THE PARENTAL ADAPTATION'S MODEL: INFLUENCING FACTORS TOWARD RAISING CHILDREN WITH ASD

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THE PARENTAL ADAPTATION'S MODEL: INFLUENCING FACTORS TOWARD RAISING CHILDREN WITH ASD

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ABSTRACT

The study aimed to gain knowledge on the parental adaptation process in raising children with ASD by developing the parental adaptation model which demonstrated the associations among influencing factors to parental adaptation outcomes. The study was divided into two phases. In the first phase, in-depth interviews with 13 parents and 5 professionals were employed for identifying the influencing factors and adaptation outcomes in parents raising ASD children, and associations were drawn as the hypothesized model. In the second phase, data were collected from 303 parents for testing the significance of the model pathways and testing the level of model fit.

The results revealed two stages of parental adaptation, including a pre-diagnosis stage and a post-diagnosis stage. Therefore, two models were tested with significant results. In the pre-diagnosis stage, it started with an observation of unusual behavior and/or delayed development of a child, and parents applied personal coping strategies to solve the ASD related problems, sought additional information on unusual child behaviors and normal development, and sought support from someone within and outside their network. The successfully adapted parents then decided to take their child to see the doctor and get a confirmation of the child's diagnosis. The pre-diagnosis model was proved to have a good model fit with chi-square test (x^2= 3.001, p-value >.05), GFI= .996, CFI=.992, RMSEA =.041, RMR =.042, and NFI =.977.

The post-diagnosis model started after parents learnt from the professionals of their child's diagnosis, then the confirmed diagnosis increased the level of stress in the parents. Parents should then put effort into accepting their child's diagnosis even though it was difficult; they redefined meaning and found positive aspects from the ASD related situation, used religion or spiritual principles, sought information related to the disorder and treatment, and sought social support. Finally, successfully adapted parents were able to continue taking their child to receive treatment and/or enroll him/her in a specialized education program for ASD, were able to practice skills with the child at home, were able to share information with other parents who are facing the same condition, have higher levels of self-efficacy for parenting an ASD child, and have good quality-of-life. The post-diagnosis model was proved as a good model fit with chi-square test (x^2= 114.496, p-value < .05), GFI= .947, CFI=.950, RMSEA =.109, RMR =.705, and NFI =.939. The findings on the two stages of the parental adaptation model reflect a holistic adaptation process of parents for raising children with ASD and it gives suggestions to practitioners on how to support these parents so far.

KEY WORDS: PARENTAL ADAPTATION / MODEL / ASD

206 pages

โมเดลการปรับตัวของพ่อแม่: ปัจจัยสำคัญที่มีผลต่อการเลี้ยงดูบุตร ASD

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บทคัดย่อ

งานวิจัยครั้งนี้มีวัตถุประสงค์เพื่อสร้างองค์ความรู้เกี่ยวกับกระบวนการปรับตัวของพ่อแม่ในการดูแลบุตร ASD โดยการพัฒนาโมเดลการปรับตัวของพ่อแม่ที่แสดงให้เห็นถึงความสัมพันธ์ระหว่างปัจจัยสำคัญที่มีผลต่อผลลัพธ์ด้านการปรับตัวของพ่อแม่ ในการศึกษาครั้งนี้ จะแบ่งเป็น 2 ระยะ ระยะแรกเป็นการสัมภาษณ์กลุ่มตัวอย่างซึ่งเป็นพ่อแม่ที่มีบุตร ASD จำนวน 13 คน และผู้เชี่ยวชาญด้าน ASD จำนวน 5 คน เพื่อค้นหาปัจจัยสำคัญที่เกี่ยวข้องกับการปรับตัวของพ่อแม่และผลลัพธ์ที่เกิดขึ้นในพ่อแม่ที่ปรับตัวได้จนสำเร็จ จากนั้นนำเสนอความสัมพันธ์ของปัจจัยและผลลัพธ์ที่พบในลักษณะของโมเดลต้นแบบ ในระยะที่สอง เป็นการเก็บข้อมูลด้วยแบบรายงานตนเองกับกลุ่มตัวอย่างซึ่งเป็นพ่อแม่ที่มีบุตรเป็น ASD จำนวน 303 คน เพื่อทดสอบความถูกต้องของโมเดลต้นแบบด้วยสถิติ

ผลจากการวิจัย พบว่า กระบวนการปรับตัวของพ่อแม่ประกอบด้วยกระบวนการสำคัญ 2 ขั้นตอน ในขั้นตอนแรกเป็นกระบวนการปรับตัวของพ่อแม่ช่วงก่อนรับทราบผลวินิจฉัยของบุตร ในช่วงนี้ การปรับตัวจะเริ่มตั้งแต่การสังเกตเห็นความผิดปกติด้านพฤติกรรมและพัฒนาการที่ล่าช้าของบุตร พ่อแม่ที่ปรับตัวได้จะใช้กลวิธีในการจัดการปัญหาของบุตร ASD โดยวิธีเผชิญกับปัญหา ค้นหาความรู้เพิ่มเติมเกี่ยวกับพัฒนาการที่เหมาะสมกับบุตร ค้นหาแหล่งสนับสนุนทางสังคม ซึ่งผลลัพธ์ที่แสดงว่าพ่อแม่ปรับได้เป็นผลสำเร็จในขั้นนี้ คือการตัดสินใจพาบุตรเข้ารับการวินิจฉัยจากแพทย์ผู้เชี่ยวชาญโดยเร็ว สำหรับโมเดลการปรับตัวของพ่อแม่ในช่วงก่อนรับทราบผลวินิจฉัยของบุตรนี้ ได้รับการทดสอบทางสถิติว่าเป็นโมเดลที่มีความถูกต้องเป็นอย่างดี มีค่าไคร์-สแควร์ เป็น 3.001 (p-value >.05), GFI เป็น .996, CFI เป็น .992, RMSEA เป็น .041, RMR เป็น .042 และ NFI เป็น .977

สำหรับขั้นตอนที่สอง เป็นกระบวนการปรับตัวของพ่อแม่หลังรับทราบผลการวินิจฉัยของบุตรจากแพทย์หรือผู้เชี่ยวชาญ ซึ่งผลการวินิจฉัยนี้จะทำให้พ่อแม่มีความเครียดและความกังวลเกี่ยวกับบุตรเพิ่มขึ้นอย่างมาก พ่อแม่ที่ปรับตัวได้จะพยายามทำใจให้ยอมรับกับผลการวินิจฉัย แม้ว่าจะเป็นสิ่งที่ยาก พยายามหาข้อดีหรือมุมมองทางบวก ใช้หลักทางศาสนา ค้นหาข้อมูลเพิ่มเติมเกี่ยวกับโรคและการรักษา ตลอดจนการแสวงหาแหล่งสนับสนุนทางสังคม ในขั้นตอนนี้ พ่อแม่ที่สามารถปรับตัวได้สำเร็จ คือพ่อแม่ที่สามารถพาบุตรเข้ารับการรักษาได้อย่างต่อเนื่อง บางคนอาจนำบุตรเข้ารับการศึกษาในสถานศึกษาเฉพาะทางด้าน ASD มีการนำผลการฝึกฝนจากที่โรงเรียนหรือที่โรงพยาบาลมาฝึกทักษะและพัฒนาการของเด็กอย่างต่อเนื่องที่บ้าน สามารถแลกเปลี่ยนประสบการณ์กับพ่อแม่คนอื่นที่มีบุตรเป็นเด็กพิเศษเหมือนกัน มีศักยภาพในการดูแลเด็กที่เป็น ASD ได้อย่างมีประสิทธิภาพมากขึ้น และมีคุณภาพชีวิตที่ดี โดยโมเดลการปรับตัวของพ่อแม่ในช่วงหลังรับทราบผลการวินิจฉัยของบุตรนี้ ได้รับการทดสอบทางสถิติว่าเป็นโมเดลที่มีความถูกต้องเป็นอย่างดีพอสมควร มีค่าไคร์-สแควร์ เป็น 114.496 (p-value < .05), GFI เป็น .947, CFI เป็น .950, RMSEA เป็น .109, RMR เป็น .705 แบะ NFI เป็น .939 ผลการศึกษาทั้งสองขั้นตอนนี้ สะท้อนกระบวนการปรับตัวของพ่อแม่ในการดูแลบุตร ASD ในภาพรวมได้เป็นอย่างดี ซึ่งจะเป็นประโยชน์ต่อผู้ที่เกี่ยวข้องในการนำไปใช้สนับสนุนและ ส่งเสริมความสามารถของพ่อแม่ในการดูแลบุตรกลุ่มนี้ได้อย่างมีประสิทธิภาพต่อไป

206 หน้า

CONTENTS

CONTENTS (cont.)

CONTENTS (cont.)

LIST OF TABLES

LIST OF TABLES (cont.)

LIST OF TABLES (cont.)

LIST OF TABLES (cont.)

Table **Page**

LIST OF FIGURES

LIST OF ABBREVIATIONS

ASD	Autism Spectrum Disorder
PDD	Pervasive Developmental Disorder
PSI	The Problem Solving Inventory
WHOQOL-BREF	The World Health Organization test for Quality-of-Life: Brief Version
Be-Stress	The Parent Perception of Child’s Unusual Behaviors and Development during Pre-Diagnosis Stage
Be-CopeStra	The Parental Coping Strategy by Solving with the Problems
Be_Seekinfo	The Parental Action of Seeking Additional Information on Child’s Unusual Behaviors and Normal Development
Be_SocSupport	The Parental Action of Seeking Social Support from Someone Within and Outside Their Network
Be_Adp_Tx	The Parental Adaptation Outcome by Taking a Child to Receive Diagnosis
Af-Stress	The Heightened of Worrying Level and Negative Emotion of Parents When Being Informed about Child’s Diagnosis
Af_Stigma	The Parental Feeling of Misunderstanding from Society
Af-CopeStra	The Parental Coping Strategy by Solving with the Problems during Post-Diagnosis Stage
Af_Accept	The Level of Parental Acceptance toward Child’s Diagnosis and Situation
Af_Cognitive	The Level of Parental Redefine Meaning and Finding Positive Aspects from ASD Related Situation
Af_religion	The Level of Parental Use of Religious and Spiritual Principles

LIST OF ABBREVIATIONS (cont.)

Af_Seekinfo	The Parental Action of Seeking Additional Information on the Disorder and Treatment
Af_SocSupport	The Parental Action of Seeking Social Support from Someone Within and Outside Their Network
Af_Adp_Tx	The Parental Adaptation Outcome by Taking a Child to Receive One or Several Kinds of Treatment/Intervention
Af_Adp_School	The Parental Adaptation Outcome by Taking a Child to Enroll in Specialized Education Program
Af_Adp_Prac	The Parental Adaptation Outcome by Implementing or Initiating Activities and Practicing with a Child at Home
Af_Adp_Share	The Parental Adaptation Outcome by Sharing Information with Other Parents Who Had Faced with the Same Situation
Af_Adp_Self	The Parental Adaptation Outcome by Having Self-Efficacy for Raising an ASD Child
Sum_QoL	The Level of Parental Quality-of-Life
C_age	Ages of ASD Children
C_sibling	The Number of Siblings in the Family

CHAPTER I
INTRODUCTION

1.1 Background and significance of the study

Children with ASD refer to group of children who are diagnosed in the umbrella of Autism Spectrum Disorder (ASD) or other term as Pervasive Developmental Disorder (PDD). There are five sub-disorders included in ASD (1) Autistic disorder, (2) Rett's disorder, (3) Childhood disintegrative disorder, (4) Asperger's disorder and (5) Pervasive developmental disorder- not other specified. Those ASD children present their significant impairments in areas of social interaction, communication and repetitive pattern of behaviors and interests (American Psychiatric Association, 2010). The degree of ASD severity is varied. Theoretically, classic autistic disorder is the most severity while Asperger's disorder is mildest. Moreover, ASD is unpreventable and long life condition (Stein, Ring, Shulman, et al, 2001, Seltzer, Shattuck, Abbeduto, et al, 2004). Children who are diagnosed as ASD in childhood continue to grow up with ASD in adulthood. Mostly, parent is the first person who notices unusual behaviors in their child and most of them reported that impairments of ASD seem not improve throughout children life span (Siperstein & Volkmar, 2004)

For the numbers of ASD children in society, the prevalent and incident rate had been reported as dramatically increased with time and the numbers seem likely to continue in all around the world. In US, where numerous studies on ASD children had been published, revealed the estimated prevalent rate of children with ASD that fell in the range of 5-10 per 10,000 through the years of 1990 and continued to be approximately 10-20 per 10,000 by the years of 2003 (Newschaffer & Curran, 2003). The study of Montes & Halterman (2007) reported the prevalent rate of autism that had been continuously increased to be 60 per 10,000. The study of Kogan, Blumberg, Schieve, et al. (2009) revealed the autistic prevalence rate of 110 per 10,000. Their study also estimated overall population of US children that roughly

673,000 of them were diagnosed as ASD. The study of Crane (2008) reported approximately of 34 per 10,000 US children were diagnosed as classic autistic disorder. Not only in US that had continuously increased in number of ASD, the study in UK also indicated the similar trend, for example, the study of European Commission (2005) reported the prevalent rate of ASD children during the years of 1999 that the number of ASD was approximately 57 per 10,000. While another study in UK, the study of Chakrabarti & Fombonne (2005) reported the prevalent rate of children with Pervasive Developmental Disorder (PDD, another name of ASD) that was approximately 58.7 per 10,000. Roughly 22 per 10,000 was the rate of classic autistic disorder while 36.7 per 10,000 was the rate of other disorders in autistic spectrum. Meanwhile, in Australia, there were studies that also reported the prevalent rate of ASD children in their society, for example, the study of Buckley (2006) reported the ASD prevalent rate during the years of 2000-2003 which was approximately 67.2 ASD per 10,000 normal children. While in Thailand, the report from National Research Council of Thailand (NRCT) indicated that approximately 2-5 per 10,000 Thai children were diagnosed as autism by the years of 1999. Meanwhile, in 2005, the NRCT revealed the numbers of autistic children that there were roughly 15,210 Thai autistic children out of 1.54 million disability children who lived in metropolitan areas. For all those children, only 32.19% (4,869) of them were included in educational system while the others 67.81% (10,314) were not. In 2006, NRCT had surveyed and reported the total number of autism that range between 425,000 to 1.2 million while the ratio of children who were diagnosed as autism to children who were diagnosed as learning disability was 166:1. Moreover, there were studies identifying the underlying reasons for dramatically increase of the numbers of ASD children around the world. Those reasons might partly explained by (1) changing and broadening of definition and diagnosis criteria from classic autism to umbrella of autistic spectrum (2) increasing in awareness from parents, health professionals and public which might be resulted by the growing of published articles and media coverage (3) improving in the effectiveness of process for screening and identification and (4) more autistic related services available in community. (Wolf, Noh, Fisman, et al, 1989; Jick, & Kaye, 2003; Newschaffer & Curran, 2003; Johnson, Myers, The Council on Children with Disabilities, 2007; Kogan, Blumberg, Schieve, et al, 2009).

In addition, there were some other studies indicated the estimation of total societal cost for a child with ASD, for example, the study of Jarbrink, Fombonne, Knapp, et al. (2003) indicated the societal cost for ASD child as approximately £689 per week while the annual costs of autism in the country would be counted for billions. Most of the costs were positively associated with use of medical intervention and behavioral therapy expenses (Sharpe & Baker, 2007) while the study of European Commission (2005) indicated the costs of residential care/living support and day activities as the majority of the total costs. Other than the estimation of ASD calculated costs, the study of Newschaffer & Curran (2003) also indicated the uncalculated costs as parental emotional strain and altered lifestyle of affected family which were also vital for consideration.

For helping children with ASD, previous studies had reviewed effectiveness of early tailored interventions that there were success in improving children skill and functioning, reducing severity of autistic symptoms and against the development of secondary problematic behaviors (Rogers, 1996; Valente, 2004). However, most of interventions for ASD children were implemented by professionals at autistic centers, it might not reach the full effectiveness due to some limitations, especially the limitation regarding to ability of parents to early notice unusual behaviors in their children, limited in knowledge about development of children with ASD, limited in expanding the practice to a child at home, limited in opportunity to access to services and limited in capacity to raise significant parental concerns to professionals (Johnson, Myers, The Council on Children with Disabilities, 2007; Crane, 2008).

When having ASD children in family, children with ASD had certainly impact on their parents, other family’s members and family system as a whole. Several studies emphasized the negative impact from ASD children that brought to their parents, especially in domains of emotional and psychological functioning (Davis & Carter, 2008; Myers, Mackintosh, Goin-Kochel, 2009), social functioning (Dunn, Burbine, Bowers, et al, 2001, Myers, Mackintosh, Goin-Kochel, 2009), and overall parental quality-of-life (Lee, Harrington, Louie, et al, 2008; Shu, 2009; Benjak, 2011). Some other studies emphasized the impact of ASD children to functioning of siblings (Constantino, Lajonchere, Lutz, et al, 2006; Toth, Dawson, Meltzoff, et al, 2007), marital relationship (Rodrigue, Morgan, Geffken, 1990; Rodrigue, Morgan, Geffken, 1992; Toth, Dawson, Meltzoff, et al, 2007; Milshtein, Yirmiya, Oppenheim, et al, 2010), and family system as a whole (Myers, Mackintosh, Goin-Kochel, 2009). Moreover, since ASD was long life condition, the impact that ASD children had brought to their parents and families would continue overtimes.

However, the impact that each parent perceived, the reaction from parents to diagnosis of ASD children and the behaviors of them to functionally raise their ASD child were greatly varied from person to person. For unadapted parents, literature suggested that unadapted parents faced difficulties in accepting the diagnosis of children which led to poor abilities of family functioning and child raising activities. The unadapted parents also needed to face with emotional strain and less in their quality-of-life overtimes. While in adapted parents, they were able to positively reinterpret the situation related to ASD which led to the outcomes of accepting children diagnosis early. The adapted parents were also able to function for raising their ASD children with effectiveness and optimism together with having more positive emotional and high level of their own quality-of-life as the consequence. These differences of function between groups of parents, their personal health status and personal quality-of-life could be explained through the process of parental adaptation.

The process of parental adaptation could be explained by some behavioral science theories, particularly the transactional model of stress and coping by Lazarus et al. (1977 cited in Glanz, Rimer, Lewis, 2002) The Lazarus's model stated the framework for evaluating the process of personal coping to stressful situation. The model emphasized on personal judgment of external stressors or threats and personal evaluation on their ability to manage or control over those stressors, then applied various types of coping including of coping efforts and meaning-based coping, in order to mediate person's appraisal of stressors to adaptation outcomes of emotional well-being, functional status and health behavior. The Lazarus's model also stated the importance of social and cultural resources as moderators that go between coping efforts, meaning-based coping and adaptation outcomes as well. This concept of Lazarus was pretty fit with the research objective. Moreover, there were some theories explained the reciprocal interaction between individual and environment that relevant to individual’s desirable behavior and health status, for example, the construct of self-efficacy by Bandura or the construct of social network and social support by House. Furthermore, some parts of those theories were determined as practical application in several empirical studies within group of parents with ASD children. Their findings from several empirical works could be categorized in terms of factors related to parental adaptation and parental adaptation outcomes.

For this research, the factors related to parental adaptation included (1) adaptation related factors, the factors that suggested by the behavioral science theories and repeatedly reviewed by numerous studies on ASD, for example, factor of perceived child’s severity (Kasari & Sigman 1997; Allik, Larsson, Smedje, 2006; Osborne, McHugh, Saunders, et al, 2008), coping strategies (Pakenham, Samios, Sofronoff, 2005; Smith, Seltzer, Tager-Flusberg, et al, 2008), parental personality (Yau & Li-Tsang, 1999; Ekas, Lickenbrock, Whitman, 2010), perceived social stigma (Case, 2000; Schall, 2000; Gray, 2006), social support (Gray & Holden, 1992, Stuart & McGrew, 2009; Meadan, Halle, Ebata, 2010). (2) The contextual factors, factors of demographic variables that related to parental adaptation for raising ASD children, including the factors of child gender, child age, child age at diagnosis, parent gender, parent age, parent level of education and family structure. All those factors were determined as potential factors which could be added or removed according to real data with parents of ASD children in the process of data collection so far.

After achieving in the process of parental adaptation, literatures suggested the finding of outcomes in adapted parents including (1) adapted parents should be able to raise their child for better (Yau & Li-Tsang1999; Hauser-Cram, Warfield, Shonkoff, et al, 2001; Altiere & Kluge, 2009; Clutterbuck, 2009). (2) Adapted parents should be able to maintain their healthy quality-of-life (Arksey, Beresford, Glendinning, et al, 2007; Bayat, 2007; Woodgate, Ateah, Secco, 2008; Samous, Pakenham, Sofronoff, 2009). (3) Adapted parents should be able to increase their level of parenting competency (Johnson, Myers, The Council on Children with Disabilities, 2007; Siller & Sigman, 2008). Those outcomes suggested by literature were determined as the guideline then they were confirmed with the real data from parents of ASD children later on.

Moreover, the review from literature led to objectives of this research which determined to develop the parental adaptation model in group of parents with ASD children. The model demonstrated association among influencing factors to parental adaptation outcomes in the context of raising children with ASD. For this regards, the techniques of qualitative and quantitative methods were employed within two main research phases. The first phase, qualitative method would be employed in order to identify influencing factors and parental adaptation outcomes in the context of raising children with ASD It had been run through steps of literature review and in-depth interview with parents and professionals. Then, the collected data were analyzed by means of theme and content analysis, and drawn the hypothesized model that demonstrated association among those influencing factors and adaptation outcomes. For the second phase, quantitative method would be employed in order to test the parental adaptation model and determine the coefficient values of the significant pathways from influencing factors to parental adaptation outcomes, in aspects of parental functions for raising ASD children and parental quality-of-life. This phase included five steps continued from the previous first phase starting with the development of instruments for assessing variables included in the model, pretest the quality of all the instruments, collecting data in research participants, analyzing collected data by means of descriptive statistic, t-test. F-test and correlation, analyzing the model by mean of path analysis and testing for model fit. The importance of developed parental adaptation model for raising children with ASD would suggest not only the significant factors, but also the suggestion for designing potential interventions to help either ASD children or their parents henceforth.

1.2 Research questions

1. How do parents adapt and function to raise ASD children?
2. What are the influencing factors relevant to parental adaptation and what are the adaptation outcomes?
3. What are the significant pathways of the influencing factors and the parental outcomes?

1.3 Research objectives

General objective:

To develop the parental adaptation model that demonstrates the association and prediction of those influencing factors toward parental adaptation outcomes for raising children with ASD

Specific objectives:

1. To identify influencing factors and parental adaptation outcomes for raising children with ASD
2. To determine the coefficient values of the significant pathways from the influencing key factors to parental adaptation outcomes, in aspects of parental function for raising ASD children and parental quality-of-life
3. To draw the parental adaptation model based on the significant findings

1.4 Research hypotheses

To test the overall parental adaptation model and their significant pathways, the research hypotheses were set according to stages of adaptation as follows:

In the pre-diagnosis stage, the research hypotheses were:

1. There were significant associations among group of influencing factors to outcomes of taking a child to receive diagnosis
2. The pre-diagnosis model fit well with the data set

In the post-diagnosis stage, the research hypotheses were:

3. There were significant associations among group of influencing factors to outcomes of parental adaptation, including taking a child to receive treatment, taking a child to enroll in specific educational program, ability of parents to practice a child at home, ability of parents to share information with other parents who faced with the same situation, heightening of self-efficacy for parenting an ASD child, and having good quality-of-life
4. The post-diagnosis model fit well with the data set

1.5 Scope of the study

The research was conducted in order to develop the parental adaptation model that demonstrated association among influencing factors to parental adaptation outcomes in the context of raising children with ASD. The techniques of qualitative and quantitative methods were employed for collecting data within two main research phases. The first phase, qualitative method with snowball technique was employed with key-informants of 13 parents and 5 professionals from 5 settings of (1) Darakam School, (2) Piboonprachasan School, (3) Sawangkaniwas Hospital, (4) Teacher Aor Therapy Center for Special Child and (5) Kasetsart University Laboratory School Center for Educational Research and Development. The second phase, quantitative method was employed in order to analyze data from 303 parents with ASD children. All of them were recruited according to the inclusion criteria from 5 settings of (1) Yawaprasart Hospital, (2) Ramathibodi Hospital, (3) Autistic Center at Chonburi Province, (4) Special Education School at Nakhon Pathom Province and (5) Kasetsart University Laboratory School Center for Educational Research and Development.

1.6 Operational definitions

1. Children with autism spectrum disorder (ASD)

Children with ASD in this study referred to group of children who were diagnosed in the umbrella of Autism Spectrum Disorder (ASD) or other term as Pervasive Developmental Disorder (PDD). There were five sub-disorders included in ASD (1) Autistic disorder, (2) Rett’s disorder, (3) Childhood disintegrative disorder, (4) Asperger’s disorder and (5) Pervasive developmental disorder- not other specified (PDD-NOS). The ASD children presented their significant impairments in areas of social interaction, communication and repetitive pattern of behaviors and interests. In this research, the definition of children with ASD and children with autism referred to the same meaning.

2. Parent

Parent, in this study, referred to the main-caregiver who had relationship as mother, father, grandparent, uncle or aunt to an ASD child. Parent stayed with an ASD child in the family and provided care to him/her.

3. Adapted parent

Adapted parent referred to parent who was able to perform functioning of taking a child to receive diagnosis from doctor, able to continue taking a child to receive treatment and/or enrolling in specific education program, able to practice skills with a child at home, able to sharing information with other parents who were at the same condition and heightening of self-efficacy for parenting an ASD child. Moreover, adapted parents should also have healthy quality-of-life. Level of adaptable in parents was measured by the parental adaptation questionnaire, the PSI test and the WHOQOL-BREF test. All instruments had pretested for validity and reliability before using to collect data. The higher score indicated higher level of adaptable in parents.

4. Parental adaptation model

Parental adaptation model was the model demonstrating the statistical significant associations among influencing factors to parental adaptation outcomes in the context of raising children with ASD.

5. Parental influencing factors or adaptation related factors

Parental influencing factors or adaptation related factors referred to a group of factors that mediated between stressors and adaptation outcomes. They were proved to have positive impact in enhancing level of parental adaptation.

6. Parental coping strategy

In this research, parental coping strategy referred to the problem-focus strategy that parents used for dealing with ASD situation and it could lessen their stress. This coping strategy was assessed by the standardized test- the Problem-Solving Inventory (PSI).

7. Seeking additional information

Seeking additional information referred to an action that parents were done for fulfilling their knowledge, which in turn lessening their stress related to raising ASD child. The performance of seeking information was assessed by yes/no question and its level of satisfaction was assessed by the parental adaptation questionnaire developed for this current research.

8. Seeking support

Seeking support referred to an action that parents sought and received the aid and assistance from someone within and outside their social relationship. The support could be in various types, including emotional support, instrumental support, informational support and appraisal support. It was assessed by yes/no question and its level of satisfaction was assessed by the parental adaptation questionnaire developed for this current research.

9. Accepting to the child’s diagnosis and situation

Accepting to the child’s diagnosis and situation referred to the cognitive coping when parents could be able to shift their ways of thinking to be more accept with the diagnosis of their child and accept with the responsibility to take a good care of them. The response was assessed by yes/no question and its level of satisfaction was assessed by the parental adaptation questionnaire developed for this current research.

10. Redefining the meaning and finding positive aspects from ASD related situation

This factor referred to the cognitive coping when parents could be able to reinterpret ASD situation by finding the strength of an ASD child and having realistic expectation toward child’s recovery, instead of suffering with signs of child abnormality and sadness. The response was assessed by yes/no question and its level of satisfaction was assessed by the parental adaptation questionnaire developed for this current research.

11. Using of religious and spiritual principles

This factor referred to an induction of emotion by using principle of religion that parent believed. The response was assessed by yes/no question and its level of satisfaction was assessed by the parental adaptation questionnaire developed for this current research.

12. Contextual factors

The contextual factors were groups of demographic variables related to parental functioning and outcomes. For this research, the contextual factors included (1) demographic variables of ASD children, such as child gender, child age, child age at diagnosis, (2) demographic variables of parents, such as parent gender, parent age and parental level of education, and (3) family structure, such as single parent in family, two-parent in family, extended family.

13. Parental adaptation outcomes

Parental adaptation outcomes referred to the consequence of adaptation process in parents. Parents who were able to adapt could be able to function for raising ASD child and have good quality-of-life.

14. Coefficient value

The coefficient value showed in the pathways of parental adaptation model. It indicated the degree of association and/or prediction from stressor-to-factor, factor-to-factor, stressor-to-adaptation outcome, and factor-to-adaptation outcome. Finally, all those coefficient values were summarized and determined in terms of the total effect, direct effect and indirect effect.

CHAPTER II

LITERATURE REVIEW

For this study, the literature related to concept and research works which primarily focused on parents and families of children with ASD had been reviewed accompanying with the review of empirical studies regarding to relationship between children with ASD and their parents, the behavioral science theory related to parental adaptation, factors related to parental adaptation and outcomes that were found in successful adapted parents, then categorized those reviewed into three major parts as following:

2.1 Nature and development of children with ASD.

2.2 Impact of children with ASD on their parents and families.

2.2.1 The impact of children with ASD on their parents or primary caregivers.

2.2.2 The impact of children with ASD on their siblings, extended family members, marital relationship and family system.

2.3 Parental adaptation and its outcomes.

2.3.1 Behavioral science theories and empirical research works related to parental adaptation.

2.3.2 Factors relates to parental adaptation in the context of raising children with ASD.

2.3.3 Outcomes of successful adapted parents

2.3.4 The significant variables and adaptation model from previous studies.

2.4 The summary of literature and conceptual framework.

2.1 Nature and development of children with ASD

Children with autism spectrum disorder (ASD) refer to group of children who are diagnosed in the umbrella of pervasive developmental disorder (PDD) which in 2000, the latest version of standard criteria for diagnosis- The Diagnosis and Statistical Manual of Mental Disorders, Fourth edition- Text Revision (DSM IV-TR)- classiy PDD into five categories including (1) Autistic disorder, (2) Rett's disorder, (3) Childhood disintegrative disorder, (4) Asperger's disorder and (5) Pervasive developmental disorder- not other specified (PDD-NOS). Children who are diagnosed as some particular types of disorder within PDD or widely used term as ASD present common signs of impairment regarding to the impairment in social interaction ability, language and communication skill, repetitive pattern of behaviors and interests (American Psychiatric Association, 2010). However, the degree of severity is varied for each type. Theoretically, classic autistic disorder is the most severity while Asperger's disorder is mildest. The study of Gillham, Carter, Volkmar, et al. (2000) supported the theory that children who were diagnosed as autism presented more severity than children who were diagnosis as PDD-NOS or Developmental Delayed (DD). Moreover, the study found that children with autism would present other areas of impairments rather than specified in standard criteria including the impairment of daily living skills and serious maladaptive behaviors

For the etiology of ASD, the specific cause of ASD remained unknown therefore it was no known way to prevent the disorder. Moreover, most of comprehensive literatures assumed that not only single factor contributed to autism, but several of them had been proposed as possible cause, for example, genetic, neurological, infectious, metabolic, immunology, vaccine and obstetric complication (Jick & Kaye, 2003; Valente, 2004). In addition, the developmental levels of children with ASD were unique and different from typically normal children. Children with ASD usually failed to develop their skills in the normal as typical children could, especially in areas of social interaction, communication and repetitive pattern of behaviors and interests. Mostly, parents were the first person who could notice unusual behavior in their children and most of them reported that the disabled skilled in their children seem not improve throughout children' life span (Siperstein & Volkmar, 2004). Others studies reported similar results, for example, the study of Stein, Ring, Shulman, et al. (2001) found the stability of autistic condition continued from childhood to adulthood with full symptoms of disorder. The meta-analysis study of Seltzer, Shattuck, Abbeduto, et al. in 2004 had also reviewed several studies to confirm the long-life condition of autism as well. In their finding, the modest improvement in some areas of disabilities in adolescents and adult with ASD were possibly found, but a few of them could reach normal level. While the study of Sutera, Pandey, Esser, et al. in 2007 initiated 'idea of recovery' in toddlers diagnosed with ASD in their two-year longitudinal study that children who were diagnosed as ASD at first might possibly grow up to be non-ASD depending on predicting factors such as prior cognitive ability and motor skill. However, the better outcomes which were found in children with ASD during the period of not receiving any of intervention had been reviewed in few studies.

To help children with ASD getting better, there were interventions toward ASD children which designed uniquely and differently from interventions designed for helping children with other mental problems or chronic physical handicap. For helping children with ASD, the study of Rogers (1996) and the study of Valente (2004) indicated that early interventions tailored with children needs and targeted specifically to area of impairments were required. Those interventions included, for example, education and skill training, behavioral intervention and medical used which aimed to improve children functioning and skill, reduce severity of autistic symptoms and prevent secondary outcomes. The study of Crane (2008) supported the idea that early intervention and early detection of autistic symptoms were effective for reducing autistic severity and useful for against the development of secondary deficits. Moreover, there were numbers of literatures revealed the effectiveness of variety types of interventions toward ASD children, for example, the study of Jensen & Sinclair, in 2002 indicated that behavioral intervention- Applied Behavior Analysis (ABA)- was effective for reducing problematic behaviors performed by children with autism. The four-year study of Sallows & Graupner (2005) found long-term outcomes of intensive behavioral intervention that it was effective for improving adaptive behaviors in children with autism as well as enhancing children cognitive, language academic abilities and skills for the period of time. While the study of Goldstein (2002) reported the effectiveness of communicative intervention applied in children with autism that it could successfully help children learn and expand communication in other different setting and promote social skills for interact with others. The study of Bosa (2006) had concluded the effectiveness of multiple intervention approaches toward children with autism that they could help foster children in social and communicative development, enhance their learning and cognitive ability, and decrease undesirable behaviors that interfere their ability to learn.

In summary, children with ASD referred to group of children who were presented their significant impairments in areas of social interaction, communication and repetitive pattern of behaviors and interests. ASD was long-life condition. Children who were diagnosed as ASD in childhood continued to grow up with ASD in adulthood. Moreover, ASD was unpreventable but it could be cured. Several literatures indicated that ASD condition could be cured and treated when applying early tailored interventions to children since they were young. Above was also emphasized the effectiveness of early tailored interventions that were repeatedly reviewed, for example, improve specific skill and functioning in children, reduce severity of autistic symptoms and against the development of secondary problematic behaviors. Some other studies, for example, the study of Plienis, Robbins, Dunlap (1988) indicated the benefits that autistic children might gain if their parents were trained for implementing interventions for them at home. While the single-case longitudinal study of Lucyshyn, Albin, Horner, et al. (2007) further reported the prolong positive outcomes that autistic child gained, especially in long-term reduction of problematic behaviors, when her parent were able to expand the process of intervention- positive behavior support (PBS)- at home. However, those interventions for ASD children might not reach their full effectiveness if some limitations occurred, especially the limitation regarding to ability of parents to early notice unusual behaviors in their children, limited in knowledge and information about normal development versus the development of children with ASD and how that development related to later problematic behaviors, limited in opportunity to access to services and limited in capacity to raise their concerns to professionals (Crane, 2008; Johnson, Myers, The Council on Children with Disabilities, 2007). When parents were determined as key-person for ASD children, therefore in the next section, the details about interactions between parents and ASD children were deeply classified together with the impact that ASD children brought to their parents and how parents reacted and adapted themselves for crisis situation as having ASD children in family were also reviewed in details.

2.2 Impact of children with ASD on their parents and families

Having children with ASD in family had certainly impact on their parents and families. Theoretically, the impact of children on their parents and families had been proposed based on fundamental concept of a well-known ecological perspective by Bronfenbenner (Bronfenbenner, 1979 cited in Morgan, 1988) that '(1) the child was embedded within multiple system which interact direct and indirect ways to influence behaviors and (2) among the systems involved in this interactions, the most important was the family system which included parent-child subsystem as well as the marital relationship and sibling subsystem'. In 1988, the study of Morgan was one of the very first papers attempting to apply an ecological principle on the research in which families of children with autism were focused. His study emphasized the impact of autistic children on their family within the context of developmental family system and revealed that autistic children influenced on their parents and families in various ways such as the influences of emotional and social functioning in parents, siblings, extended family members, and total family system as a whole. His findings had been the started point and expanded by several studies since then. In the present time, the study of Meadan, Halle, Ebata (2010) had also confirmed the influenced of having children with ASD on their family and expanded their findings to functioning and well-being of family members. Their systematic reviews in 57 studies which focused primarily on individual with ASD found common themes that having children with ASD in family raised stress in parents, marital subsystem and sibling subsystem. Children with ASD were also rearranged the roles of their parents. The study indicated about parental roles that 'mothers typically assume a larger part of the responsibility of meeting the needs of their child with ASD rather than fathers'. While another study, the study of Ghanizadeh, Alishahi, Ashkani (2009) had summarized the impact from

ASD children that brought about poorer mental health status in their mothers, reduce maternal quality-of-life, reduce overall family quality-of-life, increase family financial burden and increase rate of using healthcare services.

Apart from example of studies cited above, there were number of studies indicated the impact of children with ASD on their parents and family system in several domains by which variety of research designs and setting were employed. To make it easier, the tables classified by types of research designs were conducted and presented as table 2.1-2.4 below:

Table 2.1 Summary of qualitative studies regarding to impact from ASD children

Authors	Years	Participants	Setting	Impact on parents and families
Schall	2000	Families of children with autism	US	- Parents realized to their child serious disability and struggled with feeling of child's disabled - Parents felt discrimination by community
Woodgate, Ateah, Secco	2008	Parents of children with autism	Canada	Parents experienced a sense of social isolation that arisen from four main sources 1 Society' s lack of understanding 2 Missing a normal way of life 3 Feeling disconnected from family 4 Unsupportive system
Myers, Mackintosh, Goin-Kochel	2009	Parents of children with ASD	US	Mixed of positive and negative themes were found in five broad clusters including 1 Stress 2 Child's demands of care and therapy 3 Impact on parents' personal well-being, work lives and marital relationship 4 Impact on the family as a whole, including siblings and extended family 5 Social isolation

Table 2.2 Summary of cross-sectional studies regarding to impact from ASD children

Authors	Years	Participants	Setting	Impact on parents and families
Kasari & Sigman	1997	Parents of young children with autism	US	An inability of parent to interact with their autistic children during social play session
Dunn, Burbine, Bowers, et al.	2001	Parents of children with autism	US	Negative outcomes in parents regarding to - Parental depression - Social isolation - Spousal relationship problems
Davis & Carter	2008	Mothers and fathers of toddlers with autism	US	Parenting stress in mother and father regarding to - Parent's anxiety - Parent's depression - Parenting stress
Osborne, McHugh, Saunders, et al.	2008	Parents and children with ASD	England	Parenting stress and times of receiving early intensive intervention associated with children outcomes
Rivers & Stoneman	2008	Families of ASD children and siblings	US	Quality of sibling relationship associated with their satisfaction of parenting and personality in siblings themselves
Shu	2009	Mothers of children with autism	Taiwan	1. Impact of autism on quality of life in their mothers in aspects of - Physical health - Psychological status - Environmental features - Spiritual concerns and personal beliefs 2. Impact of autism on their families including - Modify lifestyle of family members - Family experienced different tasks across their lifespan - Family was exposed to stress, depress and anxiety

Table 2.2 Summary of cross-sectional studies regarding to impact from ASD children (cont.)

