction scores and that higher CBCL Externalizing scores were negatively correlated with PSOC Efficacy scores among parents of children with autism, behavior disorders, and typical development.

**Parenting stress.**

The Parenting Stress Index/Short Form (PSI/SF, Abidin, 1995) was utilized to assess parents’ levels of stress in the parenting role. The short form contains 36 items which were taken directly by Abidin from the full-length PSI (Abidin, 1995). The response format of this self-report measure varies among a 5-point Likert type scale, a multiple choice format with five options, and yes/no questions. The items constitute three subscales: (1) parental distress – an impaired sense of competence in the parenting
role, lack of social support, role-restriction, depression, and conflict with one’s spouse; (2) parent-child dysfunctional interaction – child fails to meet parents’ expectations, interactions with the child are not reinforcing; and (3) difficult child – characteristics of the child that make him/her easy or difficult to manage (Abidin, 1995). The PSI also yields a total stress score, which indicates the overall amount of parenting stress experienced in the parenting role as a function of the above three scales. Abidin (1995) indicated that the PSI Total Stress score was designed to provide an indication of the overall level of stress an individual is experiencing specific to the parenting role and nothing else. The theoretical framework of the study was based on parenting stress literature and focused on parenting stress, therefore the PSI was examined in all quantitative research questions.

The adequacy of the psychometric properties of the PSI/SF is well established. The test-retest reliability coefficients of the PSI-SF have been reported to be .84 for total stress score, .85 for parental distress, .68 for parent-child dysfunctional interaction, and .78 for the difficult child subscale. The internal reliability reported as .91 for total stress, .87 for parental distress, .80 for parent-child dysfunctional interaction, and .85 for difficult child (Abidin, 1995). In addition, Abidin reported that the Total Stress score on the full-length PSI has a .94 correlation with PSI/SF Total Stress score. Support for the validity of the PSI/SF was demonstrated by the high correlations (i.e., .92 and .87) between the corresponding subscales on the PSI/SF and the PSI. PSI-SF has been widely used to assess parenting stress and psychological distress among parents of children with disabilities (Beck et al., 2004; Dumas et al., 1991; Estes et al., 2009; Hassall et al., 2005; Tomanik et al, 2004). The PSI-SF has been translated into Chinese by a Taiwanese
researcher recently with internal consistency reliability ranging from .86 to .91 with 959 Taiwanese parents (Wong, 2011).

**Stress related to caregiving.**

The Family Stress and Coping Interview-Adapted (FSCI-A; Nachshen et al., 2003) is a questionnaire designed to quantitatively and qualitatively measure stress and coping of parents of children with developmental disabilities. It was adapted from the original FSCI developed by Nachshen et al., (2003) to address parents’ experience related to events in the lives of their child with disabilities. The original version of FSCI contains 23 individual items and can be summed up to create a total score and five open-ended coping questions, which allows a researcher to gather qualitative information regarding parents’ coping strategies. The stress rating scale requires parents to rate the level of stress of each issue on a five-point Likert Scale ranging from (0) “not stressful” to (4) “extremely stressful”.

The stress rating scale in the FSCI-Original version has demonstrated good reliability and discriminant validity (Nachshen et al., 2003). The alpha coefficient of the FSCI was .89 with 106 parents. Specifically, the stress portion of the questionnaire will elicit responses from parents regarding their level of perceived stress in the following areas: (1) the diagnosis of their child’s ASD, (2) explaining ASD to family/friends/community, (3) the causes of ASD, (4) dealing with family/friends/community, (5) dealing with health professionals such as doctors or speech/occupational therapist, (6) dealing with legal professionals, (7) dealing with teachers and education systems, (8) creating friendship/leisure opportunities for the child,
(9) deciding on the best level of integration of the child, (10) making the decision concerning accommodation in the home or in the community, (11) meeting the needs of their other children, (12) meeting their own personal needs, (13) meeting the needs of their spouse, (14) maintain their own personal friendships, (15) dealing with the child’s sexuality, (16) concerns about present/future work/employment for their child, (17) concerns about present/future long-term accommodation for their child, (18) planning wills/trusts/guardianships, (19) planning emotional and social support for their child, (20) transportation, (21) planning assistance with care, (22) time apart from their child, (23) dealing with financial and insurance issues. For the purpose of this study, the FSCI has been adapted (FSCI-A). The researcher has added an item to the stress rating scale: (24) meeting the day-to-day needs of your child with ASD, and utilized only the last of the five open-ended coping question (Research Question 8) in the original FSCI instead of all five (Appendix B). This particular open-ended question - “What would you like to see change that would help make this experience easier for you and for parents of other children with special needs” – was chosen because it can be useful in expanding the understanding of the needs of parents of children with autism in Taiwan. The other four open-ended questions in the original FSCI focus more on the coping strategies that parents used in dealing with everyday challenges they face in parenting their child with disabilities, therefore were not included in the study.

For the purpose of this study, the researcher changed the items wording “developmental disability” to “autism” in the FSCI-A. In addition, although FSCI-A measures stress related to caregiving, it is not limited to parenting stress as it may be related to other life roles and life events (e.g., “Meeting the needs of your spouse”,
“Dealing with financial and insurance issues”). As a result, FSCI-A was only examined in the first research question, which is to compare parenting stress and stress related to caregiving between parents of school-aged children and parents of adolescent children. The FSCI-A was translated into Chinese by the researcher and a professional English-Chinese translator using the back-translation method.

**Demographic questionnaire.**

A demographic questionnaire was developed for this study to assess socio-demographic questions concerning the child and the family of the participants. Background information about the child (age, gender, diagnosis as shown on the disability ID card, age of diagnosis, and placement) as well as information on parent (age, gender, education level, household income, employment status, marital status, and family size) were gathered (Appendix F).

**Procedure**

The researcher first visited the four social service agencies (two private organizations, a public funded organization, and an organization sponsored by a church serving children with various disabilities) in Taiwan and four autism associations serving parents and children with ASD located in the Northern, Middle, and Southern part of Taiwan. Later, the researcher expanded the participant recruiting sites by asking teachers from seven schools located mainly in the Northern part of Taiwan to look for potential participants. The researcher first met with the leader/responsible staff member of each social organization, and autism association, as well as seven teachers and gave a brief
description of the study and its purposes individually. In response to the staff members’ and teachers’ requests, instead of distributing the original informed consent form (three pages) to the parents, the leaders and the teachers asked the researcher to create an “informal one-page informed consent form” (for purpose of easy reading for parents) which also asked for parents’ contact information if they expressed interest in participation in the study. The staff members of the four social service agencies and seven teachers then helped to distribute the informal one-page informed consent form to potential participants in which parents were asked to leave their names and contact numbers if they were interested in participation in the study. The researcher later picked up the forms with parents’ names and contact numbers from the centers and teachers. For the autism associations, participants were recruited through notices posted on centers’ websites and facebook; interested parents contacted the researcher by phone to express their interest in participation in the study. One of the autism associations called the parents directly to ascertain parents’ willingness to participate in the study. The center then passed a list of parents who gave oral consent for participation with their contact numbers to the researcher. All the staff members and teachers who helped with participant recruitment were told that the criteria for the potential participants were: (a) have a child between 6 to 18 years old who has been diagnosed with autism as shown on their physical and mental disability ID card, and (b) must be the main caregiver of the child.

Upon receipt of parents’ contact information, the investigator contacted the potential participant by phone. The GARS was then completed on the phone to confirm the child’s likelihood of autism. If the child met the GARS criteria (Autism Index of 70
or higher), an in-person interview was then scheduled with the parent. During the in-person interview, parents were asked to sign the original informed consent form first; then the VABS-Survey Form as well as the one open-ended question adapted from the FSCI-A were completed during the interview. The VABS-Survey Form proved to be lengthy. On average, it took about 60 minutes to complete the VABS-Survey Form for each parent and each interview lasted approximately 80-90 minutes on average. One research assistant was hired in Taiwan to help the researcher complete the in-person interview with 11 participants. The research assistant worked as a staff member at one of the social service agencies and was also a special education teacher. However, before the research assistant started interviewing parents by herself, the researcher accompanied the research assistant for four parent interviews (training period), showing the assistant how to probe and ask parents questions. Both the researcher and the research assistant recorded data on VABS simultaneously in each interview during the training period. Data on VABS were compared right after each interview, and the researcher discussed and explained the scoring method with the research assistant if there was a discrepancy in the recorded data. The inter-observer agreement reached one hundred percent in the fourth interview during the training period. The interview was conducted in the parent’s home or at another location at the parent’s request. Once the interview was completed, each parent was left with a survey packet containing four questionnaires (FSS, PSI, PSOC, and FSCI-A-stress rating scale portion), a demographic information sheet, and a self-addressed stamped envelope. Parents could choose to fill out the surveys during the interview or they could complete the packet on their own time and mail it back to the researcher. Lastly, each participant received $500 (approximately $17.00 USD) if all the
questionnaires and the interview were completed as compensation. In addition, since the researcher had each participant’s contact information, any missing responses in the questionnaires were clarified by phone or in-person during the interview.

**Scoring and Data Analysis**

The GARS-II has a total of 42 items and requires respondents to rate the frequency of the child’s behavior on a 4-point Likert scale, ranging from “Never Observed (0)” to “Frequently Observed (3).” The raw score from each sub-domain can be scaled into a standard score which ranges from 1 to 20. The standard scores from the sub-domains can then be added up into a standard score total, which can generate the “Autism Index” that serves as a reference in determine the likelihood of autism of an individual. The Autism Index ranges from 40 to 165, however, because the cut off of the Autism Index in this study was 70, thus the range for this study was 70 to 165. According to Gilliam (2006), with an Autism Index below 70, the diagnosis of autism, while possible, is unlikely. Thus, in order to participate in the study, the child had to meet an Autism Index of 70 or above. An Autism Index between 70 and 84 indicates that an individual may possibly have autism. Individuals receiving Autism Index scores between 85 and 100 are very likely to have autism. In addition, Autism Index scores can also be used to determine the approximate level of severity of ASD symptomatology with greater scores indicating more severe symptom. According to Gilliam (2006), the Autism Index is another type of standard score, which has a mean of 100 and a standard deviation of 15 and is the most reliable of all the scores generated on the GARS-II. As a result, only the Autism Index Score was reported and examined in this study.
The Communication Domain, Socialization Domain, Daily Living Skills Domain, and Maladaptive Behavior Domain of the VABS-Survey form were used to assess the communication, socialization, daily living skills, as well as problem behaviors of the child. There are 99 items in the Communication Domain and the Social Domain, 109 items in the Daily Living Skills Domain, and 27 items in the Maladaptive Behavior Domain. The three sub-domains in the Communication Domain are: Receptive, Expressive, Written, and the three sub-domains in the Daily Living Skills Domain are: Personal, Domestic, and Community. Possible responses and scores are as follows: Usually (2), Sometimes or partially (1), Never (0). Additionally, the response “Don’t Know” was assigned when the parent has no knowledge of whether the child can perform the activity, and the response “No Opportunity” was assigned when the activity is not performed because of limiting circumstances. On this instrument, scoring consisted of counting the items before the basal level as two and the items after ceiling level as zero. The basal item was the highest item in the highest set of seven consecutive items scored 2 and the ceiling item was the lowest item in the lowest set of seven consecutive items scored 0. The measure was scored to yield raw scores in each of the sub-domains and only the raw scores were used in this study.

The Family Social Support Scale (FSS) is a 19-item survey with a five-point scale ranging from “Not at all helpful (1)” to “extremely helpful (5)”, and a “N/A (0)” response which indicates if a source of help is not available to a family during this period of time. FSS results in a total score between 0-95. The items constitute five sub-scales: kinship, spouse/partner support, informal support, programs/organizations, and professional services, which can be further categorized as “informal support” (kinship, spouse/partner...
support, informal support) or “formal support” (programs/organizations and professional services). The total score on the FSS is the sum of “informal support” and “formal support” scores, and only the FSS total score was examined in the study.

The Parenting Sense of Competence Scale (PSOC) has 16 items with a 6-point Likert scale from 6 (Strongly Disagree) to 1 (Strongly Agree). As mentioned previously, Johnston and Mash (1989) divided the PSOC into two subscales: Satisfaction (9 items) and Efficacy (7 items). All items on the Satisfaction Scale were reverse scored (i.e., item 2, 3, 4, 5, 8, 9, 12, 14, and 16), with higher scores indicating greater satisfaction. According to Bandura (1997), efficacy beliefs can influence how people feel, think, motivate themselves, and act, in other words, our internal states and efficacy beliefs operate as interrelated mechanisms. This study thus utilized the Total score of PSOC which ranges from 16-96 (combined both Efficacy and Satisfaction Scale) as a single measure in measuring parenting self-efficacy beliefs.

The Parenting Stress Index/Short Form (PSI/SF) is a 36 items survey with a 5-point Likert type scale. Response options include: Strongly Agree (5), Agree, (4), Not sure (3), Disagree, (2), and Strongly Disagree (1). The PSI-SF is divided into three subscales: Parental Distress, Parent-Child Dysfunctional Interaction, and Difficult Child. Each of the subscales has 12 statements. The maximum score for each subscale is 60 and for the total stress score is 180. However, only the PSI Total Score was examined in the study (ranges from 36-180). Parents who obtain a Total Stress score above a raw score of 90 (at or above the 90th percentile) are experiencing clinically significant levels of stress. Lastly, the FSCI-A rating scale portion has 24 items with a 5-point Likert Scale from 0 (not stressful) to 4 (extremely stressful). Individual items can be summed to create a total
For the quantitative data, scores from all questionnaires and demographic variables from the survey packets were entered into the Statistical Package for the Social Science (SPSS). First of all, internal consistency was tested with FSS, PSOC, GARS, and FSCI-A to ensure reliability of the translated surveys. All translated questionnaires had good inter-item consistency yielding the following coefficients for FSS, PSOC, GARS, and FSCI-A: 0.86, 0.74, 0.79, and 0.95. Independent samples t-tests were employed to compare means for parenting stress and stress related to caregiving between the two groups of parents (school-age child: 6.00 to 12.11 years V.S. adolescent child: 13.00 to 18.11 years). Chi-square analyses were run to determine independence of demographic variables. Pearson Product-Moment Correlations among all dependent variables and independent variables were calculated, and a correlation matrix was generated. Stepwise regression analysis was used to identify significant predictors of parenting stress for all parents. To examine potential mediators and moderators of the relationships between parenting self-efficacy and social support and child’s characteristics on parenting stress, this study followed the method outlined by Baron and Kenny (1986). First, the child’s characteristics were entered into the regression as a predictor of parenting stress. In order to explore evidence for mediation, parenting self-efficacy or social support scores were entered as the second step in the analysis. If parenting self-efficacy or social support indeed mediated the effect of child’s characteristics on parenting stress, we would expect to see child’s characteristics initially making a significant independent contribution to the prediction of the parenting stress. However, once parenting self-efficacy or social support scores were entered, we would
expect to see a reduction in the contribution made by child’s characteristics or for this contribution to no longer be significant (Baron & Kenny, 1986). In addition, Sobel’s test (Preacher & Hayes, 2004) was employed to confirm the mediation effects. To test for moderating effects of parenting self-efficacy and social support, an interaction term for the child’s characteristics and parenting self-efficacy (or social support) scores were entered. The interaction term was the product of parenting self-efficacy (or social support) and child’s characteristic scores (the characteristics that show the strongest correlation with parenting stress). Evidence for a moderating effect of parenting self-efficacy (or social support) could be established if the interaction term explained a significant proportion of the variance over and above that accounted for by the main effects of its contributing variables. A summary of all potential dependent and independent variables as well as their sources and range of scores can be found in Table 2.

