EMOTIONAL REGULATION AS PROTECTIVE FACTOR FOR PARENTS

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Emotional regulation as protective factor for parents

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CERTIFICATE OF ORIGINALITY

I hereby declare that this thesis is my own work and that, to the best of my knowledge and belief, it reproduces no material previously published or written, nor material that has been accepted for the award of any other degree or diploma, except where due acknowledgement has been made in the text.

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Abstract

Establishing a healthy growth foundation is crucial in early childhood as it sets the stage for every other phase of life. Young children spend most of their time with their parents during this period. Thus, their interactions with parents and parenting behaviors are important. Researchers have identified parental stress and self-efficacy as the major family factors determining children's emotional and social development. While substantial evidence has also identified internalizing and externalizing behaviors as the predictors of parental stress, parental stress can in turn escalate with children's difficult behavior. This study aimed to investigate parental-level predictors of and protective factors on parental stress and self-efficacy. This was a cross sectional study with self-administrated questionnaires. Parents completed questionnaires which included measures of demographics, parental perception of hyperactive behavior, meta-parenting and emotional regulation as well as parental stress and self-efficacy. One hundred fifteen parents with children aged between 4 to 7 were recruited. Path analysis suggested that reported low income and hyperactivity problems were correlated positively with parental stress and lower self-efficacy. In terms of meta-parenting, assessing had negative association while rumination had positive association with parental stress and lower self-efficacy. With regard to emotion regulation, cognitive reappraisal was found to moderate the relationship between on one hand assessing and rumination, and on the other, parental stress and self-efficacy. Results suggested that emotion regulation could have a possible protective effect on parental sense of well-being. Implications for interventions were discussed.

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CHAPTER ONE Introduction

Early childhood is important as it has a prolonged effect on later life. Children who have positive up bring environment often have high academic achievement, cognitive and motor abilities, positive social relationship and emotion well-being (Blair & Raver, 2015). For young children aged around 3-7, parents are the major care-giver who have the most frequent interaction with them (Storey & Ziegler, 2016). Therefore, positive parent-child interaction is critical for children social emotion development. However, some of the children do not receive the nurturance that enables them to enter school healthily and be ready to learn. Numerous evidences have demonstrated family factors can hinder young children development and escalate problem behaviors. These factors include parental psychological functioning as well as parental stress and self-efficacy (Jones & Prinz, 2005; Dunninga & Giallo, 2012). Problem behaviors involved include internalizing (anxiety/depression and withdrawal) and externalizing (inattentiveness, aggression, hyperactive and delinquency) behaviors. Problem behaviors may in turn increase parental stress and decrease self-efficacy, forming a negative reciprocal cycle (Xing, & Wang, 2013). Therefore, attenuating parental stress and enhancing parental self-efficacy are particularly important. Understanding more about the mechanisms involved has important implications for developing and providing meaningful, effective and timely interventions.

Although it is normative to have some parental stress (Newland, Crnic, Cox, & Mills-Koonce, 2013), parents who experience extreme levels of such stress suffer psychologically and are less able to implement positive parenting on their children (Puff

& Renk, 2014). The situation is worse for parents who are overwhelmed by both financial difficulties and the responsibilities of parenting. Substantial previous evidence has identified child level predictors of parental stress in young children. These include internalizing and externalizing behaviors of parental stress and self-efficacy (Neece, Green, & Baker, 2012; Schermerhorn, Bates, Goodnight, Lansford, Dodge, & Pettit, 2013; Pearl, French, Dumas, Moreland, & Prinz, 2014). However, studies on parental level predictors have been scanty. Thus, this study sought to identify more specifically the parental level predictors of parental stress and self-efficacy for families with range of income.

From the literature review, this study conceptualized contextual risks (e.g. income, parental education, occupation) and hyperactive behaviors as the risk factors for parental stress and self-efficacy. However, despite living in an environment with contextual risks, a number of parents can still overcome distress and emerge with positive and adaptive parenting behaviors. Adaptive methods may include exerting direct and immediate control over their own thoughts and emotions (Hawk, 2007). Therefore, this study was also interested in the protective factors of parental stress and self-efficacy. This study assumed that meta-parenting (including anticipation, assessing, reflection, and problem solving) influenced parental stress and self-efficacy. However, parents may engage in too much meta-parenting which creates rumination and become locked into non-productive problem solving while facing children's problems. Therefore, this study suggested emotion regulation – cognitive reappraisal was able to protect parents from ruminating, alleviate parental stress and enhance parental self-efficacy.

To answer these research questions, this study used a cross-sectional design to

analyze the data collected through self-administered questionnaires from 115 parents. A series of path analysis was carried out. It has revealed a) contextual risk (income) and parental factor (hyperactive behaviors) associated with parental stress/ efficacy; b) meta-parenting – assessing had positive association while rumination had negative association with parental stress/ efficacy; c) emotion regulation – cognitive reappraisal moderated the relationship between meta-parenting (assessing and rumination), parental stress/ efficacy.

Results underscored various important aspects in furthering the understanding of parental stress and self-efficacy. These aspects included 1) parental socio-economic status (income); 2) young children's hyperactive behaviors; 3) meta-cognition of parents including assessing and rumination; 4) emotion regulation in terms of cognitive appraisal. More importantly, with regard to emotion regulation, cognitive reappraisal was found to moderate the relationship between on one hand meta-parenting assessing and rumination, and on the other, parental stress/ self-efficacy. Results suggested that cognitive appraisal could have a possible protective effect on parental sense of well-being. Implications for interventions were discussed.

This thesis consists of 5 chapters. Chapter 1 is the Introduction. Chapter 2 consists of a literature review covering background, significance of the study, literature gaps, aims and hypotheses. Chapter 3 focuses on the research design and methodology. Chapter 4 reports the findings of the study. Chapter 5 covers the discussion on the key findings, elaboration of the theoretical and practical implications, and explication of limitations of the present study.

CHAPTER TWO Literature review

The following literature review will first highlight the background and significance of this study by discussing risks factors contributing to parental stress and self-efficacy. These include contextual factors and the hyperactive behaviors with the consideration of Chinese culture. The review will then discuss the effects of protective factors, namely, meta-parenting and emotion regulation on parental stress and self-efficacy. The gaps in the literature will be examined. Finally, the aims and hypothesis as well as the significance of the present study will be highlighted.

2.1 Background

Considerable amount of evidence has shown that preschool to early school children with problem behaviors are at higher risk for subsequent adjustment problems (Illingworth, 2013; Hetherington & Blechman, 2014). In order to prevent complications and provide timely intervention on children's problem behaviors, researchers have tried to identify factors contributing to children's behavior problems (Newland, Ciciolla, & Crnic, 2015). For young children who have just started primary school, problem behaviors are suggested to be heavily dependent on family context factors, including marital quality, parental psychological functioning, parenting behavior, and parental stress (Evans, Li, & Whipple, 2013; Brassell, Rosenberg, Parent, Rough, Fondacaro, & Seehuus, 2016; Levendosky, Bogat, & Huth-Bocks, 2011). Parental stress is the major family contextual factor intensifying children's problem behaviors (Jeffery, 2013).

2.1.1Parental stress to children

Although it is normative to have some parental stress (Newland, Crnic, Cox, &

Mills-Koonce, 2013), parents who experience extreme levels of such stress suffer psychologically and are less able to implement positive parenting on their children (Puff & Renk, 2014). Research has indicated that parents repeatedly experience high levels of stress whilst raising their children, especially when their children are between preschool to early school years (Anthony, Anthony, Glanville, Naiman, Waanders, & Shaffer, 2005). In contrast, reduction in parental stress enhances the efficacy of parent management training (Rabbitt, Kazdin, & Hong, 2015). Both Belsky's (1984) parenting-process model and Abidin's (1997) parental stress model assert that parental stress can be caused by perceived incompetence in parenting, insecure attachment with children, insufficient spousal support and the constraints of personal freedom due to parental role, all of which exacerbate poor parenting behaviors. Poor parenting behaviors, in turn, have unfavorable consequences on children's development (Xing & Wang, 2013; Aunola, & Nurmi, 2005). Parental stress escalates with children's internalizing (anxiety/depression and withdrawal) and externalizing (inattentive, hyperactive, aggression and delinquency) behaviors (Deault, 2010; Cussen, Sciberras, Ukoumunne, & Efron, 2012; Newland, Ciciolla, & Crnic, 2015; Mäntymaa, Puura, Luoma, Latva, Salmelin, & Tamminen, 2012). For example, Theule, Wiener, Tannock, and Jenkins (2013) found that parental stress had a strong direct effect on mother-reported, teacher-reported, and young children's self- reported anxious and depressive symptoms. Similarly, Deault (2010) observed that parental stress was strongly associated with young children's emotional and hyperactive misbehavior from American families.

Further evidence supporting a strong relationship between parental stress and children's problem behaviors comes from longitudinal data. Liu and Wang (2015)

examined the mediating effect of parenting behaviors between parental stress and young children's problem behaviors for 1 year in China. Their findings suggested that parental stress had direct effects on young children's internalizing and externalizing behaviors and indirect effects on parenting behaviors. Similarly, Mackler et al. (2015) studied the longitudinal transactions among parental stress, negative parenting behaviors and child externalizing problem at 4, 5, 7, and 10 years old. They examined both parent effects (parental stress to child behaviors) and child effects (externalizing behaviors to parenting behaviors and stress) and revealed transactional and longitudinal reciprocal effects between parental stress and externalizing behaviors. Furthermore, the negative influence of parental stress may preserve to adulthood. A study using prospective method has demonstrated that adults' biological risks, education, social relationships, and health behaviors are associated with parental stress during childhood (Boecker et al., 2014). Therefore, understanding and attenuating parental stress are of utmost importance.

2.1.2 The relevance of parental self-efficacy

Despite various negative outcomes of parental stress, it is well known that parental self-efficacy can mediate the link between parental stress and children outcomes (Murdock, 2013; Sevigny & Loutzenhiser, 2010). A meta-analysis from 47 studies has revealed that parental self-efficacy promotes individual development across toddlers to adolescents in child behavior, social and emotional well-being, and school achievement directly as well as indirectly via parenting (Jones & Prinz, 2005). For example, Gardner (2011) identified significant correlations between parental self-efficacy and children social skills by observational study. Márk-Ribiczey, Miklósi, and Szabó (2015) asserted the positive influence of self-efficacy on children self-regulation

and self-worth. Kikas and Mägi (2015) also found parental self-efficacy played an important role in children's own self-efficacy and academic achievement. Longitudinal studies further supported the positive effect of parental self-efficacy on children's health behaviors, academic self-efficacy, engagement and intrinsic motivation (Ice, Neal, & Cottrell, 2014). Such findings have been found to be consistent across new immigrants, imprisonment and clinic-referred families (Leung, Leung, & Chan, 2007; Gross, Breitenstein, Eisbach, Hoppe, & Harrison, 2014). Finally, intervention research also reported the effectiveness of parental self-efficacy in reducing children externalizing behaviors (Reyno & McGrath, 2006). Thus, both parental stress and parental self-efficacy are worth for more empirical attention.

Attenuation of parental stress is remarkably critical for families with children aged 3-7 due to the exposed developmental period in physical, emotional, social and cognitive aspects of children (Gabis et al., 2015). Early stressful experiences from parental stress have long lasting consequences on development and interfere with brain structure (Hackman, Farah, & Meaney, 2010; Hackman, Betancourt, Brodsky, Kobrin, Hurt, & Farah, 2013). Differences in stressful experiences' have been documented across the stages of development, including as early as the preschool and pre-kindergarten years (Auyeung, Burbidge, & Minnes, 2011), persisting into middle childhood (Hullmann et al., 2010) and early adolescence (Hackman, 2013). By contrast, parenting training program benefits children aged 3-7 because of the limited period of the formation of problematic behavioral patterns and the unique opportunity to explore positive developmental trajectories (Van, Prins, Oosterlaan, & Emmelkamp, 2008). Parental self-efficacy is essential in these programs considering its strong and positive

influences on children (Strauss, Vicari, Valeri, D'Elia, Arima, & Fava, 2012). Thus, the following study aims to understand the factors contributing to parental stress and parental self-efficacy in families with children aged 3-7 and provide implications for future preventive work.

2.2 Literature review

2.2.1 Parental stress

Emanating from the demands of being a parent, parental stress has been defined as a specific kind of stress perceived by the parent. Parental stress consists of multiple inter-related components including characteristics of the child, parents, and context (Abidin, 1992; Reitman, 2007; Deater-Deckard, 2005). The dominant model of parental stress comprises two major components, namely, a child domain which arises directly from child characteristics, and a parent domain that is more affected by parental functioning. Total stress is resulted from combining parent and child based stress (Abidin, Austin, & Flens, 2013).

Although previous studies have identified child level predictors of intensifying parental stress including internalizing (Liu & Wang, 2015) and externalizing behaviors (Mackler et al., 2015), there were only very few studies on contextual or parental level predictors. Van, Prins, Oosterlaan, and Emmelkamp (2006) have found parental depressive symptomatology in predicting parental stress. A more recent study by Theule et al. (2011) suggested that parental ADHD symptoms (attention deficit hyperactivity disorder) and contextual (e.g. parents' education level, marital status, social support) predictors of parenting stress varied as a function of children's hyperactive behaviors. A post-hoc analysis demonstrated that whilst children factors did not predict parental stress

over and above contextual factors and parent ADHD symptoms, parental ADHD symptomatology was the strongest predictor of parental stress. However, these studies focus on children with age 8-12. The consideration for children with age 3-7 which is a critical developmental period have been scantly.

2.2.2 Parental self-efficacy

On the other hand, self-efficacy refers to one's beliefs in his or her abilities to perform a particular behavior effectively and successfully (Bandura, 2013). The concept of self-efficacy originates from social– cognitive theory (Bandura, 2013), which postulates that self-efficacy is largely derived through one's personal accomplishment history in a given task (i.e., number of successes and failures). In parenting situations, self-efficacy refers to one's self-referent estimations of his or her abilities to be a competent and successful parent (Jones & Prinz, 2005). From a social–cognitive theory standpoint, parental self-efficacy is largely determined by one's experience in specific parenting tasks. However, observations of others performing parenting tasks, feedback from others, physiological arousal during parenting situations, and how parenting situations are cognitively reappraised may also influence parental self-efficacy (Chau & Giallo, 2015).

The child level predictors of parental self-efficacy, which include children's internalizing (Rezendes, & Scarpa, 2011) and externalizing behaviors (Murdock, 2013) are well established. In recent years there has been more literature investigating contextual and parental level predictors of parental self-efficacy. For instance, it was found that parents' depressive symptoms, such as negative self-attributions or general feelings of worthlessness, correlated negatively with parental self-efficacy (Cinamon,

Weisel, & Tzuk, 2007). Longitudinal frameworks reveal links between parents' depressive symptoms and parental self-efficacy with moderate effect size (Caldwell, Shaver, Li, & Minzenberg, 2011). Furthermore, there is also support for linkage between depressive symptoms, parental stress and self-efficacy. Caldwell, Shaver, Li, and Minzenberg (2011) found that parents with depressive symptoms and stress reported lower parental self-efficacy. In addition, parents who are both depressed and stressed rate their children as less competent than others, exhibit less effective parenting including lower sensitivity, warmth, and vigilance from observational studies, which in turn hinder children development (Jones & Prinz, 2005). These studies highlight the significance of contextual and parental level predictors in parental stress and self-efficacy. So, the aim of the following study is to investigate contextual and parental level predictors of parental stress and parental self-efficacy.

2.2.3 Risks factors on parental stress and parental self-efficacy

2.2.3.1 Contextual factors

Ecological theorists postulate that human development and behavior evolve as a function of the interaction between the individual and his or her environment (Bronfenbrenner, 1977). Stemming from this perspective, children and parents characteristics as well as sociocultural and contextual factors affect children development, parent-child relationships, and also parents themselves (Belsky, 1981). Instead of thinking and interacting with children similarly across time and situation, more family researchers begin to recognize, appreciate, and explicate the dynamic and changeable nature of parents and parenting behaviors. Moreover, developmental theorists assert that although internalizing and externalizing behaviors may depend upon

biological predisposition, vulnerability to such problem behaviors is exacerbated by contextual risks over time (Shalev et al., 2013; Moffitt et al., 2010). Exposure to deleterious environments is thought to exacerbate existing behavioral problems (Walker et al., 2011). Thus at-risk children may be particularly sensitive to detrimental factors in both family and contextual factors (Evans, Li, & Whipple, 2013). These at-risk children start to behave in a problematic manner, which in turn, escalates parental stress and hampers parental self-efficacy.

Contextual factors are measurements and consideration of the presence of stable demographic, psychosocial, and environmental factors (e.g. income, parental education, social economic status, occupations, marital status, neighborhood) that enable ecological scholars and practitioners to predict individuals' stress, efficacy and behaviors (Jackson & Scheines, 2005). This approach lead scholars understand risk from different levels including individual (psychological function, physical health; Gavin, Hill, Hawkins, & Maas, 2011), family (single parent family, maternal depression; Roy, McCoy, & Raver, 2014), and broader contextual levels (poverty, low social support, neighborhood violence; Yoshikawa, Aber, & Beardslee, 2012). Moreover, contextual risks are often associate together and cumulatively with concomitant adverse effects. For example, low income has been associated with low parental education, greater neighborhood poverty, household density (Duncan, Kalil, & Ziol-Guest, 2013) which may further intensify parental stress and decrease parental self-efficacy.

Research on the effect of contextual factors on parental stress has been controversial. Numerous studies demonstrate impoverished families with children experience higher levels of stress compare to those without one (Samms-Vaughan &

Franklyn-Banton, 2008). The decline in family economic resources (i.e. especially income) can deepen parental stress (Evans & Kim, 2013). Other research conceptualize contextual factors in terms of employment, education and marital status etc. For instance Park, Ostler, and Fertig (2015) underscored the impact of poverty, unemployment, single-parenting and physical insecurity to parental stress. Unemployed mothers manifest higher level of parenting stress (Jackson, 2014). Similarly, parents with secondary or primary education experience more stress than those with tertiary-level education (Estes, Munson, Dawson, Koehler, Zhou, & Abbott, 2009). Nonetheless, the direct relation between contextual factors and parental stress is not always supported (Odgers, Donley, Caspi, Bates, & Moffitt, 2015).

Previous controversial results on contextual factors and parental stress utilized objective measurements such as income, income-need ratio, socioeconomic status, education, employment and cumulative risks. Yet, there is not much research addressing subjective measurements such as perceived economic stress (i.e. the psychological meaning of poverty). Casalin, Luyten, Besser, Wouters, and Vliegen (2014) studied the relationships between contextual factors and parental stress by prospective and longitudinal data. They argued that the direct relationship between objective measurements of contextual factors and parental stress could not be observed because of the mediating role of perceived economic stress in infants. Pereira, Negrão, Soares, and Mesman (2015) also suggested a moderating effect of perceived economic stress for this relation in young children whilst Pereira, Negrão, Soares, and Mesman (2015) noted that parents with high perceived economic stress faced more parental stress. Wilson (2009) also argued perceived economic stress mediated the relation between contextual factors

and children problem behaviors. Due to massive economic stress, these parents are at risk for mental health issues including depression, anxiety, and substance abuse (LaBissoniere, 2012), which further interrupt their ability to care for their children (Hall, Neely-Barnes, Graff, Krcek, Roberts, & Hankins, 2012). These findings lead scholars to realize the consideration of perceived economic stress in socially diverse background is important. Therefore, this study underscores that contextual factors (e.g. income, parents' education, perceived economic stress) will have correlative association and associated with parental stress.

Literature addressing contextual risks families' has insufficient consideration on parental self-efficacy as well. Combs-Orme and Cain (2006) initially supported family processes as being related to parental self-efficacy within low and middle income families. Structural equation models indicate an association between contextual risk (e.g. income, parental education) and parental self-efficacy. Linkages between parental self-efficacy and children outcomes are generally stronger among low income families than middle income families, confirming the significance of studying parental self-efficacy in disadvantaged families. Raver, Jones, Li-Grining, Zhai, Metzger, and Solomon (2009) explained that high contextual risks were associated with low maternal self-efficacy, which further hindered parental self-efficacy and children development. In one of the few studies examining the relationship between contextual risks, parental stress and self-efficacy, Poms, Botsford, Kaplan, Buffardi, and O'Brien (2009) found in a sample of 129 middle- to upper-income parents of preschool children, parental stress is negatively associated with parental self-efficacy attributed to managing multiple environmental demands. However, such relations have not been studied in low income families. Thus,

this study also hypothesizes that contextual factors (e.g. income, parents' education) will be associated with parental self-efficacy across various family background.