Authors	Years	Participants	Setting	Impact on parents and families
Shu (cont.)	2009	Mothers of children with autism	Taiwan	- Restriction of roles and family activities - Strain on marital relationship - Less parenting competence and family adaptation - Affected to caregivers' self-identity and perspective on life

Table 2.3 Summary of comparative studies regarding to impact from ASD children

Authors	Years	Participants	Setting	Impact on parents and families
Bebko, Konstantareas, Springer	1987	Mothers, fathers and therapists of children with autism	US	Mothers, fathers and therapists of children with autism evaluated family stress in terms of - Degree of perceived child's severity - Degree of perceived stress in parents
Wolf, Noh, Fisman, et al.	1989	Parents of children with autism, Down's syndrome, and normal development	Canada	Parents of children with autism, Down's syndrome, and normal development were compared in terms of - Levels of parenting stress - Dysphoria - Perceived social support
Rodrigue, Morgan, Geffken	1990	Mothers of children with autism, Down's syndrome, and normal development	US	Mothers of children with autism, Down's syndrome, and normal development were compared in terms of - Parenting competence - Marital satisfaction - Family cohesion and family adaptation - Coping strategies - Family activities and finances

Table 2.3 Summary of comparative studies regarding to impact from ASD children (cont.)

Authors	Years	Participants	Setting	Impact on parents and families
Rodrigue, Morgan, Geffken	1992	Fathers of children with autism, Down's syndrome, and normal development	US	Fathers of children with autism, Down's syndrome, and normal development were compared in terms of - Sense of parenting competence - Coping strategies - Marital adjustment - Family adaptability and family cohesion - Family activities and finances - Social support
Sivberg	2002	Families with and without children with ASD	Sweden	Families with and without children with ASD were compared in terms of - Degree of family cohesion - Degree of purpose in life - Strain on family system - Parental coping strategies
Sivberg	2002	Mothers and fathers of with and without ASD children	Sweden	Mothers and fathers of children with and without ASD were compared in terms of - Coping strategies - Parental attitude
Weiss	2002	Mothers of children with autism, mental retardation and typical normal development	US	Mothers of children with autism, mental retardation and typical normal development were compared in terms of negative psychological and physiological effected of stress as - Anxiety and depression - Somatic symptoms - Parental burnout: emotional exhausted, depersonalization, person accomplishment
Baker-Ericzen, Brookman-Frazee, Stahmer	2005	Mothers and fathers of with and without ASD toddlers	US	Mothers and fathers of toddlers with and without ASD toddlers were compared in terms of levels of parenting stress

Table 2.3 Summary of comparative studies regarding to impact from ASD children (cont.)

Authors	Years	Participants	Setting	Impact on parents and families
Duarte, Bordin, Yazigi, et al.	2005	Mothers of children with autism and normal development	US	Mothers of children with autism and normal development were compared in term of their levels of stress
Allik, Larsson, Smedje	2006	Mothers and fathers with children as high-functioning autism and typical development	Sweden	Mothers and fathers with children as high-functioning autism and typical development were compared in term of maternal physical health
Constantino, Lajonchere, Lutz, et al.	2006	Siblings of children with autism, PDD and other psychopathology unrelated to autism	US	Siblings of children with autism, children with PDD and children with other psychopathology unrelated to autism were compared in terms of their social skill
Toth, Dawson, Meltzoff, et al.	2007	Siblings and parents of children with autism and normal development	US	Siblings of children with autism and siblings of normal children were compared in terms of - Their functioning: cognitive, language, motor adaptive behaviors, social-emotional functioning, imitation and play - Parental outcomes: parental mental health, marital relationship and parenting stress

Table 2.3 Summary of comparative studies regarding to impact from ASD children (cont.)

Authors	Years	Participants	Setting	Impact on parents and families
Rutgers, Uzendoorn, Bakermans-Kranenburg, et al.	2007	Families of young children with ASD, mental retardation, language delayed and normal development	Netherland	Families of young children with ASD, mental retardation, language delayed and normal development were compared in terms of - Attachment - Child symptoms - Parenting outcomes: parental efficacy, authoritative parenting, parental daily hassles, social support and psychological problems
Mugno, Ruta, D'Arrigo, et al.	2007	Parents of children and adolescents with PDD, MR cerebral palsy and normal	Italy	Mothers and fathers of children and adolescents with PDD, mental retardation, cerebral palsy and normal development were compared in terms of their overall perception of quality of life
Lee, Harrington, Louie, et al.	2008	Families of children with autism, ADD/ADHD and normal development	US	Families of children with autism, ADD/ADHD and normal development were compared in terms of - Quality of life of parents and children - Parental concern toward their children: children’ achievement, self-esteem, stress coping strategies and being bullied by classmate
Brobst, Clopton, Hendrick	2009	Couples whose children had ASD and without ASD	US	Couples whose children had ASD and without ASD were compared in terms of - Parenting stress - Relationship satisfaction - Social support - Spousal support - Perceived child characteristics - Respect for their partners - Commitment

Table 2.3 Summary of comparative studies regarding to impact from ASD children (cont.)

Authors	Years	Participants	Setting	Impact on parents and families
Lee	2009	Mothers and fathers of children with and without autism	US	Mothers and fathers of children with and without autism were compared in terms of - Psychological distress - Marital relationship
Mori, Ujiie, Smith, et al	2009	Parents of children with Asperger's Syndrome and autism	Japan	Parents of children with Asperger's Syndrome and autism were compared in terms of parental stress
Milshtein, Yirmiya, Oppenheim et al.	2010	Parents of children with ASD	Israel	Mothers and fathers of children with ASD were compared in terms of - Parental feeling about parenting ASD children - Social relationship with others - Financial impact - Impact on siblings and married life
Benjak	2011	Parents with ASD children and non-disabled children	Croatia	Parents of children with ASD and non-disability were compared in terms of - Subjective quality-of-life - General health perception - Parental needs

Table 2.4 Summary of longitudinal studies regarding to impact from ASD children

Authors	Years	Participants	Setting	Impact on parents and families
Osborne, McHugh, Saunders, et. al.	2008	Parents of children with ASD	England	Parenting stress regarding to - Parent and family problems - Pessimism - Child characteristics - Physical incapacity in children
Benson & Karlof	2009	Parents of children with ASD	US	The change of parent depressed mood within two years of study

From table 2.1-2.4 as cited above, the mixed results were reported by several studies in which variety of research designs and settings were employed, however, those findings might be categorized in terms of (1) the impact of children with ASD on their parents or primary caregivers, (2) the impact of children with ASD on their siblings, extended family members and family system as a whole. More details were explained below.

2.2.1 The impact of children with ASD on their parents or primary caregivers

The research findings of impact from ASD children to their parents or primary caregivers had been reported in terms of psychological and emotional distress such as increasing in levels of parental depression and anxiety (Davis & Carter, 2008; Lee, 2009; Dunn, Burbine, Bowers, et al, 2001), pessimism (Osborne, McHugh, Saunders, et al, 2008), and parenting stress (Davis & Carter, 2008; Myers, Mackintosh, Goin-Kochel, 2009). Other studies had determined the greater levels of parenting stress in parents, mostly assuming to mother of children with ASD, compared with parents of children with typical normal development or other disabilities (Wolf, Noh, Fisman, et al, 1989; Baker-Ericzen, Brookman-Frazee, Stahmer, 2005; Duarte, Bordin, Yazigi, et al, 2005). As well as the study of Weiss (2002) which reported the finding of greater levels of parental burnout, emotional exhausted and somatic symptoms in mothers of children with autism than in mothers of children with mental retardation and typical normal development. Moreover, longitudinal study of Benson & Karlof (2009) indicated that parent of children with ASD reported continuously increasing in their depressed mood during two years of study.

The impact of children with ASD on their parents did not limited to just the strain on psychological and emotional domain, but parents were also being limited in terms of socially interact with their networks. Several studies indicated that parenting children with ASD brought a sense of social isolation to parents (Dunn, Burbine, Bowers, et al, 2001, Myers, Mackintosh, Goin-Kochel, 2009). While the study of Woodgate, Ateah, Secco, et al. (2008) indicated four main sources of social isolation, including the society’s lack of understanding, missing a normal way of life, feeling disconnected from family and perceiving unsupportive system. The importance of supportive social system and acceptance from community to levels of social isolation in parents were also reported by study of Schall (2000) while the study of Wolf, Noh, Fisman, et al. (1989) and the study of Rodrigue, Morgan, Geffken (1992) reported that parents of children with ASD mostly perceived less support than parents of children with Down’s syndrome and normal development, therefore the feeling of isolation would be higher in parents of children with ASD.

Additionally, some studies had extended the finding of impact from children with ASD to their parents in terms of overall parental quality of life (Benjak, 2011), for example, the study of Shu (2009) in Taiwan found that autistic children impact on quality of life in their mothers respected to decreased in mothers physical health, strain on psychological status, environmental features and spiritual personal beliefs. The study of Mugno, Ruta, D'Arrigo, et al. (2007) in Italy found lower levels of quality of life in parents of children and adolescents with PDD than in parents of children with mental retardation, cerebral palsy and normal development as well as the study of Lee, Harrington, Louie, et al. (2008) in US which also found that parents of children with autism reported lower overall quality of life than parents of children with ADD/ADHD and normal development.

2.2.2 The impact of children with ASD on their siblings, extended family members and family system as a whole

Parent or primary caregiver was not the only person impact by having children with ASD in family, but sibling and other family members were also being affected. Mostly, the severity of autistic behaviors raised greatest demands of time and energy from parents, while siblings needed to wait for their turn and faced with miss out fair share of attention, reflecting in feeling of neglect and hurt. Moreover, there were other studies exploring the abilities in siblings of children with autism compared with others and found that siblings of children with autism reported less skills in most areas, such as social, cognitive, language, imitative skills and play (Constantino, Lajonchere, Lutz, et al, 2006; Toth, Dawson, Meltzoff, et al, 2007) while factor, such as satisfaction with parenting, presented its association with quality of siblings to make contact with autistic brothers/sisters and others (Rivers & Stoneman, 2008)

Marital relationship was another area which had been impact by ASD children. The increasing of possibility to getting divorce, marital dissatisfaction and spousal relationship problems had been reported by numerous studies (Dunn, Burbine, Bowers, et al, 2001; Toth, Dawson, Meltzoff, et al, 2007; Rodrigue, Morgan, Geffken, 1992; Rodrigue, Morgan, Geffken, 1990; Milshtein, Yirmiya, Oppenheim, et al, 2010). In the meantime, the study of Lee (2009) and the study of Brobst, Clopton, Hendrick (2009) which specifically studied couples relationship in families with and without ASD children revealed that couples whose children had ASD reported less relationship satisfaction and greater stress than couples whose children were non-ASD.

Family system was also being affected by children with ASD. Several studies indicated that families of children with ASD had to face with various strain impact within their system, for example, restriction of roles and family activities, less family leisure time and recreation, less family cohesiveness, changed in lifestyle of each family members, disrupted family planning, strain relation with extended family and strain in family financial (Rodrigue, Morgan, Geffken, 1990; Rodrigue, Morgan, Geffken, 1992; Sivberg, 2002; Rutgers, IJzendoorn, Bakermans-Kranenburg, et al, 2007; Osborne, McHugh, Saunders, et al, 2008; Shu, 2009). Moreover, the longitudinal study of Seltzer, Shattuck, Abbeduto, et al. (2004) and the study of Ritro (2005) indicated the impact from children with ASD on their family overtimes. They reported that family experienced elevating of stress and greatest in sense of isolation, During the time of parenting children to become adolescents and adults, they felt restriction of family activities and perceived less closeness with their children. Parents also had to face with difficulty in management with school and related services. Some might conclude that parenting ASD children impact on family system as a whole (Myers, Mackintosh, Goin-Kochel, 2009).

In summary, it was obvious that having ASD children in family impact on their parents, other family's members and family system as a whole. Several studies emphasized the negative impact from ASD children that brought to their parents, especially in domains of emotional and psychological functioning (Davis & Carter, 2008; Myers, Mackintosh, Goin-Kochel, 2009), social functioning (Dunn, Burbine, Bowers, et al, 2001, Myers, Mackintosh, Goin-Kochel, 2009), and overall parental quality-of-life (Benjak, 2011; Shu, 2009; Lee, Harrington, Louie, et al, 2008) . Some other studies emphasized the impact of ASD children to functioning of siblings (Constantino, Lajonchere, Lutz, et al, 2006; Toth, Dawson, Meltzoff, et al, 2007), marital relationship (Toth, Dawson, Meltzoff, et al, 2007; Rodrigue, Morgan, Geffken, 1992; Rodrigue, Morgan, Geffken, 1990; Milshtein, Yirmiya, Oppenheim, et al, 2010), and family system as a whole (Myers, Mackintosh, Goin-Kochel, 2009). However, the impact that each parent perceived, the reaction from parents to diagnosis of ASD children and the behaviors of them to functionally raise their child were greatly varied from person to person. For unadapted parents, literature suggested that unadapted parents faced difficulties in accepting the diagnosis of children which led to poor abilities of family functioning and child raising activities. The unadapted parents also needed to face with emotional strain and less in their quality-of-life overtimes. While in adapted parents, they were able to positive reinterpretation the situation related to ASD which led to the outcomes of accepting children diagnosis early. The adapted parents were also able to function for raising their ASD children with effectiveness and optimism together with having more positive emotional and high level of their own quality-of-life as the consequence. These differences of function between groups of parents, their personal health status and personal quality-of-life could be explained through the underlying process of parental adaptation. Therefore, in the next part, the details in process of parental adaptation were deeply determined together with the theories based on personal adaptation, factors related to parental adaptation and the outcomes of successful adapted parents were also reviewed.

2.3 Parental adaptation and its outcomes

Previous parts were deeply classified about the nature of children with ASD and the impacts that ASD children had brought to their parents and family system as a whole, hence in this part, the focus would move on to deeply clarify the process for supporting parents to function effectively and have better quality of life. For this regards, the review of literature in the section included:

2.3.1 Behavioral science theories and empirical research works related to parental adaptation

2.3.2 Factors related to parental adaptation in the context of raising children with ASD

2.3.3 Outcomes of successful adapted parents

2.3.1 Behavioral science theories and empirical research works related to parental adaptation

In this current research, the review of behavioral science theories based on stress and personal adaptation together with theories related to factors for supporting personal behavioral change were determined. Additionally, more empirical research works focusing on parental adaptation in the context of raising ASD child were also classified.

2.3.1.1 Behavioral science theories related to personal adaptation and factors for supporting personal change

There were numbers of behavioral science theories applied in research of health behavior and health outcome. Some of them were considered as related to adaptation of individual toward their stressful situation. Some of them explained the reciprocal interaction between individual and environment which led to performing the desirable behavior and having good health status. Therefore, in this research, the theories related to personal adaptation were reviewed in order to guide an idea of adaptation process for parents to raise ASD child. The selected theories included (1) the Transactional Model of Stress and Coping by Lazarus, (2) the Social Cognitive Theory by Bandura and (3) the Social Network and Social Support by House.

The Transactional Model of Stress and Coping

The transactional model of stress and coping was developed by Lazarus et.al. (1977, cited in Glanz, Rimer, Lewis, 2002). The Lazarus model stated the framework for evaluating the process of personal coping to stressful situation. The model emphasized on personal judgment of external stressors or threats and personal evaluation on their ability to manage or control over those stressors, then applied various types of coping including of coping efforts and meaning-based coping, in order to mediate person's appraisal of stressors to adaptation outcomes of emotional well-being, functional status and health behavior. The Lazarus's model also stated the importance of social and cultural resources as moderators that go between coping efforts, meaning-based coping and adaptation outcomes as well. The Lazarus's model was presented in figure 2.1 below:

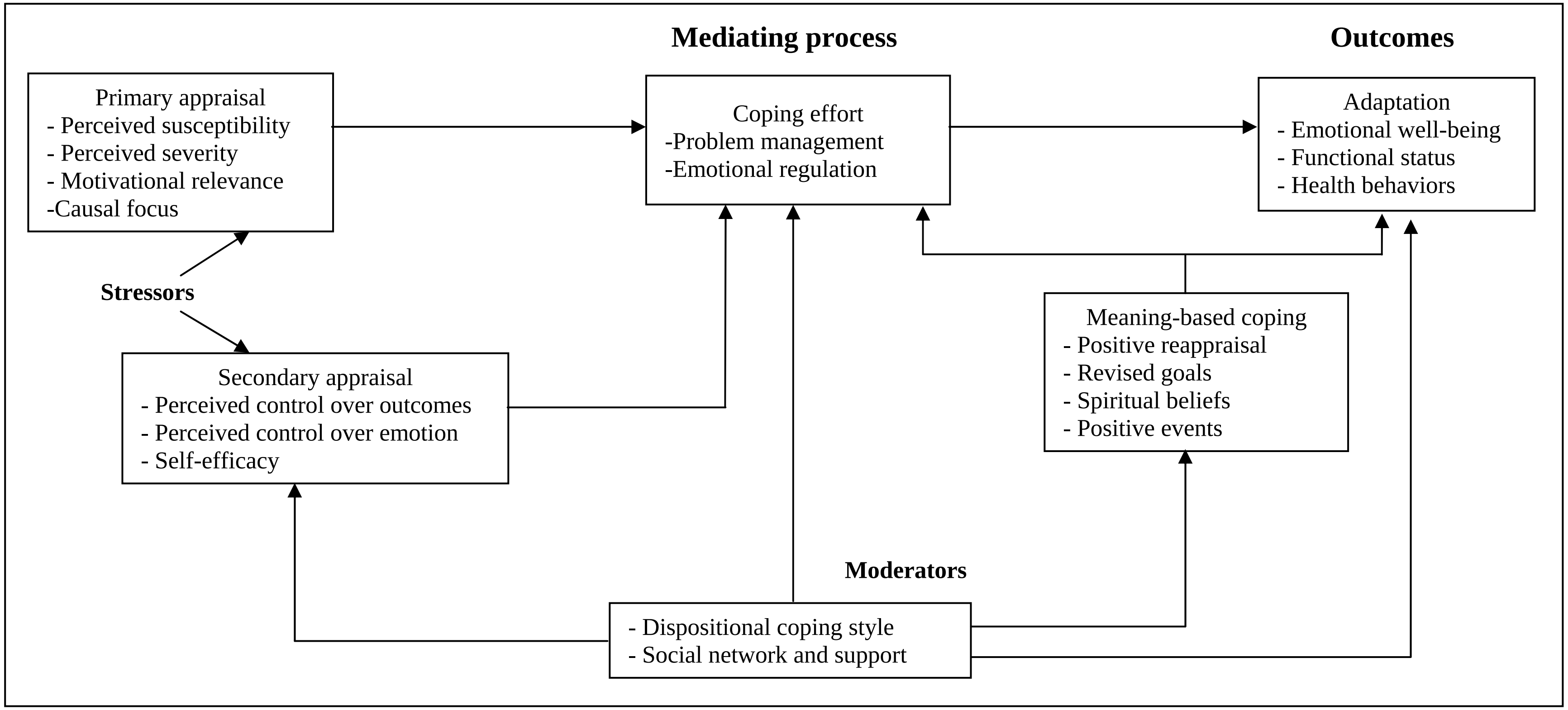


Figure 2.1 Demonstrated the transactional model of stress and coping

Other than the transactional model of stress and coping by Lazarus, there were theories explaining the reciprocal interaction between individual and environment that relevant to individual's desirable behavior and health status as summarized in table 2.5.

Table 2.5 Summary of the behavioral science theories related to individual's adaptation

Theory	Concept	Major constructs/determinants
The Transactional Model of Stress and Coping by Lazarus & Cohen (1977)	Explaining the association among stress, coping, adaptation and health outcome by providing framework for evaluating the process of coping with stressful situation	- Primary appraisal: the evaluation of potential threat which included perceived severity, perceived susceptibility, motivational relevant and causal focus - Secondary appraisal: the evaluation of individual's ability to alter situation and manage negative emotional reaction. The secondary appraisal included perceived control over outcome, perceived control over emotion and self-efficacy - Coping effort: the evaluation of coping strategies that applied for mediating primary appraisal and secondary appraisal to outcome of adaptation. The coping effort included problem management and emotional regulation - Adaptation: the outcome of coping process. Adaptation included emotional well-being, functional status and performing of desirable health behaviors
Social Cognitive Theory (SCT) by Bandura (1986)	Explaining human behavior as produced by the dynamic process of 'reciprocal determinism' in which individual's cognition, behavior and environment interacted and influenced to each other simultaneously	- Self-efficacy: the confidence of individual that they were able to accomplish certain behavior and able to overcome barriers that interrupted the process of behavioral performance - Environment: the external stimuli which influenced on individual's cognition and behavior. Environment was divided into physical and social environment

Table 2.5 Summary of the behavioral science theories related to individual's adaptation (cont.)

Theory	Concept	Major constructs/determinants
Social Cognitive Theory (SCT) (Cont.)		- Outcome expectation: a likely consequence that a certain behavior/outcome would occur - Outcome expectancies: the values that individual placed on a certain behavior/outcome - Observational learning: the process of learning that took place by watching the action of other's behavior
Social network and social support	Social network and social support were the social relationship that influenced on individual's health behavior and health status	- Social network: the web of social relationship that surrounded individual (Glanz, Rimer, Lewis, 2002) - Social support: the aid and assistance exchanged through social relationship and interpersonal transaction (Heaney & Israel in 1997 cited in Bartholomew, Parcel, Kok, et al., 2001) - House (1981 cited in Glanz, Rimer, Lewis, 2002) categorized four types of social support (1) emotional support: empathy, love, trust and caring (2) instrumental support: tangible aids and services that directly assist a person in need (3) informational support: advice, suggestion, and information that a person could use to address problems (4) appraisal support: information that useful for self-evaluation purposes such as constructive feedback, affirmation, social comparison

From table 2.5, the behavioral science theories related to individual desirable behavior, health status and health outcome were reviewed together with the reviews of their theoretical constructs and determinants. Some parts of those theories were determined as practical application in several empirical studies with specific group of participants. Those reviews would be presented in the section of empirical research works related to parental adaptation below.

2.3.1.2 Empirical research works related to parental adaptation

When specifically determined parental adaptation as targeted desirable behavior for the research, it had been investigated by several studies with varieties in groups of participants, for example, the study of parental adaptation in group of parents with 6-month old infant disabilities (Pelchat, Ricard, Bouchard, et al, 1999) or even the study of parental adaptation in group of mothers who had intellectual disabilities themselves (Feldman, Varghese, Ramsay, et al, 2002). Moreover, there were numbers of empirical research studies determined parental adaptation in group of parents with ASD children. Those studies were classified by types of research design and presented in table 2.6-2.8 below.

Table 2.6 Summary of qualitative studies and meta-analysis studies related to parental adaptation

Authors	Years	Participants	Setting	Factors related to parental adaptation	Outcomes of successful adapted parents
Morgan	1988	Families of children with autism	US	- Informal social network and informal social support from relatives, extended family members, friends, neighbors, and other parents of handicapped children	Family adaptation which was reflected by 1. Degrees of family cohesion and expressiveness

Table 2.6 Summary of qualitative studies and meta-analysis studies related to parental adaptation (cont.)

Authors	Years	Participants	Setting	Factors related to parental adaptation	Outcome of successful adapted parent
Yau & Li-Tsang	1999	Parents with developmental disabled children	Hong Kong	- Parental personal resources such as parental personality, self-appraisal, educational level, financial status - Social resources such as formal and informal social support	Parental adjustment and adaptation which was reflected by 1 Increased in parental problem-solving skill 2 Strong spousal relationship with mutual support for each other 3 Strong feeling of personal reward associated with parenting 4 Clear identifiable role for fathers and mothers for caring disabled children
Risdal & Singer	2004	Articles that focused on parents of disabled children	US	-	Family adaptation which was reflected by 1 Degree of marital adjustment 2 Degree of marital satisfaction
Symon	2005	Mothers of children with autism	US	-	Parents as trainer: parents were trained for skills and strategies necessary for expand the interventions to improve children' behaviors at home

Table 2.6 Summary of qualitative studies and meta-analysis studies related to parental adaptation (cont.)

Authors	Years	Participants	Setting	Factors related to parental adaptation	Outcomes of successful adapted parents
Bayat	2007	Families of children with autism	US	-	The evidences of family resilience were 1 Family connectedness and closeness 2 Making positive meaning to disability 3 Spiritual and personal growth
Woodgate, Ateah, Secco	2008	Parents of children with autism	Canada	-	Strategies for supporting the feeling of social isolation in parents included 1 Vigilant parenting 2 Sustaining the self and family 3 Fighting all the ways
King, Baxter, Rosenbaum, et al.	2009	Families of children with autism and Down Syndrome in elementary school and high school	Canada	-	Family resilience or the strength of families when they were faced with life's adversity by providing families with a sense of hope, meaning and control over their situation 1 Optimism 2 Acceptance and appreciation 3 Striving to change environment or to meet children' needs

Table 2.6 Summary of qualitative studies and meta-analysis studies related to parental adaptation (cont.)

Authors	Years	Participants	Setting	Factors related to parental adaptation	Outcomes of successful adapted parents
Meadan, Halle, Ebata	2010	Articles that focused on individual with ASD	US	- Family coping - Formal and informal social support	Ability of family to manage stress of having ASD children in their family

Table 2.7 Summary of cross-sectional studies related to parental adaptation

Authors	Years	Participants	Setting	Factors related to parental adaptation	Outcomes of successful adapted parents
Bristol	1987	Families of autistic and communication-impaired children	US	- Social support - Family coping strategies - Family definition of stressors	Family adaptation which was reflected by - Less degree of depression - Marital satisfaction - In-home family adaptation - Family cohesion
Wolf, Noh, Fisman, et al.	1989	Parents of children with autism, Down’s syndrome and normal	Canada	- Perceived social support	Parental well-being which was reflected by - Less in degree of parenting stress - Less in degree of dysphoria
Gray & Holden	1992	Parents of children with autism	AUS	- Coping patterns in parents - Social support	Psycho-social well-being in parents of children with autism which was reflected by - Degree of depression - Degree of parental anxiety - Degree of parental anger

Table 2.7 Summary of cross-sectional studies related to parental adaptation (cont.)

Authors	Years	Participants	Setting	Factors related to parental adaptation	Outcomes of successful adapted parents
Dunn, Burbine, Bowers. et al.	2001	Parents of children with autism	US	- Internal locus of control - Social support - Coping style	Stress reduction in parents of children with autism which was reflected by - Degree of parental depress - Degree of social isolation - Spousal relationship
Weiss	2002	Mothers of children with autism, mental retardation and typical development	US	- Maternal personality of hardiness - Informal and formal social support	Stress reduction in mothers of disabled children which was reflected by - Degree of maternal depression - Degree of maternal anxiety - Degree of maternal stress - Degree of maternal burnout
Wang, Turnbull, Summers. et al.	2004	Families of young children with special needs	US	- Parental income - Severity of disability in children	Family quality-of-life which was reflected by - Family interaction - Ability of parenting - Family emotional well-being - Family physical/material well-being - Having disability related support

Table 2.7 Summary of cross-sectional studies related to parental adaptation (cont.)

Authors	Years	Participants	Setting	Factors related to parental adaptation	Outcomes of successful adapted parents
Jones & Passey	2005	Families of children with DD and behavioral problems	UK	- Family support - Coping strategies - Parents' locus of control	Family adaptation which was reflected in terms of less in parenting stress
Hastings, Kovshoff, Brown, et al.	2005	Parents of preschool and school-aged autistic children	US	- Coping strategy	Parental well-being which was reflected by - Parent's mental health status
Higgins, Bailey, Pearce	2005	Families of children with ASD	AUS	- Coping style	Family function which was reflected by - Marital quality and marital happiness - Family cohesion and family adaptability - Self-esteem of caregivers
Pakenham, Samios, Sofronoff	2005	Mothers of children with Asperger syndrome	AUS	- Perceived severity of children - Social support - Coping strategies - Appraisal of stressors	Maternal adjustment which was reflected by - Less in maternal anxiety - Less in maternal depression - Maternal social adjustment - Subjective health status

Table 2.7 Summary of cross-sectional studies related to parental adaptation (cont.)

Authors	Years	Participants	Setting	Factors related to parental adaptation	Outcomes of successful adapted parents
Montes & Halterman	2007	Parents of children with autism in families	US	-	Maternal well-being which was reflected by - Strengthen in parent-child relationship - Better coping in parenting children - Stability of household and family communication even in the context of higher stress
Altiere & Kluge	2008	Mothers and fathers of children with autism	US	- Perceived social support - Family coping mechanism	Well-functioning families referred to - Balance of family cohesion and family adaptability - Acquire new resources such as social support, learning new coping behaviors - Changing the ways to interpret situation
Smith,Seltzer, Tager-Flusberg, et al.	2008	Mothers of toddlers and mothers of adolescents with ASD	US	- Coping strategy - Perceived child severity	Maternal well-being which was reflected by - Degree of depression - Degree of anger - Psychological well-being

Table 2.7 Summary of cross-sectional studies related to parental adaptation (cont.)

Authors	Years	Participants	Setting	Factors related to parental adaptation	Outcomes of successful adapted parents
Wachtel & Carter	2008	Mothers of young children with ASD	US	- Maternal interaction style - Maternal depression - Perceived child severity	Successful mothers' resolution regarding to - Accepting the diagnosis of their children - Incorporating the diagnosis into one's reality - Resisting self-blame
Clutterbuck	2009	Mothers and fathers of school-aged children with ASD	US	- ASD severity - Parenting efficacy - Parenting satisfaction - Marital functioning - Family cohesion - Family adaptibility	Parental well-being which was reflected by - Degree of stress - Degree of depression - Degree of anxiety
Samous, Pakenham, Sofronoff	2009	Parents of children with Asperger Syndrome	AUS		Parental adjustment which was reflected by - Degree of parental depression - Degree of parental anxiety - Satisfaction with life - Positive affect - Physical health
Stuart & McGrew	2009	Caregivers of children with ASD	US	- Perceived severity of children - Locus of control - Social support - Coping strategies - Appraisal of stressors	Maternal adjustment which was reflected by - Less in individual burden - Less in marital burden - Less in family burden

Table 2.7 Summary of cross-sectional studies related to parental adaptation (cont.)

Authors	Years	Participants	Setting	Factors related to parental adaptation	Outcomes of successful adapted parents
Ekas, Lickenbrock, Whitman	2010	Mothers of children with ASD	US	- Informal social support - Optimism	Maternal well-being which was reflected by - Positive affected mood - Life satisfaction - Psychological well-being
Lickenbrock, Ekas, Whitman	2010	Mothers of children with ASD	US	- Perceived child severity - Marital satisfaction	Maternal well-being which was reflected by - Negative affect - Positive affect
Milshtein, Yirmiya, Oppenheim, et al.	2010	Parents of children with ASD	Israel	-	Achievement of resolutions to diagnosis were reflected by - Feeling able to deal with situation (feeling oriented) - Taking action to deal with situation (action oriented) - Learning more about the child's condition and using information for helping them cope (thinking oriented)
Siman-Tov & Kaniel	2010	Parents of children with PDD	Israel	- Sense of coherence - Locus of control - Social support	Parental adjustment which was reflected by - Less in parental stress - Less in parental mental health problems - Quality of marital relation

Table 2.8 Summary of longitudinal studies related to parental adaptation

Authors	Years	Participants	Setting	Factors related to parental adaptation	Outcomes of successful adapted parents
Gray	2002	Families of children with autism (10 years study)	AUS	- Increase in manageability of individual with autism - Accessibility appropriate services - Increase in coping abilities in parents	Adaptation of families to situation were explained by - Improvement in parents and siblings health and well-being - Improvement in family's social experiences - Less impact of stigmatization or social rejection
Gray	2006	Parents of children with autism (8-10 years study)	AUS	.-	Changing of parental coping strategies overtimes

Table 2.6-2.8 demonstrated summary of studies from variety types of research designs that related to parental adaptation. Considered those studies together with the behavioral science theories cited above, some factors and outcomes were repeatedly remarked, for example, the factor of informal and formal social support, coping strategies in parents, well-being outcome in parents and parental life satisfaction. Then, the repeated variables were classified by their content and summarized into two topics of factors related to adaptation and the outcome of successful adapted parents as deeply clarified below.

2.3.2 Factors related to parental adaptation in the context of raising children with ASD

During the process of parental adaptation, there were some factors that related to parental adaptation for effectively raising children with ASD. Those factors had been considered in regard to (1) adaptation related factors and (2) contextual factors. More details were clarified as follow:

2.3.2.1 Adaptation related factors

Adaptation related factors referred to the group of literature suggested factors which reviewed by behavioral science theories and repeatedly cited by several previous studies as indicated in table 6-8 above that they were related to parental functioning and parental adaptation for raising ASD children. Each of those factors was individually explained its influence to parental adaptation as:

2.3.2.1.1 Child's severity and perceived child's severity

There were literatures considered the child's severity in terms of actual severity and perceived severity as significant factors related to parental outcome. For example, the study of Allik, Larsson, Smedje (2006) reported that the decrease of maternal well-being significantly related to degree of child's severity which assessed by the High-Functioning Autism Spectrum Screening Questionnaire (ASSQ). The study of Osborne, McHugh, Saunders, et al. (2008) indicated that severity of autistic symptoms increased level of parental stress. While the study of Davis & Carter (2008) determined the association between child's behaviors and parental stress. Their findings indicated that the deficit in child's social interaction associated with overall parental stress, parent-child relationship problems, and distress in mothers and fathers, while the deficit in communication and cognitive functioning were not uniquely associated with stress in mother and father of toddlers with ASD.

For the factor of perceived child's severity, some studied considered whether the professional perceived severity and parent perceived severity were similar. The study of Bebko, Konstantareas, Springer (1987) revealed that parents of older autistic children judged their child severity lower than reality while professionals always judged families as more stressed by the child's symptoms than did families themselves. The study of Kasari & Sigman (1997) reported the accuracy between perceived child's severity and actual child's behavior that parental perceptions of autistic child's behavior were more often linked to actual child severity.

However, some studies considered the factor of perceived child's severity as significant to parental outcomes. For example, the study of Lickenbrock, Ekas, Whitman (2010) reported the findings in mothers of ASD children that their perception toward severity of ASD associated with degrees of maternal well-being. The similar pattern of results also found in the study of Smith, Seltzer, Tager-Flusberg, et al. (2008). They conducted the research in mothers of adolescent with ASD and revealed that degree of maternal well-being could be predicted by factor of individual's severity.

2.3.2.1.2 Perceived social stigma

There was some studies indicated social stigmatization as one factor influenced on parental adaptation for raising children with ASD, for example, the study of Case (2000) cited that 'disabled children attract attention in public places, mainly in the form of stares and parents are significantly concerned'. The 10-year longitudinal study of Gray (2002) indicated that perceiving less impact of stigmatization or social rejection were found in well-adapted families of children with autism. While the study of Schall (2000) proposed the factor of feeling discriminated by community as one factor which was acting as external parental experienced and played its part in the cycle of raising children with autism.

2.3.2.1.3 Parental coping strategies

There were studies indicated the direct correlation between parental coping strategies and parental adaptation, for example, the study of Gray & Holden (1992) which reported that pattern of coping in parents of children with autism associated with their levels of psycho-social well-being. The study of Jones & Passey (2005), the study of Pakenham, Samios, Sofronoff in 2005 and the study of Stuart & McGrew (2009) reported the important of parents coping to their levels of adjustment for caring autistic children, especially less in parenting stress and less in parental mental health problems of anxiety and depression. The similar pattern of results was also found in study of Hastings, Kovshoff, Brown, et al. (2005) and the study of Meadan, Halle, Ebata (2010). Meanwhile, some other studies indicated the influence of parental coping strategies as mediated or moderated factor contributed to parental adaptation, for instance, the study of Dunn, Burbine, Bowers, et al. (2001) revealed that coping strategy was act as mediated factor between stressors on one side and parental outcomes on the other. As well as the study of Smith, Seltzer, Tager-Flusberg, et al. (2008) which indicated the influences of parental coping strategy as buffering factor for increasing levels of maternal well-being when they faces with stress. Moreover, there were longitudinal study emphasized coping strategies on parental adaptation, for example the 10-year longitudinal study by Gray (2002). His findings indicated that parents of children with autism reported their long-term improvement in well-being due to an increasing in their ability to cope with situation. While 4-year later, Gray (2006) reported the pattern of coping in parents of autistic children overtimes. However, it was surprising that one study from Higgins, Bailey, Pearce (2005) indicated the non-significant effect of coping to predict family functioning in families of children with ASD in Australia.

2.3.2.1.4 Parental personality: hardiness, optimism, and internal locus of control

Some studies highlighted on parental personal resources that showed their correlation with degrees of parental adaptation, for example, the study of Yau & Li-Tsang (1999) reported parental personality as important factor associated with parental adjustment and adaptation for caring disabled children. The study of Weiss (2002) found that maternal levels of hardiness could predict less mental health problems in mothers of children with autism and further indicated that level of hardiness in mothers of children with autism was significantly different when compared with mothers of children with mental retardation and normal development. Other studies had explored the relationship between different kinds of parental resources on their adaptation. For example, the study of Ekas, Lickenbrock, Whitman (2010), which collected data in group of mothers with autistic children in US, had indicated their findings that there was positive correlation between the ways to positively interpret situation or optimism and maternal well-being.

Some studies indicated the relationship between parental locus of control and parental adaptation, for example, the study of Dunn, Burbine, Bowers, et al. (2001) indicated the association between locus of control and parental outcomes. Their finding revealed that levels of internal locus of control was adversely associated with parental negative outcomes regarding to less in parental depression, social isolation and spousal relation problems in parents of children with autism. While the study of Stuart & McGrew (2009) reported an association between locus of control and maternal adjustment which reflected by less in individual burden, marital burden and family burden in caregivers of children with ASD. Another study, the study of Siman-Tov & Kaniel (2010) indicated the association between locus of control and parental adjustment in terms of less in parental stress, less in parental mental health problem and increased in quality of marital relationship.