For the open-ended question (the last research question) from the FSCI-A, because participants’ responses were not audiotaped, data gathered were limited and therefore data were only presented in a table format which listed the aspects that parents would like to see change in rearing their child with autism. During the in-person interview with the parents, the researcher wrote down the main ideas of response from each participant, each parent’s response to the question was then assigned a phrase that described the meaning of the response. The phrases were then translated into English by the researcher and the percent of parents who mentioned each phrase was calculated.
Table 2
Summary of Sources, Score Ranges, and Number of Items for Independent and Dependent Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Test Source</th>
<th>Number of items</th>
<th>Raw Score Range</th>
<th>Category</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Child Measures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Autism Symptom</td>
<td>GARS</td>
<td>42</td>
<td>70-165*</td>
<td>Independent</td>
</tr>
<tr>
<td>Severity</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication Skills</td>
<td>VABS</td>
<td>99</td>
<td>0 - 198</td>
<td>Independent</td>
</tr>
<tr>
<td>Socialization Skills</td>
<td>VABS</td>
<td>99</td>
<td>0 - 198</td>
<td>Independent</td>
</tr>
<tr>
<td>Daily Living Skills</td>
<td>VABS</td>
<td>109</td>
<td>0 -218</td>
<td>Independent</td>
</tr>
<tr>
<td>Behavior Problems</td>
<td>VABS</td>
<td>27</td>
<td>0-57</td>
<td>Independent</td>
</tr>
<tr>
<td><strong>Parent Measures</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Support (Total)</td>
<td>FSS</td>
<td>19</td>
<td>0-95</td>
<td>Independent</td>
</tr>
<tr>
<td>Parenting Self-Efficacy (Total)</td>
<td>PSOC</td>
<td>16</td>
<td>16-96</td>
<td>Independent</td>
</tr>
<tr>
<td>Parenting Stress (Total)</td>
<td>PSI/SF</td>
<td>36</td>
<td>36-180</td>
<td>Dependent</td>
</tr>
<tr>
<td>Stress Related to Caregiving</td>
<td>FSCI-A</td>
<td>24</td>
<td>0-120</td>
<td>Dependent</td>
</tr>
</tbody>
</table>

* reported as Autism Index scores, which can be generated from summing the subscale standard scores (Gilliam, 2006).

FSS – The Family Support Scale (Dunst, Jenkins, & Trivette, 1984).


PSI/SF – The Parenting Stress Index-Short Form (Abidin, 1995).


CHAPTER IV

Results

This study gathered both quantitative and qualitative data on Taiwanese parents of children with ASD to examine the relationships between specific child characteristics such as communication skills, daily living skills, social skills, behavior problems, and symptom severity as well as parent’s factors such as parenting self-efficacy, social support, and other demographic variables with two measures of parental stress. First of all, the entire sample was grouped into two groups: parents with school-aged children (6-12 years old) and parents with adolescent children (13-18 years old). Preliminary analyses are reported, including frequencies, means, ranges, standard deviations, independent samples t-test analyses on the independent variables (autism severity, daily living skills, socialization skills, communication skills, behavior problems, parent’s social support, and parenting self-efficacy) by groups. Next, the main analyses are reported in relation to the research questions, including independent sample t-test comparisons, in which the two groups of parents were compared on parenting stress and stress related to caregiving to explore possible differences in parenting stress and stress related to care-giving among parents with school-aged children and parents with adolescent children. Then with the entire sample, correlations, stepwise regression, and hierarchical regression procedures were employed for the dependent variable (parenting stress).

For the qualitative question, a content analysis followed a coding process in which the qualitative data were sorted and categorized using a coding process (Creswell, 2003). During the in-person interview, the researchers wrote down the main ideas of each participant’s response. Each parent’s response to the question was
assigned a phrase that described the meaning of the response. Since parents’ responses were not audiotaped, verification of the responses was not possible. As a result, qualitative data were only presented in a table format which listed the aspects that parents would like to see change in rearing their child with autism. In the additional analyses, the items in the FSCI-A were examined individually to determine the salient factors contributing to parenting stress in this study. The total and the mean scores for each item were calculated and the top ten sources of stress for the entire sample were listed.

**Preliminary Analyses**

Comparisons were made between the two groups on all of the independent variables. The child’s factors included: symptom severity, child communication skills, daily living skills, socialization skills and behavior problems. The parent’s factors included: social support and parenting self-efficacy. Group means were compared using t-tests for independent samples (Table 3). The results indicated that, for the child’s factors, children in the adolescent group (n =34) demonstrated significantly higher levels of daily living skills ($M = 99.06$, $SD = 31.27$) as reported by the parents during the in-person interview compared with the children in the school-aged group (n = 45) ($M = 77.60$, $SD = 29.67$) as measured by the VABS-Daily Living Skills Domain ($t (77) = -3.11$, $p <0.01$). No significant differences were found for the other child’s factors or for the parent’s factors, such as family support or parenting self-efficacy. Correlational analysis was also performed on child age and all the child variables, the results showed child age was positively correlated with daily living skills and nothing else.
Table 3
Means, Standard Deviations (in the first parentheses), Ranges (in the second parentheses), and t-tests on the Independent Variables between the School-Aged Group and the Adolescent Group

<table>
<thead>
<tr>
<th>Variable</th>
<th>School-Aged N = 45</th>
<th>Adolescent N = 34</th>
<th>t-tests</th>
<th>df</th>
<th>Sig (2-tailed)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autism Severity (GARS: Autism Index)</td>
<td>84.11 (14.12)</td>
<td>79.44 (8.37)</td>
<td>t = 1.713</td>
<td>77</td>
<td>.091</td>
</tr>
<tr>
<td></td>
<td>(70-130)</td>
<td>(70-100)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Communication Skills (VABS-Communication)</td>
<td>72.16 (29.95)</td>
<td>79.50 (30.62)</td>
<td>t = -1.069</td>
<td>77</td>
<td>.288</td>
</tr>
<tr>
<td></td>
<td>(12-115)</td>
<td>(17-117)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Daily Living Skills (VABS-Daily Living)</td>
<td>77.60 (29.67)</td>
<td>99.06 (31.27)</td>
<td>t = -3.110</td>
<td>77</td>
<td>.003**</td>
</tr>
<tr>
<td></td>
<td>(22-136)</td>
<td>(31-149)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Socialization Skills (VABS-Socialization)</td>
<td>49.58 (20.47)</td>
<td>47.97 (15.72)</td>
<td>t = .381</td>
<td>77</td>
<td>.705</td>
</tr>
<tr>
<td></td>
<td>(16-105)</td>
<td>(18-83)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavior Problems (VABS-Maladaptive Behavior)</td>
<td>22.27 (9.13)</td>
<td>23.35 (8.90)</td>
<td>t = -.526</td>
<td>77</td>
<td>.600</td>
</tr>
<tr>
<td></td>
<td>(9-45)</td>
<td>(7-41)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social Support (FSS-Total)</td>
<td>38.60 (14.90)</td>
<td>38.50 (13.51)</td>
<td>t = .031</td>
<td>77</td>
<td>.976</td>
</tr>
<tr>
<td></td>
<td>(10-76)</td>
<td>(14-67)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parenting Self-efficacy (PSOC-Total)</td>
<td>57.53 (8.33)</td>
<td>58.97 (8.30)</td>
<td>t = -.704</td>
<td>77</td>
<td>.449</td>
</tr>
<tr>
<td></td>
<td>(40-76)</td>
<td>(44-74)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. **p < .01. Values enclosed in the first parentheses represent SD. Values enclosed in the second parentheses represent Ranges.
Main Analyses

Research Question #1 - Will parents of primary school age children (6-12 years old) differ from parents of adolescent children (13-18 years old) in parenting stress as measured by (a) the Parenting Stress Index (PSI) and (b) the Family Stress and Coping Interview-Adapted (FSCI-A)?

Using independent samples t-tests, the two dependent variables were compared between parents of school-aged children and parents of adolescent children in Taiwan. Table 4 presents the means, standard deviations, and t-test results for the two groups of parents on the parenting stress and stress related to caregiving measures. The results showed that no significant differences were found on these two variables between the two groups of parents, although parents in the adolescent group in general showed slightly higher mean scores on both parenting stress (PSI) \( M = 106.21, SD = 22.11 \) and stress related to caregiving (FSCI-A) \( M = 50.68, SD = 22.53 \) as compared to those parents in the school-aged group (parenting stress: \( M = 103.39, SD = 19.05 \); stress related to caregiving: \( M = 46.42, SD = 17.10 \)).

It is worth noting that the mean levels of parenting stress as measured by the PSI were high according to Abidin’s (1995) normative data. For both groups of parents, the mean total parenting stress was above the 95th percentile. This indicated that Taiwanese parents of children with autism indeed experienced high levels of parenting stress compared to the normative sample.
Table 4
Independent Group Means, Standard Deviations (in the first parentheses), Ranges (in the second parentheses), and t-tests on Levels of Parenting Stress between the Parents of School-Aged Children and Parents of Adolescent Children

<table>
<thead>
<tr>
<th>Variable</th>
<th>School-Aged</th>
<th>Adolescent</th>
<th>t-tests</th>
<th>df</th>
<th>Sig (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Parenting Stress (PSI/SF)</td>
<td>103.49</td>
<td>106.21</td>
<td>-.586</td>
<td>77</td>
<td>.560</td>
</tr>
<tr>
<td></td>
<td>(19.05)</td>
<td>(22.11)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(58-144)</td>
<td>(58-145)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stress Related to Caregiving (FSCI-A)</td>
<td>46.42</td>
<td>50.89</td>
<td>-.954</td>
<td>77</td>
<td>.343</td>
</tr>
<tr>
<td></td>
<td>(17.10)</td>
<td>(22.23)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(10-86)</td>
<td>(11-92)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Values enclosed in the first parentheses represent SD. Values enclosed in the second parentheses represent Ranges.

Research Question 2: Are there relationships between the following variables in parents of children with autism in Taiwan? (a) parenting stress (as measured by the PSI), (b) parenting self-efficacy, (c) social support, (d) autism severity, (e) communication skills, (f) socialization skills, (g) daily living skills, (h) behavior problems, and (i) demographic variables (parent training, income level, and education level)?

Pearson’s correlation analysis was used to explore the relationships between parent/child characteristics and parenting stress for the entire sample. The dependent variable was parenting stress as measured by PSI Total Stress score. The independent variables were parenting self-efficacy, social support, autism severity, communication skills, socialization skills, daily living skills, and behavior problems, as well as some demographic variables such as parent training, income level, and education level. However, due to the nature of demographic variables (parent training, income level, and
education level), the correlation coefficients were reported as Spearman’s Rho correlations.

With regard to parent’s factors (parenting self-efficacy (PSOC) and social support (FSS)), parenting stress (PSI) showed a strong negative correlation with parenting self-efficacy ($r = -.73; p < .01$) and social support ($r = -.44; p < .01$). With respect to child’s factors (autism severity (AI), communication skills (COM), socialization skills (SOC), daily living skills (DLV), and behavior problems (BHP)), correlational analysis uncovered significant positive relationships between parenting stress and severity of symptoms ($r = .34; p < .01$) and child behavior problems ($r = .55; p < .01$). Lastly, none of the demographic variables (parent training, income levels, education levels, and child’s gender) showed correlations with parenting stress.

It is interesting to note that not only did parenting stress show significant correlations with behavior problems, the data also showed that parenting self-efficacy, social support, and parent training all indicated significant negative correlations with behavior problems ($r = -.55; p < .01; r = -.26; p < .05; r = -.26; p < .05$ respectively). In addition, parent training (PT) also showed significant associations with child’s communication skills ($r = .25; p < .05$), daily living skills ($r = .29; p < .01$), and behavior problems ($r = -.26; p < .05$). A full correlation matrix between all the independent variables and dependent variable is presented in Table 5.
Table 5
Correlation Matrix of Independent and Dependent Variables of the Entire Sample

<table>
<thead>
<tr>
<th></th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
<th>11</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. PSI</td>
<td>1</td>
<td>-0.73**</td>
<td>-0.44**</td>
<td>0.34**</td>
<td>-0.16</td>
<td>-0.22</td>
<td>0.55**</td>
<td>-0.11</td>
<td>-0.20</td>
<td>-0.12</td>
<td></td>
</tr>
<tr>
<td>2. PSOC</td>
<td>1</td>
<td>0.34**</td>
<td>-0.24</td>
<td>0.13</td>
<td>0.14</td>
<td>0.15</td>
<td>-0.55**</td>
<td>0.17</td>
<td>0.13</td>
<td>0.07</td>
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</tr>
<tr>
<td>3. FSS</td>
<td>1</td>
<td>-0.06</td>
<td>0.12</td>
<td>0.14</td>
<td>0.11</td>
<td>-0.26*</td>
<td>0.24*</td>
<td>0.31**</td>
<td>0.14</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. AI</td>
<td>1</td>
<td>-0.22</td>
<td>-0.21</td>
<td>-0.23*</td>
<td>0.41**</td>
<td>-0.08</td>
<td>-0.04</td>
<td>0.22</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. COM</td>
<td>1</td>
<td>0.72**</td>
<td>0.84**</td>
<td>-0.40**</td>
<td>0.25*</td>
<td>0.11</td>
<td>-0.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. SOC</td>
<td>1</td>
<td>0.69**</td>
<td>-0.37**</td>
<td>0.17</td>
<td>0.03</td>
<td></td>
<td>-0.14</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. DLV</td>
<td>1</td>
<td>-0.39**</td>
<td>0.29**</td>
<td>0.05</td>
<td></td>
<td>-0.18</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. BHP</td>
<td>1</td>
<td>-0.26*</td>
<td>-0.21</td>
<td>-0.16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. PT</td>
<td>1</td>
<td>0.10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. IN</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. ED</td>
<td>1</td>
<td></td>
<td></td>
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</tbody>
</table>

Note: *p<.05 and ** p<.01

1. PSI = Parenting Stress
2. PSOC = Parenting Self-Efficacy
3. FSS = Social Support
4. AI = Autism Severity
5. COM = Communication Skills
6. SOC = Socialization Skills
7. DLV = Daily Living Skills
8. BHP = Behavior Problems
9. PT = Parent Training (reported in Spearman’s Rho)
10. IN = Income Level (reported in Spearman’s Rho)
11. ED = Education Level (reported in Spearman’s Rho)
Research Question 3: What are the best predictors of parenting stress of parents of children with autism in Taiwan?

