

Mother-child Discrepancy in Perceived Family Functioning and Adolescent Developmental Outcomes in Families Experiencing Economic Disadvantage in Hong Kong

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### Abstract

Though growing attention has been devoted to examining informant discrepancy of family attributes in social science research, studies that examine how interactions between mother-reported and adolescent-reported family functioning predict adolescent developmental outcomes in underprivileged families are severely lacking. The current study investigated the difference between mothers and adolescents in their reports of family functioning, as well as the relationships between mother-reported and adolescent-reported family functioning and adolescent developmental outcomes in a sample of 432 Chinese single-mother families (mean age of adolescents = 13.7 years, 51.2% girls, mean age of mothers = 43.5 years, 69.9% divorced) experiencing economic disadvantage in Hong Kong. Polynomial regression analyses were conducted to assess whether discrepancy in family functioning between mother reports and adolescent reports predicted resilience, beliefs in the future, cognitive competence, self-efficacy and self-determination of adolescents. The results indicated that adolescents reported family functioning more negatively than did their mothers. Polynomial regression analyses showed that the interaction term between mothers' reports and adolescents' reports of family functioning predicted adolescent developmental outcomes in Chinese single-mother families living in poverty. Basically, under poor adolescent-reported family functioning, adolescent development would be relatively better if their mothers reported more positive family functioning. In contrast, under good adolescent-reported family functioning, adolescents expressed better developmental outcomes when mothers reported lower levels of family functioning than those mothers who reported higher levels of family functioning. The findings provide insights on how congruency and discrepancy between informant reports of family functioning would influence adolescent development. Theoretical and practical implications of the findings are discussed.

Keywords: parent-child discrepancy, family functioning, single-parent families, Chinese, adolescent development, poverty

## Introduction

Family is the basic functional unit of the society. It is particularly important in the Chinese culture where collective familism is stressed (Yeh & Yang, 1997). The popular Chinese slogan “*jia he wan shi xing*” (harmony in the family is the basis for success in any undertaking) suggests the importance of family functioning in determining one’s own fate, and aptly reflects the important role of the family among Chinese people.

However, previous studies have revealed that parents and adolescents perceive the family differently across different cultures (De Los Reyes, Ohannessian & Laird, 2016; Leung & Shek, 2013; Ohannessian et al., 2000; Shek, 2006), with adolescents having relatively more negative perceptions than the parents. Moreover, there is empirical evidence that parent-child discrepancies in perceived family processes predicted adolescent developmental outcomes. Ohannessian et al. (2000) identified two contradictory impacts of discrepancies between parents and children in family processes - adaptive and maladaptive impacts. Based on the developmental perspective that adolescents search for identity formation, independence and autonomy in their developmental life span, parent-child difference in perceived family processes is an indication of individuation (Grotevant & Cooper, 1986), which is regarded as a normative developmental process (Lerner & Spanier, 1980; Montemayor & Flannery, 1991; Steinberg, 1991). Parent-adolescent discrepancies can also be explained by the “generational stake” hypothesis (i.e., parents have a tendency to rate higher in perceived family functioning). As parents have paid greater effort in providing a nurturing environment for the adolescents, they tend to perceive their family as healthier and more cohesive (Lerner & Knapp, 1975; Lerner & Spanier, 1980). In this case, family processes perceived by the parents may also be distorted due to their investment in their families (Niemi, 1974). However, adolescent children tend to enlarge the differences so as to display autonomy and independence (Bengtson & Kuypers, 1971).

However, parent-child discrepancies of perceived family functioning are viewed as maladaptive by some family theorists. Olson et al. (1983) suggested that differences in perceived family processes were the results of family stresses among family members. Minuchin (1985) further indicated that parent-child differences in perceptions of family processes were the manifestations of family disorganization, maladaptive interaction patterns among family members, and non-cohesive family atmosphere. This perspective suggests that parent-child difference in perceived family processes is the result of maladjustment of the families, which adversely affects psychosocial development of adolescents (Feinberg et al., 2000; Guion et al., 2009; Ohannessian et al., 2000). In the Chinese context, parent-child discrepancy of perceived family functioning may be intensified due to hierarchical decision making and the lack of emotional expression within the Chinese families (Shek & Chan, 1998). Leung and Shek (2013) further showed that parent-child discrepancy in the perception of family functioning negatively influenced adolescent achievement motivation and psychological competence in poor families in Hong Kong.