2.3.2.1.5 Social support and network

Several studies reported the correlation between social support, mostly assuming to perceived social support to parental adaptation, for example, the study of Gray & Holden (1992) confirmed the significant correlation between social support and psycho-social well-being in mothers and fathers of children with autism. The study of Bristol (1987) reported the correlation among social support to in-home family adaptation, marital satisfaction and family cohesion. Other studies, the study of Pakenham, Samios, Sofronoff (2005), the study of Stuart & McGrew (2009), and the study of Siman-Tov & Kaniel (2010) reported the importance of social support to parental adjustment, less in parenting stress and less in parental mental health problems. Some studies had classified social support in terms of informal and formal support to degrees of parental adaptation, for example, the study of Weiss (2002) reported the adversely association of perceived greater informal and formal support to less in parental burnout. While the study of Yau & Li-Tsang (1999) and the study of Meadan, Halle, Ebata (2010) reported the associations among informal and formal social support for reducing stress in parents, increasing spousal relationship with mutual support for each other and increasing in well-being of families with ASD children. Specifically, the significant of informal social support was particularly confirmed. The study of Morgan (1988) indicated that informal social support from relatives, extended family members, friends, neighbors and other parents of handicapped children was associated with successful adaptation in families with autistic children. The similar pattern of results was also found in the study of Ekas, Lickenbrock, Whitman (2010). For the study, it was indicated that higher informal social support especially in terms of family support, partner support and friend support were positively associated with maternal well-being. Other than studies cited above, there were some studies highlighted the social support as mediated or moderated factors contributed to adaptation in parents, for example, the study of Wolf, Noh, Fisman, et al. (1989) indicated that perceived social support was act as moderator to suppress parenting stress and depression in group of parent with autistic children. As well as the study of Dunn, Burbine, Bowers, et al. (2001) which also reported the influenced of social support as the moderated factors acting in between stressors and parental negative outcomes, particularly in terms of lessening depression, social isolation and spousal relationship problems.

2.3.2.2 Contextual factors

The contextual factors were group of demographic variables that related to parental functioning and adaptation outcomes. For this research, the contextual factors included (1) demographic variables of ASD children, such as child gender, child age, child age at diagnosis, (2) demographic variables of parents, such as parent gender, parent age and parent level of education, and (3) family structure, such as single parent in family, two parents in family, extended family.

In summary, the key factors related to parental adaptation included the factors of (1) adaptation related factors, the factors that suggested by the behavioral science theories and repeatedly reviewed by numerous studies on ASD, for example, factor of perceived child's severity (Kasari & Sigman 1997; Allik, Larsson, Smedje, 2006; Osborne, McHugh, Saunders, et al, 2008), coping strategies (Pakenham, Samios, Sofronoff, 2005; Smith, Seltzer, Tager-Flusberg, et al, 2008), parental personality (Yau & Li-Tsang, 1999; Ekas, Lickenbrock, Whitman, 2010), perceived social stigma (Case, 2000; Schall, 2000; Gray, 2006), social support (Gray & Holden, 1992, Stuart & McGrew, 2009; Meadan, Halle, Ebata, 2010). (2) The contextual factors, factors of demographic variables that related to parental adaptation for raising ASD children, including the factors of child gender, child age, child age at diagnosis, parent gender, parent age, parent level of education and family structure. All those factors were determined as potential factors which could be added or removed according to real data with parents of ASD children in the process of data collection so far.

2.3.3 Outcomes of successful adapted parents

After achieving in the process of parental adaptation, numerous studies considered the outcomes of successful adapted parents which indicated by various aspects of parental health status and functioning, for example, the study of Yau & Li-Tsang (1999) indicated the outcomes of adjustment and adaptation in parents of children with developmental disabilities that they were skillful in problem-solving, strong spousal relationship with mutual support for each other, strong feeling of personal reward associated with parenting and clear in identifiable roles of fathers and mothers for caring disabled children. While the study of Hauser-Cram, Warfield, Shonkoff, et al. (2001) indicated the outcomes of adapted parents that included their ability to adjust family routine appropriated with disabled children routine and expertise in managing unique children behaviors and demands. The study of Walsh (1996) indicated the outcomes of successful adapted parents that included their abilities to maintain family function as become family cohesion, open communication and flexibility together with having better skill in problem-solving. Another concept paper, the paper of Arksey, Beresford, Glendinning, et al. (2007) categorized the desired outcomes in parents of disabled children that included (1) having high parental quality-of-life which was reflected by having identity of one’s own, having control over one’s life and maintaining physical and emotional well-being, (2) able to manage the parental roles by achieving a balance between time spent for caring disabled children and time spent for enjoying life, skilled in supporting and managing children behaviors, maintaining healthy family life by successful adjustment in sibling and marital relationship, and having opportunity for family activities similar to families with non-disabled children and (3) able to work with services effectively by having ability to work as partnership with professionals and having confidence in services. Other than exampled studies, there were several studies determined the outcomes of successful adapted parents which had been presented in table 2.6-2.8 above.

Since several studies as presented in table 2.6-2.8 indicated the status and functions of successful adapted parents with a mix pattern of results, it might classify and group them as follows:

2.3.3.1 Successful adapted parents should be able to cognitively and behaviorally raise their disabled children for better, for example, they were able to cognitively make positive meaning to disability and become optimism (Bayat,2007; King, Baxter, Rosenbaum, et al, 2009; Altiere & Kluge, 2009), perceived themselves as efficacy to parenting disabled child (Clutterbuck, 2009), accept to the diagnosis of their children (King, Baxter, Rosenbaum, et al, 2009; Wachtel & Carter, 2008), able to change the way to interpret the situation (Altiere & Kluge, 2009), able to behaviorally take action to deal with situation (Milshtein, Yirmiya, Oppenheim, et al, 2010), competence in parenting disabled children (Yau & Li-Tsang, 1999; Milshtein, Yirmiya, Oppenheim, et al, 2010), skill in problem-solving and willing to learn new coping behaviors (Montes & Halterman, 2007; Yau & Li-Tsang, 1999; Walsh, 1996; Milshtein, Yirmiya, Oppenheim, et al, 2010; Gray, 2006), expertise in supporting and managing unique children behaviors and demands (Arksey, Beresford, Glendinning, et al, 2007; Hauser-Cram, Warfield, Shonkoff, et al, 2001), able to effectively work as partnership with professional (Arksey, Beresford, Glendinning, et al, 2007) and able to expand intervention to improve children behaviors at home (Symon, 2005).

2.3.3.2 Parents should have parenting competency. They should be able to interact with their child (Kasari & Sigman, 1997; Ruble, McDuffie, King, et al, 2008), able to synchronized with their child’s attention and ongoing activity (Siller & Sigman, 2002), able to observe unusual behaviors since a child was in early ages (Johnson, Myers, The Council on Children with Disabilities, 2007), able to negotiate with professional to receive intervention tailored with child’s needs (Case, 2000), able to become co-therapist and mediate intervention at home (Sheinkopf & Siegel, 1998; Ingersoll & Gergans, 2007; Trudgeon &Carr, 2007), able to collaboratively work as partnership with professionals to enhance skills in children and support to families (Brotherson, 2001; Swick & Hooks, 2005). Some studies determined parental competence as a parental ability to deal with dynamic autism related behaviors overtimes (Siller & Sigman, 2008).

2.3.3.3 Successful adapted parents should be able to maintain their healthy quality-of-life, for example, having psychological and emotional well-being (Smith, Seltzer, Tager-Flusberg, et al, 2008; Ekas, Lickenbrock, Whitman, 2010; Arksey, Beresford, Glendinning, et al, 2007), less degrees of parental depression, anxiety and anger (Dunn, Burbine, Bowers, et al, 2001; Smith, Seltzer, Tager-Flusberg, et al, 2008; Gray & Holden, 1992; Clutterbuck, 2009; Samous, Pakenham, Sofronoff, 2009), satisfaction with life (Ekas, Lickenbrock, Whitman, 2010; Samous, Pakenham, Sofronoff, 2009), having positive affect toward disabled children and overall situations (Ekas, Lickenbrock, Whitman, 2010; Samous, Pakenham, Sofronoff, 2009; Lickenbrock, Ekas, Whitman, 2010), having physical well-being (Arksey, Beresford, Glendinning, et al, 2007; Samous, Pakenham, Sofronoff, 2009), having spiritual growth (Bayat,2007), lessening in degree of social isolated (Dunn, Burbine, Bowers, et al, 2001), and lessening in degree of perceived social stigmatization or social rejection (Gray, 2002). Moreover, the successful adapted parents were also able to maintain their healthy family life (Woodgate, Ateah, Secco, 2008; Wang, Turnbull, Summers, et al, 2004) indicated by well-adjustment in siblings of disabled children (Arksey, Beresford, Glendinning, et al, 2007; Gray, 2002), satisfaction with marital relationship (Dunn, Burbine, Bowers, et al, 2001; Risdal & Singer, 2004; Higgins, Bailey, Pearce, 2005), became family connectedness and closeness (Bayat, 2007; Higgins, Bailey, Pearce, 2005; Altiere & Kluge, 2009), and having strong parent-child relationship (Montes & Halterman, 2007). The family function as outcome of adapted parents were also involved with an improving in family's social experiences by having opportunity for family activities similar to families with non-disabled children (Arksey, Beresford, Glendinning, et al, 2007; Gray, 2002), achieving the balance between time spent for caring children and time spent for enjoying life (Arksey, Beresford, Glendinning, et al, 2007), and able to adjust their family routine appropriate with children routine (Hauser-Cram, Warfield, Shonkoff, et al, 2001).

From the suggestion of literatures, they revealed previous findings of parental adaptation outcomes regarding to status that successful adapted parented should have and functions that adapted parents should be able to perform. Those results from previous were considered and analyzed in order to identify outcomes of successful adaptation for the current research. As a result, the outcomes of successful adaptation included abilities of parents to perform parental functioning for raising ASD children, then adapted parents would have healthy one' own quality-of-life.

2.3.4 The significant variables and adaptation model from previous studies

There were numbers of studies determined significant variables and models relevant to situation with ASD. Some studies applied existing model and confirmed for their accuracy and generalization. One of the most popular existing models was the Double ABCX model developed by McCubbin, Joy, Cauble, et al. (1980). The model included components of stressors (A), existing resources (B), perception or appraisal to the stressors (C) and adaptation (X). Application of the Double ABCX model in research related to ASD, for example, the study by Stuart & McGrew (2009) examined factors of symptom severity, additional pile-up demand, social support and the use of passive avoidance coping strategies as strong predictors to caregiver burdens. Their study indicated the coefficient from factor of social support to degree of caregiver's burden for raising ASD children as $r = -0.69$, the coefficient from factor of social support to degree of marriage's burden for raising ASD children as $r = -0.45$, the coefficient from factor of social support to degree of family's burden for raising ASD children as $r =-0.59$ and the coefficient from factor of coping strategy as passive avoidance to degree of caregiver's burden for raising ASD children as $r = 0.60$.

Some studies applied the Mccubbin's model for identifying family effort to achieve level of maternal adjustment which reflected by less in mental health problems, having well social adjustment and physical health status, for example, the study of Pakenham, Samios, Sofronoff (2005) indicated the coefficient from factor of seeking support to parental social adjustment as $r = -.42$ while the coefficient from factor of coping strategy as behavioral disengagement to parental depression was $r = -.58$. The study of Siman-Tov & Kaniel (2010) determined the ABCX model's factors of social support, sense of coherence, internal and external locus of control to adjustment of parent in terms of less in parental stress for raising autistic child. Their findings revealed the coefficient from factor of internal locus of control to degree of parental stress in mothers of ASD children was r = -0.41, the coefficient from factor of social support to degree of parental stress in mothers of ASD children was r = -0.17, the coefficient from factor of sense of coherence to degree of stress in mothers of ASD children was r =-0.39, the coefficient from factor of internal locus of control to degree of parental stress in fathers of ASD children was r = -0.38 and the coefficient from factor of social support to degree of parental stress in fathers of ASD children was r = -0.29.

Moreover, some of the previous studies employed qualitative research method in order to determine parental adaptation process for raising children with difference types of disorder and children with autism. For example, the study of Drotar, Baskiewiez, Irvin, et al. (1975) explored the process of parental adaptation to the birth of a child with congenital malformation. Their finding indicated five stages, starting with the stage of shock when being informed about child’s disorder, then the second stage, the stage of denial toward the confirmation of child’s diagnosis. The third stage, the stage of sadness, anger and anxiety. The fourth stage, the stage of adaptation when parents gradually lessen of their anxiety and intense emotion reactions, increased their confrontation with the situation and increased confidence in their ability to start caring for children. Finally, the last stage, the stage of reorganization by receiving more rewarding level of interaction with disabled children, able to deal with children’ problems, and had long-term acceptance to the child’s diagnosis and situation. Some qualitative studies determined parental adaptation process related to raising ASD children, for example, the study of Altiere & Kluge (2009) examined the parental process for acceptance to children with ASD. Their result indicated five challenges steps of accepting, including steps of development, questioning, devastation, solution and growth. The review of significant variables and models from previous studies led us see the linkage of factors and adaptation outcomes in parents when facing with stressful situation as raising an ASD child.

2.4 The summary of literature and conceptual framework

In summary, children with ASD refer to group of children who are diagnosed in the umbrella of Autism Spectrum Disorder (ASD) or other term as Pervasive Developmental Disorder (PDD). There are five sub-disorders included in ASD (1) Autistic disorder, (2) Rett's disorder, (3) Childhood disintegrative disorder, (4) Asperger's disorder and (5) Pervasive developmental disorder- not other specified. Those ASD children present their significant impairments in areas of social interaction, communication and repetitive pattern of behaviors and interests (American Psychiatric Association, 2010). The degree of ASD severity is varied. Theoretically, classic autistic disorder is the most severity while Asperger's disorder is mildest. Moreover, ASD is unpreventable and long life condition (Stein, Ring, Shulman, et al, 2001, Seltzer, Shattuck, Abbeduto, et al, 2004). Children who are diagnosed as ASD in childhood continue to grow up with ASD in adulthood. Mostly, parent is the first person who notices unusual behaviors in their child and most of them reported that impairments of ASD seem not improve throughout children life span (Siperstein & Volkmar, 2004)

For helping children with ASD, previous studies had reviewed effectiveness of early tailored interventions that there were success in improving children skill and functioning, reducing severity of autistic symptoms and against the development of secondary problematic behaviors (Rogers, 1996; Valente, 2004). However, most of interventions for ASD children were implemented by professionals at autistic centers, it might not reach the full effectiveness due to some limitations, especially the limitation regarding to ability of parents to early notice unusual behaviors in their children, limited in knowledge about development of children with ASD, limited in expanding the practice to a child at home, limited in opportunity to access to services and limited in capacity to raise significant parental concerns to professionals (Johnson, Myers, The Council on Children with Disabilities, 2007; Crane, 2008).

When having ASD children in family, children with ASD had certainly impact on their parents, other family's members and family system as a whole. Several studies emphasized the negative impact from ASD children that brought to their parents, especially in domains of emotional and psychological functioning (Davis & Carter, 2008; Myers, Mackintosh, Goin-Kochel, 2009), social functioning (Dunn, Burbine, Bowers, et al, 2001, Myers, Mackintosh, Goin-Kochel, 2009), and overall parental quality-of-life (Lee, Harrington, Louie, et al, 2008; Shu, 2009; Benjak, 2011). Some other studies emphasized the impact of ASD children to functioning of siblings (Constantino, Lajonchere, Lutz, et al, 2006; Toth, Dawson, Meltzoff, et al, 2007), marital relationship (Rodrigue, Morgan, Geffken, 1990; Rodrigue, Morgan, Geffken, 1992; Toth, Dawson, Meltzoff, et al, 2007; Milshtein, Yirmiya, Oppenheim, et al, 2010), and family system as a whole (Myers, Mackintosh, Goin-Kochel, 2009). Moreover, since ASD was long life condition, the impact that ASD children had brought to their parents and families would continue overtimes.

However, the impact that each parent perceived, the reaction from parents to diagnosis of ASD children and the behaviors of them to functionally raise their ASD child were greatly varied from person to person. For unadapted parents, literature suggested that unadapted parents faced difficulties in accepting the diagnosis of children which led to poor abilities of family functioning and child raising activities. The unadapted parents also needed to face with emotional strain and less in their quality-of-life overtimes. While in adapted parents, they were able to positively reinterpret the situation related to ASD which led to the outcomes of accepting children diagnosis early. The adapted parents were also able to function for raising their ASD children with effectiveness and optimism together with having more positive emotional and high level of their own quality-of-life as the consequence. These differences of function between groups of parents, their personal health status and personal quality-of-life could be explained through the process of parental adaptation.

The process of parental adaptation could be explained by some behavioral science theories, particularly the transactional model of stress and coping by Lazarus et al. (1977 cited in Glanz, Rimer, Lewis, 2002) The Lazarus’s model stated the framework for evaluating the process of personal coping to stressful situation. The model emphasized on personal judgment of external stressors or threats and personal evaluation on their ability to manage or control over those stressors, then applied various types of coping including of coping efforts and meaning-based coping, in order to mediate person's appraisal of stressors to adaptation outcomes of emotional well-being, functional status and health behavior. The Lazarus's model also stated the importance of social and cultural resources as moderators that go between coping efforts, meaning-based coping and adaptation outcomes as well. This concept of Lazarus was pretty fit with the research objective. Moreover, there were some theories explained the reciprocal interaction between individual and environment that relevant to individual's desirable behavior and health status, for example, the construct of self-efficacy by Bandura or the construct of social network and social support by House. Furthermore, some parts of those theories were determined as practical application in several empirical studies within group of parents with ASD children. Their findings from several empirical works could be categorized in terms of factors related to parental adaptation and parental adaptation outcomes.

For this research, the factors related to parental adaptation included (1) adaptation related factors, the factors that suggested by the behavioral science theories and repeatedly reviewed by numerous studies on ASD, for example, factor of perceived child's severity (Kasari & Sigman 1997; Allik, Larsson, Smedje, 2006; Osborne, McHugh, Saunders, et al, 2008), coping strategies (Pakenham, Samios, Sofronoff, 2005; Smith, Seltzer, Tager-Flusberg, et al, 2008), parental personality (Yau & Li-Tsang, 1999; Ekas, Lickenbrock, Whitman, 2010), perceived social stigma (Case, 2000; Schall, 2000; Gray, 2006), social support (Gray & Holden, 1992, Stuart & McGrew, 2009; Meadan, Halle, Ebata, 2010). (2) The contextual factors, factors of demographic variables that related to parental adaptation for raising ASD children, including the factors of child gender, child age, child age at diagnosis, parent gender, parent age, parent level of education and family structure. All those factors were determined as potential factors which could be added or removed according to real data with parents of ASD children in the process of data collection so far.

After achieving in the process of parental adaptation, literatures suggested the finding of outcomes in adapted parents including (1) adapted parents should be able to raise their child for better (Yau & Li-Tsang1999; Hauser-Cram, Warfield, Shonkoff, et al, 2001; Altiere & Kluge, 2009; Clutterbuck, 2009). (2) Adapted parents should be able to maintain their healthy quality-of-life (Arksey, Beresford, Glendinning, et al, 2007; Bayat, 2007; Woodgate, Ateah, Secco, 2008; Samous, Pakenham, Sofronoff, 2009). (3) Adapted parents should be able to increase their level of parenting competency (Johnson, Myers, The Council on Children with Disabilities, 2007; Siller & Sigman, 2008). Those outcomes suggested by literature were determined as the guideline then they were confirmed with the real data from parents of ASD children later on.

Moreover, the review from literature led to objectives of this research which determined to develop the parental adaptation model in group of parents with ASD children. The model demonstrated association among influencing factors to parental adaptation outcomes in the context of raising children with ASD. For this regards, the techniques of qualitative and quantitative methods were employed within two main research phases. The first phase, qualitative method would be employed in order to identify influencing factors and parental adaptation outcomes in the context of raising children with ASD It had been run through steps of literature review and in-depth interview with parents and professionals. Then, the collected data were analyzed by means of theme and content analysis, and drawn the hypothesized model that demonstrated association among those influencing factors and adaptation outcomes. For the second phase, quantitative method would be employed in order to test the parental adaptation model and determine the coefficient values of the significant pathways from influencing factors to parental adaptation outcomes, in aspects of parental functions for raising ASD children and parental quality-of-life. This phase included five steps continued from the previous first phase starting with the development of instruments for assessing variables included in the model, pretest the quality of all the instruments, collecting data in research participants, analyzing collected data by means of descriptive statistic, t-test. F-test and correlation, analyzing the model by mean of path analysis and testing for model fit. The importance of developed parental adaptation model for raising children with ASD would suggest not only the significant factors, but also the suggestion for designing potential interventions to help either ASD children or their parents henceforth. Meanwhile, the hypothesized model which rearranged adaptation-related factors according to their content and the associations among those factors to adaptation outcomes would be demonstrated in figure 2.2.

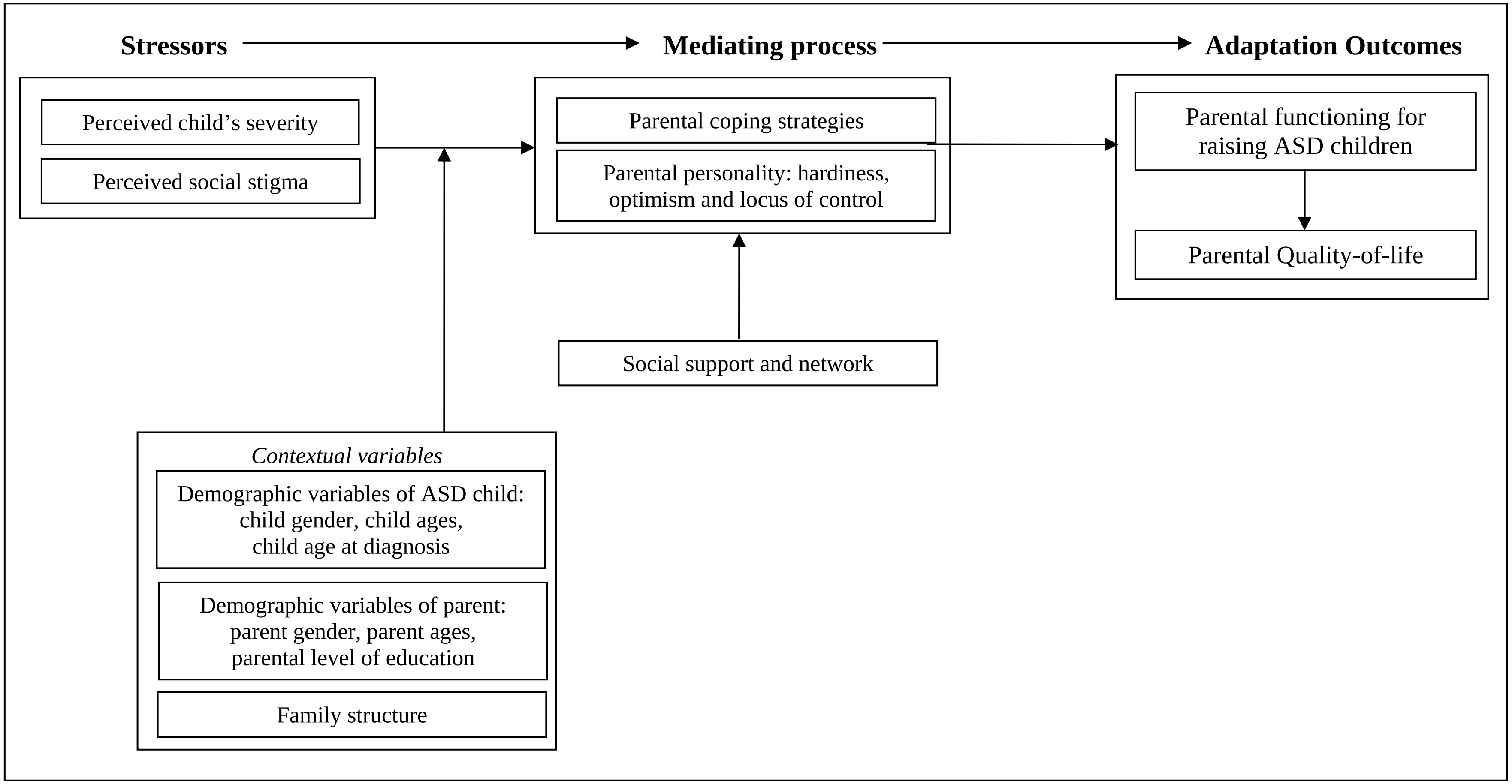


Figure 2.2 Demonstrated the hypothesized model suggested by the theories and literature

CHAPTER III
RESEARCH METHODOLOGY

The chapter covered content of research methodology that includes topic of research design, population and samples, instruments used for data collection, data analysis and ethical consideration to protect human subjects as clarified below:

3.1 Research design

The triangulated research design was applied for developing the parental adaptation model that demonstrated association among influencing factors to parental adaptation outcomes in the context of raising children with ASD. For this regards, the techniques of qualitative and quantitative methods were employed within two main research phases as follows:

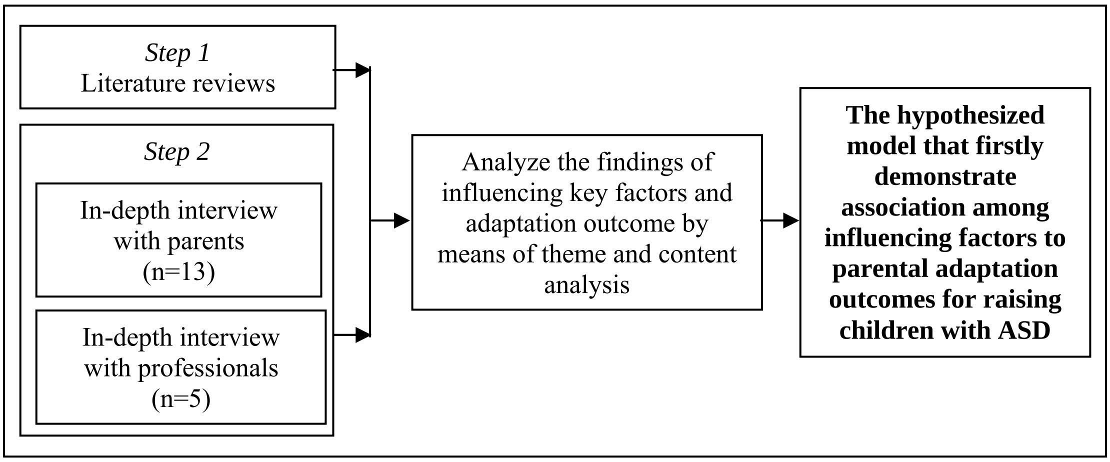
The 1st phase: Qualitative method would be employed in order to identify influencing factors and parental adaptation outcomes for raising children with ASD

The 2nd phase: Quantitative method would be employed in order to test the parental adaptation model and determine the coefficient values of the significant pathways from influencing factors to adaptation outcomes in aspects of parental function for raising ASD children and parental healthy quality-of-life

3.2 Research method

To develop parental adaptation model, the research method included seven steps within two main research phases. For each phase, the details of population and samples, research instruments, data collection and data analysis were deeply clarified. Meanwhile, the data collection plan which divided by each research phase was presented in figure 3.1 below:

The 1st phase: Identify influencing factors and parental adaptation outcomes for raising children with ASD



The 2nd phase: To test the parental adaptation model and determine the coefficient values of the significant pathways from influencing factors to adaptation outcomes in aspects of parental functions for raising ASD children and level of quality-of-life

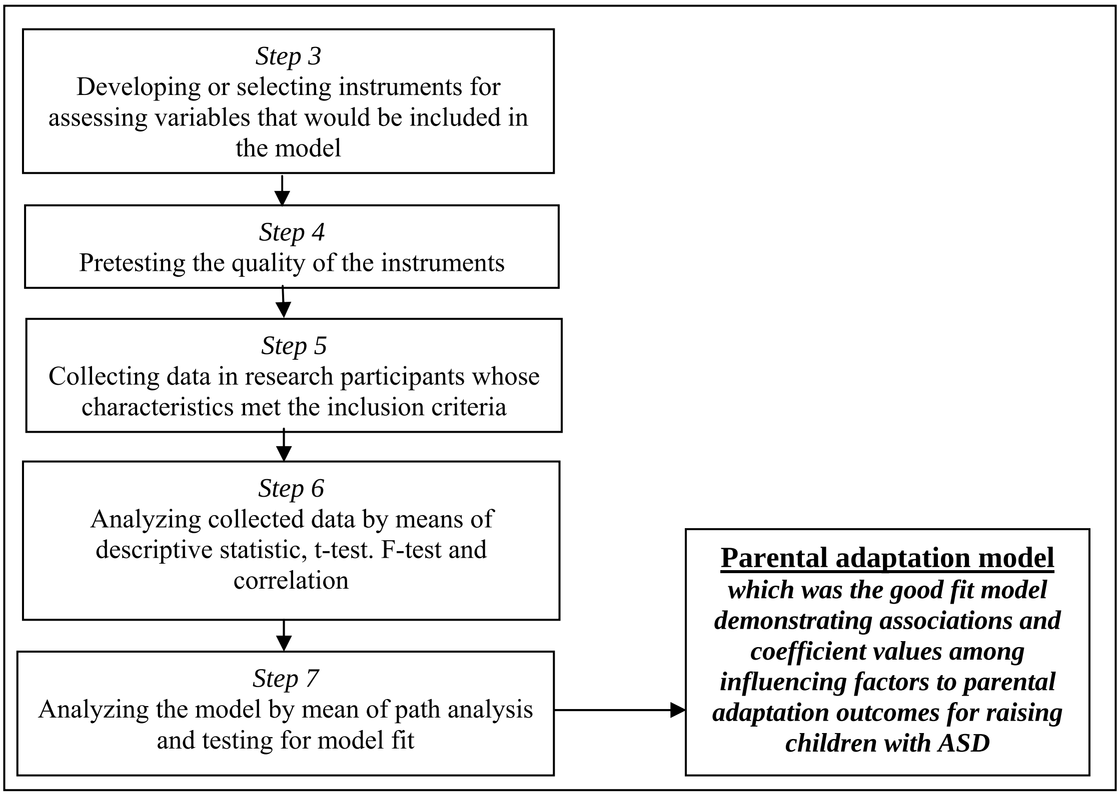


Figure 3.1 The data collection plan

3.2.1 The 1st phase: Identify influencing factors and parental adaptation outcomes for raising children with ASD

The first phase focuses on the process to identify influencing factors and parental adaptation outcomes in the context of raising children with ASD. For this phase, the steps of literature review and in-depth interview with parents and professionals were run through. The collected data were analyzed by means of theme and content analysis, then drawn the hypothesized model that demonstrated association among those influencing factors and adaptation outcomes. More details were described as follow.

Step 1: Literature reviews

At first, the key factors and outcomes that relevant to parental adaptation has been explored through the review of numerous literatures that primarily studied in parents and families with ASD children together with the review of behavioral sciences theories relevant to personal adaptation. Then, the repeated factors and outcomes from those reviews were considered in order to develop interview guideline for parents and parallel one for professionals.

Step 2: In-depth interview with parents of ASD children

The second step included step of in-depth interview with parents and professionals in order to indicate influencing factors and parental adaptation outcomes for raising children with ASD. For this research, thirteen parents were included by using snowball technique. Those parents were variety in their personal and family background. Then, all parents were interviewed with set of questions that mainly asked about parental experience toward raising ASD child in stage of pre-and-post diagnosis while their responses were analyzed by means of theme and content analysis so far.

In-depth interview with professionals

The research needed to validate the parental findings by adding professional views and experiences toward adaptation of parents for raising children with ASD. For this research, five professionals were included. All of them were interviewed with the set of questions parallel with questions for parents. The interview questions mainly asked about professional views toward parental adaptation for raising ASD child in stage of pre-and-post diagnosis. After that, those professional responses were analyzed along with responses from parents in order to develop the hypothesized model of parental adaptation.

Analyze the findings of influencing factors and adaptation outcome by means of theme and content analysis

The results from parents and professionals were analyzed by means of theme and content analysis in order to identify influencing factors and parental adaptation outcomes for raising ASD child. Moreover, those identified variables were considered for drawing hypothesized model that firstly demonstrate association among all factors to parental adaptation outcomes. For this research, the hypothesized model could be divided according to stage of pre-diagnosis and post-diagnosis, then testing for their model fit at the final.

Samples

In this phase, samples include thirteen parents and five professionals. All of them were recruited by using snowball technique which considered as a type of purposive sampling method. The method recruited first key-informant and he/she referred the researcher to other people within their social network who could potentially participate to the study and their characteristic met the inclusion criteria. Snowball technique was stated by Mack, Woodsong, MacQueen, et al. in 2005 that *"it was particularly useful when the population you are interested in was hidden and/or hard-to-reach."*

In this study, researcher applied the snowball technique to recruit participants or key-informants starting from the first case with mother who took an ASD child to receive special educational program at the Darakam primary school. The first mother was asked about who else she suggested for interviewing with, then referred to the second case and continued until covered all thirteen cases. All of key-informants who participated in this study met the inclusion criteria of:

(1) They were the main-caregiver of an ASD child and had relationship as mother, father, grandparent, uncle or aunt.

(2) They were raising an ASD child who were diagnosed by the doctor.

Within 4 months of collecting the data, there were 13 parents participated to the study, including 12 mothers and 1 father with range of parental ages was 35-51 years old.

For professionals, the snowball technique was also applied to recruit professionals who worked with ASD child and his/her family. All of them met the inclusion criteria of:

(1) They had professional training and graduated from qualified professional program

(2) They had experienced working with ASD and family either in government or private sectors

Within 4 months of collecting the data, there were 5 professionals participated to the study, including 3 teachers, 2 therapist. The average years of professional's working experience were approximately 20.

Instruments

There were two sets of interview guidelines that used as instruments for collecting the data. The first one was interview guideline for parents. The guideline included questions of, for example, *"How do you know your child had deviation?"*, "*How do you deal with that?"*, "*How do you feel with child's diagnosis?", "How could you pass through or deal with that situation after getting child's diagnosis?", "What things/factors do you think it is necessary for raising a child with ASD?", According to your experience, what your action/behavior toward raising a child with ASD?", "What are your expectation toward health system, community or society?"*,

The second set of interview guideline was developed parallel with the set of questions for parents. It was used for asking professionals which included questions of, for example, *"According to your experience, what parent feels about his/her child's diagnosis?"," How parent can pass through that crisis situation?", "Do parents perform any differences in parenting ASD child between before and after getting child's diagnosis?", "What things/factors do you think it is necessary for parents to raise a child with ASD?", According to your experience, what action/behavior parents should perform for raising a child with ASD?", "What are* *your expectation toward ASD child, their parents and family?"*, *"What are your expectation toward health system, community or society?"*,

Data collection

The data was collected through snowball technique in 5 different settings. The first setting was the Darakam School started by contacting with the school administrator and asked for their approval. The consent form and the ethical approval by the Institutional Review Board of Mahidol University were attached for consideration. The latest case at the Darakam School referred researcher to the cases at the second school, then the cases at the second school referred researcher to the third setting and continued so forth. Before collecting data in each setting, the contact with administrator and asked for their approval were made. Researcher also attached the consent form and the ethical approval for their consideration. Finally, the settings included in this phase were:

1. Darakam School: key informants were 2 parents and 1 teacher
2. Piboonprachasan School: key informants were 4 parents and 1 teacher
3. Sawangkaniwas Hospital: key informants were 3 parents and 1 therapist
4. Teacher Aor Therapy Center for Special Child: key informants were 1 parent and 1 therapist
5. Kasetsart University Laboratory School Center for Educational Research and Development: key informants were 3 parents and 1 teacher

Data analysis

The interviewed data collected from parents and professionals were analyzed by means of theme and content analysis in order to find out the parental influencing factors and adaptation outcomes for raising children with ASD, then drawing those associations among all variables as the hypothesized model. The hypothesized model was tested for their level of model fit in the next research phase so far.

The linkage of data collection from the 1st phase to the 2nd phase

In the 1st phase, the data collected through interview with parents of ASD children and professionals then analyzed the data with theme and content analysis. The outcomes from this phase were concluded in themes of factors related to parental adaptation and outcomes that adapted parents could be able to perform. Next, the instruments for assessing each theme were conducted in order to statistically test the themes, conduct the model, and test the model fit in the 2nd phase so far.

Results of the cases and questionnaire

In the 1st phase, the result from the cases of parents and professionals revealed themes of adaptation-related factors and outcomes. Each of the themes needed to assess with quality instruments for developing the model. If there was existing instrument matched for assess the theme, the existing one was selected. If the new questionnaire was needed, there were 6 steps to develop as described below:

Steps in developing the questionnaire, including the steps of:

1. Decided the question content by considered results of the cases from the research 1st phase
2. Choose a question type of dichotomous response and Likert scale in order to ask participants whether they perform the specific behavior in each item or not and in which extent do they satisfy with their performance
3. Develop the question wording according to each theme of adaptation-related factors and adaptation outcomes
4. Put question into a meaningful order and format
5. Check the length of the questionnaire
6. Pretest the instruments and revised if needed

To prepare the instruments for collecting data at the 2nd phase followed by the results of the cases, three instruments were needed. It included (1) the parental adaptation questionnaire which was the new questionnaire designed to assess adaptation-related factors and adaptation outcomes in parents with ASD children (2) the Problem-Solving Inventory (PSI) and (3) the WHOQOL-BREF test. The latter two instruments were selected from the existing instruments which their content matched with the themes.

All instruments were pretested for their validity and reliability before using with research participants. The validity was tested by three experts who were keen in the field of medical, psychological and social. The reliability was tested by the Cronbach's alpha which was .882 (ranged from .872 to .891) for the parental adaptation questionnaire, .772 for the PSI test, and .915 for the WHOQOL-BREF test. The detail of each instrument was deeply clarified in the topic of instruments for the 2nd phase so far.

3.2.2 The 2nd phase: To test the parental adaptation model and determine the coefficient values of the significant pathways from influencing factors to adaptation outcomes

The second research phase focused on the process to develop parental adaptation model which was the good fit model demonstrating associations and among influencing factors to parental adaptation outcomes for raising children with ASD. For developing the model, it included five steps continued from the previous first phase of developing or selecting instruments for assessing variables included in the model, pretesting the quality of all the instruments, collecting data in research participants, analyzing collected data by means of descriptive statistic, t-test, F-test and correlation, analyzing the model by mean of path analysis and testing for model fit. More details in each step were clarified.

Step 3: Developing or selecting instruments for assessing variables included in the model

All the variables/themes of parental adaptation factors and outcomes explored through the previous research first phase needed to be assessed and shown in the model. All those variables were assessed by items which scaling the variables into five levels of totally experience until never had that experience at all. While parental coping strategies was assess by using the Problem-Solving Inventory (PSI) and the parental quality-of-life was assessed by using the WHOQOL-BREF test.