Stepwise regression analyses were run for the full sample to determine the relative contributions of the independent variables to parenting stress. Variables with significant correlations ($p<.05$) were entered into a stepwise multiple regression analysis to determine the best set of predictors of parenting stress (i.e., parenting self-efficacy, social support, behavior problems, and autism severity). Collinearity tolerance was tested (.682, .874, .719, .828) suggesting that the relationships among independent variables were not overly strong. The results showed that among all the independent variables that showed significant correlations with parenting stress, only parenting self-efficacy, behavior problems, and social support made significant contributions to parenting stress. Specifically, parenting self-efficacy alone accounted for 52.6% of the variance ($r^2 = .526; p<.01$) in the first step, social support accounted for an additional of 3.4% of unique variance ($r^2 = .602; p < .01$), and behavior problems added an additional of 4.3% of unique variance ($r^2 = .569; p < .01$). Overall, for parents of children with autism in Taiwan, the results indicated that parenting self-efficacy, social support, and child’s behavior problems were predictors for parenting stress. On the other hand, although autism severity showed significant bivariate correlations with parenting stress, it failed to significantly predict parenting stress. A summary of the stepwise regression analyses for parenting stress of parents of children with autism can be found in Table 6.
Table 6
Stepwise Multiple Regression for Parenting Stress

<table>
<thead>
<tr>
<th>Source</th>
<th>R²</th>
<th>R²Δ</th>
<th>SS</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parenting Self-Efficacy</td>
<td>.526</td>
<td>.</td>
<td>16965.406</td>
<td>1</td>
<td>16965.406</td>
<td>85.482***</td>
</tr>
<tr>
<td>Behavior Problems</td>
<td>.569</td>
<td>.043</td>
<td>18341.259</td>
<td>2</td>
<td>9170.630</td>
<td>50.118**</td>
</tr>
<tr>
<td>Social Support</td>
<td>.602</td>
<td>.034</td>
<td>19427.183</td>
<td>3</td>
<td>6475.728</td>
<td>37.883**</td>
</tr>
</tbody>
</table>

Note: ** p<.01  ***p<.001

Research Question 4: Does parenting self-efficacy mediate the relationship between child’s characteristics and parenting stress levels among parents of children with autism in Taiwan?

In order to test for the possible mediation effects of parenting self-efficacy and/or social support, Baron and Kenny’s (1986) steps and Sobel’s test (Preacher & Hayes, 2004) were employed to analyze the results for these questions (research questions 4-5). According to Baron and Kenny (1986), the main idea in the “mediated model” is that “the effects of stimuli on behavior are mediated by various transformation processes internal to the organism” (p. 1176). In other words, this study examined whether the effects of child’s behavior problems (the only child characteristic that significantly predicted parenting stress as showed in research question 3) on parenting stress are mediated by a third variable such as parenting self-efficacy or social support. If parenting self-efficacy or social support indeed mediates the relationship between behavior problems and parenting stress, then parenting self-efficacy or social support is the “mediator” or the “intervening variable” (Baron & Kenny, 1986).

To further clarify the meaning of “mediation,” Baron and Kenny (1986)
introduced two path diagrams that depicted a causal chain in a mediated model. Figure 2 depicts an “unmediated model” and Figure 3 depicts a “mediated model.” In Figure 3, the mediated model assumes a three-variable system such that there are two causal paths feeding into the outcome variable (parenting stress): the direct effect of the independent variable (behavior problems) (Path c) and the effect of the mediator (parenting self-efficacy or social support) (Path b). In order to calculate the mediation effects, a path (Path a) from the independent variable (behavior problems) to the mediator (parenting self-efficacy or social support) is also taken into the account.

To establish the linkage of a meditational model, the following conditions must hold: (a) the independent variable (behavior problems) must affect the dependent variable (parenting stress), this estimated path c in Figure 3, (b) the independent variable (behavior problems) must be shown to affect the mediator (parenting self-efficacy or social support), this tested path a in Figure 3, and, (c) the mediator (parenting self-efficacy or social support) must affect the dependent variable (parenting stress) when the independent variable (behavior problems) is controlled, in which path b is estimated. To determine whether parenting self-efficacy or social support is a mediator, the previously significant relation between behavior problems and parenting stress (path c) should no longer be significant when path a and path b are controlled, and complete mediation is demonstrated when path c is reduced to zero. However, in this study, since parenting stress is more likely to have multiple causes, partial mediation may be demonstrated if the relation between behavior problems and parenting stress is significantly reduced rather than eliminating the relation between behavior problems and parenting stress altogether. The multiple regression analyses followed the steps mentioned above to test
the mediation effects of parenting self-efficacy and social support in research question 4 and 5. First, to establish path c, the only child’s factor that significantly predicted parenting stress – behavior problems, was entered into the regression as a predictor to parenting stress. Second, to establish path a, behavior problems was entered into the regression as a predictor to parenting self-efficacy. Third, to establish path b, both behavior problems and parenting self-efficacy were entered into the regression as predictors to parenting stress. If parenting self-efficacy indeed mediated the effect of behavior problems on parenting stress, we would expect to see a reduction in the contribution made by behavior problems on parenting stress in the third step compared to the first step (a reduction in $\beta$).

Sobel’s test (Baron & Kenny 1986; Preacher & Hayes, 2004) was used to confirm the amount of mediation or indirect effect (path a x path b) of parenting self-efficacy on behavior problems and parenting stress. The calculation requires the standard error of $a$ or $Sa$ and the standard error of $b$ or $Sb$ and provides the standard error of $ab$. Sobel’s test provides the standard error of $ab$ which can be shown to be equal to $\sqrt{b^2Sa^2+a^2Sb^2}$, and the test of the indirect effect is given by dividing $ab$ by $\sqrt{b^2Sa^2+a^2Sb^2}$ and treating the ratio as a Z test (i.e., larger than 1.96 in absolute value is significant at the .05 level) (Preacher & Hayes, 2004). Preacher and Hayes (2004) provided SPSS macros that can directly test the significance of indirect effects/mediation (Sobel’s test), which can be downloaded online from the Psychonomic Society’s Web archive at

www.psychnomic.org/archive/.
A series of regression analyses were performed as outlined by Baron and Kenny (1986), the results showed that parenting self-efficacy demonstrated partial mediation effects between behavior problems and parenting stress in Taiwanese parents of children with autism (Table 7). When the parenting self-efficacy score was entered into the regression, the $B$ had decreased from 1.243 ($p < .001$) to .538 ($p < .001$) from step 1 to step 3. In other words, once parenting self-efficacy was entered, the reduction in the contribution that explained the variance on parenting stress by behavior problems in the third step compared to the first step signaled a partial mediation effect of parenting self-
efficacy. Analysis using Sobel’s test (Preacher & Hayes, 2004) indicated that parenting self-efficacy was a significant mediator of the relationship between behavior problems and parenting stress ($z = 4.213; p<.001$) with a total mediating effect of 56.700%.

<table>
<thead>
<tr>
<th>Table 7</th>
<th>Regression Analyses for Testing Mediation Effects of Parenting Self-efficacy.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
<td>B</td>
</tr>
<tr>
<td>Step 1:</td>
<td></td>
</tr>
<tr>
<td>Behavior problems on parenting stress</td>
<td>1.243***</td>
</tr>
<tr>
<td>Step 2:</td>
<td></td>
</tr>
<tr>
<td>Behavior problems on Parenting Self-efficacy</td>
<td>-.479***</td>
</tr>
<tr>
<td>Step 3:</td>
<td></td>
</tr>
<tr>
<td>Behavior problems</td>
<td>.538***</td>
</tr>
<tr>
<td>Parenting self-efficacy on Parenting Stress</td>
<td>-1.472***</td>
</tr>
</tbody>
</table>

Research Question 5: Does social support mediate the relationship between child’s characteristics and parenting stress levels among parents of children with autism in Taiwan?

With regard to social support, the $B$ has decreased from 1.243 ($p < .001$) to 1.055 ($p < .001$) from step 1 to step 3 (Table 8). In other words, once social support was entered into the regression, the reduction in the contribution that explained the variance on parenting stress by behavior problems in the third step compared to the first step signaled
a partial mediation effect of social support. Analysis using Sobel’s test (Preacher & Hayes, 2004) indicated that social support was a significant mediator of the relationship between behavior problems and parenting stress ($z = 1.973; p<.05$) with a total mediating effect of 15.112%. In summary, using regression analyses proposed by Baron and Kenny (1986) and the Sobel’s test, both parenting self-efficacy and social support are considered a partial mediator of the impact of behavior problems on parenting stress in parents of children with autism in Taiwan.

Table 8

<table>
<thead>
<tr>
<th>Variables</th>
<th>B</th>
<th>Model R²</th>
<th>F</th>
<th>R²Δ</th>
<th>FΔ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: Behavior problems on parenting stress</td>
<td>1.243***</td>
<td>.306</td>
<td>33.901***</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Step 2: Behavior problems on Social Support</td>
<td>-.413**</td>
<td>.069</td>
<td>5.688*</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Step 3: Behavior problems</td>
<td>1.055***</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Social Support on Parenting Stress</td>
<td>-.455**</td>
<td>.400</td>
<td>25.352**</td>
<td>.094</td>
<td>11.973**</td>
</tr>
</tbody>
</table>

** **p<.01 ***p<.001

Research Question 6: Does parenting self-efficacy moderate the relationship between child’s characteristics and parenting stress levels among parents of children with autism in Taiwan?

New variables were created for analyzing the moderating effect of parenting self-efficacy and social support. First of all, the moderator variable (parenting self-efficacy
for question 6 and social support for question 7) and the variable with which it is interacting (child behavior problems for both question 6 and 7) were centered at zero, in which the deviation scores were created by subtracting each variable’s mean from the individual observations. A new interaction term using the two centered variables was then created by multiplying the new centered variable (e.g., parenting self-efficacy-centered X child behavior problems-centered for research question 6; social support-centered X child behavior problems-centered for research question 7).

Hierarchical regression procedures were performed to investigate the moderating effects of parenting self-efficacy in relation to behavior problems on parenting stress. Evidence for the moderating effect of parenting self-efficacy could be established if the interaction term explained a significant portion of the variance over and above that accounted for by the main effects of its two contributing variables (behavior problems and parenting self-efficacy). The results of the hierarchical regression showed no evidence for the role of parenting self-efficacy as a moderator variable (model 3 in Table 9). In other words, the interaction term between behavior problems and parenting self-efficacy scores did not make a significant contribution to the prediction of total parenting stress after accounting for the main effects of these variables. A summary of the regression analyses of moderating effect of parenting self-efficacy in relation to behavior problems and parenting stress can be found in Table 9.
Table 9
Regression Analyses of Moderating Effect of Parenting Self-Efficacy in Relation to Behavioral Problems and Parenting Stress

<table>
<thead>
<tr>
<th>Model/Predictor</th>
<th>β</th>
<th>R²</th>
<th>R²Δ</th>
<th>SS</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Behavior Problems</td>
<td>1.243***</td>
<td>.306</td>
<td>-</td>
<td>9857.63</td>
<td>1</td>
<td>9857.63</td>
<td>33.90***</td>
</tr>
<tr>
<td>2. Behavior Problems</td>
<td>.556**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Behavior Problems</td>
<td>.532**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parenting-Self Efficacy</td>
<td>-1.472***</td>
<td>.568</td>
<td>.262</td>
<td>18309.56</td>
<td>2</td>
<td>9154.78</td>
<td>49.91***</td>
</tr>
<tr>
<td>Behavior Problems X Parenting-Self Efficacy</td>
<td>-.013</td>
<td>.570</td>
<td>.002</td>
<td>18381.84</td>
<td>3</td>
<td>6127.28</td>
<td>33.14***</td>
</tr>
</tbody>
</table>

**p<.01; ***p<.001

Research Question 7: Does social support moderate the relationship between child’s characteristics and parenting stress levels among parents of children with autism in Taiwan?

Hierarchical regression procedures were performed to investigate the moderating effects of social support in relation to behavior problems on parenting stress. The interaction term was created by multiplying the new center variables in behavior problems and social support. Evidence for the moderating effect of social support could be established if the interaction term explained a significant portion of the variance over and above that accounted for by the main effects of its two contributing variables (behavior problems and social support). The results of the hierarchical regression
showed no evidence for the role of parenting social support as a moderator variable (model 3 in table 10). In other words, the interaction term between behavior problems and social support scores did not make a significant contribution to the prediction of total parenting stress after accounting for the main effects of these variables. A summary of the regression analyses of moderating effect of social support in relation to behavior problems and parenting stress can be found in Table 10.

Table 10  
Regression Analyses of Moderating Effect of Social Support in Relation to Behavioral Problems and Parenting Stress

<table>
<thead>
<tr>
<th>Model/Predictor</th>
<th>β</th>
<th>R²</th>
<th>R²Δ</th>
<th>SS</th>
<th>DF</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Behavior Problems</td>
<td>1.243***</td>
<td>.306</td>
<td>-</td>
<td>9857.63</td>
<td>1</td>
<td>9857.63</td>
<td>33.90***</td>
</tr>
<tr>
<td>2. Behavior Problems</td>
<td>1.055**</td>
<td>- .455**</td>
<td>.400</td>
<td>12904.93</td>
<td>2</td>
<td>6452.47</td>
<td>25.35***</td>
</tr>
<tr>
<td>Social Support</td>
<td>- .431**</td>
<td>.416</td>
<td>.015</td>
<td>13425.91</td>
<td>3</td>
<td>4475.303</td>
<td>18.033***</td>
</tr>
<tr>
<td>Social Support</td>
<td>-</td>
<td>.020</td>
<td></td>
<td>13.999</td>
<td>1</td>
<td>13.999</td>
<td>1.231*</td>
</tr>
</tbody>
</table>

**p<.01; ***p<.001

Research Question # 8: What would parents like to see change that would help make their experience in parenting their child with autism easier?