2.2.3.2 Hyperactive behaviors

Parents from 8-17% of general families worldwide have been found to complain about children's externalizing behavior especially in hyperactive behaviors (Pottegård, Hallas, Hernández-Díaz, & Zoëga, 2014; Sellers, Maughan, Pickles, Thapar, & Collishaw, 2015; Sciberras, et al., 2013; Le, et al., 2014). Yet, few studies address these concerns for deprived families. Pinard (2012) found that 23% of the preschool children in their small Head Start sample (95% government assistance) were at risk of hyperactive behavior problems. Gunn, Feil, Seeley, Severson, and Walker (2006) surveyed 954 parents of young children enrolled in Head Start and indicated 52% of the children had met the criteria for referral to mental health services for parent-reported hyperactive behavior and emotional problems. Other studies have reported a range of 20–33% for hyperactive behavior problems in young children for parents coming from deprive environment (Ronis, Baldwin, Blumkin, Kuhlthau, & Szilagyi, 2015; Lien, Yeh, Soong, Jeng, Huang, & Chen, 2015; Lee, Keyes, Bitfoi, Mihova, Pez, Yoon, & Masfety, 2014). Given such a prevalence of parents' complaints on hyperactive behaviors in contextual risks families, it is meaningful to examine their worries with respect to parental stress and self-efficacy.

Hyperactive or challenging behaviors such as marked noncompliance, high levels of activity, poor regulation of impulses, and aggression toward peers are considered as typical behaviors manifest by children in early childhood, with few long term implications for later adjustment (Petitclerc, Briggs-Gowan, Estabrook, Burns,

Anderson, McCarthy, & Wakschlag, 2015). Parents who complain about these behaviors to professionals are often told that their children will outgrow the problem or that he is "just being a boy." Of course, this advice/observation from pediatricians and others may be correct. However, some parents ruminate with their parenting roles which intensify stress and undermine parental self-efficacy and parenting behaviors. Negative parenting behaviors increase children's aggressive, defiant, and overactive behaviors and deteriorate these problems at school age (Dugas, 2015). Insensitive and constantly hyperactive behaviors can reach a level that may require professional attention as some of these problems may even continue into adulthood (Jones, Rabinovitch, & Hubbard, 2015). Thus, it is justifiable that hyperactive behaviors is a significant factor contributing to parental stress and self-efficacy.

Various evidence assures children ADHD symptoms in total (Hernández-Otero, Doddamani, Dutray, Gagliano, Haertling, Bloomfield, & Ramnath, 2015), and hyperactivity (Cannon, 2015) reported by parents are the significant predictors of parental stress. Oppositional defiant, aggressive, and hyperactive behavior have often been found to be an even more potent predictor of parenting stress (Tzang, Chang, & Liu, 2009). Meta-analyses have also revealed a significant relationship between hyperactive behaviors and parenting stress (Theule, Wiener, Tannock, & Jenkins, 2013). Furthermore, Theule, Wiener, Rogers, and Marton (2011) developed a model between contextual risks, hyperactive behaviors and parental stress. It suggests that hyperactive behaviors mediate the relationship between contextual risk and parental stress. However, such a relationship has not been studied in socially diverse families, which is common for parents concerning childhood hyperactive behaviors. Therefore, it is reasonable to

hypothesize that hyperactive behaviors will mediate contextual risks and parental stress within these families.

On the other hand, hyperactive behaviors have significant association with parental self-efficacy. For instance, Jiang, Gurm, and Johnston (2014) studied a large sample of parents with hyperactive problems children and found that low self-efficacy parents tended to rate their children as having higher rates of hyperactive behaviors. Studies by Murdock (2013) further supported the contention parental self-efficacy, mostly for mothers but to some extent fathers as well, was associated with higher hyperactive behaviors. Overall, studies linking hyperactive behaviors to parental self-efficacy reflect moderate effect size, which is stronger than contextual predictors (Burt, 2009). Furthermore, intervention research reveals that some interventions have decreased hyperactive behaviors and increased parental self-efficacy (Mulqueen, Bartley, & Bloch, 2015). Sofronoff and Farbotko (2002) conducted a parent management training intervention promoting parental self-efficacy. They found that parents in the intervention conditions significantly decreased hyperactive behaviors and increased parental self-efficacy. Consistent findings are also found in non-therapy format with children ages 2 to 8 (OBrien, 2010). Thus, this study also hypothesizes that hyperactive behaviors will mediate the relationship between contextual risk and parental self-efficacy.

2.2.3.3 Chinese culture

Parents who experience high levels of stress, especially from economic difficulties and hyperactive behaviors problems, are often less responsive, less affectionate, and exhibit low levels of parent–child interaction and connectedness with

children. They frequently use authoritarian parenting when compared with parents without such stress (Jones, Rabinovitch, & Hubbard, 2015). Authoritarian parenting, is a parenting style high in demandingness yet low in responsiveness. It is characterized by strict enforcement, punishment, power-assertive discipline and negative emotionality with a lack of explanations and explorations (Baumrind, 2012). Over the past two decades, studies that based on middle-class children in western countries have yielded a consistent picture of authoritarian parenting and children's negative outcome (Tao, 2015). Although authoritarian parenting boosts immediate children's compliance, children do not fully understand the reasons for compliance, which reduce their internalization of moral values, norms and rules. As a result, most of these children focus on not getting caught instead of changing their internalized attitudes and behavior (Moghaddam, Assareh, Heidaripoor, Eslami Rad, & Pishjoo, 2013). It follows that excessive parental stress, through its effect on authoritarian parenting, can negatively affect a child's social-cognitive development and aggravate children hyperactive behaviors. For example, Gershoff (2002)'s meta-analysis on this topic concluded that parents should abandon the use of punishment because of the association with children's aggression, parent–child connectedness, poor mental health, social relationship from childhood till adult years, child/adolescent delinquency, spousal abuse and criminal activity in adult (Gershoff, Grogan-Kaylor, Lansford, Chang, Zelli, Deater-Deckard, & Dodge, 2010).

However, given some unique Chinese social and cultural approaches to parenting, it remains questionable whether high parental stress and authoritarian parenting are more likely to lead to negative outcomes in Chinese families. In particular,

the rise of the two-children families in Hong Kong and implementation of the one-child policy in China since 1970s may result in very high parental expectations for the family's child (Wong, Chen, Goggins, Tang, & Leung, 2009), which, in turn, may create high parenting stress among Chinese parents. Under high expectation and stress, Chinese parents may be more likely to adopt authoritarian parenting to motivate their children to achieve high academic and social achievement (Anthony, Anthony, Glanville, Naiman, Waanders, & Shaffer, 2005). A recent study with Chinese families suggested that it was common to have high parental stress and authoritarian parenting was the most prevalent parenting style in China (Liu & Wang, 2015). Approximately 80% of Chinese parents reported corporal punishment, power-assertive discipline, scolding and negative emotionality toward their children in the previous year (Wang & Liu, 2014).

Despite the prevalence of parental stress and authoritarian parenting in Chinese, children's developmental problems have not been salient comparing with other cultures (Wang, 2012). According to Lansford and Dodge (2008), the outcomes of parenting most likely depend on its normative acceptance in particular subcultures. Authoritarian parenting is highly accepted in traditional Chinese societies since they tend to perceive punishment as an indication of involvement, concern, and love. For instance, a well-known Chinese proverb is "Beating and scolding is the emblem of love" (Chao & Otsuki-Clutter, 2011). In this context, Chinese children who experience such discipline may perceive it as normative parenting, positive connotations including high parental care and concern for children's welfare rather than rejection or low responsiveness, thus may not display more behavioral problems than the children who do not experience such

style (Lansford & Dodge, 2008). It is possible that high parental stress and authoritarian parenting might have less impact on Chinese children' behavior problems. Therefore, it is meaningful to investigate the generalizability of previous model on contextual risks, hyperactive behaviors, parental stress and self-efficacy in Chinese families.

2.2.4 Protective factors on parental stress and parental self-efficacy

There are numerous risk factors associated with living in deprived environment which intensify parental stress and hinder parental self-efficacy, especially for parents with hyperactive behaviors children. They are particularly challenging to parents who need to remind their children frequently to do the most basic tasks such as homework and mealtime (Harvey, Herbert, & Stowe, 2015). These children are forgetful, disorganized, impulsive, and often require close monitoring to complete daily task (Roberts, Milich, & Barkley, 2015). However, a number of parents with benign reactions evince positive and adaptive parenting behaviors despite being distressed. According to Guajardo, Snyder, and Petersen (2009), a negative relationship was found between parental stress and children's performances on false belief tasks. Gardner, Shaw, Dishion, Burton, and Supplee (2007) also suggested parental education had chronic influences on children's adjustment, with more educated parents showing more adoptive instruction strategies, styles, techniques, more practice and diverse problem-solving tasks, providing more effective problem-solving strategies for their children and using fewer direct control tactics. Liang, Zhang, Deng, Song, Zheng, and Sun (2013) also indicated that parents' education attenuated the relationship between children's negative emotion and parental teaching quality. It is particularly important for parents whose child has hyperactive behaviors. Those parents who are able to set clear goals including

managing time properly, rendering child compliant, believing that goals are obtainable, and persevering despite obstacles, are likely to obtain more positive outcomes (Mulligan, 2013). Thus, the present study also aimed to understand parental level's protective factors for attenuating parental stress and enhancing parental self-efficacy.

To date, much of the attention devoted to parents protective factors has been shifted from implicit and schematic processes (Bugental, Beaulieu, & Silbert-Geiger, 2010) to deliberate and effortful parental cognitions (Hastings, Robertson, & Yasamy, 2012). For example, parental attributions of the causes of children's behavior directly affect their parenting choices and responses to misbehavior (Loren et al., 2015). Parental acceptance significantly predicts parenting behavior such as responsiveness to their children (Braet, et al., 2014). These conscious self-awareness and regulation are more proximal to parental stress and self-efficacy comparing with implicit processes. Moreover, they have been increasingly appreciated as key determinants of parenting behaviors and targets for intervention (Lawrence, & Sovik-Johnston, 2010). Donnelly, Renk, and McKinney (2013) further supported the association between parental self-regulation, cognitions and parenting stress, self-efficacy and behaviors. Eiden, Edwards, and Leonard (2007) extended these findings by studying parents' self-regulation and children hyperactive behaviors in longitudinal data. They demonstrated that parents' alcohol diagnoses, depressive symptoms, self-regulation when their children were 12–18 months of age predicted later parental warmth/sensitivity at 2 years old, whilst parental warmth/sensitivity at 2 years old predicted children's self-regulation, social competence and hyperactive behaviors at 3 years old.

Although parents are unlikely to change their living environment immediately in

terms of income, education, housing, they can exert direct and immediate control over their own emotion, thoughts, beliefs, and ideas which enables them to attenuate stress and enhance self-efficacy. These parents' conscious self-regulation on emotion, thoughts, beliefs, attributions, goals can be classified as metacognition which may protect the families from different risks. Current evidence demonstrates the predicting and protecting ability of metacognition on parent-child relationships and children outcomes from risks factors (Hawk, 2007). Metacognition is defined as cognitions about own internal states such as thoughts and emotions, in the maintenance of psychological wellbeing / distress (Wells, 2008). It asserts that such cognitions may influence the use of helpful / unhelpful strategies, which can interfere with the adjustments required to maintain psychological wellbeing (Wells, & Simons, 2014). Under the umbrella of metacognition, meta-parenting and emotion regulation would be discussed.

2.2.4.1 Meta-parenting

Present research on metacognition in parents is classified as meta-parenting which investigates deliberate forms of thought, especially in parenting (Hawk, 2007). These thoughts are intentional, evaluative, indicative of some deliberation or reflection rather than automatic or reflexive. The meta prefix is a common psychological lexicon which has been used to indicate greater awareness and a more deliberate approach to thinking such as meta-logic, meta-memory. Thus, meta-parenting highlights the deliberate nature of thinking which centers at the child, parenting role, parent-child relationship, or related considerations including the context within which an event occurs. Holden and Hawk (2006) defined meta-parenting by reviewing extant parental social cognition literature and created superordinate category of parental effortful

thoughts, including anticipation, assessing, problem solving, reflection, and rumination which typically occur before or after interactions with children. They indicated that these thoughts were common mental activity engaged in by parents, but they have gone largely unrecognized by researchers and parenting experts. Each component will be described in the following and rumination will be discussed in subsequent section: 1) anticipation is defined as parents' intentional consideration of something that has yet to occur in the child-rearing domain, such as childproofing a home before a child can crawl (Morrongiello, Sandomierski, & Spence, 2014), which help parents organize and activate short-term and long-term parental goals; 2) assessing refers to parental evaluations of the child, self, and context. For instance, a parent may think about her child's emotional, social, academic development or monitor peer interactions and influences (Smith, Dishion, Shaw, Wilson, Winter, & Patterson, 2014); 3) reflection refers to parents' reassessment of their own behaviors, their child's behaviors, or past parent – child interactions. Reflecting on past experiences affords parents the opportunity to evaluate factors in the childrearing domain in a reasoned way (Heath, 2000); 4) problem solving refers to multiple aspects of parental thought, including identifying a problem, planning a solution, implementing the solution, and evaluating the result (Nelson & Crick, 2002).

Although not being labeled as meta-parenting, examples of these components can be found in studies of parental social cognition published over the past 50 years. Anticipation has been studied under the labels of aspirations (Areepattamannil & Lee, 2014), expectations (Wentzel, Russell, & Baker, 2015), goals (Horvath & Lee, 2015), outcome expectancies (Murphy, 2006), and proactive parenting (Jia, Wang, & Shi,

2014). According to Neff and Faso (2015) parents having sufficient anticipation on children's need were able to reduce stress and benefited parents-child relationships as parents would feel competent in caring their children. Experimental studies also suggest that anticipation increases positive emotions immediately after the offset of stressor. Participants in anticipating condition reported more adaptive thoughts during the stressor and decreased concurrent negative emotion (Papousek, Nauschnegg, Paechter, Lackner, Goswami, & Schulter, 2010).

Assessing has been studied under the rubric of parental perceptions (Moen, Hedelin, & Hall-Lord, 2015) including perceptions of their children (Blige, 2014), their own parenting experience or quality of relationship (Tomeny, 2015), and the influences on or biases associated with perceptions (Laforce, 2004). Experimental studies indicate hyperactive behaviors mediate the relationship between parental perceptions and parental stress (Rabbitt, 2013). Such stress is further associated with more negative reaction toward children's hyperactive behaviors. Assessing has also been investigated under the label of "monitoring," or parental awareness of children's whereabouts and activities, and attributions, or assessments of intentionality (Salari, & Thorell, 2015) which have been associated with effective parenting. It has been implicated in reducing parental stress, the quality of peer interactions (Fisher, 2014), academic performance (Kgosidialwa, 2010), and the development of delinquency in older children (Campbell, 2012). Assessing thus appears to be an important parenting practice that helps alleviate parental stress and is associated with positive child outcomes.

Reflection has been studied under the label of parental concern. It has been historically identified from parents' reports of children's undesirable behavior through

mail surveys (Robertson, 2015), telephone calls or visits to pediatric offices (Mesibov, Schroeder, & Wesson, 2007), and daily diaries (Enlund, Aunola, Tolvanen, & Nurmi, 2015). Recently, a study from a stress generation perspective aimed to investigate the association among reflection, parental stress, and child development. Longitudinal data revealed that reflection increased parental stress, which in turn were negatively related to child development (Desjardins et al., 2011).

Problem solving has been investigated sporadically. For instance, educated parents demonstrate more frequent and diverse problem solving abilities, which in turn attenuate parental stress (Izumi, 2015). Abusive or neglectful parents are less able to generate alternative solutions for five different types of problems in experimental studies (Azar, Robinson, & Proctor, 2012). Pettit and Collins (2011) also asserted the association between problem solving and child social competence. Other studies using problem-solving interventions on parents with hyperactive children have marked decline in parental stress and depressive symptoms (Docking, Munro, Cordier, & Ellis, 2013).

Meta-parenting (anticipation, assessing, reflection, and problem solving) is most likely engaged in when parents are experiencing certain kinds of problems including behavioral, cognitive, or affective (Kuczynski, Parkin, & Pitman, 2015). To be an effective parent, engagement in various components of meta-parenting is necessary for arriving at a new behavioral solution that ultimately benefits the situation. For instance, in the case of a 6-year-old boy with hyperactive behaviors, it is important that his parents recognize the condition and make appropriate adjustments (e.g. set clear goals for the child such as staying focused on homework for a certain time) before the child falls behind in schoolwork and begins to perceive himself as a failure. Effective parents

probably also seek for cognition-related support (e.g., additional information, advice, or assistance) or affective support (e.g., reassurance, comfort, or encouragement) to solve these problems (Mize, & Pettit, 2010). Thus, regular meta-parenting serves to broaden the parent's network of social contacts and social supports which help reduce parental stress (Respler-Herman, Mowder, Yasik, & Shamah, 2012). This example and substantial literature suggest that childrearing issues can be dealt with effectively though meta-parenting, which can then apply to universal childrearing problems, such as diagnosing why an infant is crying (Holden, & Hawk, 2003), or to issues that are specific to parents of children with special needs, such as ADHD (Sayal, Mills, White, Merrell, & Tymms, 2015). Even in the most challenging parenting contexts, such as disabled children, parents' meta-parenting abilities are the ameliorating factors in reducing stress and helping parents adapt (Cuzzocrea, Larcan, & Westh, 2013).

These previous studies demonstrate that meta-parenting can enhance the effectiveness in parenting which is tied to feelings of parental self-efficacy. As Goldberg (1977, p.163) recognized, "Parents' feelings of efficacy are derived from parental evaluation of interactions". Parenting self-efficacy scales focus on parents' evaluations of their parenting, as illustrated by items from one such scale: "My talents and interests are in other areas, not in being a parent" and "I meet my own personal expectations for expertise in caring for my baby." (Gilmore & Cuskelly, 2009). Mouton and Roskam (2015) also asserted that assessing (observations of others performing parenting tasks), and problem solving (feedback from others) play an important role in parental self-efficacy. Although there is theoretical linkage between meta-parenting and parental self-efficacy, only a few studies has investigated it systematically. For example, Leidy,

Guerra, and Toro (2012) indicated that assessing and problem solving are positively correlated with parental self-efficacy. Therefore, this study would further study the association between meta-parenting and parental self-efficacy.

Rumination Despite the benefits of meta-parenting in effective parenting and parent-child relationship, it can go awry in different ways and create rumination. For instance, parents may engage too much meta-parenting and become locked into non-productive problem solving. Instead of avoiding or suppressing negative emotions associated with child-rearing, parents may repetitively focus on their experience of the emotion and its causes and consequences (Kingston, Watkins, & Nolen–Hoeksema, 2014). People frequently claim they have engaged in rumination because they want to understand and solve their problems (Papageorgiou & Wells, 2009). In fact rumination is negatively related to problem solving (O'Mahen, Boyd, & Gashe, 2015). Rumination in the context of distress appears to interfere with good problem solving, and may immobilize individuals in making decision (Palomäki, Laakasuo, & Salmela, 2013). Parents may avoid trying out new solutions and constantly worry or ruminate about the child and consequences of their actions instead of finding a solution, which subsequently impeded spontaneous and genuine interactions. Rumination of depressed individuals refers to a maladaptive emotion regulation strategy, characterized by the tendency to respond to a stressful event passively and to focus on one's symptoms and related thoughts in a perseverative manner (Iqbal, & Dar, 2015). Although rumination is frequently investigated in the contexts of depression and anxiety disorder, it has recently been linked to other psychopathology as well such as substance use and eating disorders (Willem, Bijttebier, Claes, Vanhalst, & Raes, 2014; Sitnikov, 2015). With reference to

this study, parents tend to focus on the children's problems, but they cannot resolve the problems. As such, rumination is not productive and may lead to anxiety that can result in such child-rearing excesses as being over-controlling, overprotective, or unnecessarily intrusive.