Step 4: Pretesting the quality of all the instruments

This step involved the process of pretesting the reliability and validity of all instruments that being used in the research.

Step 5: Collecting data in research participants

In this step, the process of data collection that covered ethical consideration to protect human subjects was employed in group of parents with ASD children. Parents might be recruited from specific schools, hospitals or autistic centers but all of them needed to meet the inclusion criteria that specifically set for the research.

Step 6: Analyzing collected data by means of descriptive statistic, t-test, F-test and correlation

All collected data were analyzed by means of descriptive statistic in order to describe all variables, reflected by mean, standard deviation and percentages. The analysis by t-test and F-test were also done for finding the difference of demographic variables to parental adaptation outcomes in each stages of pre-and-post diagnosis. The correlation analysis was done for determining the correlation among adaptation related factors to adaptation outcomes in stages of pre-and-post diagnosis. Variables that shown significant in t-test, F-test or correlation were existed in the model and testing for model fit so far.

Step 7: Analyzing the model by mean of path analysis and testing for model fit

In this step, the hypothesized model which developed from the previous first phase and the results from correlation analysis were jointly determined in order to draw parental adaptation model. The model would be analyzed and estimated their coefficient in terms of the total effect, direct effect and indirect effect by means of path analysis and testing the model fit. The model might need to be modified in order to obtain the final good fit one that clearly demonstrating associations and predictive values among influencing factors to parental adaptation outcomes for raising children with ASD in each stage of pre-and-post diagnosis.

Population and samples

Population: the group of parents whose children were diagnosed as ASD

Samples: 303 parents whose children were diagnosed as ASD. They were all met the inclusion criteria specifically set in this research. Moreover, the sampling method and sample size calculation were also determined as follows:

Sampling method

The purposive sampling method was employed for recruit participant to the study. The main goal of purposive sampling was to focus on particular characteristics of participants (Mack, Woodsong, MacQueen, et al, 2005). Moreover, all participants recruited according to the inclusion criteria of

(1) They were the main-caregiver of an ASD child and had relationship as mother, father, grandparent, uncle or aunt

(2) They were raising an ASD child who were diagnosed by the doctor

Sample size

The adequate number of sample size was important, especially in considering the degree of statistical power for given statistical method. Theoretically, the definition of statistical power referred to the probability of correctly reject null hypothesis when null hypothesis was false and the power was denoted as (Chow, Shao, Wang, 2008):

$$\begin{aligned} \text{Power} &= 1 - \beta \\ &= \text{Prob. \{reject } H_o \text{ when } H_o \text{ is false\}} \end{aligned}$$

In order to determine degree of given statistical power, theory suggested some related issues for consideration (Hair, Black, Babin, et al, 2006; Maxwell, Kelley, Rausch, 2008). First, the degree of statistical power was related to statistical significant level set as the type-I error and type-II error. For their definition, type-I error (α) referred to the probability of reject null hypothesis when null hypothesis was true while type-II error (β) referred to the probability of failure to reject null hypothesis when null hypothesis was false. Type-I error and type-II error were denoted as:

$$\alpha = \text{Prob. \{reject } H_o \text{ when } H_o \text{ is true\}}$$

$$\beta = \text{Prob. \{fail to reject } H_o \text{ when } H_o \text{ is false\}}$$

Second, the degree of statistical power was also related to the estimation in degree of effect size. Theoretically, effect size (δ) referred to the estimation of degree to which the studying phenomena would be existed in the population. Lastly, the degree of statistical power was related to number of sample size in the study. At any certain level, increasing in sample size always produce greater power. However, the relationship among degree of statistical power, type-I error and type-II error, degree of effect size and the number of sample size were complicated. Some studies provided guideline for acceptable level of statistical power which was basically indicated by greater number of sample size together with the suggestion of type-I error of at least .05 and power of 80 percent (Hair, Black, Babin, et al, 2006; Maxwell, Kelley, Rausch, 2008).

When determining number of sample sizes in path analysis, several studies purposed the suggestion for computing lower bound on sample size required for a given model. Those suggestions were revealed as: (1) some studies indicated the designable number of sample size as rule of thumb which should be 10 observations per each factor/indicator. (2) Some studies calculated number of sample size in the model based on the specific rule, for example, the study of Comrey & Lee (cited in Tabachnick & Fidell, 2001) suggested that if n was 50, it led the model be very poor power, 100 was poor, 200 was fair, 300 was good, 500 was very good and 1,000 was excellent. While the study of Lacobucci (2010) suggested the designable number of sample size should be greater than 200 observations for leading the model be conservative and simplistic. (3) Some studies determine number of sample size as the ratio of observation per number of factor/indicator and provide the formula for calculating as $n = [p\ (p+1)]/2$; when p is number of factors/indicators in the model (Kline, 1998).

In this phase, the sample size could be calculated by the formula of:

$$\begin{aligned} n &= [p\ (p+1)]/2 \\ &= [19\ (19+1)]\ /\ 2 \quad = \quad 190 \end{aligned}$$

When p = number of factors in the model which equal to 19

From the suggestion of various aspects toward number of sample size required for testing the model, the conclusion for this current research would be at least 190 cases. While the actual participants who participated in this research were 303 parents whose children diagnosed as ASD and they were all met the inclusive criteria.

Instruments

There were 3 instruments used for collecting the data in this phase. Those instruments were:

1. The parental adaptation questionnaire

The instrument was newly developed for assessing the adaptation-related factors and outcomes in parents of children with ASD, The content of the test relevant to results of the cases from the research 1st phase. It included questions related to parental adaptation in the period of before getting informed about child's diagnosis (pre-diagnosis stage) and after informed about child's diagnosis (post-diagnosis stage). The test included yes/no question and five-Likert scale which asking participants whether they perform the specific behavior or not and in which extent do them satisfy with their performance. The questions of the test included, for example, "*which of the following make you stress or worry about? and how level of that stress?" "According to your experience, when you have stress who are the ones you thinking of, what kind of support that you need from them and what level of support that you receive from them?" "According to your experience, which of the following is process or mechanism that you use for dealing with your stress, and how effective of that process or mechanism?"*

2. The Problem-Solving Inventory (PSI)

This research applied the PSI test to reflect the level of parental coping strategy to solve with ASD related situation. The PSI was standardized test developed by Heppner and Petersen (1982). It was the self-reporting test used for measuring of problem-solving appraisal or an individual's perceptions of his or her problem-solving behavior and attitudes (Heppner, 1988). The test had already translated into Thai-version. Therefore, in the current study, the Thai-version of PSI test was used for reflecting level of parental coping strategy. The questions of the test included, for example, *"When I have a problem, I think of as many possible ways to handle it as I can until I can't come up with any more ideas" "When confronted with a problem, I stop and think about it before deciding on a next step" "Given enough time and effort, I believe I can solve most problems that confront me" "When faced with a novel situation, I have confidence that I can handle problems that may arise"*

3. The WHOQOL-BREF test

The WHOQOL-BREF test was the brief-version of WHOQOL-100 test developed by the World Health Organization in order to determine individual quality-of-life in general. The test was self-reporting and consisted of 26 items with five-point scales. Four domains were divided in WHOQOL-BREF test, including (1) physical domain referred to degrees of physical well-being and less in physical health problems and symptoms in individuals, (2) psychological domain referred to degrees of emotional and psychological well-being, less in emotional distress, and satisfy with life, (3) social domain referred to degrees of social function and satisfaction when individuals interact with others or when they participate in social situations and (4) environmental domain referred to the extent to which individuals perceive environment as support and warmth. The test had been translated into Thai-version. Therefore, in the current study, the Thai-version of WHOQOL-BREF was used for reflecting level of parental quality-of-life. The questions of the test included, for example, *"How satisfied are you with your health?" "How much do you need any medical treatment to function in your life?" "To what extent do you feel your life to be meaningful?" "How well are you able to get around?" "How satisfied are you with the condition of your living place?"*

<u>Data collection</u>

In this phase, data was collected with 303 parents whose children were diagnosed as ASD and they were all meet the inclusion criteria. All of the participants were collected from 5 settings, including:

1. Yawaprasart Hospital: 167 out of 200 participants (83.5%) return the questionnaire

2. Ramathibodi Hospital: 24 out of 60 participants (40.0%) return the questionnaire

3. Autistic Center at Chonburi Province: 37 out of 40 participants (92.5%) return the questionnaire

4. Special Education School at Nakhon Pathom Province: 44 out of 60 participants (73.3%) return the questionnaire

5. Kasetsart University Laboratory School Center for Educational Research and Development: 31 out of 40 participants (77.5%) return the questionnaire

All of the participants were informed about research objectives and benefits. Then they were asked for their willingness to join in the research and sign of consent form. For the parents at the hospital, the additional ethical approvals from those hospitals were also required together with the ethical approval from Mahidol University.

Data analysis

All collected data were analyzed by means of appropriated statistical methods clarified by their objectives as:

1. Descriptive statistic, including of frequency, percentage, mean and standard deviation were employed for describing all variables shown in the model of pre-and-post diagnosis stage

2. Cronbach's alpha were employed for testing the reliability of instruments.

3. Path analysis were employed for analyzing model and estimating coefficient values in terms of the total effect, direct effect and indirect effect

4. The chi-square test, GFI, CFI, NFI, RMSEA, and RMR were employed for testing the model fit with present data set

3.3 Ethical consideration

The ethical consideration required in the process of collecting data with research participants in order to protect them from any of physical and psychological harms. It was vital that the present research had to pass the ethical approval by the Institutional Review Board of Mahidol University before starting data collection. While collecting data in the real setting, it required that every single participant must be clearly informed about the research process either by plainly oral explanation or completely written description in the consent form. Moreover, the details which were clarified in the consent form needed to include (1) the background and experience of the researcher, (2) the objective and process of the research, (3) the assurance that participants were anonymous and their information would be confident, (4) the confirmation that participants were voluntary, (5) the confirmation that participants had right to quit the research at anytime they were willing to, without losing any benefits, (6) the affirmation of research's advantages and applications, and (7) the researcher's contact address and phone number in case of doubtable or emergency. Moreover, when collecting data in the government hospitals, the additional ethical approvals from those hospitals were also required together with the ethical approval from Mahidol University.

CHAPTER IV

RESULTS

The main objective of this research aimed to develop the parental adaptation's model that demonstrates association among influencing factors to parental adaptation outcomes in the context of raising children with ASD. In that regards, the triangulation research design was employed. The design included both qualitative and quantitative methods for depict the parental adaptation model and testing the model fit as a final result. More details of research finding were clarified below.

4.1 The 1st phase: Identifying influencing factors and parental adaptation outcomes for raising children with ASD

The qualitative method by in-depth interview with parents of ASD children and professionals were done for the purpose of identifying adaptation-related factors and outcomes. The finding of this phase could be divided into five parts as follow:

4.1.1 Case summary

4.1.2 Characteristic of key informants

4.1.3 Adaptation process in parents for raising children with ASD

    4.1.3.1 Factor related to parental adaptation

    4.1.3.2 Outcomes of adapted parents

4.1.4 Professional views toward parental adaptation for raising ASD

4.1.5 Hypothesized model of parental adaptation in the context of raising children with ASD

4.1.1 Cases summary

The data was collected by using in-depth interview with thirteen parents whose children were diagnosed as ASD. There were twelve mothers and one father with range of parental ages was 35-51 years old. All parents were recruited by using snowball technique starting from the first case with mother who took an ASD child to receive special educational program at primary school. She was 51 years old. She had five children and the youngest one was ASD. Her relationship with husband was not good since husband learnt about the child's diagnosis. Finally, they got divorced and she was a main caregiver to ASD son and addition two normal sons. She had a high-school graduation and owned a small grocery shop. At first, before getting diagnosis, she noticed that her youngest son acted weird when compared with his older brother. She consulted what she observed with her mother and a friend who worked at private hospital. They suggested her to take a child for diagnosis. A child was 2 years and 8 months when he was diagnosed as ASD. She got suggested by doctor that ASD needed treatment and skill training continuously. During the time of diagnosis, she was worried since she never heard about the disorder. She sought information related to disorder. Through that period, she was suffering when people staring at her son. Later, she learnt to accept the situation, take the ASD son to get treatment and training as schedule. When a child attended school, he got skill training from school teacher as well. Additionally, mother brought lesson from therapist and teacher to help practicing the child at home with hopefully it would enhancing in child's self-help skill. Having an ASD child influenced his mother to provide closely care. She thought if it was not her to provide the best care, who else could take this responsibility. If she died, she asked other sons to taking care of their youngest ASD brother. Moreover, mother sought more additional information related to ASD treatment, taking a child to practice with doctors and teachers, and sharing information with other parents who had ASD child as her. While her husband just provided partial financial support to the son.

The second case was a 41 years old mother whose ASD son was 16 years old. He enrolled in special educational program at a primary school. Her family included herself, husband, ASD son and younger normal son while mother was the main-caregiver to ASD. Mother had got no formal education and worked by open a small grocery shop. She mentioned that she had enough income for living and pay for

ASD related expenses. At the very first, mother had no idea what ASD was. She observed that her son was easy for caring and never got sick. Later, she observed some unusual behaviors in a child, such as no eye-contact, not speak, not response to sound, and hyperactive acts sometime. So she took a child to see a general doctor, and got referred to a specialist doctor later on. The child was diagnosed as ASD when he was 3 years and 2 months. He got medicine but didn’t get training at that time. When an ASD child turned into school ages, the mother took him to a private school but they refused to enroll him. So she took a child to another school nearby her home, that school teacher suggested her to take the child to another bigger school where provide classroom for children with special needs. At the time of receiving child’s diagnosis, the mother felt worried, specifically on the child’s future. How could her son continue his life without her caring? Later, she learnt from other parents to start accept situation and limitation of ASD and provide closely care to him. She decided to spend all time for caring ASD son while her husband was working harder to earn money. She thought she could provide care to the ASD until she die and ask the younger son to provide further care. For the expectation toward people in society, she expected more accept and understanding from them. Some people saw ASD as mentally ill person which was not true.

The third case was 41 years old mother whose ASD son was 7 years old. He was the only child in family. His mother and case usually spend time together because her husband often travelled abroad for business connection. Mother was the main-caregiver to ASD. She graduated from a vocational college. She decided to quit her job for taking care of ASD son while her husband still had a job to fund the family. During pre-diagnosis period, mother observed that a child was delayed in speaking and lack of interaction but nothing seems severe. When she compared her son with her relative at the same age, he also had a delayed speaking. So she didn’t feel much worry. Until getting to school, a teacher observed delayed development signs and suggested her to confirm a sign with doctor. She took her son to private hospital and got the child’s diagnosis as ASD. He needed treatment, practice and speech therapy for healing. At the time of getting diagnosis, mother was shocked and worried, especially on caring. She sought more information related to the disorder until pretty sure that it was not much severe in her sense. And it had many treatments for making a child recover. What she believed was endurance and full effort for caring an ASD child. She believed in Buddhist principle of confidence and endurance could solve any problem then she believed that an ASD child could be recovered. She tried hard by searching ASD information on internet and books, consulting with specialist and consulting with other parents who had ASD child. She took her son to get treatment and practice from many hospitals and employed many techniques for healing ASD, such as using oxygen, sensory integration technique. She expected her son could recover which meant ability to caring himself, making comprehensive communication with others, and able to study in class. The positive attitude and endurance led parent for caring and enhancing development of a child thereby. Moreover, she took a child to register as handicapped person and getting some privilege of medical and treatment fee. Mother also expected government to pay more attention for helping this group of children so far.

The fourth case was 33 years old mother whose ASD son was 7 years 6 months old. He was the only child in family and mother was main-caregiver to him. Mother graduated primary school and worked by open small grocery. When a child was 1 year and 6 months, mother took him to general public hospital since noticed signs of not response and not speak in a child. The general doctor referred him to another specific public hospital and he got actual diagnosis as ASD from there. Specialist doctor suggested mother taking a child to autistic foundation for practicing. She took a child to foundation and practiced there around 1 year. She mentioned that she was able to accept the diagnosis even it was difficult at very first knowing. She took a child registered as handicapped person for getting privilege of medicine and treatment fee. At home, she observed that her ASD child performed nearly normal, except sign of speaking with himself and not interacting with others that still weird. However, mother mentioned that a child became better and better when he grew up. Community members also understand her situation and understand an ASD child. They were all accepting when mother told that a child was not normal since her family lived there for many years.

The fifth case was 36 years old father whose ASD child was 7 years and 4 months old. He was only child and was treated by both father and mother, while father was the main-caregiver. Father’s job was motorcycle taxi. He got fairly income but mentioned about high expense for ASD. At first, before getting diagnosis, he observed some unusual child's behavior, such as not speaking, speaking but not flowing and hyperactivity. Father felt tired for raising a child. When a child was 2 years old, he met general doctor as schedule but doctor referred him to specialist doctor. Later, a child was diagnosed as high-functioning ASD. Doctor also suggested father to take care of child's weight since he was pretty fat. When getting to know child's diagnosis, father mentioned that he could be able to accept since there were cases with more severity than his son. But it had impacted on his job. He could not spend full time working since he needed to take care of a child. Mother was working outside Bangkok and support partial money for caring. Father got suggested from other parent about autistic foundation and he took his son practicing there for a year. He observed that his son had pretty much improved, especially on adjustment and social skill. For father, he said he gained more information about disorder when reading, attending meeting at the foundation, and sharing with other parents. Now, his son attended at specific school. Father also took a child registered as handicapped person for getting medicine, treatment, and school cost for free. Moreover, father took part as protestor asking government for attention and giving privilege for person with ASD.

The sixth case was 37 years old mother whose ASD child was 10 years old. He was the second child and mother was main caregiver to him. Mother graduated from vocational college but she did not work. Main income came from father. Before diagnosis, mother observed some unusual behavior in a second son which different from his older brother. Her son always ignored others, not play, and not speaks. When a child was 3 years old, mother took him to see doctor at private hospital. General doctor suggested mother taking a child to specialist at specialized hospital. A child was diagnosed as ASD from there. When knowing diagnosis, mother felt shock, stress and crying a lot. Father was the one who encourage her to accept and find places for treating ASD. Mother, herself, also searching information related to disorder and treatment. Later, she took a child to receive treatment, speech therapy and enrolled in specialized educational program. Mother also brought lesson from school and practice with a child at home. Nowadays, mother observes development in a child, such as he could help doing house chore or obeying to the order/command. Mother expected a child for self-help care, able to live independently and got acceptable. She also mentioned about the acceptance from people in society and the support from government.

The seventh case was 35 years old mother whose ASD son was 3 years and 8 months. Her family included herself, husband, ASD son, daughter and husband's sister. She graduated bachelor degree and was the main caregiver to ASD. She used to work but decided to quit since getting child's diagnosis while only father still working. However, they hadn't got financial problem. During pre-diagnosis, mother noticed unusual signs of delayed speaking, not crawl, not point when need a thing. When a child was 2 years and 6 month, she took a child to get vaccine as schedule but doctor referred her case to specific hospital. A child was diagnosed as ASD from there. At very first knowing child's diagnosis, mother felt shock, crying and could not accept since he was the first son in Chinese family. It was high expectation to him. Doctor told the disorder might develop since pregnancy and that led mother felt guilt. Mother had no idea what ASD like and how severity it was, so she sought information related to disorder on internet, read many books, joined a group with other parents and consulted with the therapist. Therapist gave her an emotional support and encouraged her to move on. She told mother that there were cases that were more severe than her son and it had many treatments for helping ASD. Three months after diagnosis, a child was treated at public hospital. Then move to autistic private center further on. Mother thought ASD child needed closely care and practice from parent so she brought lesson from therapist to practice her child at home every day.

The eighth case was 44 years old mother whose ASD son was 11 years and 8 months. He was only son in family and mother was main-caregiver. Her family included herself, ASD son, two uncles, grandmother and husband who often traveled abroad for business connection. Mother graduated bachelor degree and quit a job when knowing a child's diagnosis. Husband was still working and mainly family income came from him. However, they didn't face with financial problem. Before a child was 1 year and 6 month, mother noticed unusual signs in a child since she used to raise nephew. She noticed that a child was not play with others. When grandmother took care of a child, she often left him with television. Mother thought her son could not play because all family members were adults and grandmother didn't closely care of him. So mother decided to take a child to pediatric doctor at a clinic, and then referred to specific hospital. Doctor diagnosed her son as ASD. He needed evaluation and treatment for healing. During the first three months after knowing child's diagnosis, mother felt depressed, low esteem and felt that she could not cope with situation. Later, she began to search more information related to disorder, read many books, observed a child, and contacted specialized hospital for ASD treatment. She thought that the continuity of practicing could enhance child's development. Beside, parent needed to be patient and endurance. They needed to practice a child at home every day. At that time, mother decided to not contact school since she noticed a child was still agitated, hyperactive and not speak out when needed. She decided to take a child for receiving several kinds of skill training and intervention, joining group with other parents. She shared her experience in group and got suggestion from other parents which led her thought that the situation was difference in case-by-case. When a child was at school-ages, she contacted school for him. She faced difficulty when finding school match with her need. Some school teachers looked down at her son and rejected. Finally, she found small private school nearby her home that was willing to take care of her son. Since raising ASD was stressful, mother spent her free time with relax activities, such as singing karaoke, massage, and shopping.

The ninth case was 38 years old mother whose ASD son was 12 years old. He was the second child in family and studied in public primary school. Her family included herself, father, older son, younger son with ASD, grandfather and grandmother. Mother was the main caregiver to ASD. She graduated bachelor degree and quitted her job when being informed about the child's diagnosis. Her husband was only work for family but they didn't get financial problem. At first, mother observed that the development of the first and the second child was difference. The younger one had no eye-contact, not response when called, and not make any sound. When he was a bit growing up, he could not wait, agitate, hyperactive and still had no eye-contact. Mother felt wondering with unusual, so she brought many books for gaining information about child's development. Approximately 1 year later, she took a child to get vaccine. The general doctor observed unusual signs in her son. Then he referred a child to the specialist for getting actual diagnosis. A son was diagnosed as ASD since he was just 1 year old. Mother felt shock and depressed with diagnosis. However, what she thought was finally she needed to accept and finding the best treatment for him. It was her responsibility to take good care of her son. He should not be burdened to others and society. So she decided to quit her job and took a child for practice. An ASD child was practiced in many places, 7 days/week. Mother also brought lesson from therapist and practiced with a child at home. She thought, the practice increased of a child's self-help skill and used less of medicine. She expected her son could be able to live independently, have some career and not be burden. When a child was school-ages, she contacted school for him. She preferred small public school nearby her home and taught lesson before a child got into class. However, since an ASD was hyperactivity, mother believed that he could study in class but teacher needed to take closely care of him if possible.

The tenth case was 44 years old mother whose ASD son was 13 years old. He was the only child in family and mother was main caregiver. Mother graduated from vocational collage. She decided to quit her job and spent time for caring a child. Her husband was working and family had no financial problem. During pre-diagnosed, mother observed that a child did not have eye-contact, love to play with the same toy, and very fascinated with spinning toys. She felt wondering about this. When a child was 3 years and 6 months, mother took him to doctor and he got diagnosed as ASD since then. That diagnosis of a child heightened worry in mother and family. They worried about how did a child live without caregiver?. So every family activities needed to adjust according to ASD son. Fortunately, her and her husband always emotionally sharing and fight all the way together. They started by searching information related to disorder and treatment, finding parents who had child with ASD for sharing, contacting hospital or center for child's practicing. Moreover, mother and father figured out the way for helping a son. Mother also taught and practiced a child at home. She expected that her child could live independently and able to live in society as nearly normal. For social expectation, mother felt that she was embarrassed by autism sometime. She expected social to accept people with ASD and expected school to provide programs and techniques for enhancing skills of an ASD child case-by-case.

The eleventh case was 42 years old mother whose ASD son was 8 years and 8 months. He was only child and family just included mother, father and an ASD son. Mother was the main caregiver to ASD. She graduated master degree and used to work at government agency. She decided to quit her job when being informed about the child’s diagnosis and spent all time for caring him. At first, before diagnosis, mother observed some unusual behaviors when a child was approximately 1 year old. She noticed her son had delayed speak, less of words when compared with children at the same age. She didn’t observe any other signs at that time so she felt just a little worry. However, she decided to take a child to doctor when a child was 1 year and 6 months. Doctors diagnosed a child as children with delayed speech. Later, her son presented signs of lacking social interaction, communication, concentration and performing repetitively. She decided to take a child to doctor again and, at this time, doctors diagnosed a child as ASD. Her and her family was so much stress about the diagnosis, especially mother. She discussed her frustration and stress with father but he did not fully understand the situation of a child and herself. She felt tired since she needed to closely care of a son alone. When raising a child, she needed to give an order many times for making a child understand. She felt suffering with the disorder of a child. Later on, she thought she should find the way for moving through this difficult situation, starting by accepting and reducing expectation for a son. She also attended religion activities, such as praying, meditation and reading many books related to moral principle. She also did relaxation by shopping, watching movie, sharing with other parents who had ASD child, consulting professionals and therapists. Mother believed that in the bad scenario, luck still happens. Some other parents were worse than her case, especially in cases of facing with financial problems or had no family support.

The twelfth case was 37 years old mother whose ASD son was 8 years old. He was the second child and family included mother, father, an older brother and a child with ASD. Mother was the main caregiver. She graduated master degree and quitted a job when being informed about the child’s diagnosis. Father was only working but family didn’t face with financial problems. During pre-diagnosis, mother was working and left a child with servant. When a child was 1 year and 6 months, mother observed that a child could not response to sound, love spinning toys (e.g. fan, wheel), delay speak, and reject hug. So mother decided to take a child to doctor and doctor diagnosed a child as ASD when he was 1 years and 8 month. After knowing a diagnosis, mother decided to quit a job and spend all the time for caring of a child. She put her effort to accept diagnosis and find techniques for training and practicing a child. Mother thought he was her son so she should practice him. At least, he could be able to communicate face-to-face, tell what he needs and response as order. Mother mentioned that her and her son's life were just around home and hospital. While the autistic service was quite expensive so she brought lesson in class and practiced a child at home. Moreover, mother mentioned about understanding from people in society. Autistic child was difference from mental retardation so people should not act to a child with ASD as if he was an alien. School teachers and friends were also needed to understand and respected him as human.

The thirteenth case was 39 years old mother whose ASD son was 8 years old. He was the second child and family included mother, father, an older brother and a child with ASD. Mother was main caregiver to him. Mother graduated bachelor degree and family didn't got financial problem. When a child was baby, mother mentioned that she raised him as usual. Until a child was 1 year and 8 months, she observed that a child could not speak a sentence, just came out only word-by-word and that looked difference from other children at the same age. When he went outside, he always agitate and hyperactive. At first, mother and father were unsure and doubtable. So they decided to take a child to doctor. He got diagnosis as ASD when he was 2 year and 6 months. When getting confirmation by doctor, the frustration with child's behaviors was disappeared but shock. Mother mentioned that she needed to spend her time for closely care to a child and take him to practice at autistic center regularly. The child's diagnosis impact on her career, therefore, she decided to quit her job so that she had more time for caring him. Mother believed that training and practicing led to improve child skills. She believed in her child that he could be recovered. Up to now, mother mentions about development in a child that his behaviors are nearly normal, except of emotional controlling sometimes.

4.1.2 Characteristics of parents and ASD children

The characteristics of parents whose child was diagnosed as ASD, they were 12 mothers and 1 fathers which parental age ranged from 35 to 51 years old. Most of them graduated at bachelor's degree, three of them graduated from secondary school, two of them graduated from primary school, two of them graduated above than bachelor's degree while only one of them had no education. Five of parents were still working/employed while other eight of them were not. When determining the numbers of children in family, most of parents had only one child who was diagnosed as ASD, four of them had ASD child and one sister/brother, while another one parent had five children in family. Mostly, parents were staying together as two-parent family structure, two of them were single-parent family, two of them were staying as extended family and another one of them living as three-generation family. Nearly all of them still had married status while other two parents were getting divorce. Since all ASD children were male, then twelve parents had relationship as mothers-and-sons, while another one parent had relationship as father-and-son. More detail of characteristics of parents whose child were diagnosed as ASD was presented in table 4.1.

Table 4.1 Characteristics of parents collected through interview technique

Characteristics of parents	**n**
Key informants	
Mothers	12
Fathers	1
Educational level	
None	1
Primary school	2
Secondary school	3
Bachelor degree	5
Above than bachelor degree	2
Working at the present time	
Yes	5
No	8

Table 4.1 Characteristics of parents collected through interview technique (cont.)

Characteristics of parents	**n**
Numbers of children in family	
1	8
2	4
5	1
Family structure	
Single-parent family	2
Two-parent family	8
Three-generation family	1
Extended family (included parents and other relatives, except grandmother or grandfather)	2
Marital status	
Married	11
Divorced	2
Relationship to child with ASD	
Mother and son	12
Father and son	1

Characteristics of ASD children

The thirteen ASD children were included into the analysis which their age ranged from 3 years 8 months to 16 years old. The age at the child's diagnosis ranged from 1 year to 3 years and 6 months old. All of them were males, six of them were studying at kindergarten level and seven of them were studying at primary school. Most of them were only-one-child in family, two were the first child, and another two were the second child. The exceptional one case was the fifth child in family. Out of thirteen ASD children, eight were taking medication as prescribed by doctor, Regarding to the seeking services, all parents reported that their child received some kinds of intervention, such as behavioral therapy, speech therapy and enrolling in school at the present time. More detail about characteristic of ASD children was presented in table 4.2.

Table 4.2 Characteristics of ASD children collected through interview technique

Characteristics of ASD children	**n**
Age (Min = 3 years 8 months, Max = 16 years)	13
Age at diagnosis (Min = 1 year, Max = 3 years 6 months)	13
Gender	
Male	13
Female	0
Educational level	
Kindergarten	6
Primary school	7
Ranking in the family	
Only child	8
The first-rank child	2
The secondary-rank child	2
Other	1
Taking medicine	
Yes	8
No	5
Receiving treatment	
Yes	13
No	0
Attending school	
Yes	13
No	0

4.1.3 Adaptation process in parents with ASD children

The interviewed data from all thirteen parents were repeatedly reviewed in order to find common key factors and outcomes related to adaptation process of parents in raising ASD child. Content and theme analysis were applied. Data revealed that process of adaptation depended upon the time or stages when parents faced with many types of the problems such as child development problem, diagnosis problem, adjustment problem, and seeking service support problems. Therefore, the results categorized according to adaptation related factors and outcomes in stage of pre-diagnosis and post-diagnosis. More details described below.

4.1.3.1 Factors related to parental adaptation

Data suggested difference of adaptation related factors according to stage of pre-diagnosis and post-diagnosis.

Stage of pre-diagnosis

When asking parents with the question of *"How do you know your child had deviation?"* and the question of "*How do you deal with that?",* response from parents included finding when parents were facing with difficulty in child's development, seeking information about child's unusual behavior and development, and seeking support from ones within and outside network. The details indicated below.

Perceived child's unusual behavior and development

Some parents reported that they could observe something wrong with their child even they had no idea what it was. The example of mother's response such as

"I could observe. My son didn't talk. When he was at school, he didn't play with friends at all. He loved to keep himself quiet in the corner of the room. And he didn't cry or calling for any attention at all."

"I noticed that my son kept away from me. I worked and back home and played with him, he turned his back to me. I touched on his toy, he didn't say anything but he walked away."

"He loved to watch television, especially the commercial ads. Just watch, didn't speak, and didn't even make any sound. If someone said hi with him, he always kept away."

Some parents compared behaviors of their child with behaviors of other child at the same age, for example,

"I didn't know what my child was. All I knew was he acted differently from his other brother. Their development was different. That made me wanders."

"Although he was my first child but I used to raise my relative. Then, I could observe something unusual. My child didn't talk and play. At first, I just thought did that because all of family's members were adults? So he didn't know how to interact. But, later it was still weird."

"My son had delayed speak. I could notice and compare with our relative at the same age. But grandmother told me about his delayed that it was typical for boys. Boys always had delayed speak but they would be as normal later. His father also had delayed speak when he was at his son age. But, in my sense, this was not normal at all."

Seeking information about child's unusual behavior and development

About three out of thirteen parents reported that their capacity to detect unusual child's behaviors was due to their parental knowledge about child's development even they might not be in medical field. The parental knowledge might originate from their educational background and/or their career background. Some parents search information about child's development since pregnancy. Then compared what they knew with their child.

"He was my first son and my family was Chinese. We were very happy. During that time, I brought many books about how to treat a child. That's why I had some knowledge about child's normal development since then. When my son was born, I treated him as book suggested but he looked different and more different when he grew up. Finally, I just thought it might have something wrong. I consulted with my husband and took my son to hospital."

Seeking and receiving support from someone within and outside network:

Support from spouse

During the period of questioning and frustrating, some parents reported that they shared emotional and feeling with spouse, for example,

"I and my husband spend the difficult time together. That was so sad and it was worst if he won't encourage me. He said we would find out the way for helping a child. It must have a way."

"I was totally wonder what's wrong with my child. I talked with my husband. He also noticed unusual as well. He search information on internet and found information about autism. At first, we didn't know what it was but seem like our child had most of signs recommended in the website. And the website mentioned about the hospital that provided services for autism. Next week, we went to the hospital together and my son got diagnosis as autism really"

Support from one in medical field

Some parents moved through their feeling of wondering and doubt by receiving support from ones in the medical field. One mother told that *"We were lucky. One of my older brothers was doctor. He came to visit us at home and met my son. He told me that my son was weird and should take him to get an evaluation at the hospital as soon as possible."*

Four out of thirteen parents reported that they just took a child to get vaccine as scheduled. But physical doctor noticed something wrong. Then, they suggested parents and referred a child to specialists for getting additional evaluation tests and diagnosis. While another parent reported that they received support from their relative together with physical doctor at almost the same time.

"I observed something weird in my son and consult with my older brother who was a doctor. He suggested me to take my son to get actual diagnosis. I didn't take my son at that time. But later on, just about 2-3 months, it was time for getting vaccine. When I took my son to physical doctor, she observed my son and checked his development. Then she told me that my son was not as normal. He might have autism and should take him to specialist for getting actual diagnosis."

Stage of post-diagnosis

The finding in-between diagnosis and post-diagnosis could be analyzed together. When asking parents about "*How do you feel with child's diagnosis", "How could you pass through or deal with that situation", "What are your expectation toward health system, community or society",* response from parents included finding of raising worry and negative emotion when informed about child's diagnosis, facing with feeling of misunderstanding from society, turning to accept the situation, redefine meaning and finding positive aspects from ASD related situation, use of religion and spiritual principle, seeking information about disorder and treatment, seeking and receiving support from ones within and outside network

Increased of worried and negative emotion when being informed about the child's diagnosis

When parents took their child to the doctor and learnt that their children had ASD, all parents reported that they were emotional-affected (such as, emotional distress, sad, depress or shock) even some parents said the child's diagnosis was not beyond their expectation, for example,

"At first, when doctor told me that my child had autism. I was shocked. I didn't exactly know what it was but it seems very serious condition."

"I had never ever known about ASD, but I had heard the autistic. Did they be the same condition? Did ASD be infectious disease? How it severity? What would be next? Many questions came out. It was the really difficult time for me and my family and it was absolutely stressed."

"Firstly, I got shocked when knowing my son's diagnosis. Later on, about three months later, it seemed like I had depressive symptoms. I cried a lot. Actually, I didn't feel guilty but disappointed with myself that I could not do anything to help my son."

One mother cried during the interview *"When I knew my son's diagnosis, at first, I got shocked and cried. It was unbelievable. He was my first son in the family. The expectation for him was very very high, especially in the Chinese family of us. Moreover, since the doctor said the ASD disorder was onset during pregnancy, then it* *would be me that making a child sick. It was my fault to make him sick, wasn't it?"* In this case, participant ventilated their emotional distress and feeling guilt at the time of interviewing.

Likewise, there was another case reported of feeling quilt. She thought, it was her fault for making child become autism. *"It might be my fault. If I and his father were talkative persons, my son could be able to talk and won't be like this."*

Additionally, one mother reported of feeling angry when got informing about the child's diagnosis. She said "*When doctor told that my son had autism. I felt questioning. Why it happened to me. He was my fifth child and no one had this ASD condition. Everyone was normal. Firstly, I thought I was going to sue doctor for making my son's disorder. I was angry. I paid for special care during the time of pregnancy but the abnormality still happened."*

Nearly half of participants reflected that they were much more worried about child's future, for example,

"I and my family were very worried about our son's future. How could he live without someone who closely took care of? All the activities needed to be for him at first."

"I was afraid and so much worried about future. When my son grew up, how could he live? Did he able to take care of himself? Did he able to survive in the society without anyone who was willing to be with him?"

"My son was grown up now, what I had seen was quite different from when he was very young. He became more independent and he had more energy. I was worried that when he became teenager, who could control him? If he was upset, who will take care of him? My concern was also included sexual behaviors as well. Even he was autistic, but he still had the sexual impulse as others. I knew and it absolutely confirmed by doctors and other parents who had autistic child as me."

There were parents reported their worried about how to do well-caring for ASD child, for example,

"I had to keep my eyes on him all the time. I was worried that if I ignored him just for a second, he might have an accident"

"I had to be with my son all the time since he got up until went to bed. All my worry was about treat him as good as I could."

Furthermore, there was one mother told that she was a lot worried about parental role and responsibility.

"I was mother and it was my responsibility to take care of my son. If it was not me, who would take care of him? His father was not able to treat of course."

While another one father reported that he was worried about other physical problem of a child. He said *"My son was fat and he also had autism. I tried to manage his menu in every single meal. He had high cholesterol and doctor needed me to control of. Sometime, I took my son to play and exercise, such as, when he told me he likes to play football, I played with him. Exercise was also useful for weight control. It was also great when we did activity together which might help enhancing his social skill, I thought."*

While some other parents reflected their worried related to health care and education service payment and financial burden for raising ASD child, especially parents with low socioeconomic status. One mother said "*I don't know how to find additional money to pay for child's treatment and special educational fee."*

Six mothers reported that they needed to quit a job and spent all their time for ASD in particular, for example,

"I needed to quit my job and stay home for taking special care to my son. Just left my husband works. Then, we needed to very careful about paying."

"It was affected a lot with my career. I could not have full attention with my job because of caring a child."

"I decided to quit my job and spending all my time for raising a child."

One parent reported additional stress that arisen when she observed signs of rivalry between siblings.

"The older brother of ASD child asked me why I did spend more time with ASD than him. At first, the older one felt some kind of rejection to his younger. Sometime, he shouted at me during the time I took care of ASD brother."