This open-ended question which was taken from the FSCI-A, employed a qualitative method to collect data. During the in-person interview with the participants,
the researcher administered the VABS-Survey Form followed by asking parents what sort of change they would like to see that would help make their experience in parenting their child with autism easier. Participants’ responses were not recorded on an audiotape and transcription was not used in data analysis. Instead, after listening to each participant’s response to the question, the researcher wrote down the main points or ideas of each response. Qualitative content analysis therefore was based on these main points/ideas recorded by the research instead of the participants’ original responses. Data analysis was driven by the research question, which was to determine the needs of parents in caring for their child with autism based on different aspects of parents’ lives and their experiences in general. Specifically, parents were asked to talk about changes that they would like to see that would help making their experience in rearing a child with autism easier. Each main idea that summarized each participant’s response written by the researcher was then assigned a phrase that described the meaning of the main idea. The data set yielded thirteen categories for parents of school-aged children with autism and twelve categories for parents of adolescent children with autism, which summarized the main ideas of participants’ responses in terms of what sort of changes parents would like to see that would help make their experience in parenting their child with autism easier. These categories with percent of parents who mentioned each category are presented in Table 11 and Table 12. It should be noted that the category “Reduced Child’s Behavior Problems” was not initially identified as a category in the content analysis. However, because behavior problems turned out to be a salient factor in predicting parenting stress in the quantitative data analyses, the researcher then went back to the qualitative data and tallying responses that mentioned “behavior problems”. It is also important to note that
the low percentage of parents who mentioned “behavior problems” did not reflect the findings of the quantitative data in which behavior problems seem to be a crucial factor in relation to parenting stress. The discrepancy between the qualitative and the quantitative data could be a result of the way that the question was being presented or asked by the researcher during the interview.
Table 11
Categories Identified by Taiwanese Parents of School-Aged Children with Autism and the Percent of Parents who Mentioned each Category for Research Question 8

<table>
<thead>
<tr>
<th>Categories</th>
<th>Percent of Parents:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improved Social Services/Resources</td>
<td>36%</td>
</tr>
<tr>
<td>Establishment of a System that Helps Adolescents with Autism Transition into Adulthood</td>
<td>33%</td>
</tr>
<tr>
<td>Increased Societal Awareness about Individuals with Autism</td>
<td>31%</td>
</tr>
<tr>
<td>Improved Teacher Quality &amp; Teacher Training for Teaching Children with Autism</td>
<td>27%</td>
</tr>
<tr>
<td>Improved Education System/Policy to Maximize Child’s Learning Opportunities</td>
<td>22%</td>
</tr>
<tr>
<td>Increased Support from Family and Friends</td>
<td>17%</td>
</tr>
<tr>
<td>Improved Early Intervention System</td>
<td>16%</td>
</tr>
<tr>
<td>Increased Quality of Temporary Respite Care and its Related Services</td>
<td>11%</td>
</tr>
<tr>
<td>Increased Government Funding and Support</td>
<td>11%</td>
</tr>
<tr>
<td>Reduced Child’s Behavior Problem</td>
<td>9%</td>
</tr>
<tr>
<td>Increased School Placement Options</td>
<td>9%</td>
</tr>
<tr>
<td>Increased Parent Training/Counseling Opportunities</td>
<td>9%</td>
</tr>
<tr>
<td>Increased Hospitals Providing Early Intervention Services in a Rural Areas</td>
<td>2%</td>
</tr>
</tbody>
</table>

Note: Some Parents Gave More than One Responses to the Question.
Table 12
Categories Identified by Taiwanese Parents of Adolescent Children with Autism and the Percent of Parents who Mentioned each Category for Research Question 8

<table>
<thead>
<tr>
<th>Categories</th>
<th>Percent of Parents:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Establishment of a System that Helps Adolescents with Autism Transition into Adulthood</td>
<td>47%</td>
</tr>
<tr>
<td>Improved Teacher Quality &amp; Teacher Training for Teaching Children with Autism</td>
<td>29%</td>
</tr>
<tr>
<td>Improved Social Services/Resources</td>
<td>26%</td>
</tr>
<tr>
<td>Improved Education System/Policy to Maximize Child’s Learning Opportunities</td>
<td>26%</td>
</tr>
<tr>
<td>Increased Societal Awareness about Individuals with Autism</td>
<td>24%</td>
</tr>
<tr>
<td>Increased Support from Family and Friends</td>
<td>15%</td>
</tr>
<tr>
<td>Increased School Placement Options</td>
<td>12%</td>
</tr>
<tr>
<td>Reduced Child’s Behavior Problems</td>
<td>9%</td>
</tr>
<tr>
<td>Improved Early Intervention System</td>
<td>9%</td>
</tr>
<tr>
<td>Increased Parent Training/Counseling Opportunities</td>
<td>6%</td>
</tr>
<tr>
<td>Increased Government Funding and Support</td>
<td>6%</td>
</tr>
<tr>
<td>Increased Quality of Temporary Respite Care and its Related Services</td>
<td>3%</td>
</tr>
</tbody>
</table>

Note: Some Parents Gave More than One Responses to the Question.

Additional Analyses

To expand our knowledge of parent’s stress in parents of children with autism in Taiwan, the items in the FSCI-A were examined individually to determine the salient
factors contributing to parenting stress in this study. Parents of school-aged children with autism and parents of adolescent children with autism were analyzed separately. The items FSCI-A elicited responses from parents regarding their level of perceived stress in different areas related to caregiving and scored on a five-point Likert scale: (0) = “not stressful”, (1) = “a little stressful”, (2) = “stressful”, (3) “quite stressful”, and (4) = “extremely stressful”. The total and the mean scores for each item were calculated and the top ten sources of stress for the two groups of parents were listed as in Table 13 and Table 14. Parents of school-aged children and adolescent children were analyzed separately. Note that the stress sources for the two groups of parents were very similar, however, while parents of school-aged children showed their concern in “transportation”, parents of adolescent children expressed more concern in dealing with their children’s sexuality.

Table 13
The Top Ten Sources of Stress Derived from FSCI-A for Parents of School-Aged Children with the Total Score and the Mean Score for Each Item Calculated

<table>
<thead>
<tr>
<th>Item:</th>
<th>Total Score</th>
<th>Mean Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis of their child’s ASD</td>
<td>136</td>
<td>3.02</td>
</tr>
<tr>
<td>Concerns about present/future long-term accommodation for their child</td>
<td>131</td>
<td>2.91</td>
</tr>
<tr>
<td>Planning emotional and social support for their child</td>
<td>129</td>
<td>2.87</td>
</tr>
<tr>
<td>Concerns about present/future work/employment for their child</td>
<td>114</td>
<td>2.53</td>
</tr>
<tr>
<td>Planning wills/trusts/guardianships</td>
<td>109</td>
<td>2.42</td>
</tr>
<tr>
<td>Deciding on the best level of integration of the child</td>
<td>108</td>
<td>2.40</td>
</tr>
</tbody>
</table>
Making decisions concerning accommodations in the home or in the community 98 2.18

Creating friendship/leisure Opportunities for the child 91 2.02

The causes of ASD 89 1.98

Transportation 88 1.96

Table 14
The Top Ten Sources of Stress Derived from FSCI-A for Parents of Adolescent Children with the Total Score and the Mean Score for Each Item Calculated

<table>
<thead>
<tr>
<th>Item:</th>
<th>Total Score</th>
<th>Mean Score:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diagnosis of their child’s ASD</td>
<td>112</td>
<td>3.29</td>
</tr>
<tr>
<td>Concerns about present/future long-term accommodation for their child</td>
<td>111</td>
<td>3.26</td>
</tr>
<tr>
<td>Planning emotional and social support for their child</td>
<td>101</td>
<td>2.97</td>
</tr>
<tr>
<td>Concerns about present/future work/employment for their child</td>
<td>94</td>
<td>2.76</td>
</tr>
<tr>
<td>Dealing with the child’s sexuality</td>
<td>94</td>
<td>2.76</td>
</tr>
<tr>
<td>Planning wills/trusts/guardianships</td>
<td>92</td>
<td>2.71</td>
</tr>
<tr>
<td>Creating friendship/leisure opportunities for the child</td>
<td>85</td>
<td>2.50</td>
</tr>
<tr>
<td>Making decisions concerning accommodations in the home or in the community</td>
<td>85</td>
<td>2.50</td>
</tr>
<tr>
<td>The causes of ASD</td>
<td>83</td>
<td>2.44</td>
</tr>
</tbody>
</table>
Summary of Results

This study explored the relationships between parenting stress, child’s characteristics (autism severity, communication skills, socialization skills, daily living skills, and behavior problems), and parent’s factors (parenting self-efficacy and social support), as well as other demographic variables such as parent training, income level, and education level in Taiwanese parents of children with autism. First of all, levels of parenting stress, measured by the Parenting Stress Index and the Family Stress and Coping Interview-Adapted as dependent variables were compared between parents of school-age children with autism (6-12 years) and parents of adolescents with autism (13-18 years) in Taiwan. The results showed no significant differences were on these two measures between the two groups of parents, although parents in the adolescent group in general showed higher means scores on both measures. In addition, the mean levels of parenting stress as measured by the PSI were high compared to normative data.

Secondly, parenting self-efficacy, social support, autism severity, and behavior problems were significantly correlated with parenting stress (PSI) for Taiwanese parents of children with autism. Third, variables that were significantly correlated with parenting stress (PSI) were entered into hierarchical multiple regression analyses as possible predictors. The results showed that parenting self-efficacy, social support, and behavior problems were the best set of predictors of parenting stress for Taiwanese parents of children with autism.

A series of multiple regression analyses indicated that both parenting self-efficacy and social support demonstrated partial mediation as they both mediated the relationship between behavior problems and parenting stress (PSI) among Taiwanese parents of children with autism. These findings suggested that a significant amount of parenting
stress associated with a child’s behavior problems is derived from decreased parenting self-efficacy and social support. However, both parenting self-efficacy and social support failed to moderate the relationship between behavior problems and parenting stress (PSI) suggesting that regardless of whether parents had high levels of parenting self-efficacy (or social support) or low levels of parenting self-efficacy (or social support), the relationship between parenting stress and child’s behavior problems did not differ in magnitude, in other words, the relationship between parenting stress and behavior problems stayed the same. Lastly, qualitative data were gathered with an open-ended question requesting parents to list the most important aspects that they would like to see change in rearing their child with autism. Content analysis resulted in twelve categories for parents of school-aged children with autism (Table 11) and thirteen categories for parents of adolescent children with autism (Table 12). Moreover, to expand our knowledge of parent’s stress in parents of children with autism in Taiwan, the items in the FSCI-A were examined individually to determine the salient factors contributing to parenting stress in this study. Table 13 and 14 stated the top ten items that showed the highest score in stress related to caregiving in FSCI-A for parents of school-aged children with autism and parents of adolescent children with autism respectively.
Discussion

The purpose of this study was to compare parenting stress (as measured by the PSI and the FSCI-A) in parents of primary school-age children with autism (6-12 years) and parents of adolescent children with autism (13-18 years) in Taiwan. This study also explored the relative contribution of child’s characteristics including autism severity, communication skills, socialization skills, daily living skills, and problem behaviors, as well as parenting self-efficacy and social support in relation to parenting stress among parents of children with autism in Taiwan. Moreover, the mediating and moderating effects of parenting self-efficacy and social support on the relationship between parenting stress and behavior problems were also examined. Lastly, some qualitative data were taken at the end of this study to expand the understanding of the sources of stress that Taiwanese parents of children with autism may be experiencing.

Major Findings

Group differences

The results of this study showed that no significant differences were found on parenting stress as measured by the PSI and the FSCI-A between parents of school-aged children with autism and parent of adolescent children with autism in Taiwan. In addition, parents of school-aged children and parents of adolescent children also did not differ in terms of levels of parenting self-efficacy and social support. Some researchers from Western literature had suggested that as children with disabilities aged, parents may have developed some effective coping styles to deal with ongoing parenting challenges and gained more knowledge about their child’s disability, and they may in turn
experience less parenting stress and gain more parenting self-efficacy (Greenberg et al., 2004; Kuhn & Carter, 2006). However, literature from Taiwan indicates that parents of children with disabilities often have weaker social support networks compared to parents of typically developing children (Ho & Huang, 2007) and this is largely due to the lack of support services and resources for children with disabilities in Taiwan. In fact, the results of the qualitative analyses suggested that the social support networks and social services system for parents of children with autism may not be fully established in Taiwan. For example, 17 percent of parents of school-aged children with autism and 15 percent of parents of adolescent children with autism reported a need for an increase in family support from family and friends, 36 percent of parents of school-aged children with autism and 26 percent of parents of adolescent children with autism reported a need for an increase in social services with a few parents emphasizing that parent training and parent counseling services were lacking in their community, and 16 percent of parents of school-aged children expressed a need for improvement in the early intervention system while 47 percent of parents of adolescent children reported a need in the establishment of a system that could help their children transition into adulthood. Other Taiwanese researchers also recommended that the Taiwanese government establish a more systematic and integrated social service system to meet the needs of parents with children with disabilities (Chang & Hsu 2007; Shu & Lung 2007). As indicated by the literature in Taiwan that social support systems may not be fully established for parents of children with disabilities in Taiwan, it is possible that parents of adolescent children with autism in Taiwan were not able to receive sufficient support and services in dealing with their children’s problems, and therefore were still experiencing the same amount of stress as
when the child was young. However, note that the children in Greenberg’s et al. (2004) study was much older (mean age = 22) than the adolescent children in this study (mean age = 15.36), therefore, it is still possible that levels of parenting stress will eventually be reduced once their children reach adulthood.

Another possible reason for the lack of difference between levels of parenting stress between parents of school-age children with autism and parents of adolescent children with autism in Taiwan may be that the levels of parents’ expectations for their child’s developing capabilities were similar for the two groups of parents. It is assumed that as the child grows older, a parent’s expectations for the child’s developing capabilities become higher, and the greater the discrepancy between the child’s age and his or her levels of functioning and maturity, the greater the parent stress. The finding that the association between parenting stress and child’s age was not significant in this study may be due to the fact that parents of children with autism did not expect their child to develop capabilities similar to those of typically developing children as the child gets older. In other words, if a parent’s expectation for the child’s progresses stays the same as the child age, an increase in parenting stress may not be observed. Indeed, this is what Tobing and Glenwick (2002) found in their study of the PDD-NOS group, child impairment as measured by CARS-P was positively associated with age and child-related parenting stress, but such relationships did not appear in the autism group. Rather, content analyses on sources of parental stress from the FSCI-A items revealed that the fact that the child had autism was what bothered the parents the most. This suggested that the concerns of Taiwanese parents of children with autism may not lie in the discrepancy between child’s developmental progress and the child’s age, instead, it may
be the “autism diagnosis” itself that parents were concerned about. Moreover, in this study, the only child characteristic that showed a significant difference between the two groups of children was “daily living skills.” Children in the adolescent group demonstrated significantly higher levels of daily living skills as reported by the parents during the face-to-face interview compared to the children in the school-aged group as measured by the VABS. However, the increase in the child’s daily-living skills in the adolescent children did not appear to have a positive impact on parenting stress levels after all. This implies that the child’s daily living skills may not have a direct association with parenting stress. However, since the two groups of children did not differ in other child characteristics such as communication skills, socialization skills, autism severity, and behavior problems, and the two groups of parents did not differ in levels of parenting self-efficacy, social support, parenting training received, income levels, and education levels, the failure to find a significant difference in parenting stress levels between the two groups of parents is not surprising. However, it should be noted that the stress levels of parents of adolescent children were slightly higher than those of parents of school-aged children. Approximately half of the parents of adolescent children expressed their worry about the future care of their adolescent children with autism during the interview, therefore, although at a non-significant level, the fact that their child with autism is transitioning into adulthood can be quite stressful for some parents.

One reason this study grouped the participants according to the child’s age is because children in the adolescent group (13-18 years) were moving into a developmental transition stage, and according to White and Hastings (2004) and Tehee et al. (2009) that parents with adolescent children may receive less social support compared to parents of
children at a younger age. The findings of this study suggest otherwise, at least in Taiwan. Instead, this study found that parents with adolescent children and parents with school-aged children did not differ in the amount of social support received and raising a child who is currently aging into a developmental transition stage does not elevate parent stress significantly beyond levels experienced by parents whose children are not in a developmental transition stage.

White and Hastings (2004) found that parents reported that informal support that included their immediate and extended family was very helpful until their child reached adolescence, and then support received from family members became limited. Note that this study did not examine “informal support” nor “formal support” individually, instead, the “total social support score” was utilized in examining social support. Investigating whether parents of younger children with autism and parents of older children with autism in Taiwan differ in “informal support” and “formal support” received might be helpful in helping Taiwanese parents to build their social support networks.

**Behavior problems and parenting stress**

Numerous research studies have found that, as a group, parents of children with ASD appear to be the most adversely affected by the stressors that result from raising a child with a disability (Dabrowska & Pisula, 2010; Dumas et al., 1991; Griffith et al., 2010; Rodrigue et al., 1990, Schieve et al., 2007). While previous research has focused on investigating parenting stress of parents of children with autism while their children were young, this study extended prior work by documenting that high levels of stress were also present in parents of adolescent children with autism. Though no comparison
group was used in this study, parenting stress levels in both parents of school-aged children with autism and parents of adolescent children with autism in Taiwan were high according to Abidin’s (1995) normative data with a mean total parenting stress above the 95th percentile.