The association between rumination and stress is well established in experimental studies and among depressed individuals (Grodewald, 2011). Ruijten, Roelofs, and Rood (2011) further developed a conceptual model in parents with series of studies from attachment theory perspective. They assured that parents diminished security attachment with their children which could negatively affect stress related neurobiological systems and emotion processing through rumination. Studies on children with co-occurring internalizing and externalizing problems also demonstrate that hyperactive behaviors mediate the relationship between parents' rumination and parental stress (Grimbos, 2012).

According to Bandura (2013), self-efficacy is influenced by socio-emotional functioning through cognitive, motivational, affective and decisional processes. Individuals constructing positive meaning of, and planning behavioural responses to life events engage in high self-efficacy, while non-adaptive cognitive processes decrease self-efficacy such as engaging in unproductive chains of thoughts (rumination) or blaming oneself or others. Empirical research has supported these suggestions. For example, Takagishi, Sakata, and Kitamura (2013) found that rumination was positively related to lower levels of self-efficacy during experimental tasks. Among parents of children with developmental disabilities, rumination is negatively associated with reappraisal, acceptance, and self-efficacy (Caldwell, 2011).

In summary, there is considerable amount of evidence on the association between each of the components of meta-parenting and parental stress and self-efficacy. However, to the author's knowledge, there is only one study that used meta-parenting to examine these relationships. Goldberg (2012) studied meta-parenting, parents' emotion regulation and stress tolerance among 26 mothers of young children. It indicated that greater meta-parenting, greater emotion regulation predicted greater stress tolerance. Emotion regulation's reappraisal played an important role in meta-parenting and stress tolerance. However, most of these preliminary studies operate from laboratory settings. Besides, such systematic and coherent framework of meta-cognition in parents from miscellaneous background has never been investigated up to date. Therefore, this study also investigated the relationship between meta-parenting, parental stress and self-efficacy with the consideration of ecological factors and hyperactive behaviors. Specifically, meta-parenting was associated with parental stress (anticipation, assessing, and problem solving attenuate parental stress; reflection and rumination accrete parental stress) and parental self-efficacy (anticipation, assessing, and problem solving enhance parental self-efficacy; reflection and rumination attenuate parental self-efficacy). Although it is possible that meta-parenting occur when child-rearing problems are encountered, it can occur before or during the interaction with the children. Anticipation and assessing occur before the interaction with children. For example parents would plan ahead (e.g. providing clear instructions) before the interaction with hyperactive children. If they able to handle their children as planned, their stress will be decreased and self-efficacy will be increased. Therefore, it is hypothesis that hyperactive behaviors mediated the relationship between meta-parenting and parental stress / self-efficacy.

2.2.4.2 Emotion regulation

In order to minimize rumination and enhance meta-parenting, previous preliminary literature suggested that emotion regulation might act as a protective factor. However, the role of emotion in metacognitive theory has been relatively ignored as an area for research and discussion in literature. Spada and Wells (2005) confirmed that metacognitive theory could indeed be applied to all internal states including emotion. Metacognition of emotion has been discussed extensively in relation to its impact upon or involvement with emotion regulation. Understanding parents' emotion regulation is important because it protects children from emotion dysregulation, social incompetence, and future psychopathology (Penela, Walker, Degnan, Fox, & Henderson, 2015; Steinberg, & Drabick, 2015). In unfavorable condition, parents' emotion dysregulation has significant negative impact on children emotion regulation, aggression, hyperactive behavior and social life (Zhong, & Zhang, 2015). For instance, Herndon, Bailey, Shewark, Denham, and Bassett (2013) argued that parents' negative emotion influenced children's social adjustment by the mediating effect of children's emotion dysregulation. Ambrose (2014) ascertained a systematic association between parents' emotion regulation, expression and children's social skills. Bunford, Evans, and Wymbs (2015) further supported the impact of parents' emotion dysregulation to children's hpyeractive behaviors through the influence of children's emotion dysregulation. Consistent findings were found in 325 Chinese families with preschool children (Liu, Zhang, Ding, Li, Hu, & Cheng, 2015). On the other hand, studies reveal the positive effect of parents' emotion regulation. Parental emotion socialization processes directly and indirectly influence the development of children's emotion regulation (Shewark, & Blandon, 2015). Meyer,

Raikes, Virmani, Waters, and Thompson (2014) postulated that parents' beliefs about emotion – the importance of attention to/acceptance of emotional reactions, and the value of emotion regulation –were associated with both socialization strategies and enhancement of children's emotion regulation.

Conceptualization of emotion regulation Although there are numerous frameworks that conceptualize emotion regulation in different ways (Koole & Rothermund, 2011), the process model of emotion regulation (Gross, 2015) is the most widely used model to date. Thompson (1994, p.22) defined emotion regulation as 'the extrinsic and intrinsic processes responsible for monitoring, evaluating and modifying emotional reactions, especially their intensive and temporal features, to accomplish one's goals'. It is a continuum from a conscious, effortful and controlled regulation to an unconscious, effortless and automatic regulation. The model distinguishes five emotion regulation processes on a temporal dimension including antecedent-focused processes (situation selection, situation modification, attentional deployment, and cognitive reappraisal) and response-focused processes - suppression; (Gross, 2015).

Antecedent-focused processes include situation selection, situation modification, attentional deployment, and cognitive reappraisal which deploy before appraisals, give rise to a full-blown emotional response. Despite a number of studies that focus on how people modify or avoid situations as a way of coping (Berkman, & Lieberman, 2009) and how parents alter the situations of their children in an attempt to modify the children's emotional experience (Premo, & Kiel, 2014), a substantial body of literature has researched on the effects of attentional deployment and cognitive reappraisal. Most of the literature on antecedent-focused processes starts from the position that people are

unable to avoid or change the emotion-eliciting situation hence need to find a way to deal with the experience—either by (a) directing attention toward or away from particular aspects of the situation (attentional deployment) or by (b) changing the interpretation of a situation so as to alter its emotional impact (cognitive reappraisal). For instance, experimental studies on attention deployment asked participants to "quickly think of something else" in order to deal with the anxiety associated with an impending electric shock (Webb, Miles, & Sheeran, 2012). Experimental studies on cognitive reappraisal asked participants to "try to think about what you are seeing objectively, in terms of the technical aspects of the events you observe", in order to cope with three films depicting medical procedures (Gross & Jazaieri, 2014). Cognitive reappraisal is therefore highly relevant to present study because of the non-modifiable and unavoidable stress from contextual risks and hyperactive behaviors facing by parents. On the other hand, response-focused processes deployed after the emotional responses are generated. This category refers to efforts to suppress the expression or experience of emotion (Manstead, & Parkinson, 2015). For instance, participants were asked "try to behave in such a way that a person watching you would not know you were feeling anything" (Gross, 2014). Although this model distinguishes five emotion regulation processes, a meta-analysis of 306 studies comparing different emotion regulation strategies showed that cognitive reappraisal has gained the largest effectiveness (d= 0.45) on emotion regulation compared with suppression (d= 0.32), while attentional deployment had no effective (d= 0.00; Webb, Miles, & Sheeran, 2012). Therefore, this study would focus on the protective role of cognitive reappraisal and suppression on parental stress.

Cognitive reappraisal and stress The biopsychosocial model of challenge and threat explains the relationship between cognitive reappraisals and stress (Tomaka, Blascovich, Kibler, & Ernst, 1997). Both challenge and threat states evoke acute stress and are accompanied with sympathetic activation, yet they differ in antecedent appraisal processes and downstream physiological responses. Individuals experience challenge when appraisals of personal resources exceed situational demands, which is characterized by improved cardiac efficiency and dilation of the peripheral vasculature. In contrast, threat manifests itself when perceived demands exceed resources which decreases cardiac efficiency and constricts the vasculature in anticipation of damage or defeat. Although it is commonly believed that arousal experienced during stress is bad, approach-motivated challenge states indeed have greater sympathetic activation than threat states (Mawdsley, 2010). This notion is consistent with the idea of physiological toughness, which suggests that activation of the sympathetic nervous system facilitates effective coping and improves performance in situations of acute stress (Dienstbier, 2015). Therefore, it is possible that some adaptive parents are able to antecedently reappraise their impoverished condition and perceive it as challenge which reduce parental stress, whereas some maladaptive parents are unable to reappraise their situation and perceive it as threat, which subsequently hinder children's development.

Initial examinations by experimental studies have shown the positive effects of cognitive reappraisal on physiology, attention, and performance. For instance, Pavlov, Reva, Loktev, Tumyalis, Korenyok, and Aftanas (2014) examined how cognitive reappraisal could alter cardiovascular functioning and attention during and after a stressful evaluative task. During the stressful task, participants in reappraisal condition

exhibited an approach-oriented physiological profile, indexed by less vasoconstriction and greater cardiac output when compared with other conditions. Similarly, Jamieson, Nock, and Mendes (2012) assessed attentional bias (using an emotional Stroop task) after a stressful task and found that participants in reappraisal group exhibited less vigilance to threat cues relative to other groups of participants. Extending from this study, Schraub, Turgut, Clavairoly, and Sonntag (2013) have recently examined how cognitive reappraisal facilitated recovery from stress. Participants in reappraisal group not only exhibited more adaptive physiological responses during stress but also had their physiological responses returned to baseline more quickly after the stressful situation, compared with controls.

These benefits of cognitive appraisals can also extend to real life. For instance, participants using reappraisal scored higher on the quantitative section of the actual GRE test and reported that arousal on the day of the test had aided their performance comparing with control (Basturk, 1999). This study implied that a brief laboratory-based reappraisal manipulation might have sustainable effects on stress appraisals and performance. Furthermore, benefits of cognitive reappraisal are also observed in community and daily life settings. Cognitive reappraisal is positively associated with psychological health and lowers depression in the context of high stress (Conway, Hammen, Espejo, Wray, Najman, & Brennan, 2012). Bigatti, Steiner, and Miller (2012) revealed that individuals who had recently experienced a stressful life event, with greater stress and high cognitive reappraisal ability reported significantly smaller increase in depressive symptoms relative to those with low cognitive reappraisal. Even in highly stressful contexts that are inevitable, the protective effects of cognitive

reappraisal remain, such that high cognitive reappraisal is associated with lower levels of depressive symptoms. Furthermore, studies examining cognitive reappraisal as a moderator of the relationship between stress and mental health is equivocal. Jackson and Roper (2014) reported numerous studies that examined variables related to emotion regulation (such as cognitive reappraisal and social support) as moderators of relationships between life stressors (such as divorce and family history of alcoholism) and both emotional and behavioral problems. Taken together, the aforementioned research demonstrates that using cognitive reappraisal as an emotion regulation tool during acutely stressful episodes can promote adaptive physiological responses, reduce attentional bias, and improve performance. However, studies on the topic of cognitive reappraisal and stress in parenting have been ignored.

A similar topic of stress and coping has been studied extensively in family literature. Most of the studies assert that reappraisal as coping method can help relieve stress. For example, Graungaard, Andersen, and Skov (2011) suggested that parents who realized that their newborn child was severely disabled often experienced severe physical and emotional stress. They argued that parents would continually create and sustain their personal resources through cognitive reappraisal of their circumstances which gain positive outcomes. Such findings are consistent with cross-sectional, prospective and longitudinal data on developmental delays, down syndrome, posttraumatic stress disorder (Denny, & Ochsner, 2014; Van, Kraaij, & Garnefski, 2009; Seligowski, Lee, Bardeen, & Orcutt, 2015).

Although the connection between coping and emotion regulation is close, there is substantial degree of independence. Gross (2015) asserted that both emotion and

stress involved whole body responses (e.g. biological, behavioral) to important events, but stress refers to negative affective responses, meanwhile emotion refers to both negative and positive affective states. The topic of stress and coping emerged from the publication of Richard Lazarus's 1966 (Lazarus, 1966) book, Psychological Stress and the Coping Process during the 1970s. They refer to a complex, multidimensional process that is sensitive to both the environment and to personality dispositions that influence the appraisal of stress. They are 'conscious and volitional efforts to regulate emotion, cognition, behaviour, physiology, and the environment in response to stressful events or circumstances' (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001, p.156) or 'regulatory processes in a subset of contexts—those involving stress' (Eisenberg, Fabes, Guthrie, & Reiser, 2002, p.145). On the other hand, emotion regulation has received increasing research interest since the mid-1990s. Emotion regulation refers to processes through which individuals modulate their emotions, consciously and non-consciously, so to appropriately respond to environmental demands (Gross, 2015). It does not solely depend on "specific stressful events or circumstances". In this study, the term "emotion regulation" was used because contextual risks, hyperactive behaviors, and parental stress were prolonged environmental conditions rather than specific stressful event or circumstances like serious illness or divorce.

Even so, previous literature hypothesized that emotion regulation – cognitive reappraisal would moderate the relationship between meta-parenting, and parental stress. Despite the concrete evidence of the protective role of emotion regulation - cognitive reappraisal on meta-parenting and parental stress, to date there is only one study exploring the joint effect of rumination, cognitive reappraisal and parental self-efficacy

on a sample of parents of hospitalized children (Miklósi, Szabó, Martos, Galambosi, & Forintos (2013). Results suggested that cognitive reappraisal moderated the association between rumination and parental self-efficacy.

2.3 Summary of literature

In conclusion, the above literature provided the conceptual framework between contextual risks, hyperactive behaviors, meta-parenting, parental stress, parental self-efficacy and emotion regulation. Although substantial body of literature has demonstrated child level predictors of parental stress and self-efficacy, there are only few studies addressing contextual and parental level predictors, while children factors per se do not predict parental stress and self-efficacy over and above contextual and parental factors. Thus, the literature review discussed contextual and parental level predictors and protective factors on these.

From contextual risks, studies indicate that declines in family economic resources especially income negatively influence parental stress and self-efficacy. Other research conceptualize contextual factors in terms of employment, education and marital status gain similar results. From parental risks, parent's hyperactive behaviors also negatively influence parental stress and self-efficacy. It is prevalent for parents to complain about children's hyperactive behaviors in socially diverse families. Hyperactive behavior has often been found to be more potent predictor of parenting stress and self-efficacy. Intervention research reveal consistent results.

Despite of the many risks factors associated with living in socially diverse environment, especially for parents with hyperactive behaviors children, meta-parenting and emotion regulation are able to protect families from risks. Literature on meta-

parenting suggest an association between parental stress and self-efficacy. For instance, anticipation, assessing, and problem solving attenuate parental stress and enhance parental self-efficacy. On the other hand, reflection and rumination accrete parental stress and attenuate parental self-efficacy. Hyperactive behaviors mediate the relationship between meta-parenting, parental stress and self-efficacy. Moreover, coping literature has suggested that emotion regulation is able to reduce rumination and enhance meta-parenting and that cognitive reappraisal can relieve stress and enhance self-efficacy. Thus, the literature review has provided the conceptual basis of emotion regulation as protective factor in parental stress and self-efficacy, moderating the effects between various risk factors.

2.4 Literature gaps

Many previous studies have highlighted child level predictors, such as deviant or problematic behavior, of parental stress and self-efficacy. Yet to the author's knowledge there are only a few studies that address contextual and parental level predictors which has been underscored to be equally salient predictors of parental stress and self-efficacy. Thus, the aim of this study was to investigate contextual and parental level predictors of parental stress and self-efficacy.

In terms of risks factors, research on the effect of contextual risks on parental stress has been controversial. There is a lack of consideration on perceived economic stress and the effects of contextual risks on parental self-efficacy. Besides, the prevalence of hyperactive behaviors is high in impoverished families. However, the relationships between hyperactive behaviors, parental stress and self-efficacy have not been studied. Thus, this study advanced previous literature by investigating the role of

contextual risks and hyperactive behaviors in families coming from socially diverse background. Furthermore, despite the prevalence of parental stress and authoritarian parenting in Chinese families, it appears that these families do not render significantly more developmental problems when compared with those from other cultures. It remains an open question as to whether high parental stress and authoritarian parenting are more likely to lead to negative outcomes in Chinese families. Therefore, it is meaningful to investigate contextual risks, hyperactive behaviors, parental stress and self-efficacy in Chinese families.

Most of the previous studies address either risks factors or protective factors. However, this study would discuss both of these effects. It considered deliberate effortful parental meta-cognitions rather than implicit and schematic processes. For meta-parenting, although the association between each of the components of meta-parenting and parental stress and self-efficacy is well-documented, there is insufficient work using meta-parenting as one coherent framework. For emotion regulation, it has been well established the association between rumination and stress in experimental studies and depressed individuals. However, studies in this topic on parenting have been scanty. Cognitive reappraisal of emotion regulation plays an important role in meta-parenting, parental stress and self-efficacy. However, most of these preliminary studies came from relatively controlled laboratory settings rather than the more ecological understanding and concerns of parental stress and self-efficacy. Besides, an attempt at a more systematic and coherent framework of meta-cognition in parents has not been carried out. Therefore, this study aimed to investigate the protective role of emotion regulation and meta-parenting, on parental stress and self-efficacy with the

consideration of ecological factors and hyperactive behaviors.

2.5 Aims and hypothesis

This study aimed to investigate the protective role of emotion regulation and meta-parenting on parental stress / self-efficacy in the context of ecological factors and hyperactive behaviors. The literature review has suggested that emotion regulation is most relevant to stress. Parental outcome is conceptualized as the primary outcome while self-efficacy was the secondary outcome. The first research question sought to identify the contextual predictors of parental stress/ self-efficacy. The study had the following hypotheses:

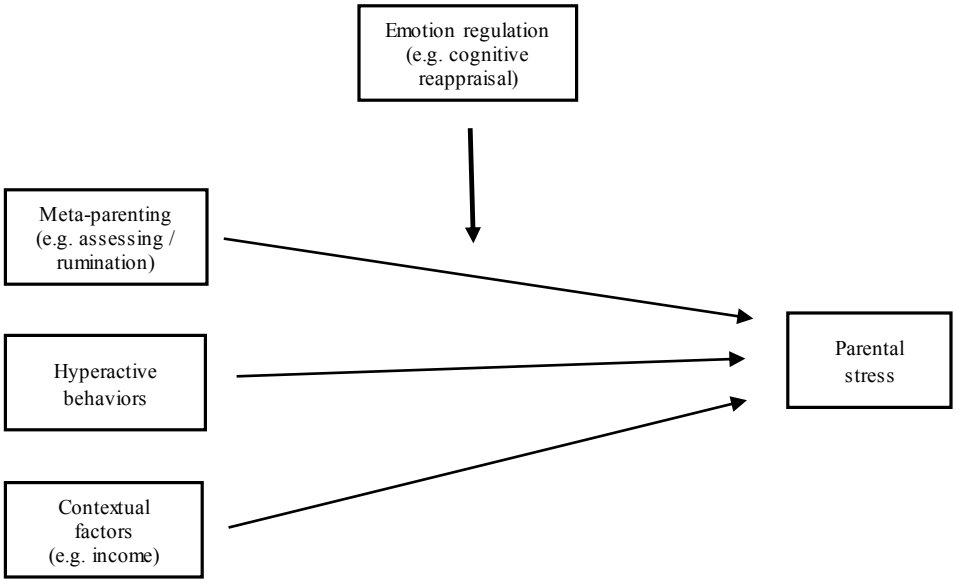
First, income, parents' education, perceived economic stress would have significant correlations with parental stress and self-efficacy (H_1).

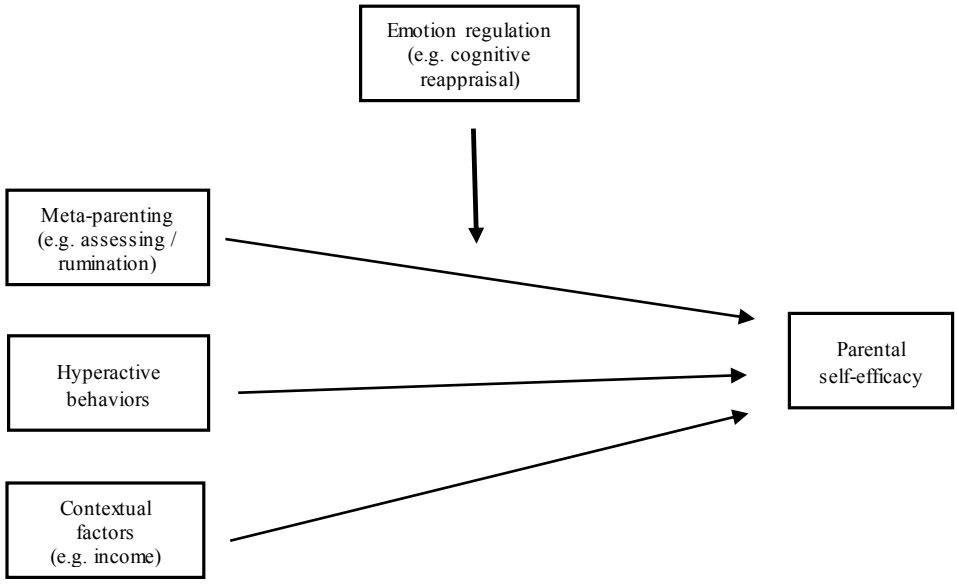
Second, hyperactive behaviors would have effect on parental stress and self-efficacy (H_2).