Facing with feeling of misunderstanding from society

Some parents reported that they were distinguished or rejected from other members of a society, for example,

"I thought, people in society did not truly accept autistic child. They might act as they were feeling okay, but no one knew what they actually thought in their mind. Someone kept thinking that autistic child was as same as mental retardation. Someone stared at my son as if he will make them in trouble."

"I felt others stared at my son like he was an alien. I just told them that he was normal human like you. Angry but that only was I could do."

"If someone asked me whether I felt embarrassed because of having ASD child, I thought everyone had feeling but a child was much more important than anything."

"It might be okay and acceptable when ASD child was still very young. But when he grew up, people might feel annoyed and could not accept any more."

Turning to accept the situation

Acceptance to child's diagnosis and situation was one of multiple factors related to personal meaning-based coping, It was defined when participant could be able to change their ways of thinking to be more acceptable with the situation of having child as ASD and they have to take care of them for good. For this research, some parents reported that they could accept the situation even it might take some time, for example,

"It was happened; I could accept and going to take care of him for good."

"He was ASD and it happened. I needed to accept anyway."

"I must accept a child's diagnosis and treat him as good as I can,"

"He was born to be my son. I needed to take care of him and accept what he had been."

"He was not the dessert. When you did something wrong then you made a new one, he was our son. We needed to take a good care for him."

Some parents could able to accept when they compared with other ASD child, for example, "*I could accept. Some children were worse than my son,"*

Some parent could able to accept since they needed to pass through their difficult feeling. One mother said *"Sometime, dealing with the feeling was absolutely difficult and I could not avoid it at all the time. Then, I thought, we should accept the truth and find the best solution for treating my son."*

Redefine meaning and finding positive aspects from ASD related situation

It referred to positive reinterpretation by finding child's strength and expectation for child's recovery instead of just suffering with signs of abnormality and sadness. Nearly half of participants reported that they could find some strengthen point in their child and it helped encourage them for moving on. For example, some parents reported about raising an ASD that

"Tried, sometime he made me angry but he was my son. Sometime, I asked him to do something; he was always willing to do without any complain."

"He was able to do some household, e.g. sweeping or cleaning a dish even anything for him needed to be routine,"

Three participants reported that they could find the child's strength in some specific areas, for example,

"My son was going well when he grew up, a much better. He had excellence memory. I just tough him once but he could remember all, even word-by-word. He was excellent in this skill."

"My son was able to study in a class. He was pretty nice in remembering a thing although he might agitate and hyperactive sometimes"

"He could be able to do self-care e.g. taking a bath, eating, or wearing a cloth by his own."

Expectation for child's recovery was another coping. It referred to positive reinterpretation by giving an expectation that their ASD child could be recovered at the level of satisfactory. For this research, some parents reported that they expected for a child's recover, especially when they noticed progression in a child, for example,

"When I saw the progression and development in my son day-by-day, that made me believes he would be recovered"

"I was pretty sure that he would be recovered. He was getting better and better in my sense. Just only behavior of speaking with himself that was still weird."

One mother gave a specific meaning to child's recovery, She said *"I believed that my son would be better and recovery. For me, if my son could be able to do self-care in daily life, able to talk with others, able to study in class even he might get lower grade. That was the meaning of recovery."*

Use of religion and spiritual principle

This factor referred to an induction of positive emotion by using principle of religion that person believed. For this research, two out of thirteen participants reported that they used religion for lessening their stress, getting more concentration and conscious. The religion could help them calm down and able to function properly, for example,

"I believed in Buddha. The philosophy of Buddhism taught us to have confident, patience and clam. Same as when I raised my ASD child, I needed to be calm, patience and had confident. The logic thinking of Buddhism philosophy which stated that the result would be shown after you had done, I generalized this concept to my case that if I raised my son affectionately, he would be better."

"I read some kind of dharma/moral books for lessening my stress and lower my expectation toward my son."

Seeking information about disorder and treatment/intervention

The seeking information referred to an action that parent done for fulfilling their knowledge, which in turn lessening their stress related to raising ASD child. For this research, seven participants had doing a kind of seeking ASD information, for example, *"I read lot of books related to ASD disorder and its treatment, especially during the first knowing child's diagnosis."*

"I search the information about the disorder"

While three mothers reported that her and her husband spent time for seeking information related to ASD, for example,

"His father and I search much more information about autism"

"His father search for autistic information on internet while I bought many books and read."

Some other participants reported that they were seeking information together with contact some additional services or experts for helping an ASD child.

"When I knew my son's diagnosis, I seek more autistic information by reading many books, observe unusual signs of a child and contact hospital where provided program for autism."

"After I knew that my son was autism, I seek more information and contact the experts for help. Up to now, I won't stop seeking more information to help my son."

Seeking and receiving support from ones within and outside network:

Family support

Nearly half of participant reported the important of support, especially from one in family and spouse that could help main caregivers pass through the stressful situation easier. The support from family and spouse might be in various types but the most significant one was emotional support, for example,

"The encouragement from husband helped me had more energy to move on."

"When I very first knew my son's diagnosis, I was shocked and sad. I told my husband. He also shocked and we cried together. He said, it should have some ways for helping our son. We shall try together."

While significant of having a family was mentioned for raising an ASD child, for example, *"Family was important. If every family member understood the situation of ASD and treated him as the same pattern, he could be recovered sooner."*

"Luckily, everyone in my family encouraged each other. We didn't blame on others. Especially my husband, he gave me an understanding and fight with me throughout those times"

Some mother reported the function of husband for taking care of a child while she was busy. She said "*His father helped me by looking after a child when I was not home."*

While another one mother reported of situation where lacking support from one in family. She told that *"I felt lonely. I and my husband were broke up since he knew my son's diagnosis. He thought that it was my fault to make a son dysfunction."*

Peer support

Surprisingly, ten out of thirteen participants reported the importance of peer support for helping them adapted and functioned for raising ASD child. Peer support, in this situation, defined as the support from parents who also had ASD child in family. Mostly, after getting child's diagnosis, parents were received peer support when they join in a group at autistic center or school. Peer group could provide many types of support including informational support together with emotional support. For example,

"I had someone to share with and felt that they totally understand since we were in the similar situation."

"I attended a class with other parents and we shared lot of information in a group. Additionally, we also encouraged each other at the same time."

"I search for people who also had child with ASD so that we would talk and find out the ways for helping ASD child."

Some parents cited the important of peer support as helping them feeling of not alone. At least, there was somebody who faced with difficult situation as them. For example,

"When I joined in group at autistic center and saw many parents whose child had ASD. I felt that I'm not alone. Some of them had really worst situation than mine."

"I talked with other parents who had similar condition as me. And that made me feels better. At least, I was not the one who faced with stressful situation alone."

"I saw other child, they looked worst than my son but their parent still able to continue and move on. Then, I thought, I needed to imitate them, stand up and fight for my son."

Only one mother reported negative feeling when joining in a group. She said *"there were some other parents who didn't feel good when join in a group. They might think that their child was better than others. They looked down to others."*

One mother reported that she was feeling good when hang out with other parents who were as the same condition as her much more than hang out with her old friends. She said *"I tried to avoid hang out with old friends since I knew my son's diagnosis. I felt better when spent more time with parents who had ASD child instead. It seem like we talked in the same stories and I got fully understanding from them."*

Formal support from school teacher and therapist

All participants took their child to receive some kinds of treatment and/or educational program but only five of them reported that they got support from therapists or school teachers. Mostly, participants reported that they got some advice and information related to ASD caring from therapist or school teacher. For example,

"I got more knowledge related to ASD treatment from nurse and therapist. They also gave me a suggestion for practicing a child at home."

"Teacher took a good care to my son. That was okay for me. If my son did something weird in class, Teacher called me and gave me some advice."

Some parents reported that they were received some kinds of emotional support from therapist and school teacher, especially in cases of long-term contact between parent and professional. For example,

"I got lot of support from therapist. I shared my feeling with her. Not only take care a child, sometime I talked with her about my family problems. She was nice. She listened to me even I called her on late night. I was so impressed,"

"Teacher said to me that only this ASD child will be with me when I was getting old. She knew that I and my husband were broken and she needed me to continue caring a child"

4.1.3.2 Outcomes of adapted parents

The data suggested adaptation outcomes according to stage of pre-diagnosis and post-diagnosis as follows:

During pre-diagnosis

When asking parents with the question of *"What do you done to solve situation of frustration and wondering",* the finding was only taking a child to receive actual diagnosis from the doctor. The earlier of receive the diagnosis, the better of progression and development. For example, one parent reported that *"I took my son to meet doctor since he was nearly two years old. Let's me absolutely know what happened, then I could find the best solution for him."*

During post-diagnosis

During this period, parents were asked with the question of *"What have you done after receiving child's diagnosis",* "*Are there any differences in parenting ASD child between before and after getting child's diagnosis*." Parents who were able to adapt referred to ones who were able to perform functional behaviors for raising ASD child, able to turn their emotion from stress to be more positive, and finally, they should have healthy quality-of-life. Specifically, for this research, the adapted parents could be able to take their child to receive one or several kinds of treatment and/or take their child to get specific educational program at school, able to practice a child at home, able to share information and emotion with other parents who were at the same condition. Moreover, some parents might perform more function about teaching siblings for caring ASD in replace of them, and taking a child for registering as handicapped person. More details were clarified below.

Taking ASD child to receive one or several kinds of treatment

All parents reported that they took their child to receive some kinds of treatment when getting to know that a child was ASD. While most of parents considered treatment and practice as important for helping a child. One of the parents said *"I thought, the frequency and continuity of practice could help a child for better."* Some parents believed that an ASD disorder could be recovered when getting treatment and practice, for example, some said

"Practicing and systematic teaching could help enhancing child's skills,"

"I just kept thinking that the disorder could be cured by specific tailored treatment that suit with a child's need."

For medication taking, all participants reported that their child used to take some medicine for reducing unusual signs but about eight of them were still taking the medicine at this present time. Some parents still believed in medicine as the main treatment suitable with ASD, for example, *"I took my son to doctor and got the medicine up to now."*

While some other parents kept thinking that only medicine might not be effective, it needed some actions and/or other service programs such as a behavioral modification, for example,

"I thought, the practice could help an ASD child for better. Only taking medicine was not good enough,"

"Practicing was important otherwise he could not stop taking medicine. However, medicine was important in case of controlling a child for not disturbing others."

In some cases, parents reported that they were willing to take their child receiving some kinds of treatment at autistic center and also willing to continue practicing a child at home. For example, *"It needed several kinds of treatment for enhancing child's development, including taking a child to doctor, getting to practice some skill at home, especially in speaking and sensory integration skill."*

"I believed, practicing could help a child. If he didn't get any kinds of practice, that was the worst. Parents also needed to continue practicing some skills for a child at home."

Taking an ASD child to get specific educational program at school

In this research, all parents took their child to receive specific educational programs at school. Most parents reported that they took their child to school because they needed to improve a child's social skill rather than looking for academic success. Therefore, in some cases, a child had attended in class that lowers than his age. However, nearly all parents reported their satisfaction when their child attended the school, for example,

"The school had teachers for children with special needs so that they could shaping a child's behavior if needed."

"Teacher always recorded behavior and gave to parents every single day. That made me knowing about my son's behavior at school."

"I often talked and shared with the teacher, especially on the child's behavior at home and compare with his behavior at school."

While some parents reported about the difficulty in finding educational programs which specifically provided for ASD child. Some said "*I took my son to school but not many schools provided program for autism. It was quite difficult to find the best school for him."*

Practicing an ASD child at home

Eight out of thirteen parents reported that they realized the important of practicing an ASD child. Some said *"ASD need a practice and closely care so that he could be able to take care himself when I was not alive"*

Some parents reported that they practiced a child by observing activities that therapists or teachers did with ASD child, and then worked with a child at home. Example of mother responses were,

"I learned and observed activities from therapist and practiced with my son at home."

"When teacher gave an assignment, I taught and taught and taught my son until all were done. Besides, when I saw anything teacher did at school, I would come back and teach my child at the same manner."

"When I was home with my son, I always taught him with picture as the same way as I observed what therapist had done."

"It needed to be patience, Not only practicing by therapist, parent needed to practice a child every days."

Moreover, there was one case reported of practicing a child follow by an instruction that getting from internet. She said "*I found information related to floor-time therapy on internet, It was quite similar with activities I saw therapist done with my son. Then, I tried to use that principle and practice with a child at home, additionally from treatment a child received from hospital."*

Sharing information with other parents who were at the same condition

One indicator reflected to the successful adaptation was the willingness of parents to share information and emotion with other person who was in the same situation. In this research, some parents reported about sharing, for example,

"When I met other parents who were in the same situation as mine, I was willing to share anything that I had done for my son and it was effective."

"If I met other parents, I was willing to talk with them. I also was willing to give them my number so that we could become friend and share idea for helping our child."

"Each of parents had idea for helping an ASD child, and then we hold on as a group for sharing each other."

While another one mother reported her willingness to help new parents with ASD child as *"I was willing to share my experience with parents who were very new in the group since I passed through that difficult situation prior."*

Having self-efficacy for raising ASD

Only one mother reported openly that she was highly confident in herself that she could be able to raise ASD child although it might be stress and difficult. She said *"I was his mother. Who would take care for him as good as I could. Even it might be stress and difficult, I would try my best for him. And I was pretty sure that the result of my effort would be reflected in terms of a child's progression and development"*

4.1.4 Professional views toward parental adaptation for raising ASD children

There were five professionals included in the study while their characteristic presented below.

Characteristics of professionals

There were two therapists, two teachers and one teacher who used to be therapist participated in this in-depth interview. All of them were females. All participants were asked about their experience in working with parents of ASD children, what did they viewed as significantly important for parent to become adapted and what the desirable outcomes that adapted parents should have and perform. In this group of participants, three of them were working in the government sector while another two of them work in the private sector. For the educational level, there were three teachers and therapists who were bachelor's degree holder while another two of them graduated master degree. Moreover, the working experience of participants was approximately 20 (SD = 3.80) years. More detail was presented in table 4.3.

Table 4.3 Characteristics of therapists and teachers collected through interview technique

Characteristics of teachers and therapists	n
Gender	
Male	0
Female	5

Table 4.3 Characteristics of therapists and teachers collected through interview technique (cont.)

Characteristics of teachers and therapists	n
Educational level	
Bachelor degree	3
Master degree	2
Organization	
Government sector	3
Private sector	2
Position	
Teacher	2
Therapist	2
Teacher who used to be therapist	1
Experience of work (years) (Mean = 20 years, SD = 3.80 years)	

Professionals view toward parental adaptation

All professionals were interviewed with a set of questions which seeking responses parallel with questions for parent. The questions mainly ask about professional views toward parental function and adaptation for raising children with ASD. After that, content and theme analysis were applied for analysis. The finding organized according to professionals' views toward (1) parental adaptation factors, (2) professional roles for helping parents adapt and (3) parental adaptation outcomes for raising an ASD child. More details were clarified below.

4.1.4.1 Professional views toward parental adaptation factors

When interviewing professionals with the questions of *"according to your experience, how parent feels about his/her child's diagnosis? How parent can pass through that crisis situation? Do parents perform any differences in parenting ASD child between before and after getting child's diagnosis? What's your expectation toward ASD child, their parents and family? What's your expectation toward health system, community or society?"* The responses of professional revealed various kinds of factors associated with parental adaptation and effective functions for raising ASD child. Some professional suggested factors similar with factors mentioned by parents, some were not. For professionals, they suggested the factors of accepting to a child's diagnosis and situation, able to find child's strength, seeking information about disorder and treatment, having peer support, family support and formal support. The details were presented below.

Acceptance to the child's diagnosis and situation

Parents who were able to change their way of thinking to be more accepting to the child's diagnosis even it was difficult was the one who were tendency to adapt successfully. All professionals played significant roles in this part.

"If parents could be able to change their way of thinking and accepting an ASD condition, at least they would felt better. Their feelings would be more positive. It might not be sad at very first knowing the diagnosis."

"Mothers needed to accept the diagnosis and the limitation of autism as well as the need for accepting the capacity of autism. Moreover, they also needed to trust teacher for caring a child."

"I told mother that she needed to be strong. Accept your child as he was. He would be with you for all of your life. He won't leave you. If you took a good care of him, he would take a good care of you."

Finding child's strength

Positively reinterpreting the situation by finding strength in ASD child was also another factor significant for parental adaptation. The example of professional responses were

"I told parents if they needed to be more happiness, they probably started by finding what a strengthen skill of a child. You might feel that he was not totally lost function and your feeling turn to be more optimism."

"I always told parents and my colleagues that my students might not smart as other but they were good-minded person. They were generous and never made trouble to others."

Seeking information

After having a confirmed child's diagnosis, professionals viewed parental behavior of seeking additional information related to ASD disorder and treatment was important.

"I thought when parents firstly knew their child's diagnosis. They probably had no idea what it was. Then, they needed to find out information related to disorder. Some read books, some search on internet."

"After knowing the diagnosis, some parents search information on internet. They seek information by their own that led them had some confidence about autistic signs and symptoms. Then, they had an idea to roughly evaluate their child."

Seeking and receiving support from someone within and outside network: Having peer support

Some professional paid attention with peer support that could help parents moving through stressful situation and adapted, for example,

"I thought, parents should sharing and talking with other parents who also had ASD child. Parents who interacted with peer group seem much better than ones who stand alone."

"Most parents tried to find a person who had same condition as them. They loved to share their experience and emotion with. The sharing led them to move on. Basically, parents might be able to continue when they observed that there were any other persons who were also facing the same situation or even worst than they were."

Having formal support

Not only having peer support, four out of five professionals reported the importance of formal support from teachers and therapists.

"It was necessary for parents to find one who was knowledgeable about autism. The one that parents believed he/she could take care of an ASD child."

"Parents needed suggestion from specialists for more understanding of ASD disorder and the techniques for dealing with autism."

Parental educational background

One professional stated the importance of parental educational background that necessary for parents to adapt. She said *"parents with high educational background seem likely to understand the situation more than ones who had low education. Mostly parents with low education were too compassion. They depended on their feeling much more than rational. They didn't practice a child in the way that I told because they felt it was too hard for a child. They felt too compassion a child. Subsequently a child was still underdeveloped."*

4.1.4.2 Professional roles for helping parents adapted

Data from professional suggested the importance of professional roles in enhancing parents to adapt. These roles included professional ability to support parents for accepting child's diagnosis and situation, finding some positive and strength, moving through social stigma and providing emotional support to them.

Role of professionals to support parents for accepting the situation and limitation related to ASD

Some professionals reported that they played a role in supporting parents to accept the situation and limitation of ASD and those acceptable parents were more likely to success in adaptation. Some professionals said about her roles as

"In my experience, one of the very first things when dealing with parents of ASD child was a support of parents to accept a child's diagnosis. When parents accepted, they could move on for next step otherwise they were stuck with their frustration. That was not helpful for a child and themselves at all."

"I needed to support parents and shaping them the child's raising behavior together with shaping their way of thinking. Parents needed to be strong. They needed to accept the limitation of a child even it was hard."

Support parents for finding positive views

One of the professionals reported that she played a role in supporting parents for finding some positive aspect in having ASD child. She said *"I always told* *parents that autism had capacity to learn and develop when receiving tailored treatment. Parents needed to start with observe and roughly evaluate things that a child like or dislike, then learn to set condition for him. You would be surprised that the autistic child could also learn the condition that you had set for. Start with an easy task and continue to the harder one."*

Support parents for well-caring of ASD child

Most professionals reported that they usually suggested parents about the technique to raise a child and expected for positive outcome when parents applied their instruction with the same pattern, for example,

"I always told parents what I had practiced with a child. Parents who trusted me would train a child as the same pattern and that would be success. Parents, themselves, also become happier."

"I told parents that they were the key-person for caring an autistic child, even in case of less severity. It needed significant one who observed a child for all of his life. Then, consult what they had observed with therapists continuously."

Support parents for coping with social stigma

One professional reported her role as supporting parents for moving through social stigma with the hope that parents who feel less suffering had more ability to adapt and able to raise ASD child with optimism. She said "*some parents suffer from reaction of others. I always told parents that we needed to act as a helper instead of a receiver. Giving help instead of asking for help. You could help others, especially one who was facing the same situation,"*

Providing emotional support to parents

Some professional reported that the emotional and mentally support from professional could help parents moving on for raising ASD child. In some case, suggestion from a therapist focused on how to reduce parental stress and managed their time, for example,

"I always told parents to be under stress due to taking care of the autism. You needed to take care of him forever and it took a long time. You needed to be

balance. Balance for your time in caring the autism and for yourself. Balance your life in terms of money, energy and everything."

4.1.4.3 Parental adaptation outcomes for raising ASD child

Professionals viewed the successful of adaptation in parents which reflected by the willingness of parents to take ASD child for getting intervention or special educational program tailored for the child's need, able to practice or carry out skill training with the child at home, able to share information with other parents who were at the same situation, able to collaboratively work with professional, having knowledge related to autistic disorder and treatment, able to observe a child systematically and able to manage supportive environment for raising an ASD child.

Taking an ASD child to receive treatment and/or special educational program

All professionals gave their suggestions toward function of adapted parents that they should be able to take their child receiving treatment tailored to the child's needs. Some parents might be able to enroll their child in some special educational program together with receiving medical treatment at the same time. The important of tailored treatment was for improving child's skills. While there was no known cure for autism, there were treatment and educational approaches that might reduce some of the abnormal behaviors associated with the ASD condition. Interventions might help lessen disruptive behaviors and education might enhance self-help skills that led to be more independent when a child grown up. This responsibility should be taken by the adapted parents as suggested by all professionals.

Able to teach a child at home

Apart from taking a child to receive tailored treatment and/or educational program, Some professionals reported that adapted parents should be able to continue practicing a child at home. For example, some professionals reported that

"As my observation, parent who was able to adjust activities and carry out regularly with a child at home was a case of success one,"

"Parents needed to practice with a child as schedule at home. They needed to prolong the practice at home otherwise it could not reach a goal."

Collaborative work with professional

All professionals viewed that adapted parent should be able to collaboratively work with professional. Professionals and parents should share their ideas toward technique to deal with ASD child and set a mutual goal together. Some professional said

"I started working with parents by telling them what I had done with a child, then sharing those with parents. Some parents willing to tell me what were their expectation. Then, we set a goal together."

"Parents and teachers needed to share. Teacher should share about techniques of caring autism while parents observed a child when applying new technique, then discuss for a change and move on."

"Parent should work together with the teacher. We should share information and gave feedback to each other."

"Therapists needed to explain to parent the nature of ASD disorder together with giving them several techniques for dealing with ASD child at home."

Ability to observe a child systematically

One of the professionals paid her attention toward ability of adapted parents to observe unusual behavior in an ASD child. She said

"Parents should be able to do systematical observation. They needed to observe what autistic child like or dislike as well as the observation of development or regression in a child. Some might necessary need to record their observation and consult with teachers. That would be a lot of help,"

Ability to manage supportive environment for a child

One out of five professionals reported that adapted parents should have ability to set up supportive environment for raising an ASD child, especially the environment in the family. She said *"parents needed to set up supportive environment* *for autistic child, such as setting a safety room for him or even treat other family members to take care of autism properly."*

When consider framework of parental adaptation as suggested by data from parents and professionals, the framework started since parents observed unusual behavior and development of a child, taking to the doctor and getting to know child's diagnosis. During post-diagnosis, adapted parents were attempted to accept situation, redefine meaning and finding positive from ASD related situation, use of religion principle, seeking information related to disorder and treatment, and seeking support. Finally, successful adapted parents should be able to continue taking a child to receive treatment and/or enrolling in specific education program for ASD, able to practicing a child at home, able to sharing information with other parents who were at the same condition, raising self-efficacy for parenting an ASD child and able to collaboratively work with professionals. Those summaries of parental adaptation according to stage of pre-diagnosis and post-diagnosis presented in table 4.4 below.

Table 4.4 The summary of adaptation-related factors and outcomes according to the pre-diagnosis and post-diagnosis stage

Adaptation issues	Sources of data	
	Parents	**Professionals**
During pre-diagnosis		
- Perceived unusual child's behavior and development	13	N/A
Adaptation-related factors		
- Seeking information about child's unusual behavior and development	3	N/A
- Seeking and receiving support from ones within and outside network		
Support from spouse	3	N/A
Support from ones in medical field	6	N/A

Table 4.4 The summary of adaptation-related factors and outcomes according to the pre-diagnosis and post-diagnosis stage (cont.)

Adaptation issues	Sources of data	
	Parents	**Professionals**
Adaptation outcome		
- Taking a child to receive diagnosis	13	N/A
During post-diagnosis		
- Heightened of worrying level and negative emotion when being informed about child's diagnosis	13	5
- Feeling of misunderstanding from society	4	2
Adaptation-related factors		
- Turning to accept the child's diagnosis and situation	10	5
- Redefine meaning and finding positive from ASD related situation	10	5
- Use of religion and spiritual principle	2	-
- Seeking information about disorder and treatment	7	2
- Seeking and receiving support from ones within and outside network		
Family support	6	-
Peer support	10	2
Formal support from school teachers and therapists	5	4
- Parental educational background	N/A	1
Adaptation outcome		
- Taking a child to receive one or several kinds of treatment/intervention	13	5
- Taking a child to enroll in specific education program at school	13	3

Table 4.4 The summary of adaptation-related factors and outcomes according to the pre-diagnosis and post-diagnosis stage (cont.)

Adaptation issues	Sources of data	
	Parents	Professionals
- Practicing a child at home	8	3
- Sharing information with other parents who are at the same condition	5	3
- Having self-efficacy for raising an ASD child (e.g. ability to observe a child systematically, ability to manage supportive environment for an ASD child)	2	2
- Collaborative work with professional	N/A	5

4.1.5 The hypothesized model of parental adaptation in the context of raising children with ASD

The finding from thirteen parents and five professionals were determined along with the suggestions from theory and literature that had been reviewed previously. Based on those combined conclusion, it could be summarized and drawn the hypothesized adaptation model of parents for raising children with ASD. In this study, the hypothesized model were divided according to different stages or timeframes as (1) model of parental adaptation during pre-diagnosis and (2) model of parental adaptation during post-diagnosis. Both of the models were presented in figure 4.1.

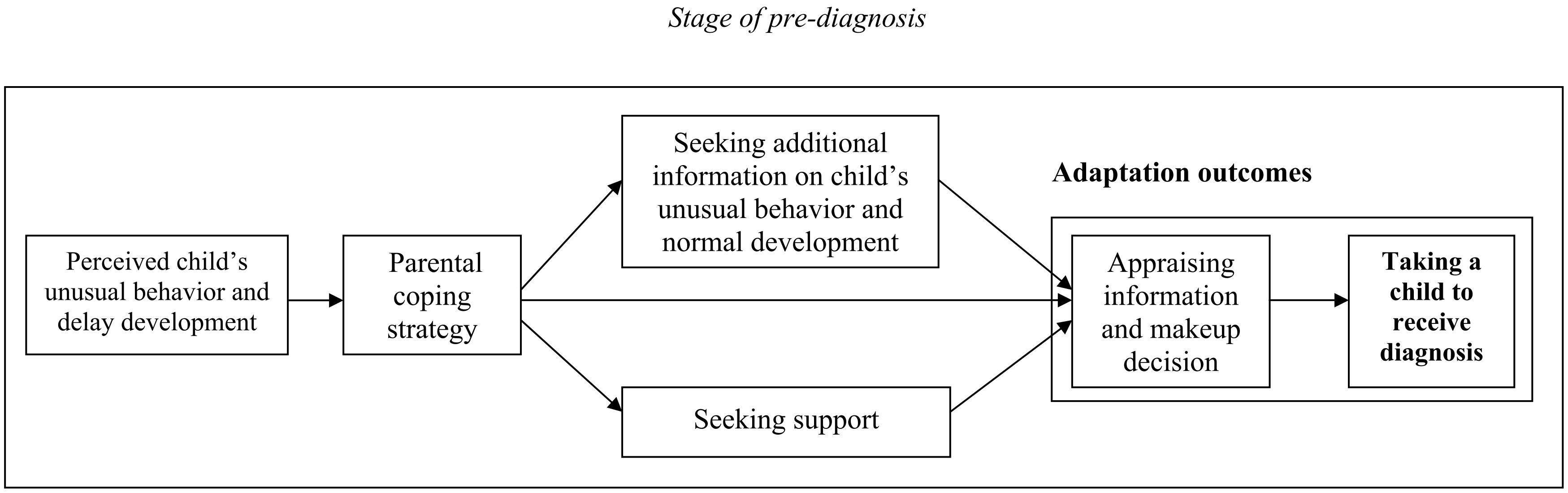
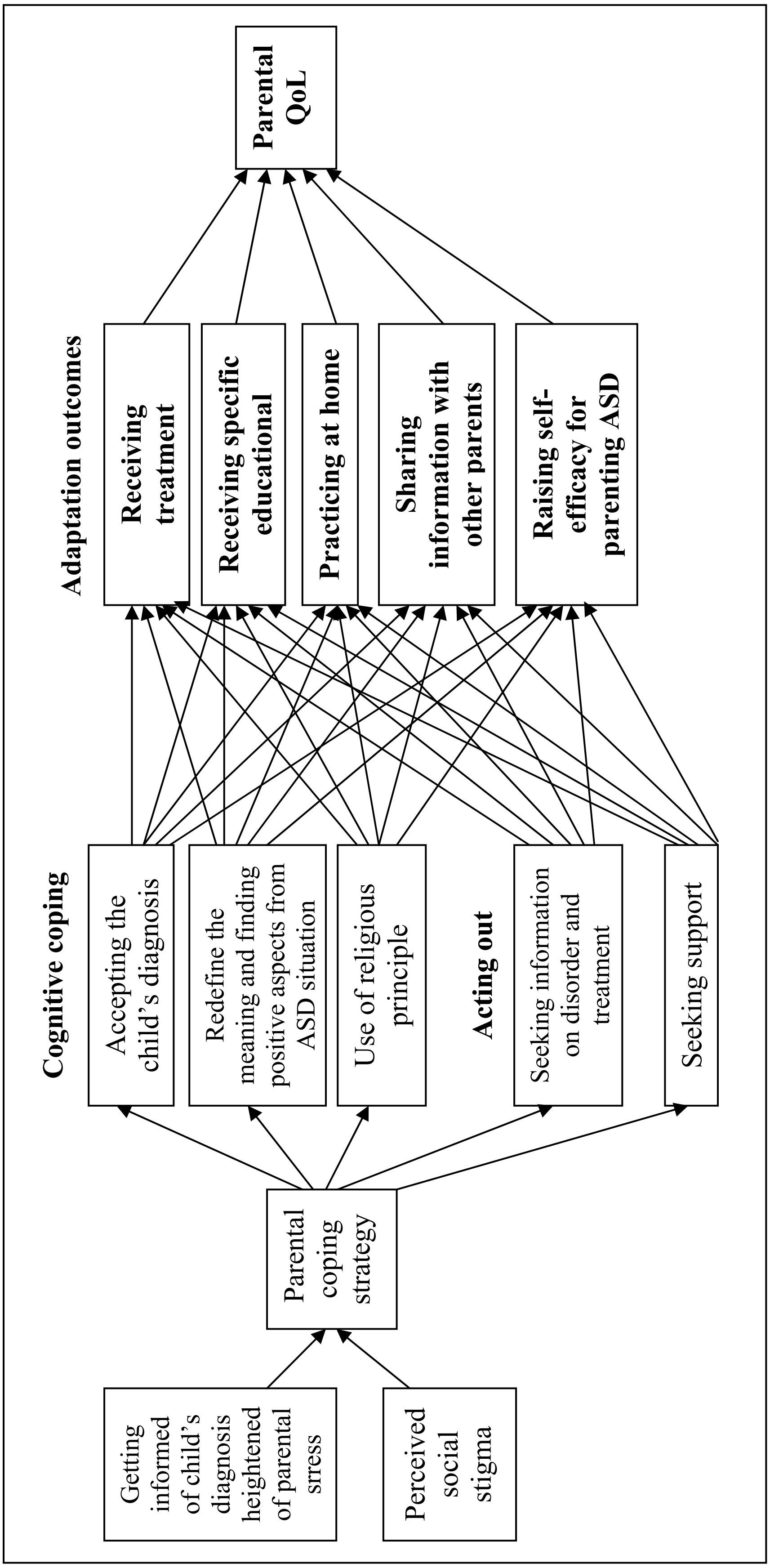


Figure 4.1 Demonstrated the hypothesized model in stages of pre-diagnosis and post-diagnosis

Stage of post-diagnosis



4.2 The 2nd phase: Testing the parental adaptation model in order to determine the coefficient values of the significant pathways from influencing factors to adaptation outcomes and testing the level of model fit

The quantitative method was employed to confirm the first phase results in terms of finding the coefficient values of the significant pathways from influencing factors to parental adaptation outcomes in aspects of parental function for raising ASD children and parental quality-of-life, and testing of model fit with large group of samples. The finding of this phase could be divided into three parts as follows:

4.2.1 Characteristics of samples

4.2.2 Analysis of pre-diagnosis stage

4.2.2.1 Descriptive analysis of each influencing factor and parental adaptation outcome

4.2.2.2 Correlation analysis to find out the associations among influencing factors to parental outcomes

4.2.2.3 Path Analysis for testing the model fit

4.2.3 Analysis of post-diagnosis stage

4.2.3.1 Descriptive analysis of each influencing factor and parental adaptation outcome

4.2.3.2 Correlation analysis to find out the associations among influencing factors to parental outcomes

4.2.3.3 Path Analysis for testing the model fit

4.2.1 Characteristics of samples

In this phase, samples were parents who provided closely care to an ASD child followed by the inclusion criteria of (1) They were the main-caregiver of an ASD child and had relationship as mother, father, grandparent, uncle or aunt (2) They were raising an ASD child who were diagnosed by the doctor. Finally, it had 303 parents participated in the research which their characteristic presented in table 4.5 and the characteristic of ASD children presented in table 4.6.

Characteristics of parents with ASD children

There were 303 parents whose child was diagnosed as ASD participated in the research. The parental age ranged from 19 to 70 years old which the parental age's mean was 43.17 (SD = 9.732) years old. Most of them, 216 cases (71.3%) were mothers, 44 cases (14.5%) were grandparents, 28 cases (9.2%) were fathers, 12 cases (4.0%) were uncles or aunts and another 3 cases (1.0%) did not responses to this item. The educational level of parents, 108 cases (35.6%) graduated of bachelor's degree, 77 cases (25.4%) graduated of primary school, 68 cases (22.4%) graduated of secondary school, and 36 cases (11.9%) graduated above than bachelor 's degree while another 14 cases (4.7%) did not responses to this item. The relationship between parents and ASD children, 164 cases (54.3%) were mother and son, 52 cases (17.2%) were mother and daughter, 37 cases (12.3%) were grandparent and son, 21 cases (7.0%) were father and son, 7 cases (2.3%) were uncle/aunt and son, father and daughter, grandparent and daughter while another 5 cases (1.7%) were uncle/aunt and daughter, respectively. The summary of parental characteristics presented in table 4.5.

Table 4.5 Characteristics of parents collected through the questionnaire

Characteristics of parents	**n**	**%**
Age (mean =43.17 years, SD = 9.73 years)		
Main-caregiver		
Mother	216	71.3
Father	28	9.2
Grandmother/ Grandfather	44	14.5
Uncle/Aunt	12	4.0
Non-response	3	1.0
Educational level of main-caregiver		
Primary school	77	25.4
Secondary school	68	22.4
Bachelor degree	108	35.6
Above than bachelor degree	36	11.9
Non-response	14	4.7

Table 4.5 Characteristics of parents collected through the questionnaire (cont.)

Characteristics of parents	n	%
Relationship to child with ASD		
Mother and son	164	54.3
Father and son	21	7.0
Grandmother/ Grandfather and son	37	12.3
Uncle/Aunt and son	7	2.3
Mother and daughter	52	17.2
Father and daughter	7	2.3
Grandmother/ Grandfather and daughter	7	2.3
Uncle/Aunt and daughter	5	1.7

Characteristics of ASD children

The ASD children were 232 (76.6%) males and 71 (23.4%) females. The children ages ranged from 2 to 17 years old which the mean was 7.83 (SD = 3.462) years old. The children ages at diagnosis ranged from 1 to 13 years old which the mean was 3.59 (SD = 2.330) years old. Most of ASD children, 277 cases (91.4%) received some kinds of medical treatment or behavioral intervention at the present time, 25 cases (8.3%) were not received, and another 1 case (0.3%) was not responses in this item. The average duration of receiving treatment or intervention was 4.71 (SD=3.427) years. When asking about enrolling in specific educational program, 241 cases (79.5%) attended some educational program, 60 cases (19.8%) were not attended while another 2 cases (0.7%) did not response in this question. The average duration of attending in specific educational program was 4.80 (SD=2.908) years. For the numbers of children in family, most of family had only one child with ASD (167 cases, 55.2%), 118 cases (38.9%) had two children in family, 13 cases (4.3%) had three children in family, 4 cases (1.3%) had four children in family and only 1 case (0.3%) had five children in family. The characteristics of ASD children were summarized and presented in table 4.6.

Table 4.6 The characteristics of ASD children collected through the questionnaire

Characteristics of ASD children	n	%
Gender		
Male	232	76.6
Female	71	23.4
Age (mean =7.83 years, SD = 3.46 years)		
Age at diagnosis (mean =3.59 years, SD = 2.33 years)		
Had a child receiving the treatment/intervention?		
Yes	277	91.4
No	25	8.3
Non-response	1	0.3
Duration of receiving treatment/intervention (mean =4.71 years, SD = 3.43 years)		
Had a child attending school?		
Yes	241	79.5
No	60	19.8
Non-response	2	0.7
Duration of attending school (mean =4.80 years, SD = 2.90 years)		
Numbers of children in family		
Only one child	167	55.2
Two children	118	38.9
Three children	13	4.3
Four children	4	1.3
Five children	1	0.3

4.2.2 Analysis of pre-diagnosis stage

4.2.2.1 Descriptive analysis of each influencing factor and parental adaptation outcome

During pre-diagnosis, stressor was parental perception of child’s unusual behaviors and development, adaptation-related factors included using personal coping strategy, finding additional information related to unusual behaviors and seeking support, then appraisal the information and make up decision to see doctor and getting diagnosis. Their descriptive were analyzed and presented in table 4.7-4.8.