Previous studies investigating parenting stress among parents of children with autism have identified the child’s symptom severity (Hasting & Johnson 2001; Osborne & Reed, 2009), social communication impairment (Baker-Ericzen et al., 2005; Kasari & Sigman, 1997; and Montes & Halterman, 2007), adaptive skill (daily living skills) deficits (Plant & Sanders, 2007; Weiss et al., 2003; Tomanik et al., 2004), and behavior problems (Baker et al., 2002; Donenberg & Baker, 1993; Estes et al., 2009; Griffith et al., 2010; Lacavalier et al., 2006; Osborne & Reed, 2009; Rao & Beidel, 2009) as the key child characteristics impacting parenting stress. Specifically, higher levels of child’s impairment are suggested to be associated with higher levels of parenting stress. This study revealed that with Taiwanese parents of children with autism, although both severity of child’s symptoms and behavior problems showed associations with parenting stress in the correlation analysis, child’s behavior problems was the only child characteristic that significantly predicted parenting stress in the regression analysis. This finding corroborates the findings of many autism studies from the Western literature suggesting that higher levels of child’s behavior problems are associated with higher levels parenting stress (Baker et al., 2002; Dumas et al., 1991; Estes et al., 2009; Lacavalier et al., 2006). The findings also parallel the more recent research suggesting that behavior problems are a far more salient predictor of parenting stress than is the child’s daily living skills deficit (Beck et al., 2004; Estes et al., 2009; Lacavalier et al,
2006). Consistent with the results of Ling’s (2011) study on the relationships between child’s characteristics and caregiver burden in parents of children with autism in Taiwan, there is clear evidence of an association between child’s behavior problems and parenting stress in the Taiwanese population. On the contrary, while Ling (2011) found that severity of ASD also predicted caregiver burden, this study failed to replicate such results. In other words, the positive association between child’s autism severity and parenting stress was not strong enough in predicting parenting stress in this study.

Osborne and Reed’s (2009) study offers a possible explanation for these findings. They found that when the child was young, autistic severity was the best predictor of parenting stress, however, when the child became older, parent rated child behavior problems as the best predictor of parenting stress. With a mean child age of 12.21 for the entire sample, this study provides further evidence to support Osborne and Reed’s (2009) conclusion about the association between child’s behavior problems and parenting stress with older children with autism.

Lastly, besides parenting stress, child’s behavior problems also show negative correlations with parenting self-efficacy, social support, and parent training. Therefore, if parent education programs focus on managing child behavior problems effectively, not only may parenting stress be decreased, parenting self-efficacy may also be increased. The importance of parent training issue is discussed further in a later section.

**The role of parenting self-efficacy and social support**

The theoretical framework of this study is based on Lazarus and Folkman’s (1984) model of stress, appraisal, and coping, in which parenting stress is seen as a process which involves continuous interactions and adjustment between the person and
the environment. A parent can be an active agent who can influence the impact of a stressor through behavioral/emotional strategies, resources, or support. However, parenting stress results when the challenges of raising a child with autism have not been coped with adequately due to the lack of effective strategies, resources, or supports. Research suggests that coping appraisals such as parenting self-efficacy and social support often exert a positive impact on parental well-being within the context of having a child with disabilities (Bromely et al., 2004; Dunst et al., 1986; Feldman et al., 2007; Hasting & Brown, 2002; Kuhn & Carter, 2006; Meirsschaut & Warreyn 2010; Plant & Sanders, 2007; Quine & Pahl 1991). Parenting self-efficacy and social support were examined as mediators and moderators of the relation between child behavior problems and parenting stress in parents of children with autism in Taiwan.

In terms of mediating effects, Lazarus and Folkman’s (1984) transactional stress model asserts that both general and specific beliefs such as parenting self-efficacy and resource variables, such as social support, available to parents are coping mechanisms that may potentially buffer (mediating) the impact of the child’s characteristics on parenting stress. Results from the current investigation offer support to Lazarus and Folkman’s model of stress. Parenting self-efficacy and social support were analyzed separately as mediators that may protect a parent’s level of stress from the child’s behavior problems. With regard to parenting self-efficacy, parenting self-efficacy was confirmed as a mediator of the relation between behavior problems and parenting stress. For social support, though showing a weaker mediating effect, social support was also confirmed as a mediator of the relation between behavior problems and parenting stress.

The results of these analyses elaborate upon the findings of Hastings and Brown’s
(2002) that a) not only does parenting self-efficacy act as a mediator against parenting stress results from child’s behavior problems, social support also serves as another mediating variable in coping appraisal, and b) the mediating effects of parenting self-efficacy and social support between behavior problems and parenting stress can also be observed in parents with adolescent children with autism. It is possible, however, that parenting self-efficacy may impact parents with a younger child and parents with an older child differently. Feldman et al. (2007) conducted a similar study in examining the buffering effects of parenting self-efficacy and social supports on child’s behavior problems and parents’ depressive symptoms of parents of young children (mean age of 2 years-old) with developmental delay. Unlike social support, which served as a mediator and moderator of the relationship between parenting stress and child behavior problems, parenting self-efficacy did not function as a mediator or moderator of the relationship between behavior problems and depressive symptoms. To establish a mediating effect, behavior problems must show strong associations with parenting stress as well as parenting self-efficacy. As discussed earlier, the literature does indicate that when very young children are involved, parenting stress may relate to autism severity more than behavior problems, and as the children become older, parenting stress may relate more to child’s behavior problems alone (Osborne & Reed, 2009). Since the child sample in the Feldman et al. (2007) study was extremely young, it is possible that child behavior problems were not the child characteristics that best predicted parenting stress, and as a result, the mediating effects of parenting self-efficacy could not be established.

In general, the significant findings of parenting self-efficacy and social support as a mediating variable indicated that the degree to which parents perceive their parenting
self-effectiveness and their available social support as helpful, influences how much their child’s behavior problems impact their parenting stress. Additionally, this influence continues from middle childhood to adolescence. The findings support both Lazarus and Folkman’s (1984) model of stress and the buffering model of social support proposed by Cohen and Wills (1985), which suggest that social support provides a buffer against stressful life events and is related to well-being for individuals under stress. That is, both parenting self-efficacy and social support can be seen as a way of coping with parenting stress. Parenting self-efficacy and social support may intervene between child’s behavior problems and parenting stress by preventing the stress appraisal (i.e. the degree to which one feels stressed) response. Parents who had high self-efficacy or received more social support allowed them to cognitively appraise the situation as less stressful or provided solutions to deal with their child’s behavior problems in a better way. However, this study does not provide evidence for the directions of causality in the mediation model. In fact, Hastings (2002) pointed out that parenting stress could be both the cause and the consequence of child behavior problems and that behaviors of parents and the child reciprocally influence each other (Brofenbrenner, 1992). Other researchers also showed that levels of parenting stress could have an impact on child’s behaviors with parents of children with autism (Lecavalier et al., 2006; Osborne et al., 2008; Osborne & Reed, 2010). It would be interesting to find out whether the mediating effect of parenting self-efficacy and social support still holds if parenting stress predicts behavior problems in parents of children with autism.

As defined by Baron and Kenny (1986), a mediator is a variable that correlates with both the independent and dependent variables and accounts, at least partially, for the
relation between them, whereas a moderator is a variable that differentially impacts the strength or the direction of the relation between an independent variable and a dependent variable. It was assumed that greater parenting self-efficacy and more social support would decrease the strength of the relationship between child’s behavior problems and parenting stress. This study showed that neither parenting self-efficacy nor social support served as a moderator in relation to behavior problems and parenting stress in parents of children with autism in Taiwan. This failure to uncover moderating effects underscores the strength of the relationship between behavior problems and parenting stress for this population. Nevertheless, there is clear evidence for the role of parenting self-efficacy and social support as mediators suggesting that parenting self-efficacy and social support may both function as intervening variables in designing parent education programs.

**Family Characteristics and Additional Findings**

The items in the FSCI-A and the qualitative research question (research question 8) together were able to offer additional insights into the caregiving experiences in children with autism from the Taiwanese parents’ self-perspective. The content analyses of the last research question, in which parents talked about the changes that they would like to see in the future which may help make their parenting experience easier with their child with autism, revealed thirteen categories for parents of school-aged children with autism and twelve categories for parents of adolescent children with autism. Some of the categories have been well described in the literature, while other have received little attention. First, the findings from this study, as in other studies, suggest that mothers of children with autism often experience high levels of stress about their child’s future
Thirty-three percent of parents of school-aged children and forth-seven percent of parents of adolescent children expressed a need to establish a system that can help their children with autism transition into adulthood. The top ten stress sources from FSCI-A also showed a pattern in concert with the open-ended research question in that many of the stress sources were related to child transitioning into adulthood. For example, “Long-term planning for accommodation for your child with ASD” and “Work placements or employment for your child with ASD” were among the top five stress sources for Taiwanese parents with school-aged children and adolescent children with autism. Secondly, although one cannot tell whether levels of social support (M=38.5 with 95 being the highest possible score) that parents received in this study has landed in the lower end, from the content analyses, parents did report a need for a better support system as discussed previously. It is interesting to note that despite the result that parents were experiencing high levels of stress and child’s behavior problems was a significant predictor to parenting stress, less than 10 percent of the parents reported a need for more parent training and parent counseling opportunities. While most of the parents in this study have had certain amount of parent training experiences, the findings suggest that the effectiveness of these parent training programs may be in questioned.

Another crucial source of parenting stress that was not discussed in the literature review but was reported by the Taiwanese parents of children with autism during the face – to - face interview was parents’ frustration in dealing with the child’s school system. While some parents indicated a need for more school placement options for their children with autism, many of the parents of school-aged and adolescent children with autism.
expressed a need for a better education system/policy which could maximize the child’s learning opportunities, and “improved teacher quality and teacher training for teaching children with autism” was rated as the second from the top concern for parents of adolescent children with autism. Consistent with this issue, item in FSCI-A “Deciding the best level of integration for your child with ASD” and the item “Creating and/or finding opportunities for your child to make friends and participate in activities” were both rated as the top ten stress sources by the two groups of parents. These school/education-related issues highlight the critical need for a collaborative effort on the part of policy makers, schools, and society in order to support parents of children with autism in Taiwan.

As mentioned previously, the stigma attached to disability in Taiwan originated from the past cultural belief that disability is sometimes viewed as a punishment for the person’s sins in a past life, and therefore, parents are sometimes deeply concerned about the viewpoints of others regarding their children with autism and gradually become isolated from society. Interestingly however, many parents who participated in this study were more than willing to share their parenting experiences during the face-to-face interviews with the researcher. Some of these parents assumed an active role in parenting their child with autism as they kept asking the researcher and seeking strategies and information that could possibly maximize their child’s learning, while some parents talked about how their child with autism affected their relationship with their spouse. Although an interview typically lasted about 90 minutes, a few of the interviews lasted beyond two hours and the longest one lasted close to four hours due to the on-going conversations with the parents even after the interview was completed. In addition,
parents were aware of the stigma they were attached to. Approximately 31 percent of the parents of school-aged children and 24 percent of the parents of adolescent children showed concern that society as a whole was not informed enough about autism and more awareness in autism should be raised to reduce prejudice towards children with autism and their families. Moreover, many of the mothers felt that they were responsible for their child’s diagnosis in autism. For example, both parents of school-aged children and parents of adolescent children reported that the most stressful source related in caregiving as measured by FSCI-A was item 1, “the diagnosis of your child’s as having ASD”. In other words, despite the social stigma that still exists nowadays in Taiwan, parents who participated in this study were very willing to talk about their child and were not ashamed to talk about their needs with the researcher. On the other hand, one could also argue that it is because of these active-parenting characteristics that the parents have that made these parents chose to participate in this study. Those who were deeply affected by social stigma probably would not participate in a research study.

**Implications for Practice**

This study demonstrated that parents of children with autism in Taiwan experienced higher levels of parenting stress compared to the normative data (Abidin, 1991). One child characteristic that predicted parenting stress was child’s behavior problems. The findings suggest that intervention aimed at teaching parents child behavior management techniques may be effective in reducing parenting stress. Researchers have found that there was a relationship between parenting behaviors of limit setting and subsequent child behavior problems (Osborne et al., 2008; Osborne & Reed,
The better the limit setting of a parent in the baseline, the fewer child behavior problems were observed at follow-up. Moreover, the parenting behavior of limit setting was found to mediate the relationship between parenting stress and subsequent child behavior problems. In other words, training parents to respond contingently to child behavior and to plan activities to minimize opportunities for disruptive behaviors may be beneficial in reducing child’s behavior problems and increasing parenting self-efficacy, which in turn will decrease parenting stress.

To maximize the benefits of parent education programs, ways to increase parenting self-efficacy must also be considered. Bandura (1997) postulated that self-efficacy beliefs are constructed from four sources of information: a) enactive mastery, b) vicarious experience, c) verbal persuasion, and d) physiological and affective states. Therefore, parents need a venue for learning new skills in behavior management, developing competence, feeling successful (enactive mastery), and watching or hearing other parents like them be successful (vicarious experience). In addition, parents should be encouraged to attempt new parenting skills they have learned and be given feedback by professionals that highlight parents’ successes (verbal persuasion). When designing parent education programs, one should keep these factors in mind. Moreover, since social support is another possible intervening variable to parenting stress, parents focus groups or support groups in which parents of children with autism are able to share their experiences and feelings and exchanges their advices in parenting with each other may also be helpful for parents of children with autism in Taiwan. In terms of informal social support, parent training programs should inform Taiwanese parents, and especially mothers, that they should not be held responsible for the child’s autism diagnosis, and
encourage parents to talk with their family members about their needs and feelings.

Parents of children with autism in Taiwan also expressed a need for greater societal awareness and more support through legislation, policy, and funding. Particularly, the establishment of a system that helps adolescents with autism transition into adulthood followed by improvement in social services and resources to meet the needs of children with autism and their families should be a concern for the policy makers in Taiwan.

**Limitations and Future Research**

There are some methodological constraints in this study which limit the conclusions that can be drawn. First, the absence of a longitudinal design prevented clear conclusions for the directions of the observed associations between behavior problems, parenting stress, and parenting self-efficacy. As noted earlier, some researchers suggest that the relation between child behavior and parenting stress could be bi-directional (Hastings, 2002, Coleman & Karrker, 1997), at least during the early child age. However, the bi-directional relationship between behavior problems and parenting stress into the adolescent stage is less conclusive. It is possible that parenting stress and parenting self-efficacy affect child behavior differently depending on the developmental stage of the child. For example, children in the adolescent stage theoretically have a better ability to manage emotional and behavioral demands and therefore the influence of parenting stress and parenting self-efficacy on child’s behavior is lessened, and parenting self-efficacy may or may not be significant in mediating the relationship between levels of parent stress and behavior problems. To further clarify such issues, future studies
should specifically investigate the relation between child behavior, parenting stress, and parenting self-efficacy over a period of time with parents of children with autism in different developmental stages.

Second, the inter-observer agreement on scoring was lacking in this study. Although a research assistant was hired to complete 11 interviews with the parents, the researcher of the study was the only person who scored and entered all the data into the SPSS system. In other words, the inter-rater reliability in this study was limited.