Third, it was also hypothesized that meta-parenting will be associated with parental stress. Anticipation, assessing, and problem solving would attenuate parental stress whilst reflection and rumination would increase parental stress. At the same time, anticipating, assessing, and problem solving would enhance parental self-efficacy while reflection and rumination would decrease parental self-efficacy (H_3).

Fourth, it was hypothesized that emotion regulation would moderate the relationships between meta-parenting and parental stress/ self-efficacy with the consideration of contextual risks and hyperactive behaviors (H_4). The following diagram summarized the hypothetical model of this study:

Hypothetical model





2.6 Significance of current study

Both Belsky's (1984) parenting-process model and Abidin's (1992) parental stress model assert that parental stress exacerbates poor parenting behaviors. Poor parenting behaviors, in turn, have unfavorable consequences on children's development (Xing, & Wang, 2013; Aunola, & Nurmi, 2005). For instance, parental stress escalates children's internalizing and externalizing behaviors (Crnic et al., 2015; Deater-Deckard & Scarr, 2006; Huth- Bocks & Hughes, 2008). Substantial evidence from longitudinal studies has shown that these internalizing and externalizing behaviors cause subsequent adjustment problems (Vissing, Straus, Gelles, & Harrop, 2011). On the other hand, parental self-efficacy promotes children development (child behavior, socio-emotional functioning, and achievement at school) directly as well as indirectly via parenting (Jones & Prinz, 2005). Márk-Ribiczey, Miklósi, and Szabó (2015) found these positive influences on children self-regulation and self-worth in new immigrants, imprisonment and clinic-referred families. Therefore, understanding, attenuating parental stress, and enhancing parental self-efficacy are of utmost importance for children development.

It is meaningful to investigate the predictors and protective factors of parental stress and self-efficacy for families coming from various background because of the prevalence of children hyperactive behaviors. Although children's hyperactive behaviors are especially challenging to parents, parents can exert direct and immediate control over their own thoughts and emotions (i.e. meta-parenting and emotion regulation) which enable them to relieve stress and enhance self-efficacy. Thus the present study aimed to provide evidence and insight for future prevention and intervention work.

Identifying risk and protective factors can be critical for families with children aged 4-7 because of the critical developmental period in physical, emotional, social and cognitive aspects of children (Gabis et al., 2015). Early stressful experiences of children from parental stress may have long lasting consequences on development and interfere with brain structure that make stress related differences persist into later developmental periods (Hackman, Betancourt, Brodsky, Kobrin, Hurt, & Farah, 2013). On the other hand, parenting training program can also have the critical potential benefits the aforementioned age group of children in the context of understanding developmental trajectories.

CHAPTER THREE Methods

3.1 Procedure

The present study was a cross-sectional study. A total of 115 families participated in this study were recruited from districts with high contextual risks, including Kung Tong, Sheung Shui, Sham Shui Po, Tai Po, Tuen Mun, Wong Tai sin, Yuen Long. Families were recruited through a research project of Yan Oi Tong Child Development Centre in the Hong Kong Polytechnic University targeting on high contextual risks families' parenting training program. Ethics approval have been obtained from the Hong Kong Polytechnic University Human subjects ethics committee. The inclusion criteria included (a) both the parents must be Hong Kong residents and they should normally reside in Hong Kong; (b) both the parents and children able to read Chinese; (c) it is common for families with several children. Therefore, it is required parents to bring one of their children only whom parents' perceived more hyperactive or aroused parental stress; (d) the target child must be living with the parents; (e) target children with major developmental delay were excluded (e.g., autism, psychosis) (f) parents receiving psychiatric services were excluded (e.g., active chemical dependency, psychosis). The research project selected Hong Kong's deprive distinct and invited the schools and NGOs (see Appendix 1 for a list showing the schools and NGOs involved). Families were firstly recruited for this study with informed consent, than participated in the parenting training program. Questionnaires (see Appendix 2) were administered to the main caregiver of the children (93.1% were mothers).

3.2 Measurements

In addition to demographic information, each participant was administered with the following questionnaires: 1) Perceived economic Stress (Shek, 2003); 2) Measures of the ADHD symptoms: Strengths and Weaknesses of ADHD-Symptom and Normal-Behaviors Questionnaire (SWAN; Lakes, Swanson, & Riggs, 2012); 3) Meta-parenting questionnaire (MPPQ; Hawk & Holden, 2006); 4) Emotion regulation questionnaire (ERQ; Gross & John, 2003); 5) Parent Stress Scale (PSS; Berry, & Jones, 1995); 6) The Parenting Sense of Competence Scale (PSOC; Ohan, Leung, & Johnston, 2000).

Demographic and contextual risks. Based on the framework of Hollingshead Four Factor Index of Socioeconomic Status, the following information was collected: Parents' age, occupation, educational attainment, family monthly income, marital status, children age and gender. According to Bornstein, Hahn, Suwalsky, and Haynes (2003) marital status took into consideration of different families' members participated in the economic system including both spouses gainfully employed, one spouse full-time participant in the labor force. Occupations were categorized according to The Hong Kong Census and Statistics Department' General Household Survey guideline.

Perceived economic stress (ESS). Perceived economic stress - the psychological implication, meaning of poverty or economic hardship, was a subjective measurement (Shek, 2003) that facilitated the understanding of contextual risks and parental stress and self-efficacy. Shek (2003) developed four items to measure current perceived economic stress in Hong Kong. For the first item, the respondents responded to the question: 'in the past six months, has your family had inadequate money to cope with the family expenses?' Answers could be 'Never', 'Rarely', 'Sometimes' and 'Always'. For the

second item, the respondents responded to question: 'in the past six months, has your family delayed the payment of bills because of financial difficulty?' The respondent could answer 'Never', 'Rarely', 'Sometimes' and 'Always'. For the third item, the respondents responded to the question 'what has the economic condition of your family been in the past six months?' in terms of 'No financial difficulty', 'Has some financial difficulty', 'Has considerable financial difficulty' or 'Has much difficulty'. Finally, the respondents were asked to indicate their feeling about the financial situation of the family where the respondent can respond 'Has improved', 'No change' or 'Has deteriorated'. This scale was used to study perceived economic stress of Hong Kong's economic disadvantaged families while validity and reliability were proven (a = 0.77; Shek, 2003). The reliability of ESS in this study is 0.86.

Hyperactive behaviors - Strengths and Weaknesses of ADHD-Symptom and Normal-Behaviors Questionnaire (SWAN). SWAN rating scale was phrased in neutral or positive terms for parents to compare the index children's hyperactive behaviors with that of their peers (Lakes, Swanson, & Riggs, 2012). Two sub-scale were obtained including hyperactive and inattentive behaviors. Hyperactive was used for analysis because of its validity to hyperactive behaviors. There were in total 18 behavioral and child-focus items, for example, "Modulate motor activity (inhibit inappropriate running/climbing)" and "Settle down and rest (control constant activity)". Participants rated a 7-point Likert scale ranging from +3 (far below average) to −3 (far above average). Mean score of the 18 items was calculated for each participant, with higher score indicating a frequent perception of children' attentive, compliance, organizing behaviors, and lower score more hyperactive behaviors. The SWAN scale was a reliable

and valid instrument for the assessment of children hyperactive problems in Hong Kong (Lai et al., 2013). The reliability of SWAN Hyperactive is 0.96 and SWAN Inattentive is 0.95 in this study.

Meta-Parenting – Meta-parenting questionnaire (MPPQ). The MPPQ was a 19-item self-report instrument designed to measure the four hypothesized components of meta-parenting: anticipation, assessing, reflection, problem solving and rumination (Hawk & Holden, 2006). Example items for assessing included " How often do you consider the extent to which activities away from home influence your child" and " "In general, how often do you consider, or think about what is occurring with you and your child? ". Example for rumination included "When you identify or attempt to solve a problem with your child or your parenting, how often do you get stuck thinking or worrying". Parents were instructed to rate a 5-point Likert scale with a focal child in mind. Some questions focused on the frequency of meta-parenting, and others addressed the extent to which the parent engage in that type of thinking. These items measured cognitive aspect in parenting from parents. It was more parents and child focus comparing with SWAN. Response options ranged from 1 (never/rarely) to 5 (constantly) for the "frequency" questions and from 1 (not at all) to 5 (completely) for the "extent" questions. High scores indicated frequency of meta-parenting. The MPPQ was shown to be a sensitive measure with good internal reliability, test–retest reliability, and validity across age, gender and ethnicity (Hawk & Holden, 2006). Chinese version have been back translate for this questionnaire with consent parties. This reliability of MPPQ Assessing is 0.88; MPPQ Anticipating is 0.77; MPPQ Reflecting is 0.79; MPPQ Problem solving is 0.73; MPPQ Rumination is 0.78 in this study.

Parents' emotion regulation – Emotion Regulation Questionnaire (ERQ). The ERQ (Gross & John, 2003) was used to measure parents' emotion regulation. Using 7-point Likert scale, parents were asked to rate to what extent they agreed with 10 statements that reflected two emotion regulation styles, with higher scores indicating the frequent use of the specific emotion regulation style. The reappraisal style described people who tried to control their emotions by employing cognitive strategies (e.g., 'When I want to feel more positive emotions, I change the way I'm thinking about the situation'). The suppression style described people who tried to control their emotions by inhibiting emotionally expressive behavior (e.g., 'When I am feeling negative emotions, I make sure not to express them'). These items measured emotion aspect of parents which were parents focus. A large literature using this measure indicated the significant relationship of two approaches and differences in interpersonal functioning and individual adjustment (English, John, Srivastava, & Gross, 2012). Other work has shown that ERQ had good internal reliability, test–retest reliability, and measurement equivalence across gender and ethnicity (Sala, Molina, Abler, Kessler, Vanbrabant, & van 2012). Chinese version have been back translate for this questionnaire with consent parties. The reliability of ERQ Reappraisal is 0.95 and ERQ Suppression is 0.84 in this study.

Parental stress - Parent Stress Scale (PSS). The PSS was used to measure parental stress. Good validity and reliability was documented for PSS (Berry & Jones, 1995). A Chinese version of the PSS was validated by Leung and Tsang (2010) with satisfactory psychometric properties for Hong Kong parents. The Chinese version of the PSS consisted of 17 items on a 6-point Likert scale (from 1 = strongly disagree to 6 =

strongly agree). A total score was calculated, with higher scores indicating higher levels of parental stress. The reliability of PSS is 0.86 in this study.

Parents' self-efficacy - The Parenting Sense of Competence scale (PSOC). The PSOC (Ohan, Leung, & Johnston, 2000) measured parental competence on two dimensions: Satisfaction and Efficacy. It was a 16 item 6-point Likert-scale questionnaire ranging from 1=strongly agree to 6=strongly disagree, with nine questions under satisfaction domain and seven under efficacy domain. Satisfaction section examined the parents' anxiety, motivation and frustration, while the Efficacy section looked at the parents' competence, capability levels, and problem-solving abilities in their parental role. Evidence for reliability, internal consistency, convergent and divergent validity have been well studied (Gilmore & Cuskelly, 2009). Chinese version have been back translate for this questionnaire with consent parties. The reliability of PSOC Satisfaction is 0.71 and PSOC Efficacy is 0.92 in this study.

CHAPTER FOUR Results

The following analyses were conducted by Statistical Package for Social Sciences for Windows Version 22 and IBM SPSS AMOS version 22 (SPSS, 2014). Less than 1% missing data across all the study variables with Little's Missing Completely at Random test indicated that the data were missing at random ($p > 0.05$).

4.1 Participants Characteristics

Table 1 showed the demographic of the 115 families. All of the data did not violate the test of normality except children age. There was no significant difference between children gender, X^2 (1) = 2.24, $p = 0.13$. Most of the participants were mothers (93.1%). Moreover, there was small number of children ($M = 1.68$, $SD = 0.71$) and small total number of family members ($M = 3.70$, $SD = 1.03$). These showed a typical family structure in Hong Kong with two parents and two children. However, these families obtained around secondary five education level. Spouse' years of education were ($M = 12.67$, $SD = 3.05$) while main caregivers' years of education were ($M = 11.86$, $SD = 3.27$). Table 1 also showed that 18.2% of the families' monthly household income were less than $10,000; 64.2% of the families earned between $10,001 to $26,000; 17.6% of the families earned more than $26,001. According to Hong Kong Population Census (2011), the median of economically-active family household income is $24,500. In this study, there were more than 70% of the participants whose income was lower than median of family household income. Furthermore, according the Hong Kong Poverty Line (2013) – (i.e. $7,700, $11,500, $14,300, $14,800 for two, three, four and five-person households), more than 30% of current participants were living under poverty.

Together with the Table 2-4 of families' heterogeneous occupation, these suggested participants in the present study were representative for range of income and occupation.

4.2 Analysis involving parental stress as primary outcome

Table 5 provided the descriptive statistic among different measurements. All of the data did not violate the test of normality with satisfying reliability (alpha range from 0.71 to 0.96).

4.2.1 Step 1: Pearson Correlation

Table 6 showed the correlation table among various measurements. In contextual risks factors, income was slightly correlated with PSS ($r = -0.26, p < 0.01$). It moderately correlated with parents' education (main caregivers: $r = 0.52$, $p < 0.01$; spouse: $r = 0.59, p < 0.01$), ESS ($r = -0.30, p < 0.01$), SWAN Hyperactive ($r = 0.45, p < 0.01$) and SWAN Inattentive ($r = 0.41, p < 0.01$). Main caregiver's education did not correlate with PSS while positively correlated with SWAN Hyperactive ($r = 0.22, p < 0.01$) and SWAN Inattentive ($r = 0.19, p < 0.01$). Spouse's education also showed the correlation with SWAN Inattentive ($r = 0.21, p < 0.05$) but not significant in SWAN Hyperactive. ESS did not correlated with PSS while negatively correlated with SWAN Hyperactive ($r = -0.31, p < 0.01$) and SWAN Inattentive ($r = -0.31, p < 0.01$). These supported H_1 that contextual risk, in particular income, was associated with PSS.

In terms of parental factor, SWAN was negatively correlated with PSS (SWAN Hyperactive: $r = -0.34, p < 0.01$; SWAN Inattentive: $r = -0.29, p < 0.01$), which SWAN hyperactive showed a larger effect size. These confirmed H_2 that perceived SWAN Hyperactive correlated with PSS.

MPPQ was significantly correlated with PSS (MPPQ Assessing: $r = -0.52, p <$

0.01; MPPQ Rumination: $r = 0.46$, $p < 0.01$), but MPPQ Anticipation, MPPQ Reflection and MPPQ Problem solving were not significant. MPPQ was also correlated with SWAN Hyperactive (MPPQ Assessing: $r = 0.37$, $p < 0.01$; MPPQ Reflecting: $r = -0.18$, $p < 0.05$; MPPQ Rumination: $r = -0.34$, $p<0.01$) and SWAN Inattentive (MPPQ Assessing: $r = 0.37$, $p < 0.01$; MPPQ Reflecting: $r = -0.17$, $p < 0.05$; MPPQ Rumination: $r = -0.34$, $p < 0.01$). These also supported H_3 that MPPQ Assessing and MPPQ Rumination correlated with PSS.

ERQ Reappraisal was significantly correlated with PSS ($r = -0.54$, $p < 0.01$), MPPQ Anticipating ($r = 0.16$, $p < 0.05$), MPPQ Assessing ($r = 0.28$, $p < 0.01$), MPPQ Reflection ($r = -0.20$, $p < 0.05$) and MPPQ Rumination ($r = -0.20$, $p < 0.05$). ERQ Suppression had insignificant relationship with PSS. These supported the significant relationships between ERQ Reappraisal, MPPQ Assessing MPPQ Rumination, and PSS.

4.2.2 Step 2: Path analysis

The following mediation, moderation and path analysis were tested using a bootstrap estimation approach with 1000 samples (Shrout & Bolger, 2002). For mediation analysis, regression analysis was used to investigate the hypothesis that SWAN Hyperactive mediates the relationship between income and PSS. Results indicated that income was a significant predictor of SWAN Hyperactive, b = 0.45, SE = 0.02, CI = 0.10, 0.21, p < 0.01, and that SWAN Hyperactive was a significant predictor of PSS, b = -0.34, SE = 1.22, CI = -5.92, -1.20, p < 0.01. Income was a significant predictor of PSS, b = -0.26, SE = 0.36, CI = -1.68, -0.30, p < 0.01 consistent with partial mediation. Regression analysis was also used to investigate the hypothesis that SWAN Hyperactive mediates the relationship between MPPQ assessing and PSS. Results

indicated that MPPQ assessing was a significant predictor of SWAN Hyperactive, b = 0.52, SE = 0.13, CI = 0.23, 0.78, $p < 0.01$, and that SWAN Hyperactive was a significant predictor of PSS, b = -0.34, SE = 1.22, CI = -5.92, -1.20, $p < 0.01$. MPPQ assessing was a significant predictor of PSS, b = -7.88, SE = 1.24, CI = -10.23, -5.28, $p < 0.01$ consistent with partial mediation. Regression analysis was further used to investigate the hypothesis that SWAN Hyperactive mediates the relationship between MPPQ rumination and PSS. Results indicated that MPPQ rumination was a significant predictor of SWAN Hyperactive, b = -0.46, SE = 0.14, CI = -0.71, -0.16, $p < 0.01$, and that SWAN Hyperactive was a significant predictor of PSS, b = -0.34, SE = 1.22, CI = -5.92, -1.20, $p < 0.01$. MPPQ rumination was a significant predictor of PSS, b = 6.45, SE = 1.20, CI = -3.86, 8.71, $p < 0.01$ consistent with partial mediation.

For moderation analysis, a multiple regression model was tested to investigate whether the association between MPPQ assessing to PSS depends on ERQ reappraisal. After centering MPPQ assessing and ERQ reappraisal interaction term (Aiken & West, 1991), the two predictors and the interaction were entered into a simultaneous regression model. Results indicated that MPPQ assessing (b = -0.41, SE =1.18, CI =-8.26, -3.42, $p < 0.01$) and ERQ reappraisal (b = -0.36, SE = 0.92, CI =-6.17, -2.44, $p < 0.01$) were both associated with PSS. The interaction term was also significant (b = -0.24, SE = 0.64, CI =0.10, 2.79, $p < 0.05$), suggesting that the effect of MPPQ assessing on PSS depended on ERQ reappraisal. Another a multiple regression model was tested to investigate whether the association between MPPQ rumination to PSS depends on ERQ reappraisal. After centering MPPQ rumination and ERQ reappraisal interaction term (Aiken & West, 1991), the two predictors and the interaction were entered into a simultaneous regression

model. Results indicated that MPPQ rumination (b = 0.38, SE =1.26, CI =2.42, 7.41, p < 0.01) and ERQ reappraisal (b = -0.43, SE = 0.93, CI =-6.81, -2.97, p < 0.01) were both associated with PSS. The interaction term was also significant (b = -0.20, SE = 8.28, CI =-2.74, 0.52, p < 0.05), suggesting that the effect of MPPQ rumination on PSS depended on ERQ reappraisal.

Path analysis was used to test the conceptual model for income, SWAN Hyperactive, MPPQ Assessing and MPPQ Rumination, ERQ reappraisal, and PSS. Given the multivariate normality, the models were estimated using maximum likelihood estimation with standard errors. Model fit was assessed using the chi-square test (X^2), and other practical fit indices including the comparative fit index (CFI) and root mean square error of approximation (RMSEA). Indices for the CFI should exceed 0.90 for an acceptable fit, and values for the RMSEA were acceptable when close to or below 0.08 (Hu & Bentler 1999). Langrange Multiplier Tests and Wald Tests (Chou & Bentler, 2002) were also conducted to predict the enhancement of model fit from adding or dropping specific paths.