Table 4.7 The summary of stressors related to ASD during pre-diagnosis stage

Stressors	Yes		No	
	n	%	n	%
Perceived child's unusual behavior and development				
Limited use of eye contact to express feeling	201	66.3	102	33.7
Limited use of gesture or physical touching	62	20.5	241	79.5
Does not imitate other children at play	139	45.9	164	54.1
Looks through people	146	48.2	157	51.8
Leave oneself out of group	179	59.1	124	40.9
Inflexible interests	133	43.9	170	56.1
Anxious when changing activities from routine	82	27.1	221	72.9
Sequence the objects as the same pattern and feeling dissatisfy if moved	99	32.7	204	67.3
Laugh without reason	119	39.3	184	60.7
Cry without reason	101	33.3	202	66.7
Hyperactivity	162	53.5	141	46.5
Hypoactivity	44	14.5	259	85.5
Fascinated by spinning or flickering items	108	35.6	195	64.4
No spoken language	190	62.7	113	37.3
Often point out objects of interest instead of telling others when needed	151	49.8	152	50.2
Repetitive use of language e.g., repeat what other person has just said on ads	122	40.3	181	59.7
Significant difficulty with turn taking in conversation	177	58.4	126	41.6

Level of stress, 0 = not stress at all and 5 = the most stress

Table 4.7 The summary of stressors related to ASD during pre-diagnosis stage (cont.)

Stressors	Yes		No	
	n	%	n	%
Not response to the sound as if doesn't heard it	150	49.5	153	50.5
Repetitive movement	174	57.4	129	42.6
Flaps or twirls hands	98	32.3	205	67.7
Rigidly stare at hands or objects more than 5 seconds	76	25.1	227	74.9
Like to run in a set pattern e.g., in circles or a particular route	72	23.8	231	76.2
Level of stress	**Mean = 3.65, SD = 1.124**			

Level of stress, 0 = not stress at all and 5 = the most stress

From table 4.7, the responses of parents indicated that they could perceived the most three signs of child's unusual as limited use of eye-contact (201 cases, 66.3%), had no spoken language (190 cases, 62.7%) and left oneself out of group (179 cases, 59.1%), respectively. While the less common signs that parents could be able to perceived were hypo-activity (44 cases, 14.5%), limited use of gesture or physical touching (62 cases, 20.5%), and likely to run in a set pattern (72 cases, 23.8%), While the average scores of parental stress related to perceive child's unusual behavior and development was 3.65 (SD=1.124).

The descriptive analyses of influencing factors during stage of pre-diagnosis were presented in table 4.8.

Table 4.8 The summary of adaptation related factors during pre-diagnosis stage

Adaptation-related factors	Yes		Satisfied	
	n	%	Mean	SD
Using coping strategy to solve with the problems	236	77.9	37.98	5.85
seeking information related to child's unusual behavior and normal development	228	75.2	3.07	1.855
Seeking social support	303	100	1.15	.968

Table 4.8 The summary of adaptation related factors during pre-diagnosis stage (cont.)

Adaptation-related factors	**Yes**		**Satisfied**	
	n	**%**	**Mean**	**SD**
Husband or wife	209	69.0	2.98	2.131
Relative who in medical field	65	21.5	.81	1.650
Relative who is not involve in medical	127	41.9	1.51	2.005
Friend who involve in medical field	63	20.8	.66	1.514
Friend who is not involve in medical	75	24.8	.97	1.761
Someone who involve in medical field	56	18.5	.67	1.493
Someone who is not involve in medical	50	16.5	.57	1.362
Parent who has child with some kind of disability	130	42.9	1.55	1.954
Neighbor or community members	56	18.5	.66	1.417
Numbers of social network	303	100	4.14	2.973

Level of satisfaction, 0 = not satisfied at all and 5 = the most satisfied

Total score of personal coping strategy to solve with the problem was 55

From table 4.8, descriptive analysis of each influencing adaptation related factors in stage of pre-diagnosis were presented. For the personal coping strategy, 234 parents (77.9%) responded in this item with the average level of satisfaction when applied the coping strategy factor was 37.98 (SD = 5.85) and the total score was 55. Some parents (228 cases, 75.2%) responded in the factor of seeking additional information related to child's unusual behavior and normal development with the average level of satisfaction was 3.07 (SD =1.855). While all parents responded that they sought social support from someone within or outside their network with the average level of satisfaction was 1.15 (SD = .968). Most parents (209 cases, 69.0%) received support from husband/wife with highest in score of satisfaction (mean = 2.98, SD=2.131). Whereas the average numbers of social network was 4.14 (SD=2.983).

The descriptive analysis of parental adaptation outcome during stage of pre-diagnosis was presented in table 4.9.

Table 4.9 The summary of parental adaptation outcomes during pre-diagnosis stage

Adaptation outcomes	Yes		Satisfied	
	n	%	Mean	SD
Contact with hospital where provide diagnosis for these group of children	243	80.2	3.34	1.768
Contact with general hospital, then referred to specific hospital for getting diagnosis later	58	19.80	2.54	2.082
	Mean = 2.93, SD = 1.674			

Level of satisfaction, 0 = not satisfied at all and 5 = the most satisfied

From table 4.9, descriptive analysis of parental adaptation outcome in stage of pre-diagnosis were presented. About 243 parents (80.2%) took their child to receive diagnosis form specific hospital with the average score of satisfaction was 3.34 (SD=1.768) while some parents (58 cases, 19.80%) took their child to general hospital at first, then referred to specific hospital and the average score of satisfaction was 2.54 (SD=2.082). When determining overall satisfaction in this outcome, the average was 2.93 (SD=1.674).

4.2.2.2 Correlation analysis to find out the associations among influencing factors to parental outcomes

According to the research hypothesis, the correlation analysis was done for determining the significant levels of demographic variables to adaptation outcomes and adaptation-related factors to adaptation outcomes in both stage of pre-diagnosis and post diagnosis. The finding of correlation was important for indicating which of variables should exist in the model. Only those that shown significant correlation would exist and the model would be analyzed for identifying level of model fit so far. For this regards, the correlation analysis in stage of pre-diagnosis were presented in table 4.10-4.12.

The analyses of demographic variables to adaptation outcomes were presented. The demographic variables of parental ages, child ages, and number of siblings in family to outcome of taking a child to receive diagnosis were analyzed by

Pearson correlation as clarified in table 4.10. While the demographic variables of child's gender, person who was main-caregiver to ASD in family, educational level of main-caregiver to the parental outcome of taking a child to receive diagnosed were analyzed by t-test and one-way ANOVA as clarified in table 4.11.

Table 4.10 The analysis of demographic variables to adaptation outcomes during pre-diagnosis stage, run by Pearson correlation

Demographic variables	DV: Level of satisfaction when taking a child to diagnosed	
	Pearson coefficient	p-value
Parental ages (years)	.028	.634
Child ages (years)	.070	.223
Number of siblings in family	.112	.052

From table 4.10, there were no significant associations between parental ages, child ages, and number of siblings in family to level of parental satisfaction when taking a child to receive diagnosed. Therefore, all of these demographic variables would not exist in the model.

Table 4.11 The analysis of demographic variables to adaptation outcomes during pre-diagnosis stage, run by independent t-test or one-way ANOVA

Demographic variables	DV: Level of satisfaction when taking a child to diagnosed		
	t/F value	df	p-value
Child's gender	-.796	301	.427
Main caregivers (mother, father, grandparent, uncle or aunt)	2.077	301	.068
Educational level of main caregivers (primary, secondary, bachelor's degree, above bachelor's degree)	.609	301	.656

From table 4.11, there were no statistical differences between child's genders, person who was main-caregiver to ASD in family, educational level of main-caregiver to the level of parental satisfaction when taking a child to receive diagnosed. Therefore, all of these demographic variables would not exist in the model.

Moreover, when determining the adaptation-related factors of coping by solving to the problems, seeking additional information related to child's unusual behaviors, seeking support, and numbers of social network to the parental adaptation outcome. The hypothesis stated that there were significant associations among group of influencing factors to outcomes of taking a child to receive diagnosis. To test the hypothesis, the Pearson correlation was employed and their results were presented in table 4.12.

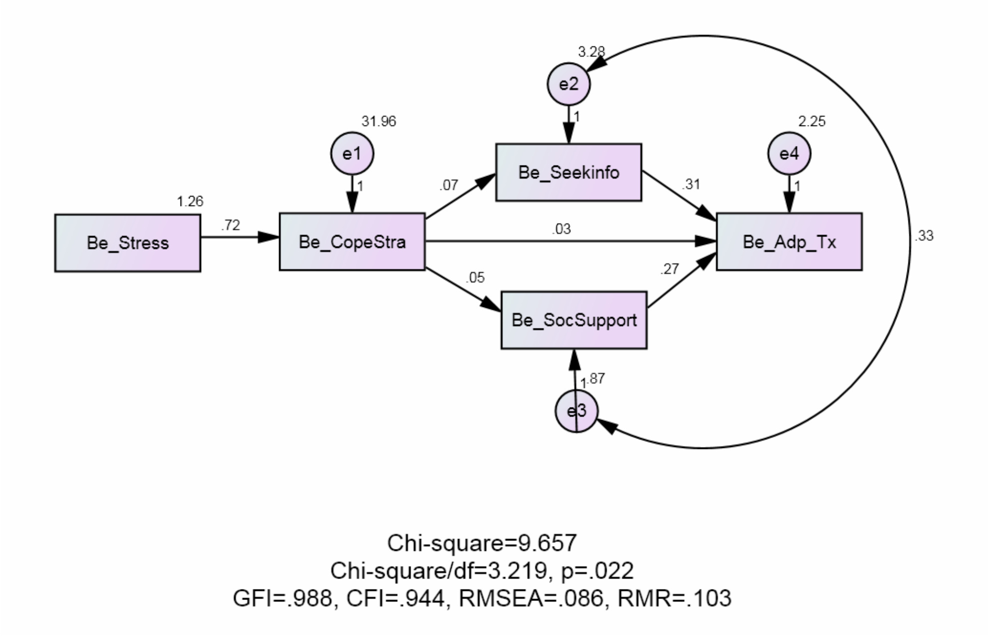
Table 4.12 The correlation analysis of adaptation-related factors to adaptation outcomes during pre-diagnosis stage

Adaptation-related factors	DV: Level of satisfaction when taking a child to diagnosed	
	Pearson coefficient	p-value
Coping by solving problem	.168**	.010
Seeking information	.396**	< .001
Seeking support	.261**	< .001
Number of social network	.379**	< .001

From table 4.12, there were statistical correlation among the adaptation-related factors of coping by solving to the problems, seeking additional information related to child's unusual behaviors, seeking support, and numbers of social network to the parental adaptation outcome at the level of .01. Therefore, all of these variables must exist in the model and test for model fit so far.

4.2.2.3 Path analysis for testing the model fit

The path analysis was employed for testing the hypothesis which stated that the pre-diagnosis model fit well with the set of 303 parents. It was assumed that if the hypothesized model was good, the model should be fit well in the group of participants. For this research, the path analysis was analyzed by using AMOS statistical program starting with the test of hypothesized model as suggested by the interview data in qualitative phase and results from correlation analysis. Therefore, the pre-diagnosis model should include variables of coping by solving to the problems, seeking additional information related to child's unusual behaviors, seeking support, and numbers of social network to the parental adaptation outcome of taking a child to receive diagnosed. If the model shown not pretty good fit, the modifying method would employed until getting the final good fit model. The testing of model fit was presented in figure 4.2 and 4.3 below.



Chi-square=9.657
Chi-square/df=3.219, p=.022
GFI=.988, CFI=.944, RMSEA=.086, RMR=.103

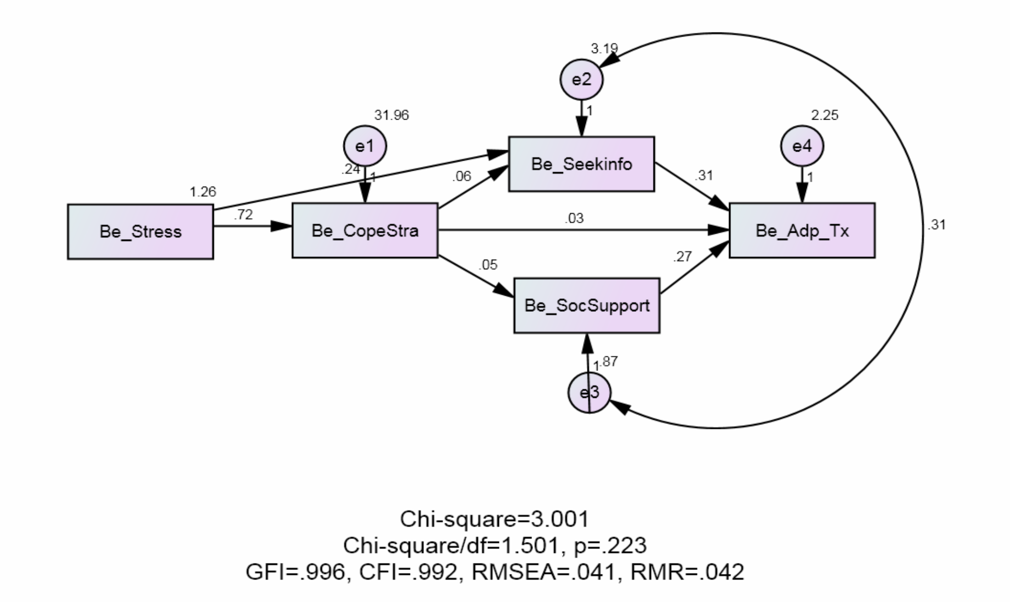
Be-Stress referred to parent perception of child's unusual behaviors and development during pre-diagnosis stage
Be-CopeStra referred to parental coping strategy by solving with the problems
Be_Seekinfo referred to parental action of seeking additional informal on child's unusual behaviors and normal development
Be_SocSupport referred to parental action of seeking social support from someone within and outside their network
Be_Adp_Tx referred to parental adaptation outcome by taking a child to receive diagnosis

Figure 4.2 The test of model fit with the hypothesized model in the pre-diagnosis stage

From figure 4.2, the testing of model fit when analyzed with hypothesized model shown pretty good results. The fit indexed indicated by GFI= .988 (suggestion value should be greater than .90), CFI=.944 (suggestion value should be greater than

.90), RMSEA =.086 (suggestion value should be less than .06), RMR =.103 (suggestion value should be less than .08) and NFI =.925 (suggestion value should be greater than .90).

When modified model as suggested by statistical data, the modified model in this pre-diagnosis stage was presented in figure 6 below.



Be-Stress referred to parent perception of child's unusual behaviors and development during pre-diagnosis stage
Be-CopeStra referred to parental coping strategy by solving with the problems
Be_Seekinfo referred to parental action of seeking additional informal on child's unusual behaviors and normal development
Be_SocSupport referred to parental action of seeking social support from someone within and outside their network
Be_Adp_Tx referred to parental adaptation outcome by taking a child to receive diagnosis

Figure 4.3 The test of model fit with the modified model in the pre-diagnosis stage

From figure 4.3, the modified model added one direct path from stressor to adaptation factor of seeking information related to child's unusual behavior and normal development. When added the path, the analysis shown perfect result. The fit indexed indicated by GFI= .996 (suggestion value should be greater than .90), CFI=.992 (suggestion value should be greater than .90), RMSEA =.041 (suggestion value should be less than .06), RMR =.042 (suggestion value should be less than .08) and NFI =.977 (suggestion value should be greater than .90). Therefore, the latter model was selected for explaining parental adaptation process in stage of pre-diagnosis while path coefficients and model summarization was presented in table 4.13.

Table 4.13 The summary of path coefficient in adaptation model during pre-diagnosis stage

Paths	Total effect		Direct effect		Indirect effect	
	Unstd.	**Std.**	**Unstd.**	**Std.**	**Unstd.**	**Std.**
Coping strategy ← Perceived child unusual	.717	.141	.717	.141	-	-
Seek information ← Perceived child unusual	.281	.171	.237	.144	.044	.027
Seek support ← Perceived child unusual	.033	.038	-	-	.033	.038
Seek information ← Coping strategy	.062	191	.062	.191	-	-
Seek support ← Coping strategy	.046	.273	.046	.273	-	-
Taking a child to diagnosed ← Perceived child unusual	.115	.077	-	-	.115	.077
Taking a child to diagnosed ← Coping strategy	.059	.202	.028	.095	.031	.107
Taking a child to diagnosed ← Seek information	.306	.338	.306	338	-	-
Taking a child to diagnosed ← Seek support	.265	.153	.265	.153	-	-

The parental adaptation model in pre-diagnosis stage could be explained with several pathways. There were 5 direct pathways, 2 indirect pathways, and 2 pathways of combination between direct and indirect paths. The strongest was direct path from taking a child to receive diagnosed after seeking additional information about child's unusual behavior and normal development with the standardized coefficient of .338. The weakness was indirect path from seeking support when perceived child's unusual behavior and development with the standardized coefficient of .038.

4.2.3 Analysis of post-diagnosis stage

4.2.3.1 Descriptive analysis of each influencing factor and parental adaptation outcome

During post-diagnosis, stress of parents raised when parents got confirmed of child’s unusual behavior by receiving doctor diagnosis. Parent felt worried and some parents felt social stigma. During this stage, parents who were able to adapt might using several types of factors, including turning to accept the child’s diagnosis and situation, redefine meaning and finding positive in ASD related situation, use of religion and spiritual principle, seeking additional information about disorder and treatment, and seeking social support. While successful adapted parents were able to perform parental function of taking an ASD child to receive treatment or intervention regularly, taking an ASD child to enroll in the specific educational program, practicing a child at home, having an ability to share information with other parents who were at the same situation, and having higher self-efficacy for parenting ASD child. Finally, adapted parents should have level of quality-of-life as norms. In this part, the descriptive analyses of those adaptation issues were presented in table 4.14-4.17 below.

Table 4.14 The summary of stressors related to ASD during post-diagnosis stage

Stressors	**Yes**		**Stress**	
	n	**%**	**Mean**	**SD**
Heightened of parental stress and worry				
Worry of child’s symptom	247	81.5	3.37	1.752
Worry of child’s future	265	87.5	3.92	1.607
Worry about the expense	179	59.1	2.31	2.011
Worry about parental career	157	51.8	1.89	1.959
Worry about parental physical health	116	38.3	1.31	1.763
Worry about parental social life	115	38.0	1.11	1.570
Worry about impact on other family members	119	39.3	1.29	1.734
Difficult to find school for the child	197	65.0	2.67	2.102

Table 4.14 The summary of stressors related to ASD during post-diagnosis stage (cont.)

Stressors	Yes		Stress	
	n	%	Mean	SD
Difficult to find hospital or clinic for child	154	50.8	1.85	1.949
Difficult in transportation to services	173	57.1	2.04	1.902
Total	303	100	2.18	1.217
Feeling rejection/ perceived stigma				
Rejection from relatives	98	32.3	.86	1.411
Rejection from friends	94	31.0	.82	1.380
Perceived stigmatization	130	42.9	1.54	1.908
Total	303	100	1.07	1.313

Level of stress, 0 = not stress at all and 5 = the most stress

From table 4.14, the response of parents indicated two different sources of stress during post-diagnosis stage. The first was stress and worry about ASD children. Most parents, 265 cases (87.5%) felt worried about child's future, 247 cases (81.5%) felt worried about child's symptom, and 197 cases (65.0%) felt stress when facing difficulty to find school for a child. The average scores of parental stress and worried was 2.18 (SD=1.217). Another source of stress during this stage was feeling rejection from society or perceived social stigma with the average scores of stress was 1.07 (SD=1.313).

The descriptive analysis of influencing adaptation related factors during stage of post-diagnosis were presented in table 4.15.

Table 4.15 The summary of adaptation related factors during post-diagnosis stage

Adaptation related factors	Yes		Satisfied	
	n	%	Mean	SD
Using coping strategy to solve with problem	236	77.9	37.98	5.85
Acceptance child's diagnosis even it takes some more time	244	80.5	3.12	1.897
Redefine meaning and finding positive	303	100	2.56	1.550

Table 4.15 The summary of adaptation related factors during post-diagnosis stage (cont.)

Adaptation related factors	Yes		Satisfied	
	n	%	Mean	SD
Think that these group of children is better than normal because they are trained for more responsibility	140	46.2	1.69	1.976
Believe that your child will be discovered because he/she is less severe when compare with others	184	60.7	2.37	2.072
Expect that, in the future, your child can do better self-care	246	81.2	3.24	1.882
Expect that in the future, your child will not be burdened to others or social	231	76.2	3.06	1.943
Expect that in the future, your child is able to have social life as normal	232	76.6	3.08	1.938
Finding that one of the good thing of having ASD is the opportunity of family to share and making decision together about a child	174	57.4	2.27	2.116
Finding that one of the good things of having ASD is the opportunity to find meaning of life	167	55.1	2.19	2.146
Use of religion and spiritual principle	147	48.5	1.80	2.002
Finding information about disorder and treatment	246	81.2	3.27	1.724

Table 4.15 The summary of adaptation related factors during post-diagnosis stage (cont.)

Adaptation related factors	Yes		Satisfied	
	n	%	Mean	SD
Level of social support	303	100	1.15	.961
Husband or wife	222	73.3	3.05	2.175
Relative who in medical field	62	20.5	.78	1.622
Relative who is not involve in medical	130	42.9	1.52	1.993
Friend who involve in medical field	54	17.8	.74	1.618
Friend who is not involve in medical	80	26.4	.90	1.672
Someone who involve in medical field	46	15.2	.62	1.462
Someone who is not involve in medical	49	16.2	.48	1.244
Parent who has child with some kind of disability	157	51.8	1.80	2.060
Neighbor or community members	52	17.2	.47	1.195
Numbers of social network	303	100	4.32	2.870

Level of satisfaction, 0 = not satisfied at all and 5 = the most satisfied

From table 4.15, descriptive analysis of each influencing factor in stage of post-diagnosis was presented. For the personal coping strategy to solve with the problems, 234 (77.9%) parents responded in this item with the average level of satisfaction when applied the coping strategy factor was 37.98 (SD = 5.85) and the total score was 55. Some parents (244 cases, 80.5%) responded that they needed to turn for accept child’s diagnosis even it took some more time with the average score of satisfaction was 3.12 (SD=1.897). All parents responded that they redefined meaning and finding positive aspects related to ASD situation even in different manner. The average score of satisfaction when applied the factor was 2.56 (SD=1.550). About 147 (48.5%) parents responded of using religion and spiritual principle with the average score of satisfaction was 1.80 (SD=2.002). Some parents, about 246 (81.2%) responded that they sought additional information related to disorder and treatment and the average score of satisfaction when applied this factor was 3.27 (SD=1.724). While all parents responded that they sought social support from ones within or outside their network with the average level of satisfaction was 1.15 (SD= .961). Most parents (222 cases, 73.3%) received support from husband/wife with highest in score of satisfaction (mean = 3.05, SD=2.175). Whereas the average numbers of social network was 4.32 (SD=2.870).

The descriptive analysis of parental adaptation outcomes during stage of post-diagnosis was presented in table 4.16 while the analysis of parental quality-of-life was presented in table 4.15 below.

Table 4.16 The summary of adaptation outcomes during post-diagnosis stage

Adaptation-related factors and outcomes	**Yes**		**Satisfied**	
	n	**%**	**Mean**	**SD**
Receiving treatment	303	100	3.10	1.632
Contact with hospital where provide treatment for these group of children	264	87.1	3.52	1.605
Contact with clinics or centers where provide treatment for these group of children	197	65.0	2.69	2.072
Receiving specific educational program	203	67.0	2.63	1.991
Practicing at home	303	100	2.67	1.850
Practice your child in the ways that teacher/therapist has done at home	216	71.3	2.86	1.976
Create activities for practicing your child at home everyday	198	65.3	2.49	2.057
Able to share with other parents	303	100	2.66	1.914
You are willing to give you phone number or address to other parents who face with similar problems as yours	212	70.0	3.02	2.055
Joining in the group for exceptional children	167	55.1	2.30	2.174

Table 4.16 The summary of adaptation outcomes during post-diagnosis stage (cont.)

Adaptation-related factors and outcomes	Yes		Satisfied	
	n	%	Mean	SD
Enhance self-efficacy for parenting ASD child	303	100	3.25	1.582
Confidence about having capacity to deal with child's problems	203	67.0	2.52	1.936
Observe unusual sign and change in child	235	77.6	2.96	1.914
Having endurance for parenting a child even difficult	232	76.6	3.44	1.981

Level of satisfaction, 0 = not satisfied at all and 5 = the most satisfied

From table 4.16, descriptive analysis of parental adaptation outcomes in stage of post-diagnosis were presented. All parents responded that they took their child to receive treatment or intervention with the average score of satisfaction was 3.10 (SD=1.632). About 203 (67.0%) parents took their child to enroll in specific educational program with the average score of satisfaction was 2.63 (SD=1.991). All parents were able to practice an ASD child at home, some of them carried out activities from therapist, some of them created their own activities for practicing their child, some of them could be able to applied both techniques at home. The average score of satisfaction in this outcome was 2.67 (SD= 1.850). Another parental adaptation outcome was ability to share information with other parents who were at the same condition by giving them a contact number or joining in the parental group. All parents responded to this item with the average score of satisfaction was 2.66 (SD=1.914). Moreover, all parents responded in item of having self-efficacy for parenting an ASD child, such as having more confidence to deal with child's problems, able to observe signs and change of signs in a child, able to endure for a child with the average score of satisfaction was 3.44 (SD=1.981).

Table 4.17 The summary of personal quality-of-life assessed by the WHOQOL-BREF test

Domains of personal quality-of-life	n	Full score	Min	Max	Mean	SD
Physical domain	236	35	13	35	25.92	4.06
Psychological domain	257	30	6	30	22.12	3.82
Social domain	247	15	3	15	10.66	1.87
Environmental domain	268	40	12	40	27.72	4.77
Total of personal QoL	303	120	37	129	94.04	11.19

Scale of each item, 0 = totally disagree with the item, 5 = strongly agree with the item

From table 4.17, descriptive analysis of parental quality-of-life in stage of post-diagnosis was presented. With the full score of 130, about 220 (72.60%) parents had average quality-of-life score as 93.99 (SD=13.15). The average score of physical domain was 25.92 (SD=4.06), the average score of psychological domain was 22.12 (SD=3.82), the average score of social domain was 10.66 (SD=1.87), and the average score of environmental domain was 27.72 (SD=4.77).

4.2.3.2 Correlation analysis to find out the associations among influencing factors to parental outcomes

The correlation analyses of demographic variables to adaptation outcomes were presented. The demographic variables of parental ages, child ages, and number of siblings in family to parental adaptation outcomes of functioning for raising ASD children and having one own healthy quality-of-life were analyzed by Pearson correlation as clarified in table 4.18. While the demographic variables of child's gender, person who was main-caregiver to ASD in family, educational level of main-caregiver to parental adaptation outcomes of functioning for raising ASD children and having one own healthy quality-of-life were analyzed by t-test and one-way ANOVA as clarified in table 4.19.

Table 4.18 The analysis of demographic variables to adaptation outcomes during post-diagnosis stage, run by Pearson correlation

Demographic variables	DVs: Adaptation outcomes (post-diagnosis)					
	Received treatment	**Attended specific school**	**Practiced at home**	**Sharing with parents**	**Raising of self-efficacy**	**Parental QoL**
Parental ages (years)	.007 (.906)	.062 (.298)	-.028 (.635)	-.074 (.216)	-.065 (.278)	-.130 (.061)
Child ages (years)	.054 (.348)	.195** (.001)	.003 (.955)	.014 (.807)	.021 (.717)	.168* (.017)
Number of siblings in family	.054 (.351)	.122* (.034)	.036 (.531)	.137* (.017)	.056 (.330)	-.020 (.775)

Pearson correlation coefficient (p-value)

* Significant at the .05 level

** Significant at the .01 level

Form table 4.18, there were statistically significant correlations between factors of children ages to parental adaptation outcomes of taking a child to enroll in specific educational school and parental healthy quality-of-life at the level of .01 and .05 respectively. It indicated that the older of children, the better in attended specific educational school and greater in parental quality-of-life. The number of siblings in the family was significant correlation with parental outcomes of taking a child to enroll in specific educational school and sharing information with other parents who were at the same condition at the level of .05. These results indicated that parents who had more children in the family had tendency to take an ASD child to enroll in specific school and able to share information with other parents. While another one factor of parental ages did not show significant correlation to any of the parental outcomes.

Table 4.19 The analysis of demographic variables to adaptation outcomes during post-diagnosis stage, run by independent t-test or one-way ANOVA

Demographic variables	DVs: Adaptation outcomes (post-diagnosis) t-value or F-value					
	Received treatment	**Attend specific school**	**Practice at home**	**Sharing with parents**	**Raising of self-efficacy**	**Parental QoL**
Child's gender	-.672	.460	-.254	-1.599	-.996	-1.648
Main caregiver	1.449	1.748	1.452	2.168	2.252	1.875
Educational level of main caregivers	1.103	.851	1.746	1.537	1.145	1.455

Main caregivers divided as mother, father, grandparent, uncle or aunt

Educational level of main caregivers divided as primary, secondary, bachelor's degree, above bachelor's degree

From table 4.19, there was no statistically significant difference between child's genders to any of parental adaptation outcomes when applying t-test analysis. As well as the non- statistically significant difference among person who was main-caregiver to ASD in family and educational level of main-caregiver to any of parental adaptation outcomes when applying one-way ANOVA analysis

Moreover, when determining the adaptation-related factors of coping by solving to the problems, acceptance to child's diagnosis and situation, redefine meaning and finding positive related to ASD situation, use of religion and spiritual principle, seeking additional information on disorder and treatment, seeking support, and numbers of social network to the parental adaptation outcomes of perform functioning for raising ASD children and having one own healthy quality-of-life. The hypothesis stated that there were significant associations among group of influencing factors to outcomes. To test the hypothesis, the Pearson correlation was employed and their results were presented in table 4.20.

Table 4.20 The correlation analysis of adaptation-related factors to adaptation outcomes during post-diagnosis stage

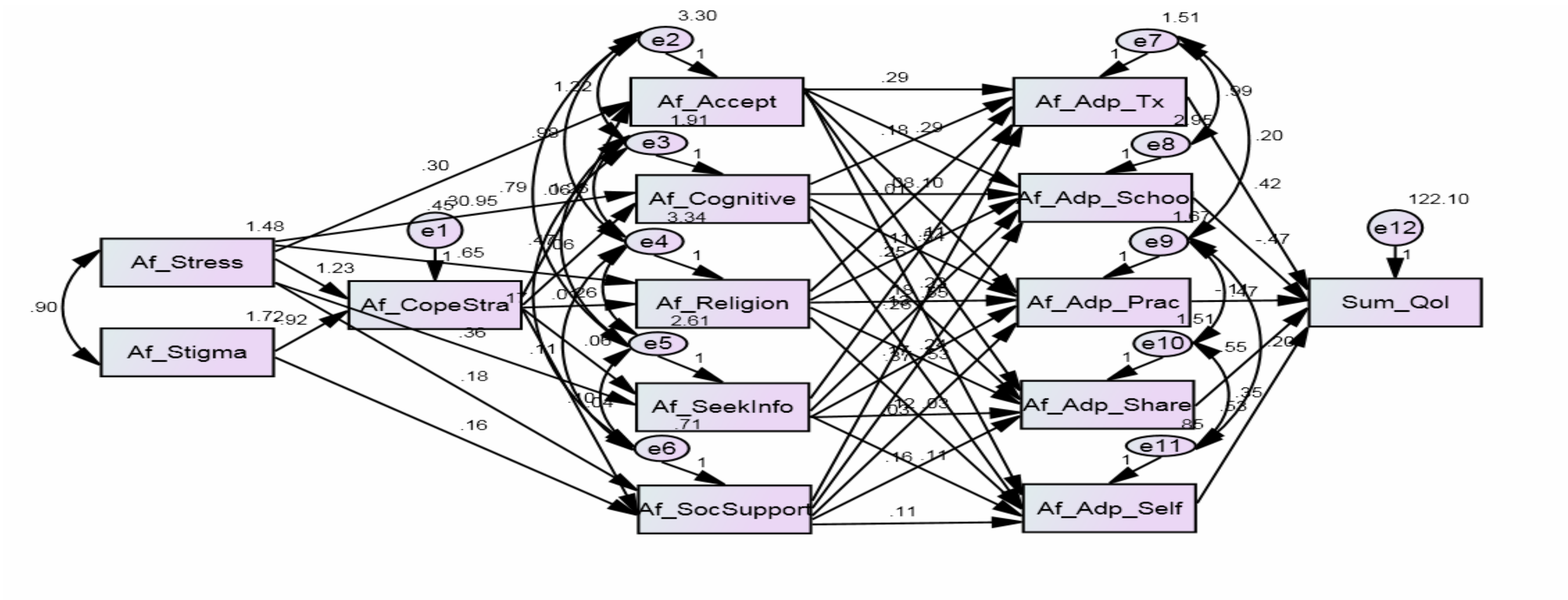
Adaptation-related factors	DVs: Adaptation outcomes (post-diagnosis)					
	Received treatment	Attended specific school	Practiced at home	Sharing with parents	Raising of self-efficacy	Parental QoL
Coping by solving problem	.246** (<.001)	.167** (.004)	.196** (<.001)	.268** (<.001)	.279** (<.001)	.566** (<.001)
Acceptance to child's diagnosis	.535** (<.001)	.411** (<.001)	.465** (<.001)	.491** (<.001)	.624** (<.001)	.145* (.045)
Redefine meaning and finding positive	.484** (<.001)	.368** (<.001)	.670** (<.001)	.711** (<.001)	.759** (<.001)	.129 (.078)
Use of religion and spiritual principle	.292** (<.001)	.304** (<.001)	.517** (<.001)	.587** (<.001)	.479** (<.001)	-.063 (.354)
Seeking information on disorder and treatment	.461** (<.001)	.287** (<.001)	.378** (<.001)	.362** (<.001)	.409** (<.001)	.089 (.217)
Seeking support	.316** (<.001)	.289** (<.001)	.258** (<.001)	.329** (<.001)	.317** (<.001)	.081 (.228)
Number of social network	.291** (<.001)	.273** (<.001)	.295** (<.001)	.360** (<.001)	.285** (<.001)	-.026 (.687)

Pearson correlation coefficient (p-value)
*Significance at the .05 level
** Significance at the .01 level

From table 4.20, most of associations among the adaptation-related factors to the parental adaptation outcomes of perform functioning for raising ASD children and having one own healthy quality-of-life were statistically significant at level of .01. Therefore, all of these variables must exist in the model and test for model fit so far.

4.2.3.3 Path analysis for testing the model fit

During post-diagnosis stage, the path analysis was employed for testing the hypothesis which stated that the post-diagnosis model fit well with the set of 303 parents. The post-diagnosis model included variables as suggested by interviewing data in qualitative phase and results from correlation analysis. Therefore, the variables existed in the hypothesized model included two stressors of raising in stress and worry about ASD children and perceived social stigma, the adaptation-related factors of coping by solving to the problems, acceptance to child's diagnosis and situation, redefine meaning and finding positive aspects related to ASD situation, use of religious and spiritual principles, seeking additional information on disorder and treatment, seeking support, and the parental adaptation outcomes of perform functioning for raising ASD children and having one own healthy quality-of-life. Then, calculating coefficient and testing for model fit by using AMOS statistical program. If the model shown not pretty good fit, the modifying method would employed until getting the final good fit model. The testing of model fit was presented in figure 4.4, 4.5, and 4.6 below.



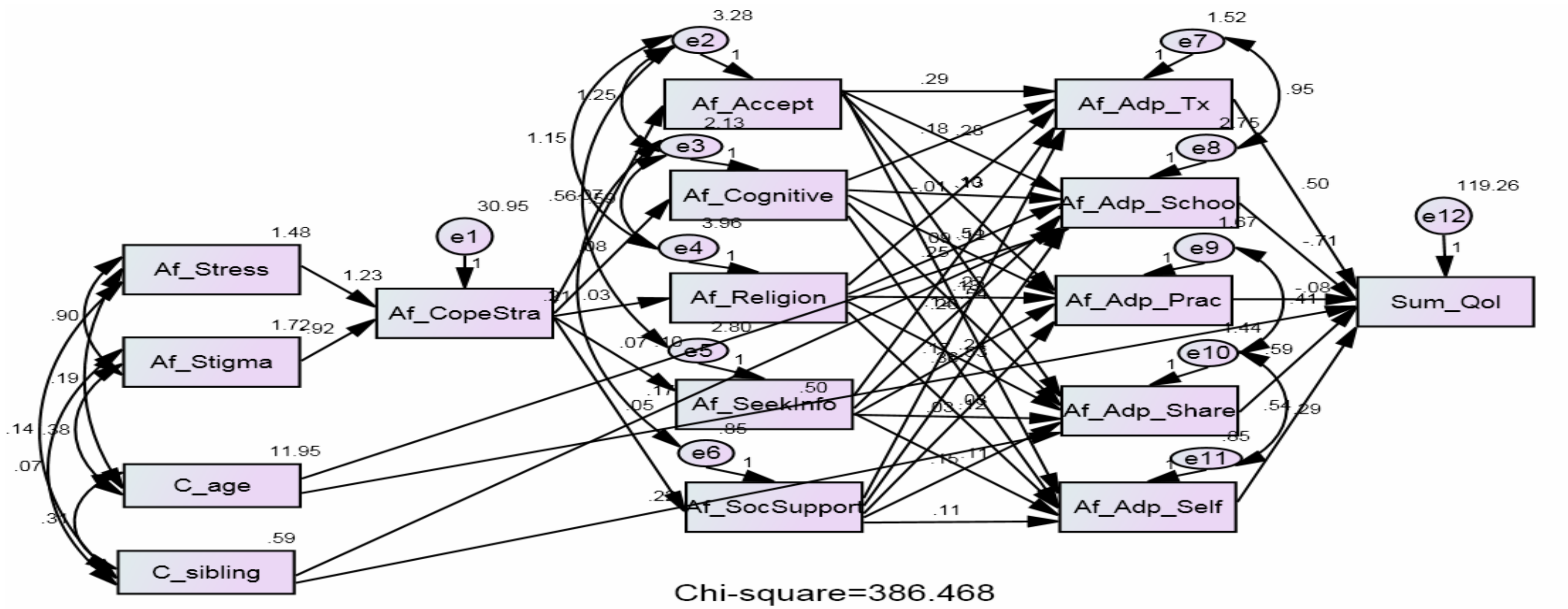
Chi-square=188.954
Chi-square/df=5.726, df=33, p=.000
GFI=.927, CFI=.919, RMSEA=.125, RMR=2.864

Af-Stress referred to the heightened of worrying level and negative emotion of parents when being informed about child’s diagnosis
Af_Stigma referred to the parental feeling of misunderstanding from society
Af-CopeStra referred to parental coping strategy by solving with the problems during post-diagnosis stage
Af_Accept referred to level of parental acceptance toward child’s diagnosis and situation
Af_Cognitive referred to level of parental redefine meaning and finding positive aspects from ASD related situation
Af_religion referred to level of parental use of religious and spiritual principles
Af_Seekinfo referred to parental action of seeking additional informal on the disorder and treatment
Af_SocSupport referred to parental action of seeking social support from someone within and outside their network
Af_Adp_Tx referred to parental adaptation outcome by taking a child to receive one or several kinds of treatment
Af_Adp_School referred to parental adaptation outcome by taking a child to enroll in specific education program at school
Af_Adp_Prac referred to parental adaptation outcome by implementing or initiating activities and practicing with a child at home
Af_Adp_Share referred to parental adaptation outcome by sharing information with other parents who were at the same condition
Af_Adp_Self referred to parental adaptation outcome by having self-efficacy for raising an ASD child
Sum_QoL referred to level of parental quality-of-life

Figure 4.4 The test of model fit with the hypothesized model in the post-diagnosis stage

From figure 4.4, the testing of model fit when analyzed with hypothesized model shown pretty fair results. The fit indexed indicated by GFI= .927 (suggestion value should be greater than .90), CFI=.919 (suggestion value should be greater than .90), RMSEA =.125 (suggestion value should be less than .06), RMR = 2.684 (suggestion value should be less than .08) and NFI =.906 (suggestion value should be greater than .90). Therefore the model needed to be modified under the statistical and theoretical suggestion.