Third, the sample in this study was not randomly selected. The self-selecting nature of the study may have weakened the representativeness of the sample. It is possible that parents who chose to participate in this study assumed a more active role in parenting, and may be more likely to seek out help and supports from others, and in turn, experienced lower levels of stress compared to those who chose not to participate in the study in the beginning. In addition, although the sample was drawn from different geographic areas across Taiwan, most of the participants were still recruited from the Northern part of Taiwan which is assumed to have more social resources and services available compare to other rural areas of Taiwan. The relationships between parenting stress and child characteristics, and the mediating/moderating effects of parenting self-efficacy and social support of parents of children with autism who live in Southern part of Taiwan, especially those in rural areas of Taiwan, remained unknown. Future research should strive to include participants from underrepresented areas to attain a broader understanding of the relationships between child characteristics, parenting stress, and coping mechanism of Taiwanese parents of children with autism.

The fourth limitation is the exclusive use of self-report measures. The researcher
obtained the measures of parenting stress (PSI and FSCI-A), parenting self-efficacy, and social support from parent self-reports. In addition, measures of child’s characteristics such as the VABS and GARS, are also rating scales themselves and therefore do not directly assess child performance or behavior. It is possible that mothers who experience higher levels of parenting stress tend to rate their child’s behavior problems higher. Conversely, mothers who are high in parenting stress may be more sensitive to detecting their child’s behavior problems and therefore portray child’s behavior problems more accurately at home. Nevertheless, this may be difficult to avoid when parents’ perceptions are the central subject of the study. One alternative would to use a measure of child’s behavior problems based on teacher’s rating. However, the measurements used in the current research are well validated and reliable, and the translated version of each measurement also showed good internal reliability.

The fifth limitation of this study was the lack of transcription of the participants’ responses to the open-ended question. As mention earlier, because participants’ responses were not audiotaped, data gather were limited and therefore data were only presented in a table format which stated the aspects that parents would like to see change in rearing a child with autism. In addition, because the participants’ responses were not transcribed and the content analysis was based on the “main idea” of the participants’ responses, revision of the content analysis was difficult, which in turn may limit the accuracy of the qualitative data. It is recommended that participants’ responses be recorded in verbatim in the future study to increase the accuracy and validity of the qualitative data.

Lastly, although previous studies have differentiated between informal and formal
support (Glidden & Schoolcraft, 2007; Tobing & Glenwick, 2006; White & Hastings, 2004), this study did not examine possible differences in the number of, and the satisfaction with, each type of support and its relationship with parenting stress in parents of children with autism in Taiwan. Moreover, although this study was intended to include both mothers and fathers, among 79 participants, only six of them were fathers. Therefore, future research should explore the relationships between stress, parenting self-efficacy, social support and child characteristics in fathers of children with autism and compare the findings with those of mothers.
References


Disorders, 40, 601-619.


Appendix A
Parenting Sense of Competence Scale (PSOC)
(Johnston & Mash, 1989)

Listed below are a number of statements. Please respond to each item, indicating your agreement or disagreement with each statement in the following manner:

If you strongly agree, circle the letters SA
If you agree, circle the letter A
If you mildly agree, circle the letters MA
If you mildly disagree, circle the letters MD
If you disagree, circle the letter D
If you strongly disagree, circle the letters SD

1. The problems of taking care of a child
   Are easy to solve once you know how your Actions affect your child, an understanding I have acquired.

2. Even though being a parent could be rewarding, I am frustrated now while my child is at his/her Present age.

3. I go to bed the same way I wake up in the morning—feeling I have not accomplished a whole lot.

4. I do not know what it is, but sometimes when I’m supposed to be in control, I feel more like the one being manipulated.

5. My mother/father was better prepared to be a good mother/father than I am.

6. I would make a fine model for a new mother/father to follow in order to learn what she/he would need to know in order to be a good parent.

7. Being a parent is manageable, and nay problems are easily solved.
8. A difficult problem in being a parent is not knowing whether you’re doing a good job or a bad one.

9. Sometimes I feel like I’m not getting anything done.

10. I meet my own personal expectation for expertise in caring for my child.

11. If anyone can find the answer to what is troubling my child, I am the one.

12. My talents and interest are in other areas, not in being a parent.

13. Considering how long I’ve been a mother/father, I feel thoroughly familiar with this role.

14. If being a mother/father of a child were only more interesting, I would be motivated to do a better job as a parent.

15. I honestly believe I have all the skills necessary to be a good mother/father to my child.

16. Being a parent makes me tense and anxious.

Parenting Sense of Competence – Chinese Translation
育兒觀念能力衡量表
(Johnston & Mash, 1989)

下面列出若干陳述。請回答每個項目，表明您是否同意以下列方式的每個陳述。
例：我覺得我是一位稱職的父/母親

十分同意( ) 稍微同意 稍微不同意 不同意 十分不同意

1. 我已經相當了解關於照顧孩子的問題：一旦我知道我的行為如何影響孩子，我就知道如何去解決照顧孩子的問題。

十分同意 同意 稍微同意 稍微不同意 不同意 十分不同意

2. 即使知道身份為父母是值得高興的，但面對我這特殊孩子，我仍然覺得沮喪。

十分同意 同意 稍微同意 稍微不同意 不同意 十分不同意

3. 從早上醒來到晚上睡覺前我都覺得我一天當中並沒有完成很多事情。

十分同意 同意 稍微同意 稍微不同意 不同意 十分不同意

4. 我不知道是怎麼回事，有時候當我應該是事情的操控者時，我反而覺得好像是被操縱。

十分同意 同意 稍微同意 稍微不同意 不同意 十分不同意

5. 我的父母比我要有更充分的準備成為一位好父母親。

十分同意 同意 稍微同意 稍微不同意 不同意 十分不同意

6. 我要為其他初為父母的人做個好模範，以便他們可仿傚並瞭解如何作一位好父母。

十分同意 同意 稍微同意 稍微不同意 不同意 十分不同意

7. 親職的角色是可應付的，覺得任何問題都是容易解決的。

十分同意 同意 稍微同意 稍微不同意 不同意 十分不同意
8. 為人父母其中一個問題在於，做父母的不知道自己是否
是一位稱職的父母親。

十分同意 同意 稍微同意 稍微不同意 不同意 十分不同意

9. 有時候我覺得我什麼事情也不能做好。

十分同意 同意 稍微同意 稍微不同意 不同意 十分不同意

10. 在照顧我這特殊的孩子上，我有達到我個人的親職標準。

十分同意 同意 稍微同意 稍微不同意 不同意 十分不同意

11. 若有人需要知道什麼事情在困擾我這特殊孩子，我都能給他們答案。

十分同意 同意 稍微同意 稍微不同意 不同意 十分不同意

12. 我的天賦和興趣是在其他的領域，而非在親職角色的扮演上。

十分同意 同意 稍微同意 稍微不同意 不同意 十分不同意

13. 就我身為一個母親（父親）而論，我覺得我完全熟悉這個角色。

十分同意 同意 稍微同意 稍微不同意 不同意 十分不同意

14. 假如身為父母親會更有趣的話，我就有動機把為人父母的職責做的更好。

十分同意 同意 稍微同意 稍微不同意 不同意 十分不同意

15. 我相信對於我的特殊孩子，我有作一位好父/母親所需要的所有知識與技能。

十分同意 同意 稍微同意 稍微不同意 不同意 十分不同意

16. 作為父母使我感到緊張和焦慮。

十分同意 同意 稍微同意 稍微不同意 不同意 十分不同意

臨床兒童心理學期刊, 18, 167-175.
Scoring Instructions for the PSOC Scale
(Johnston & Mash, 1989)

Satisfaction Scale

Items 2, 3, 4, 5, 8, 9, 12, 14, and 16
Disagreeing indicates greater satisfaction so:
   \[ SD = 6, \ D = 5, \ MD = 4, \ MA = 3, \ A = 2, \ SA = 1 \]

2 (frustrated)      ____
3 (not accomplished) ___
4 (feel manipulated) ___
5 (mother better prepared) ___
8 (don’t know if good) ___
9 (not getting done)  ___
12 (talents elsewhere) ___
14 (better if interested) ___
16 (tense)           ___

Satisfaction Total ___

Efficacy Scale

Items 1, 6, 7, 10, 11, 13, and 15
Agreeing indicates greater efficacy so:
   \[ SA = 6, \ A = 5, \ MA = 4, \ MD = 3, \ D = 2, \ SD = 1 \]

1 (problems easy)    ___
6 (fine model)       ___
7 (manageable)       ___
10 (meet expectations) ___
11 (I can find answer) ___
13 (familiar with role) ___
15 (have skills)     ___

Efficacy Total ___

PSOC TOTAL (Satisfaction + Efficacy) = ____
Appendix B

The Family Stress and Coping Interview - Adapted
(Nachshen, Woodford, Minnes, 2003)

This questionnaire contains 24 statements. Please read each statement carefully. For each statement, please focus on your child with autism spectrum disorder (ASD), and rate the level of stress of each issue on a five-point scale:

0 = “not stressful”
1 = “a little stressful”
2 = “stressful”
3 = “Quite stressful”
4 = “extremely stressful”

For example, if your child’s diagnosis of autism spectrum disorder (ASD) makes you extremely stressful, you would circle “4 (extremely stressful)” in response to the following statement:

The diagnosis of your child’s as having ASD.

1. The diagnosis of your child’s as having ASD.
2. Explaining your child’s ASD to others such as family or friends.
3. Your feelings about the cause of your child’s ASD.
4. Dealing with the family/friends/people in the neighborhood on a day-to-day basis.
5. Dealing with doctors and other allied health professionals (e.g. speech therapists, occupational therapists).
6. Dealing with legal professionals.
7. Dealing with the child’s teachers and the educational system.
8. Creating and/or finding opportunities for your child to make friends and participate in activities.
9. Deciding on the best level of integration for your child with ASD.
10. Making the decision concerning accommodation in the home or in the community.

11. Meeting the needs for your other children.

12. Meeting your own personal needs.

13. Meeting the needs of your spouse.


15. Dealing with your child’s sexuality.

16. Work placements or employment for your child with ASD.

17. Long-term planning for accommodation for your child with ASD.

18. Planning for wills, trusts, and guardianships.

19. Planning for emotional and social support for your child with ASD.

20. Transportation.

21. Day-to-day assistance with care of your child with ASD.

22. Time apart from your child with ASD.

23. Dealing with financial and insurance issues.

24. Meeting the day-to-day needs of your child with ASD.

Qualitative Questions:

a. What would you like to see change that would help make parenting your child with ASD easier for you?

Family Stress and Coping Interview – Adapted (Chinese Translation)

家庭壓力與處理情況問卷

(Nachshen, Woodford, Minnes, 2003)

本問卷共有24種情況，請仔細閱讀每一種情況。在每一種情況中，請著重於您的自閉症孩子(ASD)，接著請在五個選項中圈選出您的壓力程度：

0 = “壓力不大”
1 = “有想法壓力”
2 = “有壓力”
3 = “壓力大”
4 = “壓力極大”

例如，如果您的孩子被診斷出有自閉症讓您覺得壓力很大，則請圈選“4 (壓力很大)” 來回答這個題目：

您的孩子被診斷出有自閉症。  0 1 2 3 4

1. 您的孩子被診斷出有自閉症。  0 1 2 3 4
2. 向其他人（如家人或朋友）說明您的孩子有自閉症。  0 1 2 3 4
3. 您對造成孩子患有自閉症的原因的感受。  0 1 2 3 4
4. 每天面對住在附近的家人/朋友/周遭的人。  0 1 2 3 4
5. 面對醫生及其他相關的醫療專業人員（如語言治療師、職業治療師）。  0 1 2 3 4
6. 面對法律專業人員。  0 1 2 3 4
7. 面對孩子的老師及教育體系。  0 1 2 3 4
8. 創造或尋找孩子交朋友或參加活動的機會。  0 1 2 3 4
9. 為您的自閉症孩子決定出最佳融合（課程）程度。  0 1 2 3 4
10. 幫助您的自閉症孩子適應家中或社區環境的種種選擇。  0 1 2 3 4
11. 顧及您的其他孩子的需求。  0 1 2 3 4
12. 顧及您自己的個人需求。  0 1 2 3 4
Appendix C

家庭支持表 Family Support Scale, FSS (Chinese Translation)
Dunst, Trivette, & Jenkins (1984)

說明：請勾選過去三到六個月間，最適合描述您的家人協助您的程度。若這段期間沒有任何家人協助您，請選擇0，N/A（沒有）的選項。

<table>
<thead>
<tr>
<th>無此方面</th>
<th>一點也沒有</th>
<th>助</th>
<th>幫助</th>
<th>有時</th>
<th>普通</th>
<th>很有幫助</th>
<th>非常有幫助</th>
</tr>
</thead>
<tbody>
<tr>
<td>N/A</td>
<td>1------------</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

在撫養小孩方面，下列這些人對你的幫助程度為何：

1. 我的父母 ----------------------------- N/A 1 2 3 4 5
2. 配偶的父母 ----------------------------- N/A 1 2 3 4 5
3. 親戚 ----------------------------- N/A 1 2 3 4 5
4. 我的配偶或伴侶的親戚 ----------------------------- N/A 1 2 3 4 5
5. 我的配偶或伴侶 ----------------------------- N/A 1 2 3 4 5
6. 我的朋友 ----------------------------- N/A 1 2 3 4 5
7. 我的配偶或伴侶的朋友 ----------------------------- N/A 1 2 3 4 5
8. 我較大的孩子 ----------------------------- N/A 1 2 3 4 5
9. 我的鄰居 ----------------------------- N/A 1 2 3 4 5
10. 其他家長 ----------------------------- N/A 1 2 3 4 5
11. 同事 ----------------------------- N/A 1 2 3 4 5
12. 家長互助成員 ----------------------------- N/A 1 2 3 4 5
13. 社會群組/社團 ----------------------------- N/A 1 2 3 4 5
14. 宗教 ----------------------------- N/A 1 2 3 4 5
15. 我的家人或孩子的醫生 ----------------------------- N/A 1 2 3 4 5
16. 早期兒童療癒計畫 ----------------------------- N/A 1 2 3 4 5
17. 學校/課後補習班/日間照顧中心 ----------------------------- N/A 1 2 3 4 5
18. 專業協助者(社工、治療師、教師等) ----------------------------- N/A 1 2 3 4 5
19. 專業機構(公共衛生、社會服務、心理諮商等) ----------------------------- N/A 1 2 3 4 5
20. ----------------------------- N/A 1 2 3 4 5
21. ----------------------------- N/A 1 2 3 4 5

Appendix D
自閉症兒童行為檢查表（Gilliam Autism Rating Scale-Chinese Translation）
(Gilliam, J.E. 2006)
0=從未看到 – 從未看到這樣的行為
1=很少看到 – 每六個小時看到一或兩次這樣的行為
2=有時候會看到 – 每六個小時會看到三或四次這樣的行為
3=很常看到 – 每六個小時至少會看到五或六次這樣的行為

刻板行為

1. 避免眼神接觸（如：眼神與人接觸時會看向別的地方） 0 1 2 3
2. 盯著手或周遭的某個物品超過 5 秒鐘的時間。 0 1 2 3
3. 手或手指會在眼睛前面快速晃動超過 5 秒鐘的時間。 0 1 2 3
4. 只吃特定的食物，並拒絕吃大部份人通常會吃的東西。 0 1 2 3
5. 舔食不可食用的東西（如手、玩具、書等）。 0 1 2 3
6. 開嗅物品（如玩具、手、頭髮等）。 0 1 2 3
7. 旋轉，轉圈圈。 0 1 2 3
8. 旋轉不適合旋轉的物品（如小碟子、杯子、眼鏡等）。 0 1 2 3
9. 坐著或站著時前後搖晃。 0 1 2 3
10. 爆衝，從一個地方快速衝到另一個地方。 0 1 2 3
11. 走動或站著時惦著腳（惦著腳趾走路）。 0 1 2 3
12. 在臉前面或側面拍手或拍手指。 0 1 2 3
13. 發出高音調的聲音（如：一～）或其他自我刺激的聲音。 0 1 2 3
14. 擊打、撞擊、咬、或其他傷害自己的行為。 0 1 2 3