This study aimed to investigate whether ERQ Reappraisal moderated the relationship between PSS, MPPQ Assessing / MPPQ Rumination with the consideration of income and SWAN Hyperactive. Figure 1 and 2 show the moderation effect of ERQ reappraisal on the relations of PSS and MPPQ Assessing / MPPQ Rumination with standardized coefficients of each pathway. The overall goodness-of-fit indices of the model were X^2 (6) = 4.75, p = 0.578, RMSEA = 0.00, NFI = 0.97, IFI = 0.99, CFI = 0.99 for MPPQ Assessing. The standardize total effect for income = -0.21, MPPQ assessing =-0.38 to PSS; direct effect from income=-0.14, MPPQ assessing =-0.33; indirect effect

from income = -0.07, MPPQ assessing = -0.05. Meanwhile, the overall goodness-of-fit indices of the model were X^2 (6) = 3.71, p = 0.71, RMSEA = 0.00, NFI = 0.97, IFI = 0.99, CFI = 0.99 for MPPQ Rumination which showed a satisfied fit. The standardize total effect for income = -0.22, MPPQ rumination =0.34 to PSS; direct effect from income=-0.14, MPPQ rumination =0.28; indirect effect from income = -0.08, MPPQ rumination = -0.06. The path model provided evidences of the moderating effect of ERQ reappraisal on MPPQ Assessing / MPPQ Rumination with PSS which supported H_4. As ERQ Reappraisal, MPPQ Assessing / MPPQ Rumination, and the product of mean centered "Reappraisal*assessing" / "Reappraisal*rumination" have significant relationships with PSS, the moderating effect was supported. Moreover, Figure 5 showed that PSS is high in low ERQ Reappraisal and PSS is low in high ERQ Reappraisal for all participants. Figure 6 showed that PSS is high in low ERQ Reappraisal and PSS is low in high ERQ Reappraisal for participants with high MPPQ Rumination. It also showed SWAN Hyperactive partially mediated the relationship between income and PSS. It further suggested SWAN Hyperactive partially mediated the relations between MPPQ Assessing / MPPQ Rumination and PSS.

4.3 Analysis involving parental self-efficacy as secondary outcome

4.3.1 Step 1: Pearson Correlation

In contextual risks factors, Table 6 showed income slightly correlated with PSOC Efficacy (r = 0.28, p < 0.01), but not significant with PSOC Satisfaction. Main caregiver and spouse's education and age, ESS did not correlate with PSOC Satisfaction and Efficacy. These supported H_1 that income had the association with PSOC Efficacy.

In parental factors, SWAN was negatively correlated with PSOC Efficacy

(SWAN Hyperactive: $r = 0.40$, $p < 0.01$; SWAN Inattentive: $r = 0.35$, $p < 0.01$). These supported H_2 that SWAN Hyperactive correlated with PSOC Efficacy.

MPPQ was significantly correlated with PSOC Efficacy (MPPQ Assessing: $r = 0.63$, $p < 0.01$; MPPQ Rumination: $r = -0.53$, $p < 0.01$), but MPPQ Anticipating, MPPQ Reflection and MPPQ Problem solving had no significant relationships with PSOC Efficacy. MPPQ also correlated with PSOC satisfaction (MPPQ Assessing: $r = 0.22$, $p<0.05$; MPPQ Problem solving: $r = 0.25$, $p < 0.05$), but MPPQ Anticipating, MPPQ Reflection and MPPQ Rumination had no significant relationships with PSOC Satisfaction. These also supported H_3 that MPPQ Assessing and MPPQ Rumination correlated with PSOC Efficacy.

ERQ Reappraisal significantly correlated with PSOC Efficacy ($r = 0.49$, $p < 0.01$), but it was not significant with PSOC Satisfaction. ERQ Suppression had no significant relations with PSOC Efficacy and PSOC Satisfaction. These supported the relations between ERQ Reappraisal and PSOC Efficacy.

4.3.2 Step 2: Path analysis

The following mediation, moderation and path analysis were tested using a bootstrap estimation approach with 1000 samples (Shrout & Bolger, 2002). For mediation analysis, regression analysis was used to investigate the hypothesis that SWAN Hyperactive mediates the relationship between income and PSOC efficacy. Results indicated that income was a significant predictor of SWAN Hyperactive, b = 0.45, SE = 0.02, CI = 0.10, 0.21, p < 0.01, and that SWAN Hyperactive was a significant predictor of PSOC efficacy, b = 0.40, SE = 0.08, CI = 0.13, 0.46, p < 0.01. Income was a significant predictor of PSOC efficacy, b = 0.28, SE = 0.02, CI = 0.02, -1.12, p < 0.01

consistent with partial mediation. Regression analysis was also used to investigate the hypothesis that SWAN Hyperactive mediates the relationship between MPPQ assessing and PSOC efficacy. Results indicated that MPPQ assessing was a significant predictor of SWAN Hyperactive, b = 0.52, SE = 0.13, CI = 0.23, 0.78, $p < 0.01$, and that SWAN Hyperactive was a significant predictor of PSOC efficacy, b = 0.40, SE = 0.08, CI = 0.13, 0.47, $p < 0.01$. MPPQ assessing was a significant predictor of PSOC efficacy, b = 0.63, SE = 0.08, CI = 0.50, 0.84, $p < 0.01$ consistent with partial mediation. Regression analysis was further used to investigate the hypothesis that SWAN Hyperactive mediates the relationship between MPPQ rumination and PSOC efficacy. Results indicated that MPPQ rumination was a significant predictor of SWAN Hyperactive, b = -0.46, SE = 0.14, CI = -0.71, -0.16, $p < 0.01$, and that SWAN Hyperactive was a significant predictor of PSOC efficacy, b = 0.40, SE = 0.08, CI = 0.13, 0.47, $p < 0.01$. MPPQ rumination was a significant predictor of PSOC efficacy, b = -0.53, SE = 0.08, CI = -0.71, -0.37, $p < 0.01$ consistent with partial mediation.

For moderation analysis, a multiple regression model was tested to investigate whether the association between MPPQ assessing to PSOC efficacy depends on ERQ reappraisal. After centering MPPQ assessing and ERQ reappraisal interaction term (Aiken & West, 1991), the two predictors and the interaction were entered into a simultaneous regression model. Results indicated that MPPQ assessing (b = 0.53, SE =0.09, CI =0.39, 0.74, $p < 0.01$) and ERQ reappraisal (b = 0.28, SE = 0.05, CI = 0.11, 0.33, $p < 0.01$) were both associated with PSOC efficacy. The interaction term was also significant (b = -0.19, SE = 0.03, CI =-0.17, -0.02, $p < 0.01$), suggesting that the effect of MPPQ assessing on PSOC efficacy depended on ERQ reappraisal. Another a multiple

regression model was tested to investigate whether the association between MPPQ rumination to PSOC efficacy depends on ERQ reappraisal. After centering MPPQ rumination and ERQ reappraisal interaction term (Aiken & West, 1991), the two predictors and the interaction were entered into a simultaneous regression model. Results indicated that MPPQ rumination (b = -0.46, SE =0.09, CI =-0.62, -0.26, $p < 0.01$) and ERQ reappraisal (b = 0.36, SE = 0.07, CI =0.15, 0.43, $p < 0.01$) were both associated with PSOC efficacy. The interaction term was also significant (b = 0.17, SE = 0.05, CI =-0.04, 0.18, $p < 0.05$), suggesting that the effect of MPPQ rumination on PSOC efficacy depended on ERQ reappraisal.

Path analysis was used to test whether ERQ Reappraisal moderated the relationship between PSOC Efficacy and MPPQ Assessing / MPPQ Rumination with the consideration of income and SWAN Hyperactive. Figure 3 and 4 showed the moderation effect of ERQ Reappraisal on the relations between PSOC Efficacy and MPPQ Assessing / MPPQ Rumination with standardized coefficients of each pathway. The overall goodness-of-fit indices of the model were X^2 (6) = 4.75, p = 0.57, RMSEA = 0.00, NFI = 0.97, IFI = 0.99, CFI = 0.99 for MPPQ Assessing. The standardize total effect for income = 0.21, MPPQ assessing =0.49 to PSOC Efficacy; direct effect from income=0.14, MPPQ assessing =0.44; indirect effect from income = 0.07, MPPQ assessing = 0.05. Another overall goodness-of-fit indices of the model were X^2 (6) = 3.71, p = 0.71, RMSEA = 0.00, NFI = 0.97, IFI = 0.99, CFI = 0.99 for MPPQ Rumination which showed a satisfied fit. The standardize total effect for income = 0.23, MPPQ rumination =-0.41 to PSOC Efficacy; direct effect from income=0.14, MPPQ rumination =-0.35; indirect effect from income = 0.09, MPPQ rumination = -0.06. The

path model provided evidences of the moderating effect of ERQ Reappraisal to MPPQ Assessing / MPPQ Rumination and PSOC Efficacy which supported H_4. As ERQ reappraisal, MPPQ Assessing / MPPQ Rumination, and the product of mean centered "Reappraisal*Assessing" / "Reappraisal*Rumination" have significant relationships with PSOC Efficacy, the moderating effect was supported. Moreover, Figure 7 showed that PSOC Efficacy is high in high ERQ Reappraisal and PSOC Efficacy is low in low ERQ Reappraisal for participants with low MPPQ Assessing. Figure 8 showed that PSOC Efficacy is high in high ERQ Reappraisal and PSOC Efficacy is low in low ERQ Reappraisal for participants with high MPPQ Rumination. SWAN Hyperactive partially mediated the relationship between income and PSOC Efficacy. It also partially mediated the relationships between MPPQ Assessing / MPPQ Rumination and PSOC Efficacy.

CHAPTER FIVE Discussion

5.1 Discussion of the findings addressing the research questions

This study investigated the contextual, parental level predictors and the protective factors of parental stress and self-efficacy in families in various range of income. It was hypothesized that 1) contextual factors (income, parents' education) would have significant correlations with parental stress and self-efficacy; 2) hyperactive behaviors would have significant correlations with parental stress and self-efficacy; 3) meta-parenting would associate significantly with parental stress (anticipation, assessing, and problem solving attenuated parental stress whilst reflection and rumination accreted parental stress) and parental self-efficacy (anticipating, assessing, and problem solving enhanced parental self-efficacy; reflection and rumination attenuated parental self-efficacy; 4) emotion regulation (cognitive reappraisal) would moderate the relationships between meta-parenting and parental stress / self-efficacy. The following discussion will first discuss the effect of risk factors, the association with meta-parenting (assessing and rumination) with parental stress and efficacy, the protective effect of emotion regulation on parental stress and efficacy, followed by implication and limitation.

In sum, this study's hypotheses were supported. Results supported significant relationships of the followings: 1) income had significant association with parental stress/ efficacy; 2) hyperactive behaviors had significant association with parental stress / efficacy and the mediation effects were found; 3) meta-parenting (assessing and rumination) had association with parental stress/ efficacy; 4) in path analysis, emotion

regulation – cognitive reappraisal moderated the relationship between meta-parenting (assessing and rumination), parental stress/ efficacy.

The association between income and parental stress/ efficacy were supported. It is possible that the increase financial demands lead to emotional distress and limit parent's ability to respond sensitively and consistently to their own needs and children's needs. There is consistent evidence that low-income status is linked with higher levels of parental stress and lower levels of efficacy (Theule, Wiener, Rogers, & Marton, 2011). Samms-Vaughan & Franklyn-Banton, (2008) demonstrated low income families with children experience higher levels of stress compare to those without one. Moreover, the association between hyperactive behaviors and parental stress/ efficacy were also supported. It is possible that parents perceive their children's forgetful, disorganized, impulsive, and hyperactive behaviors seriously which increase parental stress. Consistent with Theule, Wiener, Tannock, & Jenkins's (2013) findings that there were significant relationship between hyperactive behaviors and parental stress. This is consistent with Sameroff's model of developmental continuity and multiple risks. Risk posed by each of contextual factor (i.e. income) and hyperactive behavior increased the probability that the family experienced negative outcomes in terms of increased parenting stress (Sameroff, 1995; Sameroff, Bartko, Baldwin, Baldwin, & Seifer, 1998). Many parents suffering from parental stress report less positive attitudes about parenting, often viewing the parenting role as difficult and unsatisfying. Often, such parents engage in inconsistent and harsh parenting, which in turn, affected children social and emotion development (Liu & Wang, 2015).

Furthermore, the association between meta-parenting (assessing and rumination)

and parental stress/ efficacy were supported. Meta-parenting (assessing) refers to parental evaluations of the child, self, and context. It is one's on-line awareness of comprehension and task performance. For instance, a parent may reflect her child's emotional, social, academic development or monitor peer interactions and influences (Patterson & Stouthamer-Loeber, 2014). This study supported parents with more meta-parenting (assessing), they engage with less parental stress and more efficacy. According to Holden and Hawk (2003), meta-parenting (assessing) is associated with effective parenting. It has been implicated in the quality of peer interactions (Ettekal, & Ladd, 2015), academic performance (Dotterer, McHale, & Crouter, 2009). However, meta-parenting (rumination) is different from meta-parenting (assessing). It refers to parents engaging in too much parental reflection which focus on the children's problems. Parents become locked into non-productive problem solving. Instead of avoiding or suppressing negative emotions, parents may repetitively focus on their experience of the emotion and its causes and consequences. It was not surprising that meta-parenting (rumination) was positively associated with more frequent and serious parents' hyperactive behaviors. Parents who often engage in meta-parenting (rumination) do not have efficient problem solving (Papageorgiou & Wells, 2013) which affect parental stress and efficacy.

In terms of emotional regulation, the moderating effect of cognitive reappraisal on meta-parenting (assessing) and parental stress/ efficacy were supported by path analysis. For parents who had high meta-parenting (assessing) and high cognitive reappraisal, their parental stress were the lowest. The protective effect is shown in Figure 5. Despite low meta-parenting (assessing), parental stress was significantly

decreased when cognitive reappraisal was high. Thus, emotion regulation in the form of cognitive reappraisal was a very useful method for attenuating parental stress. Cognitive reappraisal enables parents to view their situation differently and regulation owns emotion which promotes emotion well-being. Meanwhile for the moderating effect of cognitive reappraisal on the relationship between parental efficacy and meta-parenting (assessing), Figure 7 showed that parents with low meta-parenting (assessing) had significant change in parental efficacy when they had high cognitive reappraisal. For parents who do not have sufficient resources or time to assess, concern their children, cognitive reappraisal may play an important role that high cognitive reappraisal able to enhance their parental efficacy. Cognitive reappraisal probably enables parents view in different angle for their situation and enhance parental efficacy.

Both cognitive reappraisal and meta-parenting (assessing) are positive parental quality which refers to parents' reflection. However, there are considerable differences between meta-parenting and emotional regulation. While meta-parenting (assessing) refers to the frequency of thinking about their parenting role within the context of bringing up their children, cognitive reappraisal refers to the ability of thinking from different perspectives for regulating the parents' own emotion. The unique importance of cognitive reappraisal can be supported by Katch (2013)'s study. He interviewed ten fathers on their assessing of children's crying. Results indicated significant relationships between children crying, parental stress and parental self-efficacy. Although assessing of a crying child was a significant predictor of parental stress and self-efficacy, cognitively reappraised the situation and the children's behavior was an effective coping method especially for fathers reporting feelings of 'losing control'. Therefore, this study

contributed to the understanding of the relationships between cognitive reappraisal and meta-parenting (assessing). It supports cognitive reappraisal might be able to decrease parental stress and enhance efficacy by rethinking about the situation. Such findings justified the need to emphasize cognitive reappraisal in future intervention work.

Cognitive reappraisal was also found to moderate the relationship between meta-parenting (rumination) and parental stress/ efficacy. In Figure 6, high cognitive reappraisal significantly decreased parental stress for parents with rumination. Meanwhile, cognitive reappraisal significantly enhanced parental efficacy among parents with rumination in Figure 8. The topic of emotion regulation has been well studied in the area of psychopathology (Sheppes, Suri, & Gross, 2015). Successful emotion regulation is associated with good health outcomes, improved relationships and work performance (Zhong & Zhang, 2015; Johnson, 2015). Conversely, emotion dysregulation is associated with mental disorders (D'Antonio, Kahn, McKelvey, Berenbaum, & Serper, 2014) and incorporated into several models of specific psychopathologies. According to Aldao, Nolen-Hoeksema, and Schweizer (2010)'s meta-analysis, cognitive reappraisal is one of the adaptions that involves generating benign or positive interpretations or perspectives on a stressful situation as a way of reducing distress. Meanwhile, rumination is one of the maladaptive emotion regulatory strategies as characterized by the tendency to respond to a stressful event passively and to focus on one's symptoms and the related thoughts in a perseverative manner, which subsequently interfere with good problem solving (Watkins, & Nolen-Hoeksema, 2014). Although most of the literature has conceptualized cognitive reappraisal and rumination as two independent variables to predict one's well-being, only a few studies investigate

the effect of cognitive reappraisal in decreasing rumination. For instance, a fMRI study suggested cognitive reappraisal could alter rumination by changing one's interpretation of a situation's meaning (Ray, Ochsner, Cooper, Robertson, Gabrieli, & Gross, 2005). It revealed that using cognitive reappraisal to increase or decrease affective responses involved left prefrontal activation and amygdala activation. Even so, studies on cognitive reappraisal and meta-parenting (rumination) in parenting have been scanty, especially for families with range of income. Van, Kraaij, and Garnefski (2009) had studied the relationship between cognitive reappraisal and meta-parenting (rumination) in parents of children with Down syndrome. Positive cognitive reappraisal is related to lower levels of stress and higher levels of subjective well-being, whereas meta-parenting (rumination) is related to more depression and anxiety in parents. However, the present study was the first study that sought to understand the moderation effect of cognitive reappraisal on the relationship between meta-parenting (rumination), parental stress/ efficacy. It suggested that cognitive reappraisal was able to decrease parental stress because of the engagement in different perspective of viewing their children and handling their own emotion. They were less likely to ruminate or engage in negative emotions, thereby alleviating parental stress.

Notably, no association was found between parental stress and parental self-efficacy. It is possible that stress levels are impacted by the type and number of life stressors. Multiple stressors can have a cumulative effect that intensifies parental stress and reduces the ability to cope over time (Hammen, Henry, & Daley, 2000). For example, Raver and Leadbeater (2009) studied low-income mothers and found that the number of environmental stressors (e.g., low-quality housing, unsafe neighborhood,

child problem behavior). As there are 48.7% main caregiver engaged with job in this study, their direct involvement in the family was diminished. It is possible that stress level in these population hinder the relationship with parental self-efficacy due to the high stress level among high and low self-efficacy parents. Consistent with Jackson (2000) findings that parental self-efficacy was not significantly associated with parental stress. He pointed out the role of social support in hindering relationship between parental stress and self-efficacy in low-come / nonempolyed families.

Moreover, meta-parenting (assessing) may enable parents to assess oneself in the context of compare with others, a process through which these parents gained social supports and networks. Such process helped parents normalize some hpyeractive behaviors of their children and engage in social learning with other parents, all of which enhanced parental skills to handle with their children. This was consistent with Hawk (2007) that meta-parenting (assessing) was associated with social support from parents and children positive outcomes. For parents who had insufficient meta-parenting (assessing) and consideration of their children possibly due to environmental demands, as well as a lack of social support, inadequate perceptions and expectations on children's hyperactive behaviors, and insufficient ability in handling children's hyperactive behaviors. They were less likely to engage in parenting role and hence negatively influenced parental stress and efficacy.

5.2 Implication

In conclusion, this study statistically supported the protective effect of emotion regulation - cognitive reappraisal on meta-parenting assessing and rumination, hyperactive behaviors, parental stress and efficacy in families with children age 4-7. The

following discusses the implication of emotion regulation - cognitive reappraisal.