When modified model according to correlation suggestion, the path model included two more demographic variables which shown significant correlation with adaptation outcome of taking a child enrolling in specific education program. When added two more variables, the modified path model was presented in figure 4.5 below.

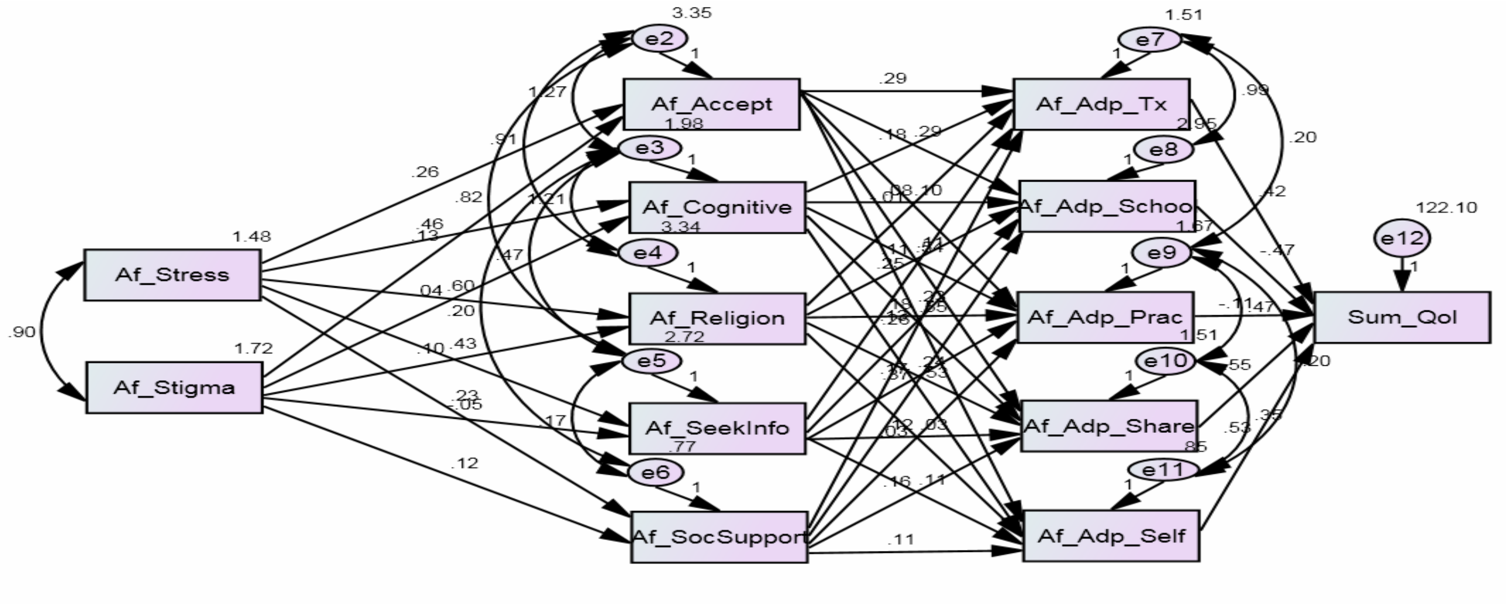


Chi-square=386.468
Chi-square/df=5.946, df=65, p=.000
GFI=.862, CFI=.836, RMSEA=.128, RMR=2.554, NFI=.815

Af-Stress referred to the heightened of worrying level and negative emotion of parents when being informed about child’s diagnosis
Af_Stigma referred to the parental feeling of misunderstanding from society
Af-CopeStra referred to parental coping strategy by solving with the problems during post-diagnosis stage
Af_Accept referred to level of parental acceptance toward child’s diagnosis and situation
Af_Cognitive referred to level of parental redefine meaning and finding positive aspects from ASD related situation
Af_religion referred to level of parental use of religious and spiritual principles
Af_Seekinfo referred to parental action of seeking additional informal on the disorder and treatment
Af_SocSupport referred to parental action of seeking social support from someone within and outside their network
Af_Adp_Tx referred to parental adaptation outcome by taking a child to receive one or several kinds of treatment
Af_Adp_School referred to parental adaptation outcome by taking a child to enroll in specific education program at school
Af_Adp_Prac referred to parental adaptation outcome by implementing or initiating activities and practicing with a child at home
Af_Adp_Share referred to parental adaptation outcome by sharing information with other parents who were at the same condition
Af_Adp_Self referred to parental adaptation outcome by having self-efficacy for raising an ASD child
Sum_QoL referred to level of parental quality-of-life
C_age referred to ages of ASD children, C_sibling referred to the number of siblings in the family

Figure 4.5 The test of model fit with the model suggested by correlation analysis in the post-diagnosis stage

From figure 4.5, the modified model according to the correlation suggestion was added two more demographic variables of children ages and number of siblings in the family and four more pathways into the model, including pathway of children ages to parental outcome of taking a child enroll in specific educational program, children ages to parental quality-of-life, number of siblings in the family to parental outcome of taking a child enroll in specific educational program, and number of siblings in the family to parental outcome of sharing information with other parents who were at the same condition. When analyzed the modified model, the model seems decrease fit level which the fit indexed indicated by GFI= .862 (suggestion value should be greater than .90), CFI=.836 (suggestion value should be greater than .90), RMSEA =.128 (suggestion value should be less than .06), RMR =2.554 (suggestion value should be less than .08) and NFI =.815 (suggestion value should be greater than .90). Therefore, the model needed to be modified again and again until finding out the better one. The history of modified model was presented in appendix C while the finalized fit model presented the good fit level was demonstrated in figure 4.6 below.



Chi-square=114.496
Chi-square/df=4.580, df=25, p=.000
GFI=.947, CFI=.950, RMSEA=.109, RMR=.705

Af-Stress referred to the heightened of worrying level and negative emotion of parents when being informed about child's diagnosis
Af_Stigma referred to the parental feeling of misunderstanding from society
Af_Accept referred to level of parental acceptance toward child's diagnosis and situation
Af_Cognitive referred to level of parental redefine meaning and finding positive aspects from ASD related situation
Af_religion referred to level of parental use of religious and spiritual principles
Af_Seekinfo referred to parental action of seeking additional informal on the disorder and treatment
Af_SocSupport referred to parental action of seeking social support from someone within and outside their network
Af_Adp_Tx referred to parental adaptation outcome by taking a child to receive one or several kinds of treatment
Af_Adp_School referred to parental adaptation outcome by taking a child to enroll in specific education program at school
Af_Adp_Prac referred to parental adaptation outcome by implementing or initiating activities and practicing with a child at home
Af_Adp_Share referred to parental adaptation outcome by sharing information with other parents who were at the same condition
Af_Adp_Self referred to parental adaptation outcome by having self-efficacy for raising an ASD child
Sum_QoL referred to level of parental quality-of-life

Figure 4.6 The test of model fit with the modified model in the post-diagnosis stage

From figure 4.6, the modified model deleted factor of parental coping strategies by solving to the problems and draw direct paths from stressors to adaptation-related factors of acceptance to child's diagnosis and situation, redefine meaning and finding positive aspects related to ASD situation, use of religion and spiritual principle, seeking additional information on disorder and treatment, and factor of seeking support as an alternation. When modified, the model seems fit pretty well with the data set. The fit indexed indicated by GFI= .947 (suggestion value should be greater than .90), CFI=.950 (suggestion value should be greater than .90), RMSEA =.109 (suggestion value should be less than .06), RMR =.705 (suggestion value should be less than .08) and NFI =.939 (suggestion value should be greater than .90). Therefore, the latter model was selected for explaining parental adaptation process in stage of post-diagnosis while path coefficients and model summarization presented in table 4.21-4.28.

Table 4.21 The summary of path coefficient in adaptation model during post-diagnosis stage: the path from raising of stress and worried about ASD children to adaptation-related factors and parental adaptation outcomes

Paths	Total effect		Direct effect		Indirect effect	
	Unstd.	Std.	Unstd.	Std.	Unstd.	Std.
Acceptance ← Stress and worried	.521	.169	.521	.169		
Redefine meaning ← Stress and worried	.464	.370	.464	.370		
Using religion ← Stress and worried	.261	.367	.603	.367		
Seek information ← Stress and worried	.433	.306	.433	.306		
Seeking support ← Stress and worried	.233	.296	.233	.296		
Taking a child to treatment ← Stress and worried	.322	.243			.322	.243

Table 4.21 The summary of path coefficient in adaptation model during post-diagnosis stage: the path from raising of stress and worried about ASD children to adaptation-related factors and parental adaptation outcomes (cont.)

Paths	Total effect		Direct effect		Indirect effect	
	Unstd.	Std.	Unstd.	Std.	Unstd.	Std.
Taking a child to specific school ← Stress and worried	.320	.197			.320	.197
Practice at home ← Stress and worried	.461	.307			.461	.307
Sharing with other parents ← Stress and worried	.521	.337			.521	.337
Increasing self-efficacy ← Stress and worried	.403	.315			.403	.315
Parental QoL ← Stress and worried	.431	.047			.431	.047

Table 4.22 The summary of path coefficient in adaptation model during post-diagnosis stage: the path from perceived social stigma to adaptation-related factors and parental adaptation outcomes

Paths	Total effect		Direct effect		Indirect effect	
	Unstd.	Std.	Unstd.	Std.	Unstd.	Std.
Acceptance ← Perceived stigma	.134	.093	.134	.093		
Redefine meaning ← Perceived stigma	.040	.034	.040	.034		
Using religion ← Perceived stigma	.097	.064	.097	.064		
Seek information ← Perceived stigma	-.054	-.041	-.054	-.041		
Seeking support ← Perceived stigma	.117	.160	.117	.160		
Taking a child to treatment ← Perceived stigma	.062	.051			.062	.051

Table 4.22 The summary of path coefficient in adaptation model during post-diagnosis stage: the path from perceived social stigma to adaptation-related factors and parental adaptation outcomes (cont.)

Paths	Total effect		Direct effect		Indirect effect	
	Unstd.	Std.	Unstd.	Std.	Unstd.	Std.
Taking a child to specific school ← Perceived stigma	.088	.059			.088	.059
Practice at home ← Perceived stigma	.046	.033			.046	.033
Sharing with other parents ← Perceived stigma	.073	.051			.073	.051
Increasing self-efficacy ← Perceived stigma	.062	.052			.062	.052
Parental QoL ← Perceived stigma	.052	.006			.052	.006

Table 4.23 The summary of path coefficient in adaptation model during post-diagnosis stage: the path from adaptation-related factors of acceptance to child's diagnosis and situation to parental adaptation outcomes

Paths	Total effect		Direct effect		Indirect effect	
	Unstd.	Std.	Unstd.	Std.	Unstd.	Std.
Taking a child to treatment ← Acceptance	.288	.337	.288	.337		
Taking a child to specific school ← Acceptance	.287	.274	.287	.274		
Practice at home ← Acceptance	.096	.099	.096	.099		
Sharing with other parents ← Acceptance	.113	.113	.113	.113		
Increasing self-efficacy ← Acceptance	.229	.277	.229	.277		
Parental QoL ← Acceptance	.157	.026			.157	.026

Table 4.24 The summary of path coefficient in adaptation model during post-diagnosis stage: the path from adaptation-related factors of redefine meaning and finding positive aspects related to ASD situation to parental adaptation outcomes

Paths	Total effect		Direct effect		Indirect effect	
	Unstd.	Std.	Unstd.	Std.	Unstd.	Std.
Taking a child to treatment ← Redefine meaning	.183	.174	.183	.174		
Taking a child to specific school ← Redefine meaning	.080	.062	.080	.062		
Practice at home ← Redefine meaning	.540	.453	.540	.453		
Sharing with other parents ← Redefine meaning	.546	.443	.546	.443		
Increasing self-efficacy ← Redefine meaning	.534	.524	.534	.524		
Parental QoL ← Redefine meaning	.561	.077			.561	.077

Table 4.25 The summary of path coefficient in adaptation model during post-diagnosis stage: the path from adaptation-related factors of using religion and spiritual principles to parental adaptation outcomes

Paths	Total effect		Direct effect		Indirect effect	
	Unstd.	Std.	Unstd.	Std.	Unstd.	Std.
Taking a child to treatment ← Using religion	-.011	-.013	-.011	-.013		
Taking a child to specific school ← Using religion	.108	.110	.108	.110		
Practice at home ← Using religion	.175	.192	.175	.192		
Sharing with other parents ← Using religion	.242	.257	.242	.257		
Increasing self-efficacy ← Using religion	.035	.045	.035	.045		
Parental QoL ← Using religion	.077	.014			.077	.014

Table 4.26 The summary of path coefficient in adaptation model during post-diagnosis stage: the path from adaptation-related factors of seeking additional information on disorder and treatment to parental adaptation outcomes

Paths	Total effect		Direct effect		Indirect effect	
	Unstd.	Std.	Unstd.	Std.	Unstd.	Std.
Taking a child to treatment ← Seek information	.246	.263	.246	.263		
Taking a child to specific school ← Seek information	.131	.114	.131	.114		
Practice at home ← Seek information	.166	.157	.166	.157		
Sharing with other parents ← Seek information	.123	.113	.123	.113		
Increasing self-efficacy ← Seek information	.111	.122	.111	.122		
Parental QoL ← Seek information	.149	.023			.149	.023

Table 4.27 The summary of path coefficient in adaptation model during post-diagnosis stage: the path from adaptation-related factors of seeking support to parental adaptation outcomes

Paths	Total effect		Direct effect		Indirect effect	
	Unstd.	Std.	Unstd.	Std.	Unstd.	Std.
Taking a child to treatment ← Seek support	.264	.157	.264	.157		
Taking a child to specific school ← Seek support	.367	.179	.367	.179		
Practice at home ← Seek support	.032	.017	.032	.017		
Sharing with other parents ← Seek support	.164	.084	.164	.084		
Increasing self-efficacy ← Seek support	.111	.068	.111	.068		
Parental QoL ← Seek support	.082	.007			.082	.007

Table 4.28 The summary of path coefficient in adaptation model during post-diagnosis stage: the path from adaptation outcomes of parental functioning to parental quality-of-life

Paths	Total effect		Direct effect		Indirect effect	
	Unstd.	Std.	Unstd.	Std.	Unstd.	Std.
Parental QoL ← Taking child to treatment	.415	.060	.415	.060		
Parental QoL ← Taking child to specific school	-.469	-.083	-.469	-.083		
Parental QoL ← Practice at home	-.108	-.018	-.108	-.018		
Parental QoL ← Sharing with other parents	.549	.092	.549	.092		
Parental QoL ← Increasing self-efficacy	.526	.073	.526	.073		

The summary from table 4.21-4.28, it could be concluded that the parental adaptation model in post-diagnosis stage could be explained with 57 pathways. There were 40 direct pathways and 17 indirect pathways. According to that, there were 4 pathways that shown negative prediction to the dependent variables while all other pathways were positive prediction. The strongest pathway was the direct pathway from applying method of redefine meaning and finding positive aspects from ASD related situation to the parental outcomes of increasing of self-efficacy for parenting an ASD child (the total standardized coefficient = .524). Next, the stronger pathways was the direct pathway from redefine meaning and finding positive aspects from ASD related situation to the parental outcomes of practicing or training of child's skills at home (the total standardized coefficient = .453), the direct pathway from redefine meaning and finding positive aspects from ASD related situation to the parental outcomes of sharing information with other parents who were facing with the same situation (the total standardized coefficient = .443). While the weakness pathway was direct pathway when applied the use of religion or spiritual principles to parental outcome of continuously taking a child to receive treatment/intervention (the total standardized coefficient = -.013). The result presented negative prediction which indicated that parents who satisfied with religion activities seem unlikely to taking a child for receiving treatment or intervention regularly. The weak pathways was the indirect pathway from use of religion and spiritual principle to parental quality-of-life (the total standardized coefficient = .014) and the indirect pathway from perceived social stigma to parental ability to practice skills of an ASD child at home (the total standardized coefficient = .033).

CHAPTER V
DISCUSSION

In this study, the parental adaptation model had developed and it proved to be effective for parent and professional. The model composed of several factors and parental adaptation outcomes of functioning and health status. The main finding of this research suggested two stages of parental adaptation. Therefore, two models were tested with significant results. The discussion in the findings focused on the reason why the factors composed as the model in each stage, whether these factors relevant to parental adaptation outcomes, and how to apply the model in professional practices. In addition, the statistical testing was employed for indicate adaptation outcomes of those parents in terms of their healthy status and quality-of-life.

5.1 The discussion on parental adaptation model and the model pathways

The main research finding on parental adaptation model composed of two stages. In the first stage, the pre-diagnosis stage, it started when parents observed unusual behavior and/or delayed development of a child, then adapted parents put effort to cope with the situation by applying personal coping strategies to solve with the ASD related problems, seeking additional information on unusual child's behaviors and normal development, seeking support from ones within and outside their network. The successful adapted parents should decide to take a child to see the doctor and getting a confirmation of child's diagnosis

The post-diagnosis model started after parents learnt from the professionals of the child's diagnosis, then the confirmed diagnosis increased level of stress in the parents. For adapted parents, they had to put effort to accept their child's diagnosis, even thought it was difficult, reconstruct meaning and finding positive aspect from ASD related situation, use of religion or spiritual principles, seek information related to disorder and treatment, and seek support. Finally, successful adapted parents should be able to continue taking a child to receive treatment and/or enroll in specific education program for ASD, able to practicing a child at home, able to share information with other parents who were facing the same condition, having higher levels of self-efficacy for parenting an ASD child, and having quality-of-life.

The finding on two stages of parental adaptation model differed from previous studies particularly on the first stage of pre-diagnosis while the post-diagnosis stage presented their results in term of path model linking of adaptation-related factors to parental behaviors and outcomes. Some pathways from the post-diagnosis stage similar to previous findings, for example, the studies of Pakenham, Samios, Sofronoff (2005) which indicated the coefficient values from factors of seeking social support to parental social adjustment and the coefficient values from behavioral disengagement to outcome of parental depression. The study of Stuart & McGrew (2009) indicated the coefficient values from factor of social support to degree of caregiver and family burden for raising children with ASD. The study of Siman-Tov & Kaniel (2010) indicated path coefficient values from factors of internal locus of control and social support to degree of stress in mothers and fathers of children with ASD.

5.1.1 The parental adaptation model as the holistic view

As cited above, it was notified that no study suggested parental adaptation in the stage of pre-diagnosis induced by the process of identifying factors. Key-informants included in this stage through interview technique help us see the parents at the starting point. While most of studies emphasized on period when professional and parent interacted. This interpretative process helped professional learnt process of parental adaptation as the holistic view.

When compared this finding with previous studies, the current finding focused on the interactions among parents, professionals, their social network and organization which support to the ecological perspective while previous studies emphasized on psychological process when parents were informed about child's diagnosis. For example, the study of Drotar, Baskiewiez, Irvin, et al (1975) determined the parental adaptation to the birth of a child with congenital malformation through in-depth interview technique. Their finding indicated five stages of parental adaptation, starting with the stage of shock when gotten informed about child's disorder, then the second stage, the stage of denial toward the confirmation of child's diagnosis. The third stage, the stage of sadness, anger and anxiety. The fourth stage, the stage of adaptation when parents gradually lessen of their anxiety and intense emotion reactions, increased their confrontation with the situation and increased confidence in their ability to start caring for children. The last stage, the stage of reorganization by receiving more rewarding level of interaction with disabled children, able to deal with children' problems, and had long-term acceptance to the child's diagnosis and situation. The study of Altiere & Kluge (2009) examined the parental process for acceptance to children with ASD. Their result indicated five challenges steps of parental acceptance, including steps of development, questioning, devastation, solution and growth. While the study of Braiden, Bothwell, Duffy (2010) indicated the parental experience when accessed to the services and entered into diagnostic procedure of ASD. Their research result indicated parental concern of listening to their needs, receiving a child's diagnosis in person, receiving written information, helping in applying information and helping parent to understand whole diagnostic process. In conclusion, most of the previous studies emphasized on psychological impact of parents when interact with professionals whole this study emphasized on the whole adaptation process starting since parents observed unusual behavior of a child until a child was diagnosed and the process of raising him/her afterward.

5.1.2 The confirmation of model pathways with in-depth interview data

This research applied case study and life's experience approaches through the interpretative principle from each of 13 interviewed cases. The life's experiences of these cases were analyzed in order to have holistic views of parents. The details were clarified below.

The parental adaptation model started in pre-diagnosis process. The research findings presented 9 pathways with 5 variables in the model, including variables of perceived child's unusual behaviors, parental coping strategies to solve with the ASD related problems, seeking additional information related to unusual behaviors and normal development, seeking support from someone within and outside their network, and adaptation outcomes of taking a child to receive diagnosis. When checking all the pathways with interview data of thirteen parents. The interview data reflected to model pathways, including (1) the pathway of observing child's unusual behaviors, seeking information and seeking support, then taking a child to receive diagnosis, the pathways of observing child's unusual behaviors, seeking support, then taking a child to receive diagnosis, (2) the pathways of observing child's unusual behaviors, using parental coping strategies of solving to the problems, then taking a child to receive diagnosis, and (3) the pathway of observing child's unusual behaviors, using parental coping strategies of solving to the problems, seeking information and seeking support, then taking a child to receive diagnosis.

In the post-diagnosis model, the research results presented 57 pathways, 40 direct pathways and 17 indirect pathways, with 13 variables in the model, including variables of increasing in level of parental stress relevant to a child's diagnosis, increasing in level of perceiving social stigma, the adaptation-related factors of acceptance to child's diagnosis even it was difficult, reconstruct meaning and finding positive aspect from ASD related situation, use of religion or spiritual principles, seeking information related to disorder and treatment, seeking social support, and the adaptation outcomes of taking a child to receive treatment and/or enrolling in specific education program for ASD, able to practicing a child at home, able to share information with other parents who were at the same condition, have higher levels of self-efficacy for parenting an ASD child, and have healthy quality-of-life. When checking all the pathways with interview data of thirteen parents. The results reflected variety of the pathways. When ranking the significant pathways according to the frequency of happening with the cases, it could be ranked as (1) the pathway of increasing in parental stress and parental perceived of social stigma, mediated by factors of acceptance to child's diagnosis even it was difficult, reconstruct meaning and finding positive aspect from ASD related situation, seeking information related to disorder and treatment, seeking social support, then having the adaptation outcomes of taking a child to receive treatment and/or enrolling in specific education program for ASD, able to practicing a child at home, able to share information with other parents who were at the same condition, and increased in level of parental quality-of-life. (2) Some parents reflected the pathway of increasing in parental stress, mediated by factors of acceptance to child’s diagnosis even it was difficult, reconstruct meaning and finding positive aspect from ASD related situation, seeking information related to disorder and treatment, use of religion or spiritual principles then having the adaptation outcomes of taking a child to receive treatment and/or enrolling in specific education program for ASD, able to practicing a child at home, and increased in level of parental quality-of-life. (3) Some parents reflected the pathway of increasing in parental stress, mediated by factors of acceptance to child’s diagnosis even it was difficult, reconstruct meaning and finding positive aspect from ASD related situation, seeking social support, then having the adaptation outcomes of taking a child to receive treatment and/or enrolling in specific education program for ASD, able to practicing a child at home, having higher levels of self-efficacy for parenting an ASD child, and increased in level of parental quality-of-life so far.

5.1.3 The final model

The final model of parental adaptation was conducted in order to simplify the research findings for future use by professionals. This model reflected holistic adaptation process of parents for raising children with ASD and it was presented in figure 5.1 below.

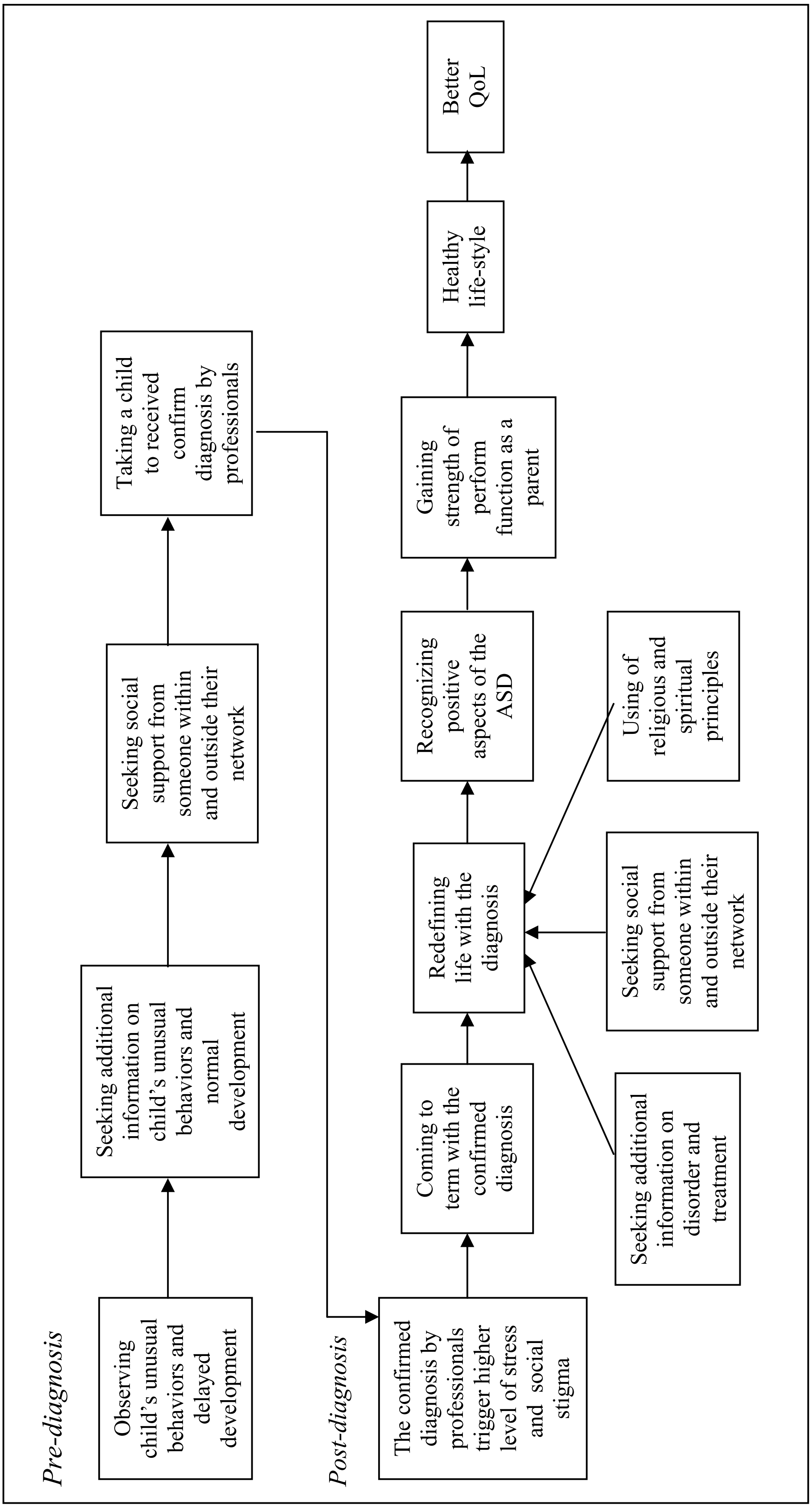


Figure 5.1 The final model of parental adaptation

From figure 5.1, the model reflected holistic adaptation process of parents for raising children with ASD. It started since parents had not been informed about the child's diagnosis until they contacted with the service, learnt of the diagnosis and adapted as the final. During the time of not informing the diagnosis or pre-diagnosis stage, parents should be able to observe and recognize the presence of unusual behaviors in their child. Then, they learnt to adapt by applying their own coping strategies to solve with the problem related to ASD behaviors. Some parents sought additional information about the child's unusual compared with the normal development. Some parents sought various kinds of support from someone within and outside their network, including support of emotion, information, instrument and appraisal. In this stage, the successful adapted parents should make decision to take a child to receive diagnosis from doctor or professional. In the post-diagnosis stage, it started when parents learnt about the child's diagnosis from professional and that confirmed diagnosis heightened level of parental stress and social stigma. Adapted parents needed to learn and passed through their difficult situation by coming to term with the diagnosis and redefine the meaning of life with the diagnosis. Parents might work with seeking additional information on disorder and treatment, seeking various kinds of support, using of religion principles for redefining their meaning of life. Adapted parents should be able to recognize positive aspects from the ASD situation to make them become more maturity and gain strength of perform function as a parent for raising a child with ASD. The successful adapted parent should also have healthy life-style and better in their quality-of-life at the final. Moreover, since the social support was determined as one of the factors existing in the parental adaptation model in both stages of pre-and-post diagnosis, the statistical testing was tested for their significant difference. The results indicated that there was significant difference in emotional social support ($t = -3.781$, p-value $< .01$) while informational support, instrumental support, appraisal support and overall support were not significant. These results reflected to professionals that the emotional support was important for parents, especially in post-diagnosis stage when parents interacted with professionals and the services.

To apply the model for professionals, the model suggested professionals in aspects of (1) to aware of their own behaviors when revealing information of diagnosis to parents, (2) to design intervention for minimize parental stress level and strengthen parental ability to cope through network of ASD, (3) design intervention to support parent by strengthening network and partnership with other parents who facing the same problems and volunteers. (4) Professionals may provide support, especially emotional support for parents to counteract with social stigma, and (5) assess the stress and ability of parents before they leave the services. Furthermore, (6) the interactive learning among professionals and other stakeholders should be included for designing the programs/interventions and educational curriculum for supporting parents to raise an ASD child so far.

5.2 The discussion on parental adaptation outcomes

In this study, the adaptation outcomes of parents could be reflected by the parenting performances and parental healthy status. Those adaptation outcomes were explored through in-depth interview with parents, and then their findings were confirmed and validated by views of professionals. In this study, the parental adaptation outcomes divided according to the stages of pre-and-post diagnosis. All the findings of parental adaptation outcomes were statistically tests again in order to indicate their significant and the existence in the model.

Comparing with previous studies, the finding of adaptation outcomes in this study revealed some result similar to the previous ones, for example the outcome of having psychological and emotional well-being (Smith, Seltzer, Tager-Flusberg, et al, 2008; Ekas, Lickenbrock, Whitman, 2010; Arksey, Beresford, Glendinning, et al, 2007), less in parental depression, anxiety and anger (Dunn, Burbine, Bowers, et al, 2001; Smith, Seltzer, Tager-Flusberg, et al, 2008; Gray & Holden, 1992; Clutterbuck, 2009; Samous, Pakenham, Sofronoff, 2009). Some studies indicated adaptation aspects as parental competence to observe unusual behaviors since a child was in early ages (Johnson, Myers, The Council on Children with Disabilities, 2007), able to become co-therapist and mediate intervention at home (Sheinkopf & Siegel, 1998;

Ingersoll &Gergans, 2007; Trudgeon & Carr, 2007), able to collaboratively work as partnership with professionals to enhance skills in children and support to families (Brotherson, 2001; Swick & Hooks, 2005). However, the interview techniques used in this study help us see the parental outcomes at the whole process of adaptation. Therefore, more outcomes relevant to raising children with ASD were revealed and the statistical tests were confirmed of their significant in the model.

5.3 Limitation of the study

In this study, the limitation may due to:

1. The recruitment of the cases with snowball technique may limit the generalization. Since the technique starts with one case and using the case to recruit more samples, they usually refer to people they know in their social network. It is possible that all cases exhibit the same traits and characteristics which leading to the sampling bias. Another limitation is that the representative of the cases may not guarantee because we don’t know the true distribution of all cases in the study. However, the snowball technique is useful for recruit specific or hard-to-reach population who prove difficult to locate (Mack, Woodsong, MacQueen, 2005; Willis, 2012).

2. In this study, the self-reporting technique was used to collect data in parents. All of them were asked about their experience in raising ASD children throughout the stages of pre-and-post diagnosis. However, this method may lead to recall bias when parents do not response just by correct answer, but also by their memory. Recall bias is viewed as the systematic bias which occurs because of the differences in accuracy or completeness of recall prior to major events or experience (Raphael, 1987). This recall bias may produce overestimate or underestimate responses (Tarrant, Manfredo, Bayley, et al, 1993) and that what researcher needs to be careful and note.

CHAPTER VI
CONCLUSION

In this chapter, the development of parental adaptation model that composed of several adaptation-related factors and adaptation outcomes were summarized together with the application of findings and recommendation to the future study.

6.1 Research conclusion

Children with ASD referred to group of children who were diagnosed in the umbrella of Autism Spectrum Disorder. Those ASD children presented their significant impairments in areas of social interaction, communication and repetitive pattern of behaviors and interests. When having ASD children in family, children with ASD had certainly impact on their parents, other family's members and family system as a whole. However, the impact that each parent perceived, the reaction from parents to diagnosis of ASD children and the behaviors of them to functionally raise their ASD child were greatly varied from person to person. Literature suggested that the successful adapted parents should be able to function for raising their ASD children with effectiveness and optimism together with having more positive emotional and high level of their own quality-of-life as the consequence.

The review and suggestion from literature led to objectives of this research which determined to develop the parental adaptation model in group of parents with ASD children. The model demonstrated association among influencing factors to parental adaptation outcomes in the context of raising children with ASD. For this regards, the techniques of qualitative and quantitative methods were employed within two main research phases. The first phase, qualitative method would be employed in order to identify influencing factors and parental adaptation outcomes in the context of raising children with ASD It had been run through steps of literature review and in-depth interview with 13 parents and 5 professionals. Then, the collected data were analyzed by means of theme and content analysis, and drawn the hypothesized model that demonstrated association among those influencing factors and adaptation outcomes. For the second phase, quantitative method would be employed in order to determine the coefficient values and significant pathways from influencing factors to parental adaptation outcomes, in aspects of parental function for raising ASD children and parental quality-of-life. Then depict those influences as a final model. The phase included five steps continued from the previous first phase of developing or selecting instruments for assessing variables included in the model, pretesting the quality of all the instruments, collecting data in 303 parents whose child had diagnosed as ASD, analyzing collected data by means of descriptive statistic, t-test. F-test and correlation, analyzing the model by mean of path analysis and testing for model fit with GFI, CGI, NFI, RMSEA, RMR, and chi-square test.

Finally, the main finding in this research had been reviewed. The significant finding was the parental adaptation models that could be divided according to the timeframe or stages of pre-diagnosis and post-diagnosis. In the pre-diagnosis model, it began when parents observed an unusual behavior and/or delay development of a child, then adapted parents put effort to apply adaptation-related factors of personal coping strategies to solve with the ASD related problems, seeking additional information on unusual child’s behaviors and normal development, seeking support from ones within and outside their network. After that, the successful adapted parents should decide to taking their child to see the doctor and getting a confirmation of child’s diagnosis which was called successful adaptation outcome in this stage.

The post-diagnosis model started after parents learnt from the professionals of the child’s diagnosis, then the confirmed diagnosis increased level of stress in the parents. For adapted parents, they had to put effort to accept their child’s diagnosis even it was difficult, reconstruct meaning and finding positive aspect from ASD related situation, use of religious or spiritual principles, seeking information related to disorder and treatment, and seeking support. Finally, successful adapted parents should be able to continue taking a child to receive treatment and/or enrolling in specific education program for ASD, able to practicing a child at home, able to share information with other parents who were at the same condition, having higher levels of self-efficacy for parenting an ASD child, and having healthy quality-of-life. After that, both models of pre-and-post diagnosis were tested for their level of model fit which reflected by several fit indexes, including GFI, CFI, NFI, RMSEA, RMR and chi-square. Mostly, the fit indexes indicated the good fit level in both models.

6.2 Application and recommendation to the future study

The findings from this research apply to practice and future study as follows:

6.2.1 Application of the study

The finding of parental adaptation model toward raising children with ASD could suggest professionals and public health practitioners to provide early crisis counseling in the first month of diagnosis, design intervention to support parent by strengthening network and partnership with other parents who facing the same problems and volunteers. Professionals may provide support, especially emotional support for parents to counteract with social stigma, assess the stress and ability of parents before they leave the services. Furthermore, the interactive learning among professionals and other stakeholders should be included for designing the health education programs or curriculum so far.

6.2.2 The recommendation to the future study

The findings of this current study may suggest to future analysis in terms of:

1. Using this parental adaptation model as the model based for determining adaptation process in others group of parents, such as the parent of children with mental retardation (MR.), children with mood disorder, children with conduct disorder or other behavioral disturbance.

2. Conducting the longitudinal study for further determine the results when children with ASD are growing up. Since, previous literature indicated the dynamic of autistic behaviors overtime.

3. Appling other research methodology, for example, the case-control study to compare adaptation process with control group so that the difference of parenting function and competence will be clearly define.