溝通 (若無法說話、無法用手語或其他溝通形式者，請略過這部分)。

15. 以聲音或手勢重複（仿說）話語。 0 1 2 3

16. 重複與當下不相關的話語（重複較早之前所聽到的話：如重複
  一分鐘前所聽到的話語）。 0 1 2 3

17. 一直重複一樣的字句。 0 1 2 3

18. 以平板的情感語氣或節律失調的語氣說話（或比手語）。 0 1 2 3

19. 對於簡單的指令（如坐下、站起來）做出不恰當的反應。 0 1 2 3

20. 別人叫自己的名字時，看向別處或避看說話者。 0 1 2 3

21. 不願說出他（她）想要的事情。 0 1 2 3

22. 不會主動跟同儕或成人開始對話。 0 1 2 3

23. 無法正確地使用「是」或「否」。對於他（她）不喜歡的東西的問題
  答是，對於他（她）最喜歡的玩具或對待方式的問題則答否。 0 1 2 3

24. 無法正確使用代名詞（無法將他、你、她等聯想到自己）。 0 1 2 3

25. 無法正確使用「我」（說自己時不會用「我」）。 0 1 2 3

26. 一直重複一些難以理解的聲音（如嬰兒牙牙學語）。 0 1 2 3
27. 用手勢來要求自己想拿到的東西，而不是以說話或手語的方式表達。

28. 無法正確回答某段敘述或簡短故事的相關問題。

社交互動

29. 避免眼神的接觸（當別人看他或她時，會看向別處）。

30. 被讚美、開玩笑或取悅時，目光呆滯或看起來不開心或不興奮。

31. 拒絕與他人做肢體的接觸（似乎不喜歡擁抱、撫拍、握住、或其他親密接觸）。

32. 在遊戲或學習活動中，要他模仿他人時不會模仿他人。

33. 團體活動時，無法融入或呈現冷漠或遠離人群的情況。

34. 無來由地呈現出恐懼、害怕的行為。

35. 毫無感情；不會給予熱情的回應（如擁抱及親吻）。

36. 不會認人（呆滯地看著人）。

37. 不正常的大笑、發笑、哭叫。

38. 無法正確地玩玩具或其他東西（如旋轉車子或拆卸玩具）。

39. 重複且習慣性地做某些事情。

40. 生活規律的事項被改變時會很生氣。
41. 被命令、要求、或指示時會出現負面反應或發脾氣。 0 1 2 3

42. 要以精確、整齊的方式排列物品，否則會生氣。 0 1 2 3
### Appendix E

**THE VINELAND ADAPTIVE BEHAVIOR SCALE （文闕適應行為量表）**

*(Chinese Translation)*

<table>
<thead>
<tr>
<th>談通領域</th>
<th>R</th>
<th>E</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. 眼和頭會轉向聲音來源</td>
<td></td>
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</tr>
<tr>
<td>2. 能至少短暫的聽主要照顧者的聲音</td>
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<tr>
<td>3. 會對主要照顧者微笑</td>
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<tr>
<td>4. 除了照顧者以外，會對熟悉的人微笑</td>
<td></td>
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</tr>
<tr>
<td>5. 聽到照顧者說“過來”或“抱”，手會主動舉起</td>
<td></td>
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</tr>
<tr>
<td>6. 了解“不行”、“不可以”的意思</td>
<td></td>
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</tr>
<tr>
<td>7. 聽到大人的聲音後，能在幾秒內加以模仿</td>
<td></td>
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<tr>
<td>8. 至少了解10個字 (問書在哪裡，會拿起書來)</td>
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<tr>
<td>9. 能以適當的動作表達“是”、“不是”、“我要”</td>
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<tr>
<td>10. 當別人對他說話時會注意聽</td>
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<tr>
<td>11. 了解“是”、“好”的意思</td>
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<tr>
<td>12. 遵從含有一個動作和一個目標的指令 (e.g. 去拿你的鞋)</td>
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</tr>
<tr>
<td>13. 能正確指出一項身體的主要部位</td>
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<tr>
<td>14. 能說出兄弟姊妹及友伴的名字或小名</td>
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<tr>
<td>15. 能說出包含名詞、動詞、或兩個名詞的片語 (e.g. “小華，走”或“妹妹，椅子”)</td>
<td></td>
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<tr>
<td>16. 能主動說出至少20種熟悉的東西 (Do not score 1)</td>
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<tr>
<td>17. 專心聽故事至少5分鐘</td>
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<tr>
<td>18. 能以聲音或動作指出所喜歡的事物</td>
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<tr>
<td>19. 能說出至少50個認識的字詞 (0 or 2分)</td>
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<tr>
<td>20. 能主動已簡單字詞敘述經驗 (e.g. 狗狗、打球)</td>
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<tr>
<td>21. 能傳達簡單的話 (e.g. 我們到外面去)</td>
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<tr>
<td>22. 能說出由4個字以上所組成的句子</td>
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<tr>
<td>23. 能正確指出身體所有的部位 (0 or 2分)</td>
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<tr>
<td>24. 能說出至少100個認識的字詞 (0 or 2分)</td>
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<tr>
<td>25. 能說出完整的句子</td>
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<tr>
<td>26. 能正確使用“一”個和“這”個 (e.g. “一”枝筆、“這”枝筆)</td>
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<tr>
<td>27. 遵從“如果…就…”的指令 (e.g. 如果冷，就穿外套)</td>
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<tr>
<td>28. 能說出自己的姓和名</td>
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</tr>
<tr>
<td>29. 會使用“什麼”、“哪裡”、“誰”、“為什麼”、“什麼時候”來發問 (0 or 2分)</td>
<td></td>
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<tr>
<td>30. 在沒看見實物的狀況下，能比較兩件物品的大小</td>
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<tr>
<td>31. 能詳細敘述經驗</td>
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<tr>
<td>32. 使用“在…後面”或“在…的中間”的詞句 (e.g. 在桌子後面)</td>
<td></td>
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</tr>
<tr>
<td>33. 會使用“在…旁邊”的詞句 (e.g. 在電視旁邊)</td>
<td></td>
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<tr>
<td>34. 會使用“或”、“但是”的詞句</td>
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<tr>
<td>35. 發音清楚無替代言 (e.g. “發”生講成“花”生，“船上”說成“床上”)</td>
<td></td>
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<tr>
<td>36. 能大概說出通俗故事、童話故事、笑話、或電視節目的情結</td>
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<tr>
<td>37. 能背誦出所有注音符號</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>38. 會閱讀至少3個常見文字指標(e.g. “上”、“下”、“開”、“拉”、“推”、“廁所”，指認圖給1分)</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>39. 說出自己幾月幾日生日</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>40. 正確使用數詞(e.g. “隻、塊、張、顆、片、個”)</td>
<td>X</td>
<td>X</td>
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<tr>
<td>41. 写自己的名字</td>
<td>X</td>
<td>X</td>
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<tr>
<td>42. 說出自己家的電話號碼(N may be scored)</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>43. 說出完整的家庭地址(包括縣市)</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>44. 會辨認至少10個常用字</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>45. 不看字樣至少能寫出10個字</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>46. 不需協助，會以一種以上的方式表達想法(e.g.“他人很好”、“他對我非常友善”)</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>47. 能讀出簡單的故事</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>48. 能寫出含3~4個字的簡單句子</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>49. 參加校內外演說能傾聽至少15分鐘以上</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>50. 自動自發閱讀</td>
<td>X</td>
<td>X</td>
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<tr>
<td>51. 閱讀2年級以上的書籍</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>52. 按筆劃多寡排列字序</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>53. 會寫簡短的備忘或留言</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>54. 會指引他人較複雜的方位(e.g.道路口右轉看到第二條巷子在左轉)</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>55. 會寫簡短的信(0或2分)</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>56. 閱讀4年級程度的書</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>57. 寫500字以上的文章(0或2分)</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>58. 會使用字典</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>59. 會用“目錄”查閱資料</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>60. 會寫學校的報告(0或2分)</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>61. 會寫完整的信封地址(3封以上2分)</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>62. 使用索引查閱資料</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>63. 會閱讀雜誌或報紙(N may be scored)</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>64. 有合乎實際的成長目標，並能詳述達成目標的方法</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>65. 會寫較長的信</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>66. 每週會自動閱讀新聞報紙或雜誌(N may be scored)</td>
<td>X</td>
<td>X</td>
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<tr>
<td>67. 會寫公用信函(0或2分)</td>
<td>X</td>
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</table>

### 日常生活領域

<table>
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</tr>
</thead>
<tbody>
<tr>
<td>1. 看到食物或奶瓶會產生進食的期待</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>2. 當食物到嘴邊，嘴巴會自動張開</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>3. 會用嘴從湯匙上取得食物</td>
<td>X</td>
<td>X</td>
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<tr>
<td>4. 會吸吮或咀嚼餅乾</td>
<td>X</td>
<td>X</td>
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<tr>
<td>5. 會吃固體食物</td>
<td>X</td>
<td>X</td>
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<tr>
<td>6. 不用協助會用杯子喝水</td>
<td>X</td>
<td>X</td>
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<tr>
<td>7. 用湯匙吃東西</td>
<td>X</td>
<td>X</td>
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<tr>
<td>8. 了解燙的物品是危險的</td>
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<tr>
<td>9. 會用手指出聲 (非哭鬧) 或拉扯等動作表示褲子濕了</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>10. 用吸管吸食</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>11. 願意讓照顧者擦鼻涕</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>12. 用筷子夾東西吃</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>13. 不需協助會脫下拉鍊在前的外套或毛衣</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>14. 用湯匙吃東西時會潑灑出來</td>
<td>X</td>
<td>X</td>
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<tr>
<td>15. 當褲子溼時，會想要換衣服</td>
<td>X</td>
<td>X</td>
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<tr>
<td>16. 使用馬桶或便器小便</td>
<td>X</td>
<td>X</td>
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<tr>
<td>17. 在協助下會自己洗澡</td>
<td>X</td>
<td>X</td>
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<tr>
<td>18. 使用馬桶或便器大便</td>
<td>X</td>
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<tr>
<td>19. 會自行如廁</td>
<td>X</td>
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<tr>
<td>20. 不需協助會正確穿著只需拉上即可的衣褲</td>
<td>X</td>
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<tr>
<td>21. 了解金錢的功能</td>
<td>X</td>
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<tr>
<td>22. 會自行把自己的物品收拾妥當</td>
<td>X</td>
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<tr>
<td>23. 半夜會自行如廁</td>
<td>X</td>
<td>X</td>
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<tr>
<td>24. 不需協助會用杯子自茶壺或飲水機取水喝</td>
<td>X</td>
<td>X</td>
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<tr>
<td>25. 會自己刷牙 (0 or 2 分)</td>
<td>X</td>
<td>X</td>
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<tr>
<td>26. 了解時鐘或電子鐘的功能</td>
<td>X</td>
<td>X</td>
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<tr>
<td>27. 能幫忙做額外的家事 (e.g. 更換家具位置)</td>
<td>X</td>
<td>X</td>
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<tr>
<td>28. 不需協助會自己洗臉</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>29. 穿鞋時，不需協助能自行穿對左右腳</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>30. 會接電話並作適當時的回答 (N may be scored)</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>31. 除繫鞋帶外，會自行穿戴整齊 (正確的穿著內衣和外衣，包括扣扣子 – 2 分)</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>32. 會叫別人接電話或會說別人不方便接電話的原因</td>
<td>X</td>
<td>X</td>
<td></td>
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<tr>
<td>33. 在協助下能把餐具擺好</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>34. 不需協助會處理包括沖水、洗手在內的所有如廁行為 (0 or 2)</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>35. 有人陪伴過馬路時，會注意雙方來車</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>36. 不需他人協助亦能將洗好的衣物收拾妥當 (e.g. 將衣物掛在鉤上或將叠好的衣服放在抽屜裡)</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>37. 不需協助與提醒會自己擦鼻涕 (0 or 2)</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>38. 會收拾易碎的餐具</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>39. 不需協助會用毛巾擦乾全身</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>40. 知道如何繫緊東西 (e.g. 夾鉤袋、帶子、安全帶) (0 or 2)</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>41. 能幫忙做簡單攪拌及烹煮的食物 (e.g. 炒飯)</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>42. 了解搭乘陌生人的便車，接受陌生人給的食物或金錢是危險的</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>43. 不需協助會自己綁鞋帶</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>44. 不需協助會自行洗澡及擦乾身體 (0 or 2)</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>45. 獨自過馬路時，會注意雙方來車</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>46. 咳嗽或打噴嚏時會用手、手帕、或衛生紙遮掩鼻子或嘴巴</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>47. 使用湯匙及筷子 (0 or 2)</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>48. 會打電話給他人 (N may be scored)</td>
<td>X</td>
<td>X</td>
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</tr>
<tr>
<td>49. 遵守紅綠燈及行人號誌 (N may be scored)</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>50. 會自行穿衣，包括綁鞋帶、扣釦子、繫皮帶、拉拉鍊 (0 or 2)</td>
<td>X X</td>
<td></td>
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<tr>
<td>51. 能自己鋪床</td>
<td>X X</td>
<td></td>
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<tr>
<td>52. 會正確的說出今天是星期幾</td>
<td>X X</td>
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<td></td>
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<tr>
<td>53. 上車不需提醒會自行綁安全帶 (N may be scored)</td>
<td>X X</td>
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</tr>
<tr>
<td>54. 認識一元、五元及十元硬幣</td>
<td>X X</td>
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<tr>
<td>55. 會使用至少 2 種基本工具 (釘子、釘子、釘子)</td>
<td>X X</td>
<td></td>
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</tr>
<tr>
<td>56. 能辨認他人的左右邊</td>
<td>X X</td>
<td></td>
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<tr>
<td>57. 不需協助能由欄中取出餐具並擺設妥當</td>
<td>X X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>58. 不需協助能使用掃把、抹布及吸塵器清理地板</td>
<td>X X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>59. 知道在緊急時要撥 110 或 119 (N may be scored)</td>
<td>X X</td>
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<tr>
<td>60. 在餐廳能自己點菜 (N may be scored)</td>
<td>X X</td>
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</tr>
<tr>
<td>61. 會正確說出今天幾年幾月幾號</td>
<td>X X</td>
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</tr>
<tr>
<td>62. 不需提醒會根據天氣變化穿著適當的衣服 (攜帶雨傘)</td>
<td>X X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>63. 不需提醒會避開有傳染性疾病的人</td>
<td>X X</td>
<td></td>
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</tr>
<tr>
<td>64. 會看時鐘並說出以 5 分為單位的時間 (e.g. 12:55 分)</td>
<td>X X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>65. 不需協助或提醒能清洗、吹乾並梳理自己的頭髮 (0 or 2)</td>
<td>X X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>66. 會使用火爐或微波爐</td>
<td>X X</td>
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<tr>
<td>67. 正確使用家用清潔劑 (e.g. 洗衣粉、洗碗精)</td>
<td>X X</td>
<td></td>
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<tr>
<td>68. 正確計算買東西所找的錢</td>
<td>X X</td>
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</tr>
<tr>
<td>69. 不需協助下會打各種電話 (N may be scored)</td>
<td>X X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>70. 不需協助會用指甲刀清理自己的指甲</td>
<td>X X</td>
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</tr>
<tr>
<td>71. 能自行做需攪拌及烹煮的食物 (炒蛋)</td>
<td>X X</td>
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<tr>
<td>72. 會使用公共 (付費) 電話</td>
<td>X X</td>
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<tr>
<td>73. 不需提醒能整理自己的房間</td>
<td>X X</td>
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<tr>
<td>74. 能用存款購買至少一種娛樂用品</td>
<td>X X</td>
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</tr>
<tr>
<td>75. 能自己照顧健康 (處理割傷、會使用體溫計和藥物、知道緊急時要就醫)</td>
<td>X X</td>
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<tr>
<td>76. 能打工賺取生活費</td>
<td>X X</td>
<td></td>
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<tr>
<td>77. 不需提醒能自行更換自己的床單和被子 (0 or 2)</td>
<td>X X</td>
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</tr>
<tr>
<td>78. 自動定期打掃除了自己房間以外的空間 (e.g. 廚房、浴室)</td>
<td>X X</td>
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<tr>
<td>79. 能做家庭例行的修理工作 (e.g. 更換燈泡)</td>
<td>X X</td>
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<tr>
<td>80. 會縫釦子、紉鈕</td>
<td>X X</td>
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<tr>
<td>81. 會預估每週支出</td>
<td>X X</td>
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<tr>
<td>82. 會自行管理金錢</td>
<td>X X</td>
<td></td>
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<tr>
<td>83. 不需協助能自行打理自己的三餐</td>
<td>X X</td>
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<tr>
<td>84. 能準時上班</td>
<td>X X</td>
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<tr>
<td>85. 不需提醒能完整清理自己的衣物，包括洗衣、烘乾、收拾等 (0 or 2)</td>
<td>X X</td>
<td></td>
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<tr>
<td>86. 假如上班會遲到，會告知老闆</td>
<td>X X</td>
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<tr>
<td>87. 生病會自己跟上司請病假</td>
<td>X X</td>
<td></td>
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<tr>
<td>88. 會預估每月支出</td>
<td>X X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>89. 不需提示或協助能自己修補衣物</td>
<td>X X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>90. 上班時，休息時間或午餐時間過後會準時回到工作岗位</td>
<td>X X</td>
<td></td>
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<tr>
<td>索引</td>
<td>中文</td>
<td>繁體</td>
<td>簡體</td>
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<tr>
<td>91.</td>
<td>為全職工作負責任</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>92.</td>
<td>會在銀行開戶存款並妥善運用</td>
<td>X</td>
<td>X</td>
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</tbody>
</table>