5.2.1 Emotion regulation on parental training programs

Parental training programs, which use a behavioral approach to change parenting behavior, have been shown to be an effective approach to treating externalizing problems in young children (Lundahl, Risser, & Lovejoy, 2006). It was posited that teaching parents the principles of behavioral reinforcement in these programs would result in effective and sustainable change in children's externalizing behavior (Modesto-Lowe, Danforth, & Brooks, 2008). It has been validated in Helping the Non-Compliant Child (HNC; McMahon & Forehand, 2003), Parent–Child Interaction Therapy (PCIT; Nelson, & Eyberg, 2013), Triple P-Parenting Program (Sander et al., 2003), and the Incredible Years (Webster-Stratton, 1993). Based on the demonstrated effectiveness, these programs are the most frequently recommended and used interventions for behavior problems in children (Webster-Stratton, Reid, & Beauchaine, 2013). However, evidence also revealed that they were not effective at treating all families who were after the services (Honeycutt, Khavjou, Jones, Cuellar, & Forehand, 2015) and were often underutilized by families at highest risk such as poverty and psychopathological parents (Kazdin & Wassell, 2008). Numerous treatment failures have been well-documented including high rates of premature attrition, lack of engagement and participation of parents, and failure to maintain treatment gains after post-intervention (Assemany & McIntosh, 2012).

Although there are numerous factors impacting treatment success, parental psychological disturbance has consistently been shown to moderate the effectiveness of parental training programs (McMahon, Long, & Forehand, 2010). For instance,

depressed mothers or parents with substance abuse tend to be less responsive to parental training programs when compared to non-depressed or non-substance abusing parents (Beauchaine, Webster-Stratton, & Reid, 2006). Because of the presence of psychological disturbances, parents' motivation to remain in treatment and treatment resilient could be decreased, leading to early treatment dropout (Karevold, Coplan, Stoolmiller, & Mathiesen, 2011). Psychopathological symptoms further inhibit parents from learning the techniques and skills being taught as part of parental training programs. Thus, they may not be able to fully attend to the training or attend sessions consistently (Nix, Bierman, & McMahon, 2009). Lastly, psychopathology affects parents' abilities to reproduce recently learned skills under high-stress, naturalistic conditions. It has been suggested that during high affective arousal condition, parents have more difficulty using newly acquired skills and instead return to using their baseline, less skillful approaches to managing children externalizing behavior (Lundahl, 2009). However, parental training programs curricula currently pay minimal attention to parental psychopathology, which may significantly impact alliance building and engagement, treatment retention, and acquisition and use of skills (Roberts 2008).

From a transdiagnostic perspective, emotion dysregulation is central to psychopathology (Aldao et al., 2010; Gross, 2015), in that people who cannot effectively manage their emotional responses will be more likely to experience longer, more severe periods of distress than those who can (Aldao et al., 2010). Given that psychopathology hinders the effectiveness of parental training programs and emotion dysregulation may be central to psychopathology, addressing parental emotion regulation may help decrease the negative impact of psychopathology on treatment

outcomes of parental training programs (Nix, Bierman, & McMahon, 2009). Emotion regulation as a potential avenue for intervention seems particularly salient since it is critical to be able to increase positive and decrease negative affect in many parental training programs. For instance, in Helping the Non-Compliant Child, parents need to be able to inhibit their negative reactions to children's externalizing behaviors, to the point of eliminating any reactivity on their part (i.e. ignoring). However, they also need to be able to enhance their own positive emotions in response to children demonstrating appropriate behaviors. These abilities can be disrupted by emotion dysregulation. Thus, addressing core dimensions such as emotion regulation, rather than individual diagnoses of psychopathology from a transdiagnostic approach, may allow the targeting of a broader range of high risk families who are less likely to benefit from parental training programs, due to the presence of parental psychopathology and also environmental demand or other stress.

Emotion dysregulation impacts parents' ability to learn and consolidate the skills being taught. Their baseline level of emotion regulation may influence the way of learning new skills, thereafter affecting the effectiveness of parental training programs. For example, parents suffering from depressive symptoms often have higher baseline levels of negative affect and lower positive affect (Cole & Tan, 2015). As these parents are already emotionally taxed, the demands of decreasing negative affect so to ignore child misbehavior, as well as increasing positive affect in order to praise children for appropriate behavior, may be particularly difficult for them (Eamon & Venkataraman, 2003).

The generalization of interacting positively with children in non-disciplinary situations and demonstrating enthusiasm to their children in other contexts appear to be particularly challenging for depressed parents (Kaminski, Valle, Filene, & Boyle, 2008). Emotion dysregulation can also impact parents' ability to judge when the skills should be used. For parents without emotion dysregulation, negative affect typically follows a negative event (e.g. their child misbehaves then the parent gets angry or upset (Weiner, 2012). However, due to the higher baseline levels of negative affectivity, parents with emotion dysregulation may respond with more anger, hostility, and inconsistency to their children independent of the children's behavior (Weiner, 2012).

Furthermore, even when parents are able to acquire the skills being taught, emotion dysregulation may interfere with their ability to utilize the new strategies effectively and appropriately. Related to their higher negative affectivity, parents may have rapid and intensive negative emotional reactions to their children's behavior. Strong emotional reactions can affect the generalization of skills from the relatively calm context of parental training programs to the more chaotic home environment (Maliken, & Katz, 2013). Parents may instead revert to their ineffective but overlearned parenting behaviours that they have previously relied on in highly arousing situations (Stein, & Lang, 2013). However, when positive emotion regulation and discipline strategies have demonstrated effectiveness at longer term management of externalizing problems, they often require more persistence and patience to learn and adopt. Taken together, this was the first study to test and confirmed that emotion regulation was able to protect families from socially diverse background. It offered promising results for

future parenting training programs to include emotion regulations in the initial assessment and also as core curriculum.

5.2.2 Promotion of emotion regulation for parents and children

The importance of parents' attending and accepting emotional experiences, and their beliefs and method in regulating negative emotion and maintaining positive emotion have been supported by Yap, Allen, Leve, and Katz (2008). These regulations and believes are each associated with more supportive emotion socialization efforts and with children's constructive self-regulatory strategies. As parents believe emotions merit attention and consideration, and accept them as valid indications of personal well-being, they devote attention to the feelings of their children and to regard them as legitimate rather than dismissing or minimizing their importance. Furthermore, they also encourage their children to express emotions, engage them in problem-solving or emotion-focused management, maintain an emotionally positive family environment, and are less likely to respond to children's negative emotions with punitive or minimizing responses (Wong, Diener, & Isabella, 2008). Moreover, parents who often use cognitive reappraisal and value emotion regulation will be more likely to actively assist in their children's emotional self-regulation, and to become models for their children of emotional self-efficacy (Laible, Thompson, & Froimson, 2015). Consistent with the concept of the parent meta-emotion philosophy of Gottman, Katz, and Hooven (1996), parents who have positive emotion regulation are also more likely to engage children in emotion-related problem-solving, encourage their emotional expression, foster a positive family environment. They are less likely to react to children's negative emotions with their own negative reactions or enlist negative dominant emotions (such as anger).

5.3 Limitation

There are several limitations in this study. Firstly, with reference to the previous literature in the conceptualization of rumination, there can be two subtypes of ruminations, brooding and reflection (Treynor, Gonzalez, & Nolen-Hoeksema, 2003). Brooding refers to a passive comparison of one's current situation with some unachieved standard while reflection suggests a purposeful intrapersonal process to engage in cognitive problem solving to alleviate one's depressive symptoms. Although brooding is associated with negative outcomes, reflection predicts a reduction in depression and an adaptive coping in longitudinal analyses. Further sub-typing of rumination needs to be studied in future.

Besides, there is a growing amount of studies that suggest cognitive control processes play a role in emotion regulation (Pe, Raes, Koval, Brans, Verduyn, & Kuppens, 2013). In fact, working memory controsl the ways in affective information processes. Working memory is important when people regulate their emotions (Joormann & D'Avanzato, 2010). For instance, impairments in the inhibition of negative content is associated with rumination and involved in reappraisal (Joormann & D'Avanzato, 2010). Therefore, future study can consider the moderating or mediating role of inhibition on both cognitive reappraisal and rumination among parents. Moreover, social support is established with the association with parental stress (Respler-Herman, Mowder, Yasik, & Shamah, 2012). Berman, Snow, Moorman, Policicchio, Geronimus, and Padilla (2015) supported that parental stress is affected by social support in addition to family risk status and family income. Thus, future study can consider social support in this topic.

Lastly, in terms of methodology, the sample size can be increased and stratified. As this study focused on socially diverse background, it is essential to have more participants so to match with the proportion of various socioeconomic classes in Hong Kong. Families with severe poverty and externalizing behavioral problems such as ADHD can be included to verify the protective effect of emotion regulation. Experimental studies can also be included for the moderation effect of emotion regulation. Longitudinal studies can be included to understand how parental stress and self-efficacy are influenced by cognitive reappraisal, meta-parenting with the consideration of contextual risks and hyperactive behaviors.

Data from this study are based on parental self-report. Therefore, these findings are subjected to the possibility of shared source variance and shared method variance. The questionnaires used in this study are selected for their validation evidence and strong psychometric properties. Nevertheless, multi-method research will provide greater confidence because they avoid the potential problems of informant bias and shared method variance.

Appendix I. List of schools and NGOs

Po Leung Kik Tin Ka Primary School, Tseung Kwan O Methodist Primary School
Yan Oi Tong Madam Lau Wong Fat Primary School
Y.O.T. Tin Ka Ping Primary School
HSBC TSW Children Learning and Support Centre
Jockey Club Ma On Shan Children & Youth Integrated Services Centre
Hong Kong Growth and Developmet Center
Tsz Wan Shan Children & Youth Integrated Services Centre
Lok Man Children & Family Integrated Activity Centre
Jockey Club Tai Po Children & Youth Integrated Services Centre
Jockey Club Tseung Kwan O Children & Youth Integrated Services Centre
The Turban Peacemaker Evangelistic Fellowship
CCC Kei Fa At Primary School (Yau Tong)
Full Grace Service Centre of the Tsung Tsin Mission of Hong Kong Social Service

Appendix II. Questionnaire

請填寫下列資料。(請圈出適用者)

性別：☐男　　☐女

學生年齡：

與學生同住的家人：☐父親 ☐母親 ☐祖父母
☐其他親戚：_____

填寫人姓名：

性別：☐男　　☐女

與學生的關係：

家中子女數目（包括學生）:

同住家人數目：_____

年齡：

填寫人受教育年份（從小學一年級開始計算）: _____

最高學歷：

☐小學　　☐中學（中三）　　☐中學（中五）　　☐中學（中七）

☐副學士/高級文憑　　☐學士　　☐碩士或以上

家庭經濟來源（可選多過一個）:

☐父親在職　　☐母親在職
☐其他同住親人在職（請列明）: _____

居住地區：

香港島	九龍	新界
☐中西區	☐九龍城	☐離島
☐東區	☐觀塘	☐葵青
☐南區	☐深水埗	☐北區
☐灣仔	☐油尖旺	☐西貢
	☐黃大仙	☐沙田
		☐大埔
		☐荃灣
		☐屯門
		☐元朗

填寫人行業：

現時職位性質: 全職 / 半職

☐農業及漁業 / 採礦及採石業
☐製造業
☐電力及燃氣供應 / 自來水集取、處理及供應
☐建造業
☐進出口、批發 及零售業
☐運輸、倉庫、郵政及速遞服務業
☐住宿及 膳食服務業
☐資訊及通訊業
☐金融及保險業
☐家庭主婦
☐地產業
☐專業、科學及技術服務業
☐行政及支援服務業
☐公共行政
☐教育
☐人類醫療保健及社工活動
☐藝術、娛樂及休閒服務業
☐其他服務業
☐家庭住戶內部工作活動 / 享有治外法權的組織及團體

填寫人職位：

☐行政總裁、高級官員、議員及外國使節
☐行政及商務經理
☐生產部經理及專職服務經理
☐款待服務業、零售業及其他服務業的經理
☐自然科學及工程專業人員
☐保健專業人員
☐教學專業人員
☐商業、行政及有關專業人員
☐資訊及通訊科技專業人員
☐法律、社會科學及文化專業人員
☐自然科學、數學及工程輔助專業人員
☐保健輔助專業人員
☐商業、行政及有關輔助專業人員
☐法律、社會科學、文化及有關輔助專業人員
☐資訊及通訊科技輔助專業人員
☐教學輔助專業人員
☐一般文員及打字員
☐客戶服務文員
☐數據及物料記錄文員
☐資訊及通訊科技助理員
☐其他文書支援人員
☐個人服務人員
☐銷售人員及模特兒
☐個人護理工作人員
☐紀律性及保護服務人員
☐運輸及其他服務工作人員
☐市場導向農業及漁業熟練工人
☐建築及有關行業工人（非電工）
☐金屬、機械及有關行業工人
☐手工藝及印刷業工人
☐電器及電子業工人
☐食物處理、木工、成衣及其他工藝、以及有關行業工人
☐固定式機台及機器操作員
☐裝配員
☐司機及流動式機器操作員
☐清潔工、雜務工及有關工人
☐採礦業、建造業、製造業、運輸業、倉務業及漁農業雜工
☐食材準備助理
☐街頭及有關售賣及服務的工人
☐廢物處理工人及其他非技術工人

配偶行業(如適用):

現時職位性質: 全職 / 半職

☐農業及漁業 / 採礦及採石業
☐製造業
☐電力及燃氣供應 / 自來水集取、處理及供應
☐建造業
☐進出口、批發 及零售業
☐運輸、倉庫、郵政及速遞服務業
☐住宿及 膳食服務業
☐資訊及通訊業
☐金融及保險業
☐家庭主婦
☐地產業
☐專業、科學及技術服務業
☐行政及支援服務業
☐公共行政
☐教育
☐人類醫療保健及社工活動
☐藝術、娛樂及休閒服務業
☐其他服務業
☐家庭住戶內部工作活動 / 享有治外法權的組織及團體

配偶職位(如適用):

☐行政總裁、高級官員、議員及外國使節
☐行政及商務經理
☐生產部經理及專職服務經理
☐款待服務業、零售業及其他服務業的經理
☐自然科學及工程專業人員
☐保健專業人員
☐教學專業人員
☐商業、行政及有關專業人員
☐資訊及通訊科技專業人員
☐法律、社會科學及文化專業人員
☐自然科學、數學及工程輔助專業人員
☐保健輔助專業人員
☐商業、行政及有關輔助專業人員
☐法律、社會科學、文化及有關輔助專業人員
☐資訊及通訊科技輔助專業人員
☐教學輔助專業人員
☐一般文員及打字員
☐客戶服務文員
☐數據及物料記錄文員
☐資訊及通訊科技助理員
☐其他文書支援人員
☐個人服務人員
☐銷售人員及模特兒
☐個人護理工作人員
☐紀律性及保護服務人員
☐運輸及其他服務工作人員
☐市場導向農業及漁業熟練工人
☐建築及有關行業工人(非電工)
☐金屬、機械及有關行業工人
☐手工藝及印刷業工人
☐電器及電子業工人
☐食物處理、木工、成衣及其他工藝、以及有關行業工人
☐固定式機台及機器操作員
☐裝配員
☐司機及流動式機器操作員
☐清潔工、雜務工及有關工人
☐採礦業、建造業、製造業、運輸業、倉務業及漁農業雜工
☐食材準備助理
☐街頭及有關售賣及服務的工人
☐廢物處理工人及其他非技術工人

配偶年齡（如適用):

配偶受教育年份（從小學一年級開始計算)：_____

配偶最高學歷：

☐小學　☐中學（中三）　☐中學（中五）　☐中學（中七）

☐副學士/高級文憑　☐學士　☐碩士或以上

家庭經濟狀況問卷（ESS）

請就著你家庭的經濟情況，爲下列題目找出你認為最適切的答案，並在答案旁邊方格加上✓號。

1. 在過去六個月裏，你的家庭有否因爲經濟困難的緣故，而未能應付家中開支？
   - ☐ 從來沒有
   - ☐ 很少發生
   - ☐ 間中發生
   - ☐ 經常發生

2. 在過去六個月裏，你的家庭有否因爲經濟困難的緣故，而延遲繳交到期帳單（如：電費）？
   - ☐ 從來沒有
   - ☐ 很少發生
   - ☐ 間中發生
   - ☐ 經常發生

3. 在過去六個月裏，你家庭的經濟情況困難嗎？
   - ☐ 完全沒有困難
   - ☐ 有一點兒困難
   - ☐ 相當困難
   - ☐ 十分困難

4. 你覺得你家庭的經濟狀況怎樣？
   - ☐ 愈來愈有改善
   - ☐ 沒有改變
   - ☐ 愈來愈差

5. 家庭月入:

☐$4000 或以下 ☐$4001 - $6000 ☐$6001 - $8000

☐$8001 - $10000 ☐$10001 - $12000 ☐$12001 - $14000

☐$14001 - $16000 ☐$16001 - $18000 ☐$18001 - $20000

☐$20001 或以上

情緒調節問卷（ERQ）

請在下列表，圈出最合適描述**你(家長)**的數字。

	非常不同意	不同意	部分不同意	不肯定	部分同意	同意	非常同意
1.我會改變對身處局面的看法，以控制自己的情緒。	1	2	3	4	5	6	7
2. 當我想自己不那麼消極，我會改變自己對處境的看法。	1	2	3	4	5	6	7
3. 當我想讓自己更積極，我會改變自己對處境的看法。	1	2	3	4	5	6	7
4. 當我希望增加正面情緒的時候（如喜悅或娛樂），我會想別的事情。	1	2	3	4	5	6	7
5. 當我希望減低負面情緒的時候（如悲傷或憤怒），我會想別的事情。	1	2	3	4	5	6	7
6. 當我面對充滿壓力的情況時，我會以能助我保持冷靜的角度去看待那個處境。	1	2	3	4	5	6	7
7. 我控制情緒的方法就是不把情緒表現出來。	1	2	3	4	5	6	7
8. 當我情緒消極的時候，我會確保自己不把它表現出來。	1	2	3	4	5	6	7
9. 我不會把情緒表達出來。	1	2	3	4	5	6	7
10. 當我情緒正面的時候，我會小心地不把它表現出來。	1	2	3	4	5	6	7

親子教導問卷 (MPPQ)

本問卷旨在調查父母教導孩子時的想法，請在以下列表，標示你思想各項事情的頻繁程度：

從不／很少 1	間中 2	有時 3	經常 4	持續 5

1. 你會經常將自己的孩子與其他同齡兒童比較，衡量他／她的成長發展嗎？	1	2	3	4	5
2. 你會經常思想自己的教導方法是否合乎子女需要嗎？	1	2	3	4	5
3. 你會經常衡量在家外的活動會如何影響子女成長嗎？（例如在學校、社區、教會等）	1	2	3	4	5
4. 你會時常考量子女的朋友對他／她帶來的影響是好是壞嗎？	1	2	3	4	5
5. 整體而言，你會經常細想正發生在你和子女身上的事嗎？（例如：細想子女在做的事情及他表現如何；你對自己教導方法的感覺；你與子女的相處及關係）	1	2	3	4	5
6. 當你思想正發生在你和子女身上的事情時，你會經常不停思考/憂慮，而未能想到新的解決辦法嗎？	1	2	3	4	5
7. 在遇到孩子可能感到沉悶的情況時，你經常已經預先作好準備嗎？（如在購物之前，預先於車廂放置玩具或書本，以免孩子覺得沉悶）	1	2	3	4	5
8. 當你和孩子在公共場所時，你會經常顧慮孩子的安全問題嗎？	1	2	3	4	5
9. 整體而言，你會經常預先想好關於孩子或教導方法的事宜嗎？（例如：在帶孩子到較嚴肅的聚會時會預先作預備，或告訴孩子某些行為的後果）	1	2	3	4	5
10. 你會經常認真回想你的教導方法，以及你作為家長所做過的決定嗎？	1	2	3	4	5
11. 你會經常對子女的行為或他做過的事感到憂慮嗎？	1	2	3	4	5
12. 整體而言，你會經常就已發生在子女身上的事，而認真回想或存有憂慮嗎？（例如：就一個已經發生的問題認真回想，回想一個進行得很好的事件，或反省自己作為家長所做過的決定）	1	2	3	4	5
13. 當你就已發生在子女身上的事，或自己已作出的決定而反思或憂慮時，你會不斷被思緒或憂慮佔據腦海嗎？	1	2	3	4	5
14. 你會經常與配偶或朋友談及發生在你子女身上的事嗎？	1	2	3	4	5