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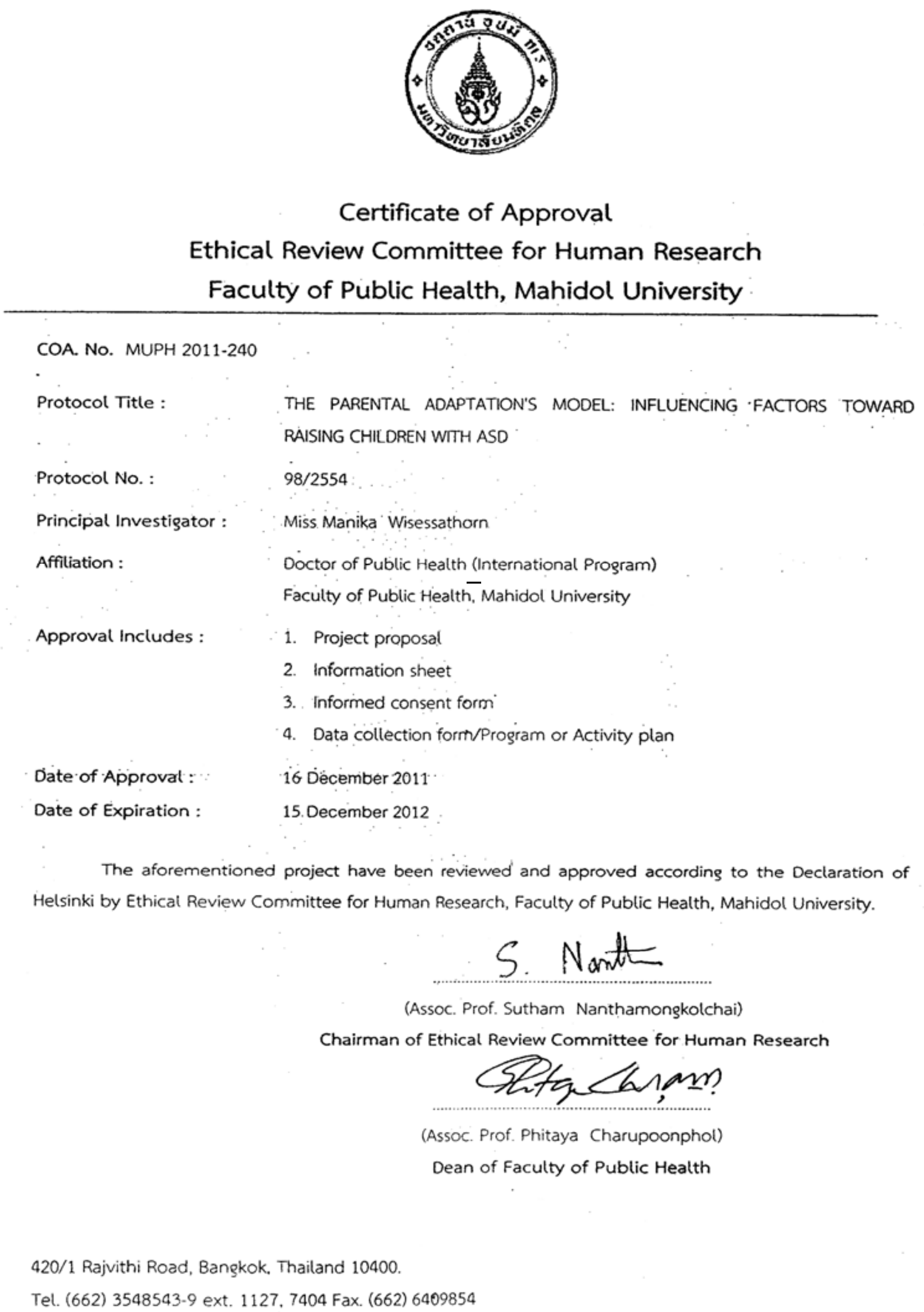
APPENDICES

APPENDIX A

CERTIFICATE OF APPROVAL ETHICAL REVIEW COMMITTEE FOR HUMAN RESEARCH, FACULTY OF PUBLIC HEALTH, MAHIDOL UNIVERSITY



Certificate of Approval
Ethical Review Committee for Human Research
Faculty of Public Health, Mahidol University

COA. No. MUPH 2011-240

Protocol Title : THE PARENTAL ADAPTATION'S MODEL: INFLUENCING FACTORS TOWARD RAISING CHILDREN WITH ASD

Protocol No. : 98/2554

Principal Investigator : Miss Manika Wisessathorn

Affiliation : Doctor of Public Health (International Program)
Faculty of Public Health, Mahidol University

Approval Includes :
1. Project proposal
2. Information sheet
3. Informed consent form
4. Data collection form/Program or Activity plan

Date of Approval : 16 December 2011
Date of Expiration : 15 December 2012

The aforementioned project have been reviewed and approved according to the Declaration of Helsinki by Ethical Review Committee for Human Research, Faculty of Public Health, Mahidol University.

S. Nanth
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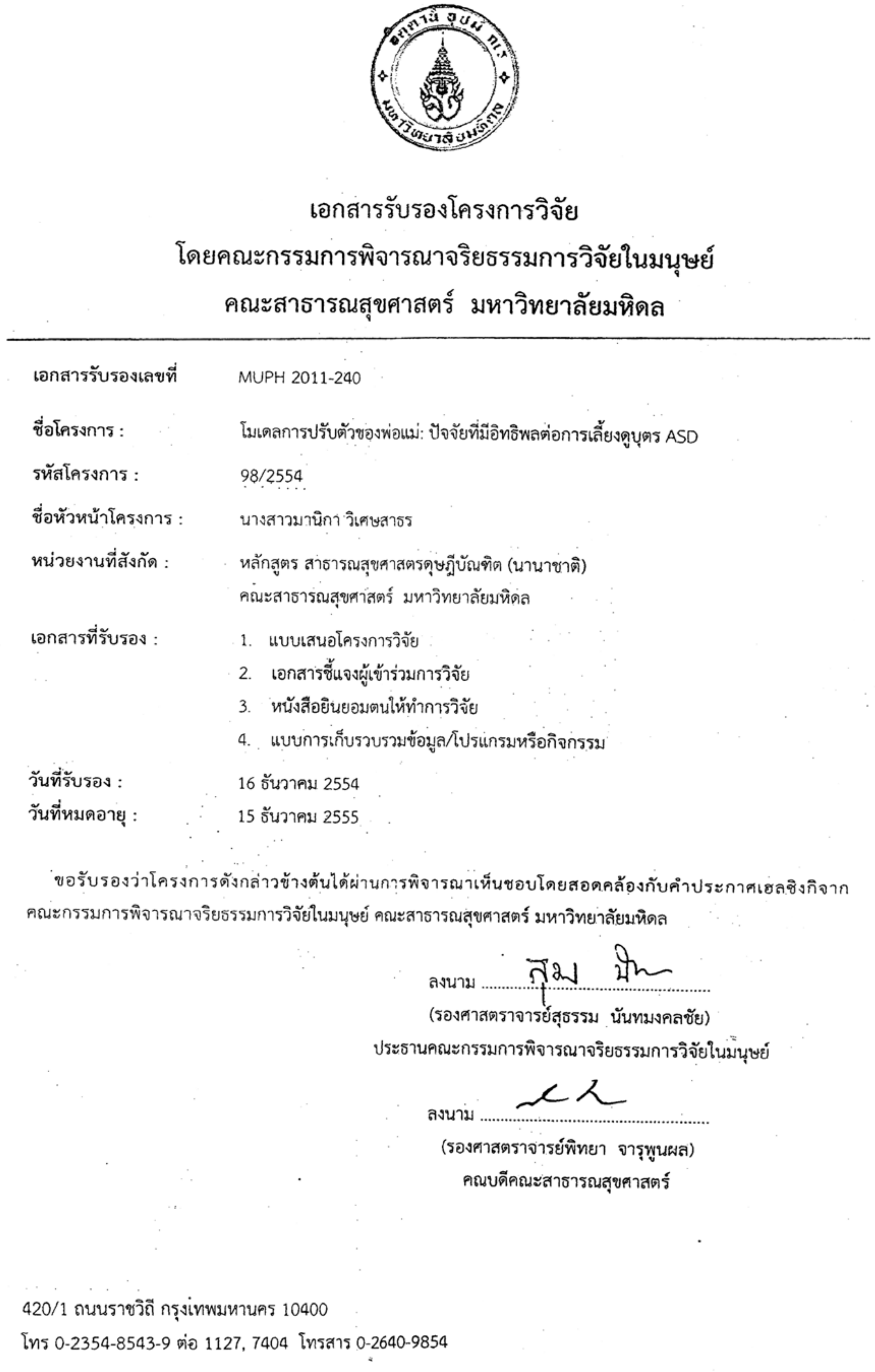

เอกสารรับรองโครงการวิจัย
โดยคณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์
คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล

เอกสารรับรองเลขที่ MUPH 2011-240

ชื่อโครงการ : โมเดลการปรับตัวของพ่อแม่: ปัจจัยที่มีอิทธิพลต่อการเลี้ยงดูบุตร ASD

รหัสโครงการ : 98/2554

ชื่อหัวหน้าโครงการ : นางสาวมานิกา วิเศษสาธร

หน่วยงานที่สังกัด : หลักสูตร สาธารณสุขศาสตรดุษฎีบัณฑิต (นานาชาติ)
คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล

เอกสารที่รับรอง :
1. แบบเสนอโครงการวิจัย
2. เอกสารชี้แจงผู้เข้าร่วมการวิจัย
3. หนังสือยินยอมตนให้ทำการวิจัย
4. แบบการเก็บรวบรวมข้อมูล/โปรแกรมหรือกิจกรรม

วันที่รับรอง : 16 ธันวาคม 2554

วันที่หมดอายุ : 15 ธันวาคม 2555

ขอรับรองว่าโครงการดังกล่าวข้างต้นได้ผ่านการพิจารณาเห็นชอบโดยสอดคล้องกับคำประกาศเฮลซิงกิจาก คณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์ คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล

ลงนาม ....
(รองศาสตราจารย์สุธรรม นันทมงคลชัย)
ประธานคณะกรรมการพิจารณาจริยธรรมการวิจัยในมนุษย์

ลงนาม ....
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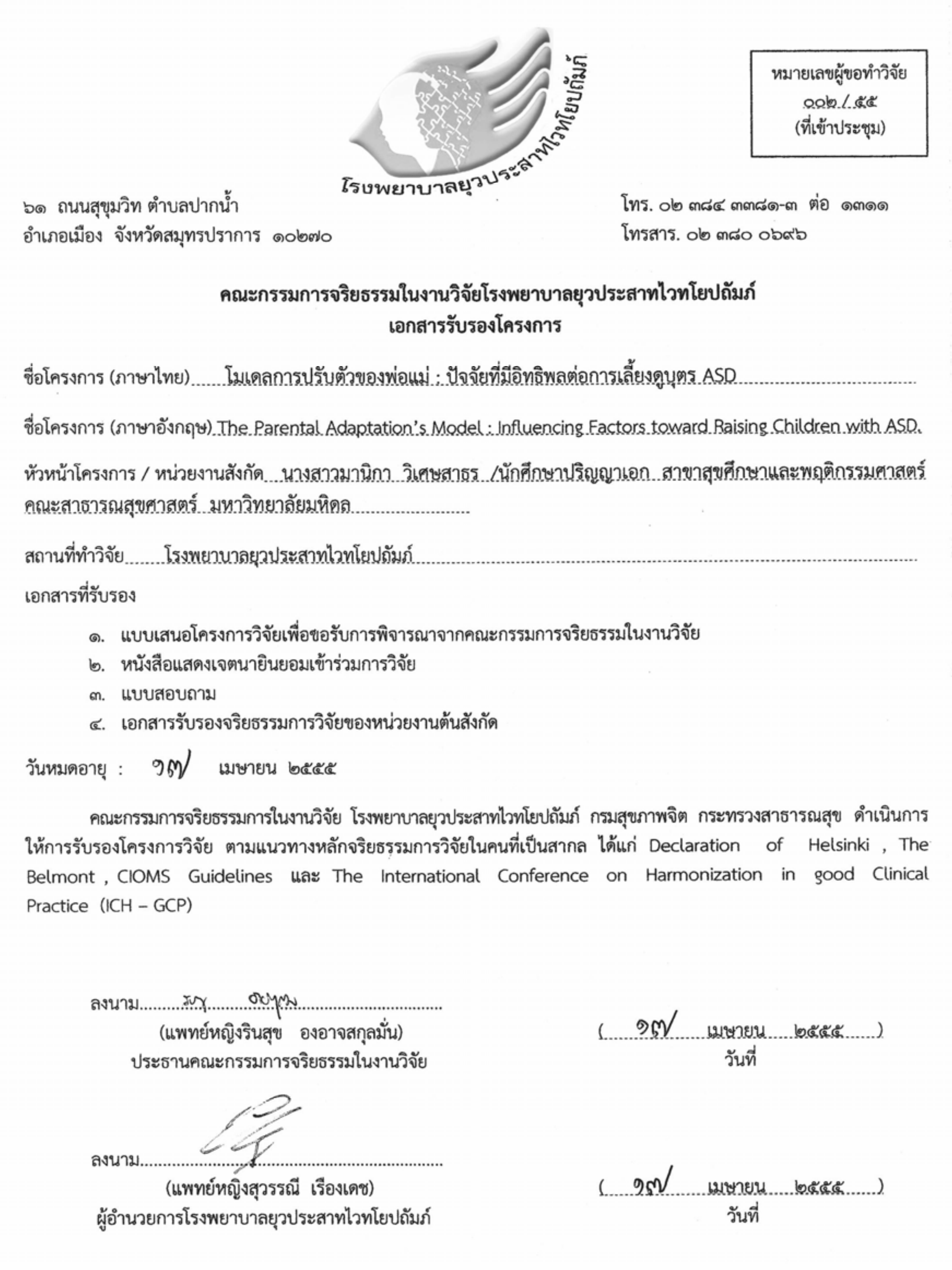

หมายเลขผู้ขอทำวิจัย
๐๐๒ / ๕๕
(ที่เข้าประชุม)

๖๑ ถนนสุขุมวิท ตำบลปากน้ำ
อำเภอเมือง จังหวัดสมุทรปราการ ๑๐๒๗๐

โทร. ๐๒ ๓๘๔ ๓๓๘๑-๓ ต่อ ๑๓๑๑
โทรสาร. ๐๒ ๓๘๐ ๐๖๙๖

คณะกรรมการจริยธรรมในงานวิจัยโรงพยาบาลยุวประสาทไวทโยปถัมภ์
เอกสารรับรองโครงการ

ชื่อโครงการ (ภาษาไทย) โมเดลการปรับตัวของพ่อแม่ : ปัจจัยที่มีอิทธิพลต่อการเลี้ยงดูบุตร ASD

ชื่อโครงการ (ภาษาอังกฤษ) The Parental Adaptation's Model : Influencing Factors toward Raising Children with ASD.

หัวหน้าโครงการ / หน่วยงานสังกัด นางสาวมานิกา วิเศษสาธร /นักศึกษาปริญญาเอก สาขาสุขศึกษาและพฤติกรรมศาสตร์ คณะสาธารณสุขศาสตร์ มหาวิทยาลัยมหิดล

สถานที่ทำวิจัย โรงพยาบาลยุวประสาทไวทโยปถัมภ์

เอกสารที่รับรอง

๑. แบบเสนอโครงการวิจัยเพื่อขอรับการพิจารณาจากคณะกรรมการจริยธรรมในงานวิจัย
๒. หนังสือแสดงเจตนายินยอมเข้าร่วมการวิจัย
๓. แบบสอบถาม
๔. เอกสารรับรองจริยธรรมการวิจัยของหน่วยงานต้นสังกัด

วันหมดอายุ : ๑๗ เมษายน ๒๕๕๕

คณะกรรมการจริยธรรมการในงานวิจัย โรงพยาบาลยุวประสาทไวทโยปถัมภ์ กรมสุขภาพจิต กระทรวงสาธารณสุข ดำเนินการให้การรับรองโครงการวิจัย ตามแนวทางหลักจริยธรรมการวิจัยในคนที่เป็นสากล ได้แก่ Declaration of Helsinki , The Belmont , CIOMS Guidelines และ The International Conference on Harmonization in good Clinical Practice (ICH – GCP)

ลงนาม..
(แพทย์หญิงรินสุข องอาจสกุลมั่น)
ประธานคณะกรรมการจริยธรรมในงานวิจัย

(๑๗ เมษายน ๒๕๕๕)
วันที่

ลงนาม..
(แพทย์หญิงสุวรรณี เรืองเดช)
ผู้อำนวยการโรงพยาบาลยุวประสาทไวทโยปถัมภ์

(๑๗ เมษายน ๒๕๕๕)
วันที่

APPENDIX B

DESCRIPTIVE ANALYSES OF THE 303 DATA SET AND INTERPRET THE DATA ACCORDING TO THE DEPENDENT VARIABLES

When determined the data according to the dependent variable in the pre-diagnosis stage, the mean of satisfaction when taking a child to receive diagnosis ranged from 1.60-3.85 as presented in table B1 below.

Table B1 Determining the data according to the dependent variable in the pre-diagnosis stage

Variables		**DV: Taking a child to diagnosed**		
		n	**Mean**	**SD**
Child's gender	Male	232	2.89	1.70
	Female	71	3.07	1.58
Main caregiver	Mother	216	3.06	1.70
	Father	28	2.55	1.46
	Grandparent	44	2.62	1.53
	Uncle/aunt	12	3.85	1.49
Education of main caregiver	Primary school	77	2.84	1.57
	Secondary school	68	3.13	1.55
	Bachelor	108	2.82	1.70
	Higher Bachelor	36	3.18	1.89
Parent's age	19 year	1	2.50	.00
	24 year	5	1.70	.27
	26 year	2	2.50	3.53
	27 year	4	3.62	.75
	28 year	2	5.00	.00

Table B1 Determining the data according to the dependent variable in the pre-diagnosis stage (cont.)

Variables		**DV: Taking a child to diagnosed**		
		n	**Mean**	**SD**
Parent's age (cont.)	29 year	4	1.50	1.00
	30 year	4	2.87	1.18
	31 year	4	3.62	.75
	32 year	8	1.50	1.00
	33 year	8	2.75	1.81
	34 year	12	1.75	1.80
	35 year	6	2.66	2.44
	36 year	10	4.15	.91
	37 year	2	4.50	.70
	38 year	11	1.36	1.18
	39 year	15	3.93	1.74
	40 year	21	3.26	1.72
	41 year	14	2.89	1.31
	42 year	17	3.29	1.52
	43 year	17	3.64	1.29
	44 year	13	2.96	1.66
	45 year	8	3.06	1.14
	46 year	9	2.38	1.91
	47 year	7	3.85	.89
	48 year	5	3.00	1.83
	49 year	9	4.50	1.00
	50 year	7	2.57	1.66
	51 year	3	2.50	2.17
	52 year	3	2.66	.57
	54 year	2	.00	.00
	55 year	11	2.54	1.33
	56 year	3	.00	.00
	57 year	5	4.10	.82

Table B1 Determining the data according to the dependent variable in the pre-diagnosis stage (cont.)

Variables		**DV: Taking a child to diagnosed**		
		n	**Mean**	**SD**
Parent's age (cont.)	58 year	1	2.00	.00
	59 year	4	3.50	.57
	60 year	9	3.44	1.58
	61 year	2	4.00	.00
	62 year	2	2.00	.70
	63 year	3	3.66	1.44
	65 year	5	1.20	1.78
	68 year	2	3.00	.00
	70 year	1	2.50	.00
Number of siblings in family	1	103	2.58	1.74
	2	161	3.14	1.61
	3	29	2.98	1.84
	4	7	3.07	.44
	5	3	3.33	.28

The analysis of data according to the dependent variable in the post-diagnosis stage, the mean of adaptation outcomes were presented in table B2-B below.

Table B2 Determining the data according to the dependent variable in the post-diagnosis stage: taking a child to receive treatment/intervention

Variables		**DV: Taking a child to treatment**		
		n	**Mean**	**SD**
Child's gender	Male	232	3.07	1.72
	Female	71	3.20	1.30
Main caregiver	Mother	216	3.19	1.61
	Father	28	2.53	1.60
	Grandparent	44	2.93	1.71
	Uncle/aunt	12	3.35	1.24
Education of main caregiver	Primary school	77	2.83	1.76
	Secondary school	68	3.13	1.48
	Bachelor	108	3.33	1.44
	Higher Bachelor	36	3.00	2.02
Parent's age	19 year	1	5.00	.00
	24 year	5	1.20	1.09
	26 year	2	3.50	2.12
	27 year	4	4.00	.00
	28 year	2	4.50	.00
	29 year	4	3.00	2.00
	30 year	4	2.62	2.05
	31 year	4	2.87	.75
	32 year	8	1.75	1.58
	33 year	8	2.81	1.96
	34 year	12	3.66	1.37
	35 year	6	2.16	2.38
	36 year	10	3.85	.94
	37 year	2	4.50	.70
	38 year	11	1.86	2.02

Table B2 Determining the data according to the dependent variable in the post-diagnosis stage: taking a child to receive treatment/intervention (cont.)

Variables		DV: Taking a child to treatment		
		n	Mean	SD
Parent’s age (cont.)	39 year	15	4.03	1.24
	40 year	21	3.50	.98
	41 year	14	2.75	1.47
	42 year	17	3.47	.81
	43 year	17	4.11	1.13
	44 year	13	1.92	1.91
	45 year	8	3.31	.88
	46 year	9	3.88	.92
	47 year	7	3.57	1.90
	48 year	5	3.60	.89
	49 year	9	3.66	2.09
	50 year	7	2.14	2.09
	51 year	3	2.50	2.17
	52 year	3	.50	.86
	54 year	2	4.00	.00
	55 year	11	2.81	1.97
	56 year	3	.00	.00
	57 year	5	3.80	.27
	58 year	1	2.50	.00
	59 year	4	3.00	.57
	60 year	9	3.88	1.02
	61 year	2	5.00	.00
	62 year	2	3.00	2.12
	63 year	3	4.83	.28
	65 year	5	1.40	2.19
	68 year	2	3.00	.00
	70 year	1	3.00	.00

Table B2 Determining the data according to the dependent variable in the post-diagnosis stage: taking a child to receive treatment/intervention (cont.)

Variables		DV: Taking a child to treatment		
		n	Mean	SD
Number of siblings in family	1	103	2.86	1.67
	2	161	3.24	1.63
	3	29	3.29	1.47
	4	7	2.71	1.86
	5	3	2.66	.28

Table B3 Determining the data according to the dependent variable in the post-diagnosis stage: taking a child to enroll in specialized school

Variables		DV: Enrolling in specific school		
		n	Mean	SD
Child's gender	Male	232	2.66	2.00
	Female	71	2.54	1.96
Main caregiver	Mother	216	2.63	1.98
	Father	28	2.79	2.04
	Grandparent	44	2.20	2.01
	Uncle/aunt	12	4.00	.81
Education of main caregiver	Primary school	77	2.44	2.06
	Secondary school	68	2.60	2.05
	Bachelor	108	2.86	1.83
	Higher Bachelor	36	2.33	2.19
Parent's age	19 year	1	5.00	.00
	24 year	5	.00	.00
	26 year	2	2.50	3.53
	27 year	4	3.50	1.00
	28 year	2	5.00	.00
	29 year	4	2.25	1.50

Table B3 Determining the data according to the dependent variable in the post-diagnosis stage: taking a child to enroll in specialized school (cont.)

Variables		DV: Enrolling in specific school		
		n	Mean	SD
Parent’s age (cont.)	30 year	4	2.00	2.44
	31 year	4	1.50	1.73
	32 year	8	1.00	1.85
	33 year	8	2.88	1.95
	34 year	12	2.25	2.09
	35 year	6	2.00	2.19
	36 year	10	3.30	1.76
	37 year	2	2.00	2.82
	38 year	11	2.18	2.35
	39 year	15	3.07	2.18
	40 year	21	3.00	1.76
	41 year	14	2.07	1.90
	42 year	17	3.35	1.49
	43 year	17	3.47	2.09
	44 year	13	3.23	1.64
	45 year	8	2.88	1.88
	46 year	9	2.56	2.06
	47 year	7	3.71	1.79
	48 year	5	1.80	1.64
	49 year	9	3.89	2.20
	50 year	7	2.00	1.52
	51 year	3	1.33	2.30
	52 year	3	1.00	1.73
	54 year	2	.00	.00
	55 year	11	2.18	2.18
	56 year	3	.00	.00
	57 year	5	3.60	.54

Table B3 Determining the data according to the dependent variable in the post-diagnosis stage: taking a child to enroll in specialized school (cont.)

Variables		DV: Enrolling in specific school		
		n	**Mean**	**SD**
Parent's age (cont.)	58 year	1	.00	.00
	59 year	4	2.00	2.30
	60 year	9	3.78	.83
	61 year	2	5.00	.00
	62 year	2	3.50	.70
	63 year	3	4.00	.00
	65 year	5	1.00	2.23
	68 year	2	4.00	.00
	70 year	1	3.00	.00
Number of siblings in family	1	103	2.30	2.06
	2	161	2.77	1.93
	3	29	2.83	1.96
	4	7	2.71	2.05
	5	3	4.33	1.15

Table B4 Determining the data according to the dependent variable in the post-diagnosis stage: practicing child's skills at home

Variables		DV: Practicing a child at home		
		n	Mean	SD
Child's gender	Male	232	2.66	1.88
	Female	71	2.72	1.73
Main caregiver	Mother	216	2.80	1.82
	Father	28	2.57	1.82
	Grandparent	44	2.42	1.99
	Uncle/aunt	12	2.28	1.41
Education of main caregiver	Primary school	77	2.31	1.85
	Secondary school	68	2.87	1.83
	Bachelor	108	2.66	1.90
	Higher Bachelor	36	2.90	1.71
Parent's age	19 year	1	5.00	.00
	24 year	5	.90	.82
	26 year	2	2.50	3.53
	27 year	4	1.25	2.50
	28 year	2	3.50	.00
	29 year	4	2.62	1.75
	30 year	4	1.50	1.22
	31 year	4	2.12	1.84
	32 year	8	2.50	2.12
	33 year	8	3.43	2.17
	34 year	12	2.87	1.83
	35 year	6	3.75	1.29
	36 year	10	3.25	1.81
	37 year	2	3.00	1.41
	38 year	11	2.59	1.64
	39 year	15	2.83	2.09
	40 year	21	3.92	.96
	41 year	14	1.89	1.86

Table B4 Determining the data according to the dependent variable in the post-diagnosis stage: practicing child's skills at home (cont.)

Variables		DV: Practicing a child at home		
		n	Mean	SD
Parent's age (cont.)	42 year	17	3.32	1.41
	43 year	17	2.91	1.94
	44 year	13	1.57	2.07
	45 year	8	2.81	1.64
	46 year	9	1.33	2.00
	47 year	7	2.07	1.66
	48 year	5	3.00	.93
	49 year	9	4.00	1.19
	50 year	7	2.00	2.51
	51 year	3	.50	.86
	52 year	3	1.00	1.73
	54 year	2	4.00	.00
	55 year	11	2.09	2.37
	56 year	3	1.50	1.32
	57 year	5	3.90	.41
	58 year	1	.00	.00
	59 year	4	1.00	1.15
	60 year	9	3.11	1.51
	61 year	2	4.00	.00
	62 year	2	3.25	1.76
	63 year	3	3.00	.86
	65 year	5	1.60	2.30
	68 year	2	3.50	.00
	70 year	1	3.00	.00
Number of siblings in family	1	103	2.48	1.86
	2	161	2.80	1.84
	3	29	2.70	1.91
	4	7	2.64	1.81
	5	3	2.16	1.15

Table B5 Determining the data according to the dependent variable in the post-diagnosis stage: sharing information with other parents who were faced with the same situation

Variables		**DV: Sharing with other parents**		
		n	**Mean**	**SD**
Child's gender	Male	232	2.57	1.96
	Female	71	2.95	1.72
Main caregiver	Mother	216	2.82	1.85
	Father	28	2.33	1.89
	Grandparent	44	2.11	2.25
	Uncle/aunt	12	3.21	1.07
Education of main caregiver	Primary school	77	2.40	1.92
	Secondary school	68	2.71	2.11
	Bachelor	108	2.83	1.80
	Higher Bachelor	36	2.33	1.82
Parent's age	19 year	1	5.00	.00
	24 year	5	1.20	1.09
	26 year	2	2.50	3.53
	27 year	4	4.12	.25
	28 year	2	5.00	.00
	29 year	4	2.62	1.75
	30 year	4	1.50	1.29
	31 year	4	3.50	2.38
	32 year	8	2.62	2.19
	33 year	8	3.87	1.52
	34 year	12	2.70	2.03
	35 year	6	1.66	2.5
	36 year	10	3.00	2.21
	37 year	2	3.00	1.41
	38 year	11	2.09	1.77
	39 year	15	3.60	1.91
	40 year	21	3.07	1.08

Table B5 Determining the data according to the dependent variable in the post-diagnosis stage: sharing information with other parents who were faced with the same situation (cont.)

Variables		**DV: Sharing with other parents**		
		n	**Mean**	**SD**
Parent’s age (cont.)	41 year	14	2.25	2.11
	42 year	17	2.47	2.05
	43 year	17	3.05	1.71
	44 year	13	1.76	1.70
	45 year	8	3.68	1.36
	46 year	9	2.44	1.70
	47 year	7	2.64	1.93
	48 year	5	3.00	.93
	49 year	9	3.83	1.27
	50 year	7	1.71	2.36
	51 year	3	.00	.00
	52 year	3	.50	.86
	54 year	2	4.00	.00
	55 year	11	.90	2.02
	56 year	3	1.00	1.73
	57 year	5	4.20	.44
	58 year	1	.00	.00
	59 year	4	2.50	2.88
	60 year	9	3.16	1.82
	61 year	2	5.00	.00
	62 year	2	1.00	1.41
	63 year	3	4.00	1.73
	65 year	5	1.40	2.19
	68 year	2	5.00	.00
Number of siblings in family	1	103	2.26	1.99
	2	161	2.85	1.90
	3	29	2.75	1.71
	4	7	3.14	1.43
	5	3	3.83	.57

Table B6 Determining the data according to the dependent variable in the post-diagnosis stage: increasing of self-efficacy for parenting children with ASD

Variables		**DV: Increasing of self-efficacy**		
		n	**Mean**	**SD**
Child’s gender	Male	232	3.20	1.59
	Female	71	3.41	1.52
Main caregiver	Mother	216	3.35	1.53
	Father	28	3.10	1.54
	Grandparent	44	2.78	1.79
	Uncle/aunt	12	3.76	.53
Education of main caregiver	Primary school	77	3.15	1.58
	Secondary school	68	3.27	1.65
	Bachelor	108	3.20	1.61
	Higher Bachelor	36	3.35	1.45
Parent’s age	19 year	1	5.00	.00
	24 year	5	3.00	.00
	26 year	2	3.83	1.64
	27 year	4	3.50	1.00
	28 year	2	5.00	.00
	29 year	4	2.75	1.83
	30 year	4	2.33	.98
	31 year	4	2.58	1.83
	32 year	8	3.50	.69
	33 year	8	3.54	1.00
	34 year	12	3.11	1.89
	35 year	6	2.55	1.89
	36 year	10	3.80	1.37
	37 year	2	2.00	2.82
	38 year	11	3.27	2.02
	39 year	15	3.57	1.79
	40 year	21	3.46	1.63

Table B6 Determining the data according to the dependent variable in the post-diagnosis stage: increasing of self-efficacy for parenting children with ASD (cont.)

Variables		**DV: Increasing of self-efficacy**		
		n	**Mean**	**SD**
Parent's age (cont.)	41 year	14	2.71	1.65
	42 year	17	3.54	1.35
	43 year	17	3.47	1.31
	44 year	13	2.61	1.69
	45 year	8	3.70	.62
	46 year	9	3.18	1.99
	47 year	7	3.42	1.58
	48 year	5	3.60	.98
	49 year	9	3.77	1.62
	50 year	7	2.19	2.02
	51 year	3	2.00	1.76
	52 year	3	1.11	1.92
	54 year	2	4.00	.00
	55 year	11	1.39	2.06
	56 year	3	2.44	2.50
	57 year	5	3.60	.27
	58 year	1	4.33	.00
	59 year	4	3.83	.57
	60 year	9	3.59	1.32
	61 year	2	4.33	.00
	62 year	2	4.00	.94
	63 year	3	3.55	.76
	65 year	5	2.00	1.88
	68 year	2	4.33	.00
	70 year	1	2.66	.00
Number of siblings in family	1	103	3.14	1.60
	2	161	3.30	1.60
	3	29	3.24	1.54
	4	7	3.80	1.10
	5	3	3.44	.19

Table B7 Determining the data according to the dependent variable in the post-diagnosis stage: parental quality-of-life

Variables		**DV: Parental QoL**		
		n	**Mean**	**SD**
Child’s gender	Male	232	93.09	11.47
	Female	71	97.12	9.67
Main caregiver	Mother	216	95.03	11.27
	Father	28	94.12	8.09
	Grandparent	44	89.90	11.35
	Uncle/aunt	12	92.61	5.92
Education of main caregiver	Primary school	77	92.14	10.70
	Secondary school	68	93.76	11.03
	Bachelor	108	94.92	9.99
	Higher Bachelor	36	96.84	11.18
Parent’s age	19 year	1	114.00	.00
	24 year	5	89.60	13.14
	26 year	2	113.50	21.92
	27 year	4	94.16	.00
	28 year	2	94.16	.00
	29 year	4	86.75	9.50
	30 year	4	76.29	30.62
	31 year	4	97.79	7.47
	32 year	8	95.04	8.92
	33 year	8	90.50	13.78
	34 year	12	93.08	6.36
	35 year	6	83.02	7.23
	36 year	10	96.24	3.58
	37 year	2	95.00	8.48
	38 year	11	99.24	10.38
	39 year	15	95.79	6.28
	40 year	21	100.41	14.45
	41 year	14	94.86	9.41

Table B7 Determining the data according to the dependent variable in the post-diagnosis stage: parental quality-of-life (cont.)

Variables		DV: Parental QoL		
		n	Mean	SD
Parent's age (cont.)	42 year	17	97.51	8.90
	43 year	17	98.98	9.32
	44 year	13	91.58	5.60
	45 year	8	87.77	12.74
	46 year	9	103.72	11.41
	47 year	7	88.42	11.41
	48 year	5	98.80	9.39
	49 year	9	92.72	4.49
	50 year	7	95.21	4.99
	51 year	3	85.10	15.68
	52 year	3	96.33	.57
	54 year	2	67.00	.00
	55 year	11	91.34	13.19
	56 year	3	93.72	12.50
	57 year	5	88.46	5.45
	58 year	1	86.00	.00
	59 year	4	89.50	2.88
	60 year	9	92.92	9.64
	61 year	2	106.00	.00
	62 year	2	101.58	10.49
	63 year	3	85.77	14.52
	65 year	5	88.23	10.47
	68 year	2	79.00	.00
	70 year	1	76.00	.00
Number of siblings in family	1	103	93.53	10.41
	2	161	94.81	11.28
	3	29	91.84	14.72
	4	7	94.40	.40
	5	3	90.05	3.55

APPENDIX C
THE MODEL CHANGE IN PRE-DIAGNOSIS AND POST-DIAGNOSIS MODEL

To consider how did the models of pre-diagnosis stage and post-diagnosis stage changed, the path analysis was employed to test each of the models with AMOS program until the final models with the best outcome were generated. The changes in pre-diagnosis stage model and post-diagnosis stage model were presented in table C1-C2 below.

Table C1 The change of pre-diagnosis model presented by the fit indexes of chi-square, GFI, CFI, RMSEA, RMR, NFI

Model	**Path changed**	**X^2**	**p-value**	**GFI**	**CFI**	**RMSEA**	**RMR**	**NFI**
1	Not change	21.339	.000**	.972	.855	.120	.139	.835
2	Add e2 ↔ e3	9.657	.022*	.988	.944	.086	.103	.925
3	Add Be_Seekinfo ← Be_Stress	3.001	.223	.996	.992	.041	.042	.977

* Significant at level of .05

** Significant at level of .01

The good model fit presented by p-value >.05, GFI >.90, CFI >.90, RMSEA <.06, RMR <.08, NFI >.90 (Chadcham, 2004)

Table C2 The change of post-diagnosis model presented by the fit indexes of chi-square, GFI, CFI, RMSEA, RMR, NFI

Model	Path changed	X^2	p-value	GFI	CFI	RMSEA	RMR	NFI
1	Not change	780.408	.000**	.729	.641	.176	2.612	.625
2	Add e3↔ e4	661.252	.000**	.774	.701	.162	2.598	.683
3	Add e7↔ e8	584.301	.000**	.794	.740	.152	2.595	.720
4	Add e2↔ e3	527.796	.000**	.808	.768	.145	2.582	.747
5	Add e10↔e11	497.347	.000**	.821	.783	.141	2.581	.761
6	Add e9↔e10	474.607	.000**	.828	.794	.138	2.580	.772
7	Add e2 ↔e4	436.645	.000**	.845	.813	.133	2.569	.790
8	Add e2 ↔e5	424.973	.000**	.847	.818	.132	2.568	.796
9	Add e3 ↔e5	409.957	.000**	.854	.825	.130	2.563	.803
10	Add e3↔ e6	400.239	.000**	.858	.830	.129	2.563	.808
11	Add e4↔ e6	386.980	.000**	.868	.836	.128	2.562	.814
12	Add e9↔e11	386.980	.000**	.871	.840	.128	2.561	.818
13	Add e7↔ e9	372.295	.000**	.873	.842	.128	2.561	.821
14	Add e4↔ e5	364.949	.000**	.877	.846	.127	2.559	.825
15	Add e5↔ e6	359.060	.000**	.881	.848	.127	2.559	.828
16	Delete C_Sibling	315.426	.000**	.887	.864	.134	2.723	.847
17	Delete C_age	298.582	.000**	.888	.864	.148	2.865	.851
18	Add Af_SocSupport ← Af_Stigma	266.795	.000**	.899	.880	.141	2.864	.867
19	Add Af_Religion ← Af_Stress	247.944	.000**	.905	.890	.137	2.861	.876
20	Add Af_Cognitive ← Af_Stress	226.115	.000**	.913	.901	.132	2.863	.887

Table C2 The change of post-diagnosis model presented by the fit indexes of chi-square, GFI, CFI, RMSEA, RMR, NFI (cont.)

Model	Path changed	X2	p-value	GFI	CFI	RMSEA	RMR	NFI
21	Add Af_SeekInfo ← Af_Stress	214.083	.000**	.918	.906	.130	2.863	.893
22	Add Af_Accept ← Af_Stress	202.116	.000**	.922	.912	.128	2.864	.899
23	Add Af_SocSupport ← Af_Stress	188.954	.000**	.927	.919	.125	2.864	.906
24	Delete Af_Copestra	114.250	.000**	.947	.951	.103	.701	.939
25	Add Af_Religion ← Af_Stigma	113.721	.000**	.948	.951	.106	.701	.939
26	Add Af_Accept ← Af_Stigma	111.594	.000**	.949	.952	.107	.703	.940
27	Add Af_Cognitive ← Af_Stigma	111.106	.000**	.949	.951	.110	.706	.940
28	Add Af_SeekInfo ← Af_Stigma	110.722	.000**	.949	.951	.112	.704	.941

* Significant at level of .05

** Significant at level of .01

The good model fit presented by p-value >.05, GFI >.90, CFI >.90, RMSEA <.06, RMR <.08, NFI >.90 (Chadcham, 2004)

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