### 社交領域

<table>
<thead>
<tr>
<th>索引</th>
<th>中文</th>
<th>繁體</th>
<th>簡體</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>看照顧者的臉</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>2.</td>
<td>對照顧者或他人的聲音有反應</td>
<td>x</td>
<td>x</td>
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<tr>
<td>3.</td>
<td>能夠辨認照顧者</td>
<td>x</td>
<td>x</td>
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<tr>
<td>4.</td>
<td>對於新的人或物品感興趣</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>5.</td>
<td>會表達自己的愉快、悲傷、害怕、憤怒（e.g. “我很傷心”）</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>6.</td>
<td>會期待照顧者把自己抱起來</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>7.</td>
<td>對熟悉的人會表達愛</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>8.</td>
<td>對於兄弟姊妹以外的小孩感興趣</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>9.</td>
<td>會靠近熟悉的人</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>10.</td>
<td>能獨自或與他人一同玩玩具或其他物品</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>11.</td>
<td>能與他人玩一些非常簡單的互動遊戲（e.g. 躲貓貓、握手）</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>12.</td>
<td>能利用家中的一般物品來玩遊戲（e.g. 茶壺、湯匙）</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>13.</td>
<td>有興趣與他人一同做活動</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>14.</td>
<td>會模仿大人得動作（e.g. 拍手、揮手、再見）</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>15.</td>
<td>對別人的稱讚或好意，會用適當的笑容來回應</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>16.</td>
<td>會叫至少兩位親人得名字或稱位（e.g. 爸爸、名字、綽號）</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>17.</td>
<td>表達取悅照顧者或親人得慾望（e.g. 協助）</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>18.</td>
<td>能與他人共同參與至少一種遊戲或活動</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>19.</td>
<td>會在他人做出複雜動作的數小時後，模仿期動作（e.g. 擦地板、掃地）</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>20.</td>
<td>會模仿大人說過的話</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>21.</td>
<td>能獨自或與他人一起玩複雜的辦家家酒遊戲</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>22.</td>
<td>有幾位較喜愛的朋友</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>23.</td>
<td>像別人提出要求時會說“請”</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>24.</td>
<td>可以認出自己的喜怒哀樂</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>25.</td>
<td>可以透過他人的特徵辨認熟人（除了名字之外）</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>26.</td>
<td>在沒有人告訴他的情況下，能與他人分享玩具或永有的東西</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>27.</td>
<td>能说出至少一項自己喜歡的電視節目，並能說出一個節目播出得時間及頻道（N may be scored）</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>28.</td>
<td>不需提醒即能在簡單的遊戲中遵守規則</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>29.</td>
<td>有一個要好的朋友，男女不拘</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>30.</td>
<td>遵守校規或老師的規定</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>31.</td>
<td>對於他人的好運，會用言語做正面的回應（e.g.祝賀朋友得獎）</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>32.</td>
<td>會為不小心犯下過錯而道歉（e.g. 踩到他人的腳）</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>33.</td>
<td>有一群經常來往的好朋友</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>34.</td>
<td>遵守社區規則（e.g. 不隨地吐痰）</td>
<td>x</td>
<td>x</td>
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<tr>
<td>35.</td>
<td>會玩至少一種需靠技巧與做決定能力的棋類或紙盤遊戲（e.g. 吹</td>
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<tr>
<td>36.</td>
<td>嘴巴有食物時，能不說話</td>
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<tr>
<td>37.</td>
<td>有一個要好的同性朋友</td>
<td></td>
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<tr>
<td>38.</td>
<td>與陌生人初次見面介紹時，表現得宜 (e.g. “嗨，你好！”)</td>
<td></td>
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<tr>
<td>39.</td>
<td>會在重要節日主動製作或購買小禮物送給家人或熟人</td>
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<tr>
<td>40.</td>
<td>能保守秘密超過一天以上</td>
<td></td>
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<tr>
<td>41.</td>
<td>能歸還項同學或朋友借得玩具、物品、金錢，或把所借得書歸還給圖書館</td>
<td></td>
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<tr>
<td>42.</td>
<td>能適當的結束談話 (e.g. “我還有事”)</td>
<td></td>
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<tr>
<td>43.</td>
<td>能遵守父母設定得時間限制 (在該回來的時間回來)</td>
<td></td>
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<tr>
<td>44.</td>
<td>避免問一些會令人尷尬，或傷害別人的問題或評論 (e.g. 真醜)</td>
<td></td>
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<tr>
<td>45.</td>
<td>當被別人拒絕時，能控制自己的憤怒或受傷情緒</td>
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<tr>
<td>46.</td>
<td>能適當且持久得保守秘密</td>
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<tr>
<td>47.</td>
<td>不需提醒，會表現適當的餐桌禮儀 (e.g.不與他人爭著夾菜) (Score 0 or 2)</td>
<td></td>
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<tr>
<td>48.</td>
<td>對於感興趣的事，能藉由看電視及聽收音機中獲得資訊 (N may be scored)</td>
<td></td>
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<tr>
<td>49.</td>
<td>在大人得陪伴下，能與朋友一起參加學校的晚間活動 (e.g. 球類活動或跳舞) (N may be scored)</td>
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<td>50.</td>
<td>在做決定前，會先考慮自己行動可能產生的後果</td>
<td></td>
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<tr>
<td>51.</td>
<td>會為不正確的判斷而造成的錯誤道歉 (e.g. “我選錯了遊戲，我們再玩另一個好了)</td>
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<tr>
<td>52.</td>
<td>記得親人及好朋友得生日或紀念日</td>
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<tr>
<td>53.</td>
<td>會與他人交談對方感興趣的話題</td>
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<tr>
<td>54.</td>
<td>具有一項嗜好</td>
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<tr>
<td>55.</td>
<td>會歸還像父母所借的錢</td>
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<tr>
<td>56.</td>
<td>與別人談話時，能了解對方的暗示</td>
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<tr>
<td>57.</td>
<td>參與校外的體育活動 (N may be scored)</td>
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<tr>
<td>58.</td>
<td>能由看電視及聽收音機中獲得日常得生活訊息 (e.g. 氣象報告、學校停課) (N may be scored)</td>
<td></td>
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<tr>
<td>59.</td>
<td>有約會會準時赴約 (e.g. 上鋼琴課)</td>
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<tr>
<td>60.</td>
<td>能獨自看電視、新聞、廣播新聞 (N may be scored)</td>
<td></td>
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<tr>
<td>61.</td>
<td>沒有大人陪伴下，能與朋友一起參與校內的晚間活動 (N may be scored)</td>
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<tr>
<td>62.</td>
<td>沒有大人的陪伴下，能與朋友一起參與校外性的晚間活動 (e.g. 音樂會)</td>
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<td>63.</td>
<td>有參與在社團、小組、社會組織裡</td>
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<td>64.</td>
<td>會與一位異性朋友出去 party 或團體活動</td>
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<td>65.</td>
<td>跟一對或兩對情侶一同出遊</td>
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<td>66.</td>
<td>有單獨約會</td>
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<tr>
<td>行為問題</td>
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<tr>
<td>1. 吸手指</td>
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<td>2. 過分依賴</td>
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<td>3. 退縮</td>
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<td>4. 尿床</td>
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<td>5. 有飲食問題</td>
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<td>6. 有睡眠問題</td>
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<td>7. 咬指甲</td>
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<td>8. 對學校或工作逃避</td>
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<tr>
<td>9. 極度焦慮</td>
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<tr>
<td>10. 突然發生短暫的重複行為或聲音（tics）</td>
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<tr>
<td>11. 極度容易笑或哭</td>
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<td>12. 眼神沒有對焦</td>
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<td>13. 常表現出極度不快樂</td>
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<td>14. 白天或晚上會磨牙</td>
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<td>15. 非常衝動（行事不加思索）</td>
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<td>16. 無法專心及沒有注意力</td>
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<td>17. 非常的好動</td>
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<td>18. 暴怒爛脾氣</td>
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<td>19. 消極或挑釁/反抗</td>
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<td>20. 捉弄或霸凌別人</td>
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<td>21. 不為他人著想</td>
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<td>22. 說謊、作弊、或偷竊</td>
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<td>23. 在肢體上會攻擊其他人</td>
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<td>24. 在不適當的時候罵人</td>
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<td>25. 別意逃跑</td>
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<td>26. 固執或憂鬱</td>
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<td>27. 逃學或矇課</td>
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<td>28. 表現不適當的性行為</td>
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<td>29. 對於物品或活動有過分或奇怪的執著</td>
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<td>30. 會有不合情理的想法</td>
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<tr>
<td>31. 有非常奇怪的行為跟嗜好</td>
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<td>32. 有自殘的行為</td>
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<td>33. 故意破壞自己或他人的物品</td>
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<td>34. 怪異的言語</td>
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<td>35. 無法察覺身邊所發生的事情</td>
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<tr>
<td>36. 站著或做著時會反覆前後晃動身體</td>
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Appendix F

Demographic Questionnaire

The following is some background information about you and your child with special needs.

Family Background

1. Please indicate the age range you fall into. Are you
   □ 24 and below □ 25-34 □ 35-49 □ 50 and above

2. What is your relationship with the child?
   Mother □ Father □

3. Please indicate your marital status:
   Married □ Divorced □ Separated □
   Other □ (specify: ____________________________)

4. Please indicate your highest educational level:
   No High school degree □ High School □ College □ Graduate □

5. Please indicate your employment status:
   Full time employment □ Part time employment □ unemployed □

6. Which category best describe your monthly household income? (select one)
   □ Less than $35,000NT
   □ Between $35,001NT to $55,000NT
   □ Between $55,001NT to $75,000NT
   □ Between $75,001NT to $95,000NT
   □ More than $95,0001NT

7. How many children do you have in all?
   (Please fill in the number: I have ___ girls and ___ boys)

8. On a scale of 0 to 3, please indicate your experiences in parent education or parent training related to your child with special needs
   0 None □ 1 Little □ 2 Moderate □ 3 A lot □
Child Background Information


10. Child’s age: ___Years ___Months ________________________________

11. At what age was your child being diagnosis as autism? ________________________________

12. What is the birth order of your child with disability? ________________________________

13. What is the gender of your child with disability?
   Male□ Female□

14. Please indicate the child’s current school placement:
   None□
   Regular Education Classroom□ (Grade: ___)
   (Resource room: Yes□ No□)
   Special Education Classroom□ (Grade: ___)
   Tutoring□ Other□ (Specify: ________________)

15. Please indicate the frequency and duration of child’s services:
   Everyday□ Five days a week□ Three times per week□
   Twice a week□ Other□ (Specify: ________________)
   Hours per week:
Demographic Questionnaire (Chinese Translation)
人口統計問卷

以下是一些有關您和您有特殊需要的孩子的若干背景資料。

家庭背景

1. 請指出您的年齡範圍。您是
   24 歲以下 □  25-34 歲 □  35-49 歲 □  50 歲以上 □

2. 您與孩子的關係？
   母親 □  父親 □

3. 請指出您的婚姻狀況：
   已婚 □  離婚 □  分居 □
   其他 □ (指出: ________________________)

4. 請指出您的最高教育程度：
   低於高中 □  高中 □  大學 □  研究所 □

5. 請指出您的就業狀況：
   全職工作 □  兼職工作 □  無 □

6. 對描述您家庭的月收入哪個類別最為恰當？（任選一）
   低於 $35,000NT □
   $35,001NT 到 $55,000NT 之間 □
   $55,001NT 到 $75,000NT 之間 □
   $75,001NT 到 $90,000NT 之間 □
   $95,0001NT 以上 □

7. 您總共有幾個孩子？
   (請按順序填寫：我有 ___ 女兒和 ___ 兒子)

8. 從 0 到 3 的程度，請勾選針對您的特殊孩子您接受過的親職教育或訓練
   課程的多寡
   0 無 □  1 很少 □  2 中等 □  3 很多 □
孩子的背景資料
9. 您孩子身心障礙手冊上的診斷：
10. 您特殊孩子的年齡___________歲___________月
11. 您的孩子在幾歲時被診斷自閉症？
12. 您特殊的孩子的出生排行？
13. 您特殊的孩子的性别？ 男□  女□

14. 請指出孩子目前的學校安置：
   無□
   正規教育班級□(年級：______)(有無參與資源班：有□無□)
   特殊教育班級□(年級：______)
   家教□
   其他□(請指出：______________________)

15. 請指出児童的學習之次數：
   每天□  一週五天□  一週三天□
   一週兩天□ 其他□(請指出：______________)
   請列出児童每週學習時數
   每週總計________________________________小时