15. 當你想到一個解決親子問題的策略時，你會經常堅持及實 行它嗎？ 倘若沒有遇到問題，請於橫線畫上剔號___	1	2	3	4	5
16. 你會經常思想自己解決問題的策略是否有效嗎？ 倘若沒有遇到問題，請於橫線畫上剔號___	1	2	3	4	5
17. 當你和孩子相處間出了問題，你會經常思考及組織策略去解決教導子女的問題嗎？ 倘若沒有遇到問題，請於橫線畫上剔號____	1	2	3	4	5
18. 整體而言，你會經常嘗試辨認並解決親子關係中，及教導子女時遇到的問題嗎？（例如：組織一個更有效的策略去處理問題；詢問其他人如何解決類似問題）	1	2	3	4	5
19. 當你發現並嘗試解決親子問題，或教導子女的問題時，會不斷被思緒或憂慮佔據腦海嗎？	1	2	3	4	5

親職壓力量表（PSS）

就以下各題，請根據你(家長)最近一、兩星期的感受，表達你的想法。

1 = 極不同意　　2 = 不同意　3 = 傾向不同意
4 = 傾向同意　　5 = 同意　　6 = 極同意

	極不同意	不同意	傾向不同意	傾向同意	同意	極同意
1. 我很高興能夠為人父母。	1	2	3	4	5	6
2. 照顧子女所花的時間，較我能付出的多。	1	2	3	4	5	6
3. 我有時擔心自己是否已為子女做足要做的事。	1	2	3	4	5	6
4. 我和子女十分親近。	1	2	3	4	5	6
5. 我很喜歡和子女共渡時光。	1	2	3	4	5	6
6. 子女讓我有被愛的感覺。	1	2	3	4	5	6
7. 子女令我對將來感到更肯定和樂觀。	1	2	3	4	5	6
8. 子女在我一生中帶來很大的壓力。	1	2	3	4	5	6
9. 子女使我再沒有時間或餘地去做其他事情。	1	2	3	4	5	6
10. 養兒育女是一項經濟重擔。	1	2	3	4	5	6
11. 因為有了孩子，我難以兼顧其他方面的責任。	1	2	3	4	5	6
12. 子女的行為常令我尷尬和感受到壓力。	1	2	3	4	5	6
13. 如果可以重新選擇，我可能不會選擇生兒育女。	1	2	3	4	5	6
14. 為人父母的責任令我感到吃不消。	1	2	3	4	5	6
15. 有了子女，我人生失去了很多選擇和自主的機會。	1	2	3	4	5	6
16. 作為父母，我感到十分滿足。	1	2	3	4	5	6
17. 我的子女為我帶來樂趣。	1	2	3	4	5	6

父母角色量表（PSOC）

此問卷內有１６項關於你作為父母的感受。請細閱每一項，然後向上１至６任何一個數字，代表自行是否切合你的感受。１代表十分同意，６代表十分不同意，詳情如下：

	十分同意	同意	有些同意	有些不同意	不同意	十分不同意
1. 我已經領悟到一個道理，那就是只要你明白你的行為是怎樣影響到你的孩子，那麼，照顧孩子的困難便會很容易解決。	1	2	3	4	5	6
2. 即使我覺得父母可以獲得很大的回報，但我卻為我現時年齡的孩子而感到煩惱。	1	2	3	4	5	6
3. 我無論晚上睡在床上或早上醒來，都總覺得自己做得不足夠。	1	2	3	4	5	6
4. 我不明白為何當我認為自己應該控制某一場合時，我總覺得自己受人支配。	1	2	3	4	5	6
5. 我的父／母親比起我做父／母親預備得好。	1	2	3	4	5	6
6. 我認為自己可以為剛為人父／母親的人做個好榜樣，讓他們知道如何做個好父／母親。	1	2	3	4	5	6
7. 做父母並不困難，甚麼問題都可以很容易解決。	1	2	3	4	5	6
8. 做父母最大的困難就是不知道怎樣判斷你做得好不好。	1	2	3	4	5	6
9. 有時我覺得我甚麼也做不成。	1	2	3	4	5	6
10. 我已經達到我期望自己應有的水平，來照顧我的孩子。	1	2	3	4	5	6
11. 如果有人可以找出困擾我孩子的原因，那人必定是我。	1	2	3	4	5	6
12. 我的才能及興趣不在為人父母，而在其他方面。	1	2	3	4	5	6
13. 在我做父／母親這段日子，我感到我已經完全熟習這個　　角色。	1	2	3	4	5	6
14. 如果做一個父／母可以越做越有趣味，我會更加有動機　去做一個好父母。	1	2	3	4	5	6
15. 我確信我已擁有一切所需的技巧去做我孩子的好父／母　親。	1	2	3	4	5	6
16. 做父母令我感到緊張及焦慮。	1	2	3	4	5	6

專注力及自制力量表（SWAN）

孩子在專注力、控制行為和抑制衝動的能力上各有不同。請將你的孩子與同齡的孩子比較，並根據你在**過去一個月內**的觀察，評估他在以下各項目的表現。

	遠遠低於一般	低於一般	稍低於一般	一般	稍高於一般	高於一般	遠遠高於一般
1. 留意細節，能避免不小心的錯誤	1	2	3	4	5	6	7
2. 做事或遊戲時，有持久的專注力	1	2	3	4	5	6	7
3. 對著他說話時，他會聆聽	1	2	3	4	5	6	7
4. 能依足指示，完成被指派的工作	1	2	3	4	5	6	7
5. 能夠組織工作及活動	1	2	3	4	5	6	7
6. 能投入那些需要持久專注的工作	1	2	3	4	5	6	7
7. 會留意帶備活動時所需的物件	1	2	3	4	5	6	7
8. 不受無關的事物干擾專注力	1	2	3	4	5	6	7
9. 能依著每日既定的生活程序行事	1	2	3	4	5	6	7
10. 能安坐（沒有挪動身體或揮動手腳）	1	2	3	4	5	6	7
11. 能安坐位中（能依循課室慣例或規則）	1	2	3	4	5	6	7
12. 能因應環境而調節自己的動作（能自我控制，避免在不適當的時候奔跑或攀爬）	1	2	3	4	5	6	7
13. 遊戲時，能保持安靜（將聲浪減至合理程度）	1	2	3	4	5	6	7
14. 有安定下來的時候（不會不停活動）	1	2	3	4	5	6	7
15. 適當的時候才說話（不會不斷說話）	1	2	3	4	5	6	7
16. 思考後才回應問題（不急於說出答案）	1	2	3	4	5	6	7
17. 能夠排隊或輪候	1	2	3	4	5	6	7
18. 能夠適當地介入對話或遊戲（不會打岔或強行加入）	1	2	3	4	5	6	7

Table 1. Demographic data for 115 families

	Mean	SD	Frequency	Percentage	Skewness	Kurtosis	Kolmogorov Smirnov
Children age	5.57	1.15			-0.46	-0.49	0.00
Children gender							
Male			66	57.3			
Female			49	42.7			
Participants gender							
Male			8	6.9			
Female			107	93.1			
Parents age							
Spouse	41.26	5.20			0.10	0.27	0.20
Main caregiver	38.40	4.34			-0.38	-0.53	0.07
Years of education							
Spouse	12.67	3.05			-0.20	-0.69	0.18
Main caregiver	11.86	3.27			-0.03	1.02	0.13
Occupation							
Main caregiver							
Housewife			59	51.3			
Full time			35	30.4			
Part time			21	18.3			
Spouse							
Full time			115	100%			
Income							
<$10000			21	18.2			
$10001-$14000			18	15.6			
$14001-$18000			19	16.5			
$18001-$22000			23	20			
$22001-$26000			14	12.1			
>$26001			20	17.6			

Table 2. Descriptive data for main caregiver's occupation

Job industry	Percentage	Job title	Percentage
Manufacturing	2.6	Administrative and commercial managers	6.1
Import or export, wholesale and retail trades	2.6	Production and specialized services managers	3.0
Transportation, storage, postal and courier services	2.6	Hospitality, retail and other services managers	3.0
Accommodation and food service activities	5.3	Teaching professionals	6.1
Information and communications	0.9	Business, administration and related professionals	6.1
Financing and insurance	1.8	Information and communications technology professionals	6.1
Real estate activities	7.0	Business, administration and related associate professionals	3.0
Professional, scientific and technical activities	1.9	General and keyboard clerks	6.1
Administrative and support services activities	4.4	Customer services clerk	6.1
Public administration	1.9	Other clerical support workers	9.1
Education	1.9	Personal service workers	3.0
Human health and social work activities	2.6	Personal care workers	3.0
Arts, entertainment and recreation	1.9	Discipline and protective services workers	3.0
Other service	1.8	Transport and other services workers	3.0
Work activities within domestic households or activities of extraterritorial organizations and bodies	1.9	Metal, machinery and related trades workers	3.0
Housewife	59.0	Handicraft and printing workers	6.0
		Food processing, wood working, garment and other craft and related trades workers	6.1
		Cleaners, helpers and related workers	12.1
		Food preparation assistants	6.1

Table 3. Descriptive data for spouse's occupation

Job industry	Percentage
Agriculture, forestry and fishing or mining and quarrying	4.2
Manufacturing	12.6
Electricity and gas supply or water supply; sewerage, waste management and remediation activities	3.2
Construction	13.7
Import or export, wholesale and retail trades	10.5
Transportation, storage, postal and courier services	6.3
Accommodation and food service activities	8.4
Information and communications	7.4
Financing and insurance	5.3
Professional, scientific and technical activities	5.3
Administrative and support services activities	6.3
Public administration	4.2
Human health and social work activities	4.2
Arts, entertainment and recreation	2.1
Other service	4.2
Work activities within domestic households or activities of extraterritorial organizations and bodies	1.1
Housewife	1.1

Table 4. Descriptive data for spouse's occupation

Job title	Percentage	Job title	Percentage
Chief executives, senior officials, councilors and foreign diplomats	1.1	Personal service workers	3.2
Administrative and commercial managers	7.4	Salespersons and models	1.1
Production and specialized services managers	5.3	Personal care workers	1.1
Hospitality, retail and other services managers	6.4	Discipline and protective services workers	1.1
Science and engineering professionals	3.2	Transport and other services workers	2.1
Health professionals	2.1	Market-oriented skilled agricultural and fishery workers	2.1
Business, administration and related professionals	3.2	Building and related trades workers (excluding electricians)	3.2
Information and communications technology professionals	1.1	Metal, machinery and related trades workers	1.1
Legal, social science and cultural professionals	3.2	Handicraft and printing workers	1.1
Science, mathematical and engineering associate professionals	2.1	Electrical and electronic trades workers	4.3
Business, administration and related associate professionals	1.1	Food processing, wood working, garment and other craft and related trades workers	1.1
Legal, social science, cultural and related associate professionals	2.1	Stationary plant and machine operators	3.2
Information and communications technology associate professionals	2.1	Drivers and mobile machine operators	3.2
Teaching associate professionals	1.1	Cleaners, helpers and related workers	1.1
General and keyboard clerks	2.1	Laborers in mining, construction, manufacturing, transport, storage, agriculture and fishing	9.6
Numerical and material recording clerks	2.1	Food preparation assistants	3.2
Information and communications technology assistants	4.3	Street and related sales and service workers	3.2
Other clerical support workers	4.3	Refuse workers and other elementary workers	1.1

Table 5. Descriptive statistic for various measurements

	Mean	SD	Skewness	Kurtosis	Kolmogorov Smirnov	Reliability
ESS	1.63	0.62	0.70	-0.47	0.18	0.83
SWAN						
Hyperactive	0.28	1.38	-0.09	-0.82	0.12	0.96
Inattentive	0.24	1.39	-0.06	-0.67	0.10	0.95
ERQ						
Reappraisal	4.89	1.06	-0.14	0.36	0.17	0.95
Suppression	3.71	1.07	0.07	-0.92	0.10	0.84
MPPQ						
Assessing	2.98	0.98	0.17	-0.74	0.15	0.88
Anticipating	2.97	0.86	0.02	-0.18	0.76	0.77
Reflecting	3.27	0.90	-0.19	-0.62	0.21	0.79
Problem solving	2.99	0.74	-0.42	-0.05	0.21	0.73
Rumination	3.19	1.04	0.10	-0.68	0.10	0.78
PSS	56.09	10.14	0.42	-0.37	0.09	0.86
PSOC						
Satisfaction	3.57	0.69	-0.18	-0.08	0.74	0.71
Efficacy	3.68	0.97	-0.63	-0.27	0.50	0.92

Table 6. Correlation table among various measurements

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1		-0.03	0.65**	0.11	-0.04	-0.13	-0.10	-0.08	0.04	0.15	-0.04	0.23**	0.00	-0.05	0.20*	0.05	-0.01	-0.09
2			-0.08	0.63**	0.52**	-0.16*	0.19*	0.22**	0.13	-0.13	-0.11	0.04	-0.12	-0.02	-0.07	-0.11	0.13	0.11
3				0.06	-0.12	-0.16	0.08	-0.00	0.03	0.17	-0.04	0.13	-0.00	-0.04	0.15	0.16	-0.01	-0.00
4					0.59**	-0.18*	0.21*	0.16	0.09	-0.13	-0.14	-0.02	-0.08	-0.06	-0.06	-0.05	0.10	0.09
5						-0.30**	0.41**	0.45**	0.15*	-0.14	-0.17*	-0.12	-0.15	-0.02	-0.01	-0.26**	0.28**	0.15
6							-0.31**	-0.31**	-0.05	-0.05	0.14	-0.04	0.05	-0.05	-0.31**	0.12	-0.13	-0.08
7								0.91**	0.37**	-0.05	-0.17*	-0.01	-0.38**	-0.01	0.17*	-0.29**	0.35**	0.25*
8									0.37**	-0.03	-0.18*	-0.02	-0.34**	-0.00	0.21**	-0.34**	0.40**	0.30**
9										0.26**	-0.48**	0.35**	-0.79**	0.28**	0.02	-0.52**	0.63**	0.22*
10											-0.21*	0.59**	-0.10	0.16*	-0.20*	0.09	0.03	-0.12
11												-0.16*	0.19*	-0.20*	0.01	0.12	-0.05	-0.10
12													-0.18*	-0.16*	-0.21**	0.06	-0.07	0.25*
13														-0.20*	0.03	0.46**	-0.53**	-0.06
14															-0.34**	-0.54**	0.49**	0.04
15																0.11	-0.12	-0.13
16																	-0.73**	0.05
17																		-0.02
18																		

** p<0.01
*p<0.05

Note. 1) Main caregivers age; 2) Main caregivers years of education; 3) Spouse age; 4) Spouse years of education; 5) Income; 6) ESS; 7) SWAN Inattentive; 8) SWAN Hyperactive; 9) MPPQ Assessing; 10) MPPQ Anticipating; 11) MPPQ Reflecting; 12) MPPQ Problem solving; 13) MPPQ Rumination; 14) ERQ Reappraisal; 15) ERQ Suppression; 16) PSS; 17) PSOC Efficacy; 18) PSOC Satisfaction

Figure1

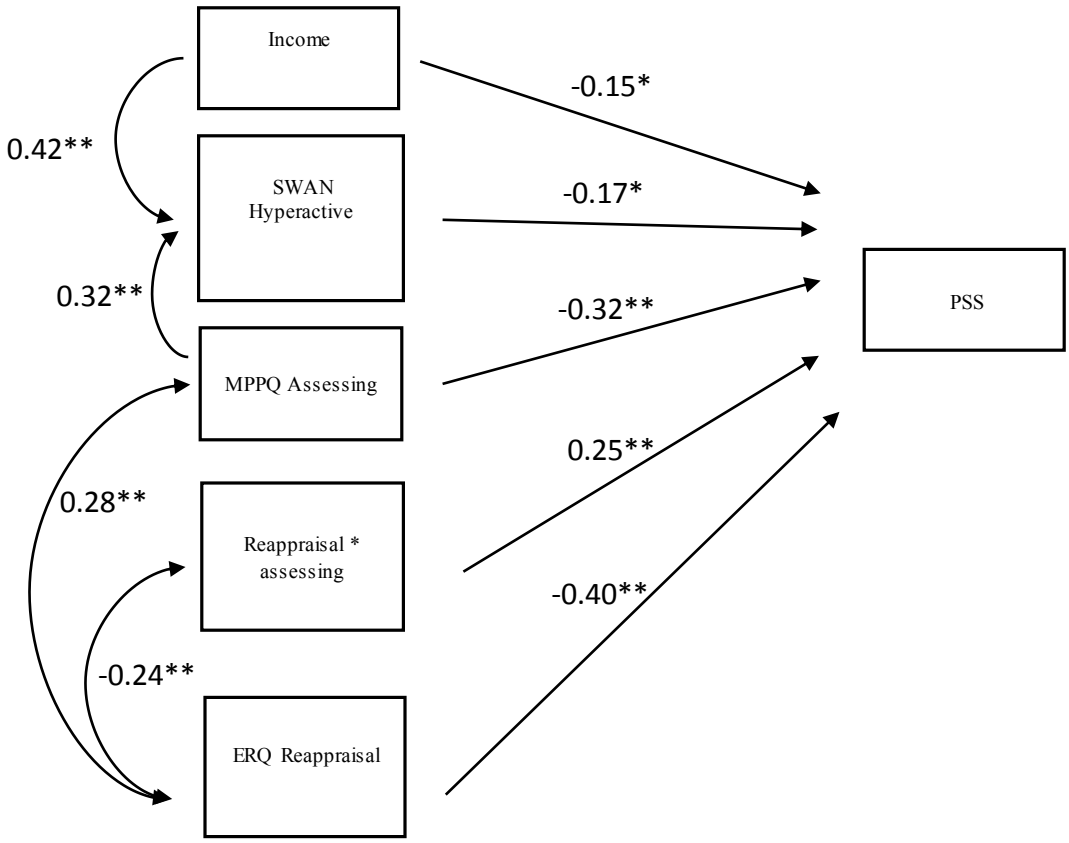


Figure 1

Path model of relationships among hyperactive behaviors, meta-parenting assessing, emotion regulation reappraisal and parental stress

The fit indices were as below: X^2 (6) = 4.75, p = 0.578, RMSEA = 0.00, NFI = 0.97, IFI = 0.99, CFI = 0.99.

** p <0.01; * p<0.05

Figure 2

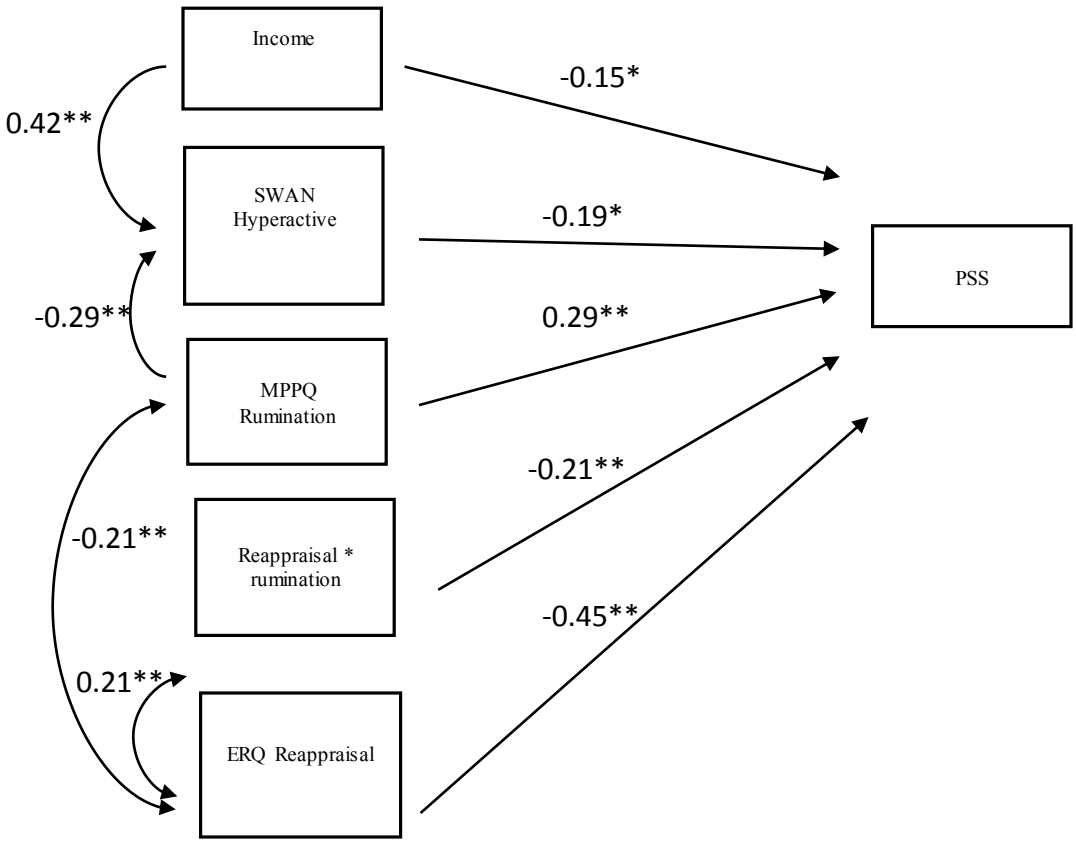


Figure 2

Path model of relationships among hyperactive behaviors, meta-parenting rumination, emotion regulation reappraisal and parental stress

The fit indices were as below: X^2 (6) = 3.71, p = 0.71, RMSEA = 0.00, NFI = 0.97, IFI = 0.99, CFI = 0.99.

** p <0.01; * p<0.05

Figure 3

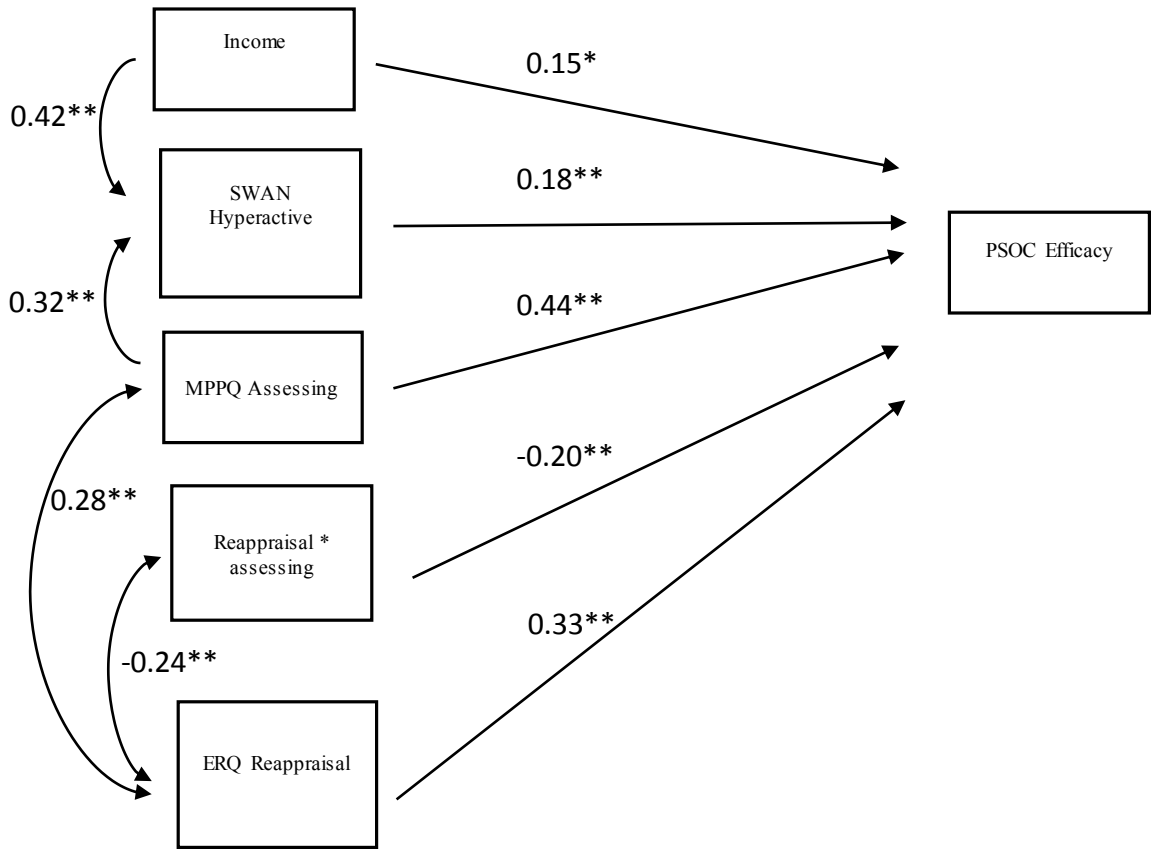


Figure 3

Path modified model of relationships among hyperactive behaviors, meta-parenting assessing, emotion regulation reappraisal and parental efficacy

The fit indices were as below: X^2 (6) = 4.75, p = 0.57, RMSEA = 0.00, NFI = 0.97, IFI = 0.99, CFI = 0.99.

** p <0.01; * p<0.05

Figure 4

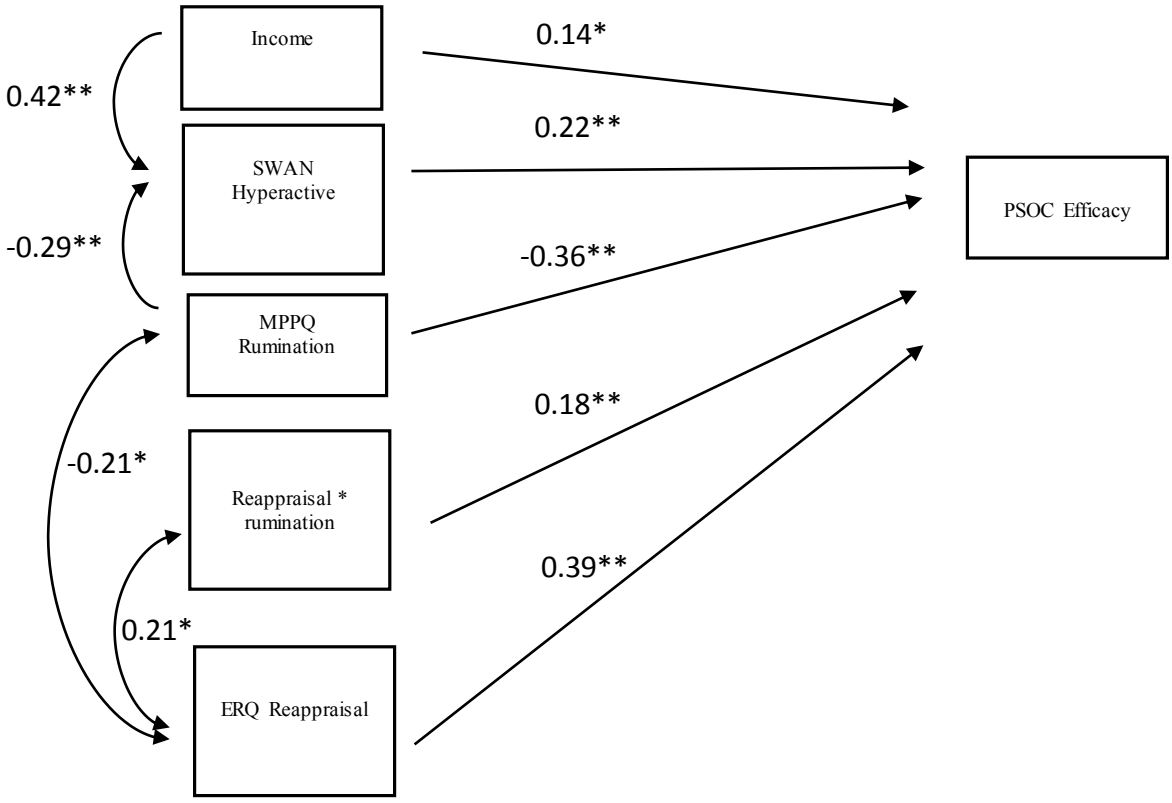


Figure 4

Path model of relationships among income, hyperactive behaviors, meta-parenting rumination, emotion regulation reappraisal and parental efficacy

The fit indices were as below: X^2 (6) = 3.71, p = 0.71, RMSEA = 0.00, NFI = 0.97, IFI = 0.99, CFI = 0.99.

** p <0.01; * p<0.05

Figure 5. Moderation effect of emotion regulation – reappraisal on parental stress and meta-parenting assessing

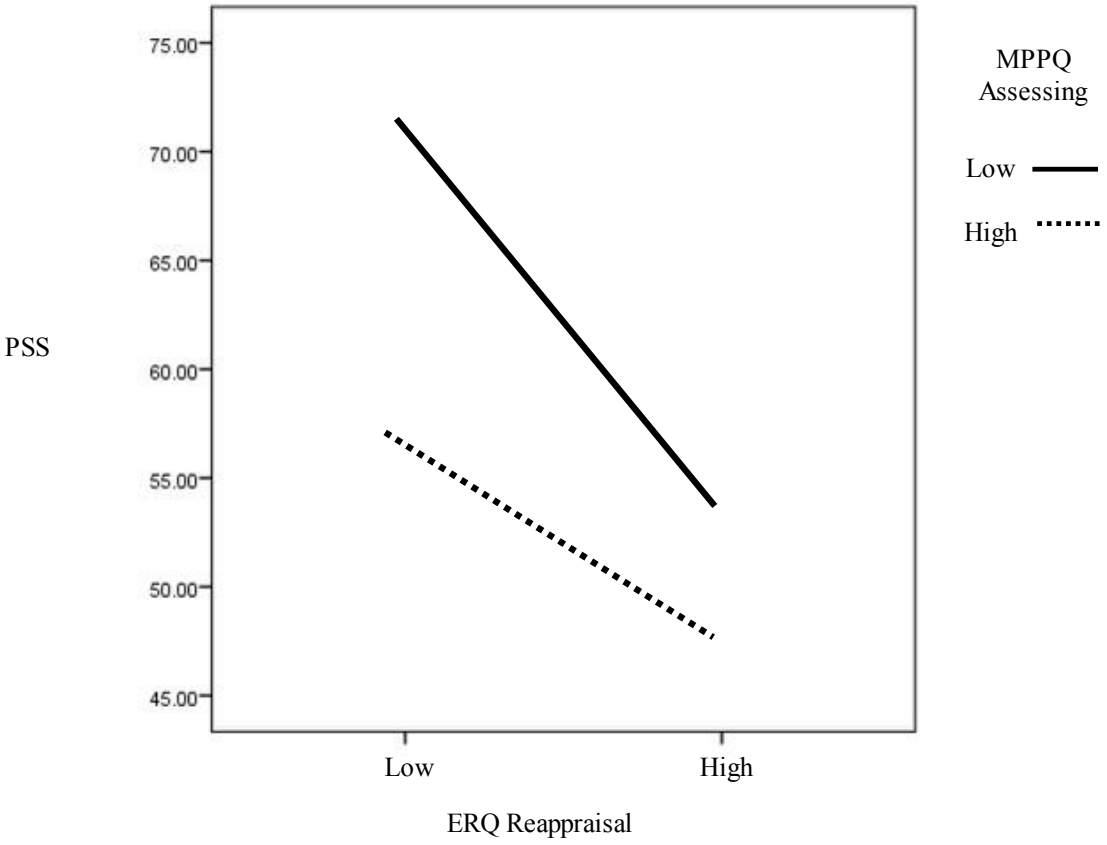


Figure 6. Moderation effect of emotion regulation – reappraisal on parental stress and meta-parenting rumination

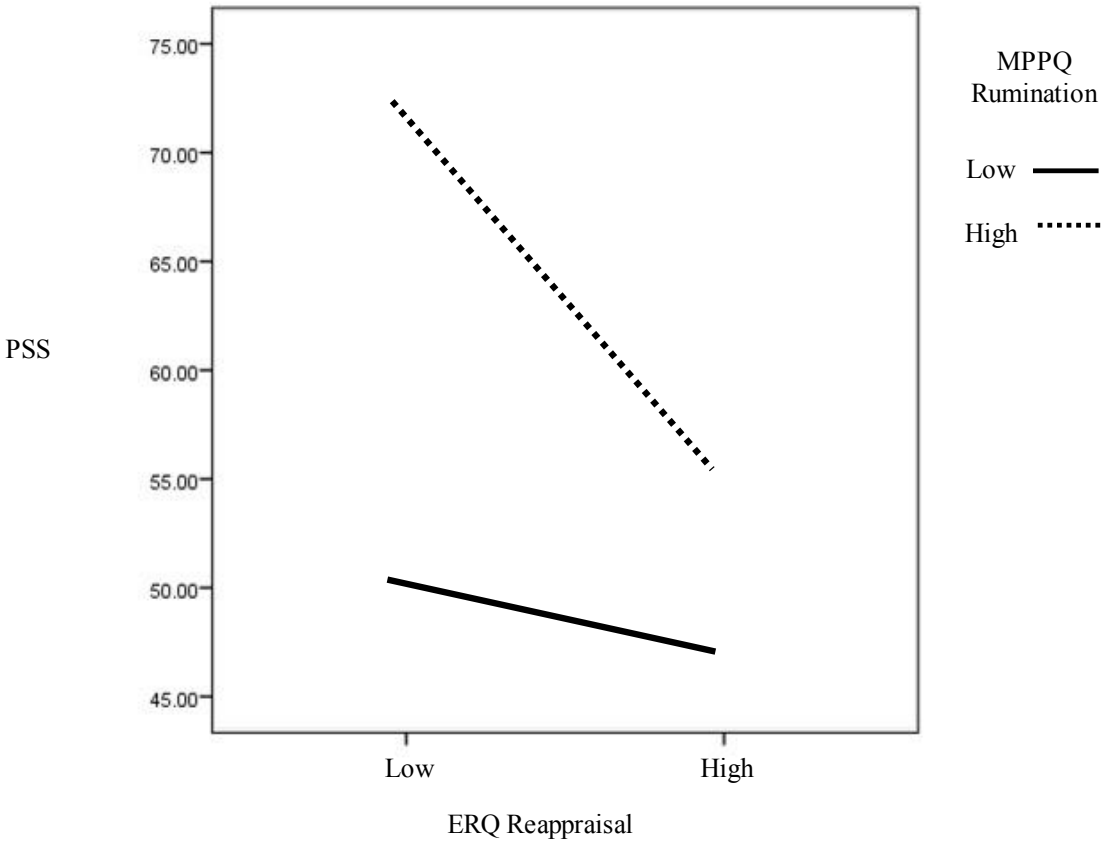


Figure 7. Moderation effect of emotion regulation – reappraisal on parental efficacy and meta-parenting assessing

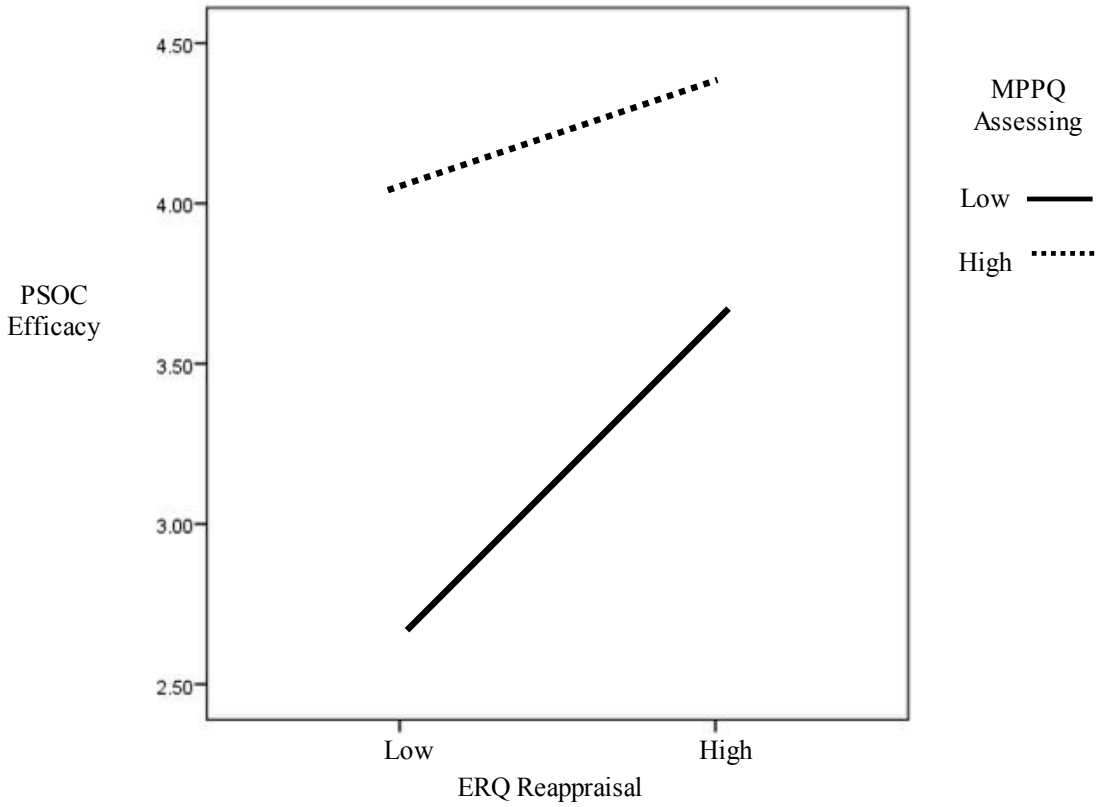
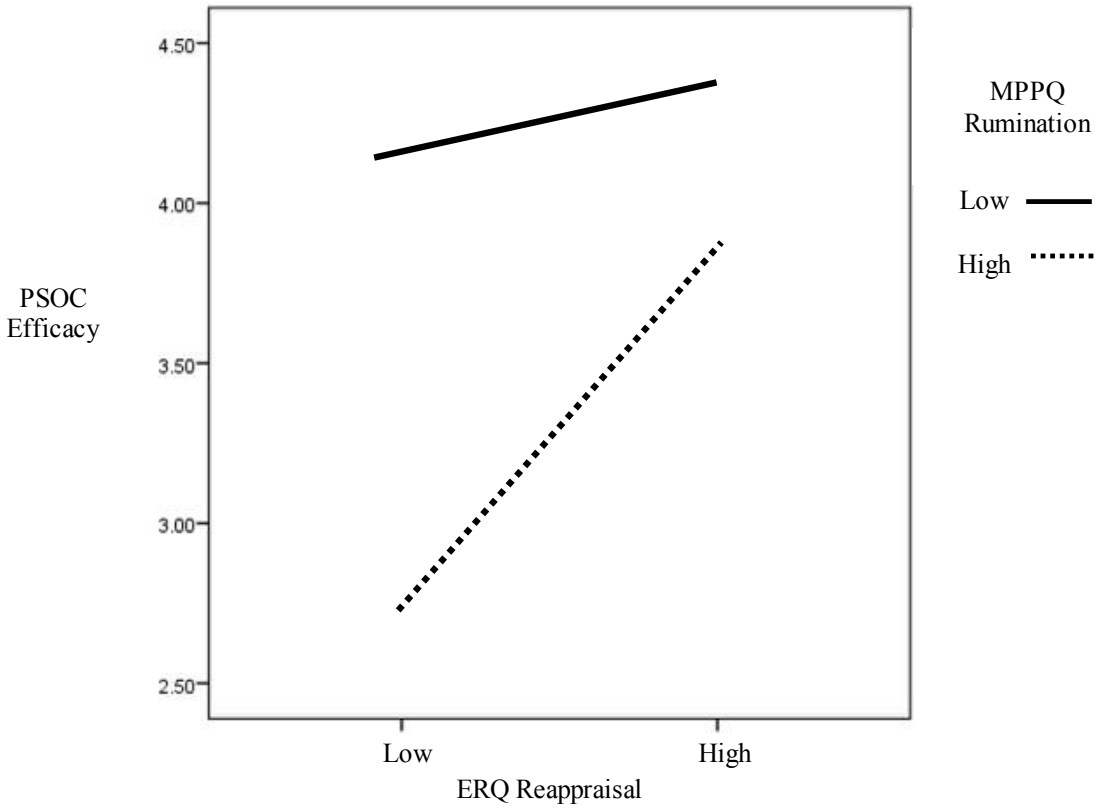


Figure 8. Moderation effect of emotion regulation – reappraisal on parental efficacy and meta-parenting rumination



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