### **Existing Research Gaps**

Although there is a growing concern for the influence of parent-child discrepancy of perceived family functioning on adolescent development during the past decade (Leung & Shek, 2013; Ohannessian, 2000), related research on underprivileged families such as single-parent families or poor families are seldom explored. Single-parenthood may have different impacts on single-parents and children. While some members may treat the absence of spouse/father as family breakdown and destruction of family solidarity (Anderson, 2003), other members may strive to restore family harmony and solidarity in face of single-parenthood (Leung & Shek, in-press).

Poverty may further intensify parent-child discrepancies in the perceptions of family functioning, as demands of and expectations for family resources allocation may be different between parents and children living in poor environment (Leung & Shek, in-press). This may be especially serious when the status of single-parenthood brings about economic hardship to the families. However, single-mothers and adolescents may become more interdependent with each other to maintain family mutuality in facing single-parenthood (Hetherington, 1992; Leung & Shek, in-press). The Chinese saying of “*xiang yi wei ming*” (parent and children become interdependent to face life challenges) is often used to describe the parent-child interdependent relationship in single-parent families. In the face of dramatic change in the family structure, whether mothers and adolescents may have more consensus or discrepancies in perceived family functioning is questionable.

Methodologically, most of the related studies calculated discrepancy scores in order to assess parent-child discrepancies in family processes and their effects on adolescent development (e.g., De Los Reyes & Kazdin, 2004, 2005; Leung & Shek, 2014). However, this method has been criticized because the discrepancy scores are “statistically redundant” with the informant reports from which they originated, and they fail to provide useful information on how this discrepancy can account for the effects beyond each individual informant report (De Los Reyes, Ohannessian & Laird, 2016; Laird & Weems, 2011). Hence, the contributions of parent-child interactions in discrepancies in family processes to adolescent development, over-and-above the main effects of parent and adolescent reports remain unexplored, particularly in the Chinese culture.

Alternatively, Edwards (1994) proposed to use polynomial regression analyses as the methodological approach to test the interaction effects between mothers’ reports and adolescents’ reports of family processes on adolescent developmental outcomes. By calculating and assessing the interactions between parent reports and adolescent reports

within a multiple regression model, a more direct analysis of whether the discrepancy between parents' reports and adolescents' reports on perceived family attributes contributes to adolescent developmental outcomes, over-and-above the main effects of each individual influence, is obtained (De Los Reyes, Ohannessian & Laird, 2016). Laird and De Los Reyes (2013) employed this approach to assess how discrepant views of parent-reported and adolescent-reported conflicts contributes to early adolescent psychopathology in a sample of 218 parent-adolescent dyads. The results indicated that parent-reported conflicts serve as a factor that moderates the influence of adolescent-reported conflicts and adolescent depression (Laird & De Los Reyes, 2013). However, this approach has not been used in the study of parent-adolescent dyads in different Chinese communities.

### **The Current Study**

Against this background, the present study examined the interaction effect of mothers' reports and adolescents' reports of family functioning on adolescent developmental outcomes in Chinese single-mother families experiencing economic disadvantage. More specifically, the study explored the moderating effect of mothers' reports of family functioning in the influence of adolescents' reports of family functioning on adolescent developmental outcomes.

It is noteworthy that the conceptions of family functioning in Chinese and Western societies show some differences. In Western societies, The McMaster Model of family functioning suggests six dimensions of family functioning, including problem solving, communication, roles, affective responsiveness, affective involvement, and behavioral control (Epstein, Bishop & Levin, 1978; Epstein et al., 2003). The Beaver Systems Model (Beavers & Hampson, 2003; Beavers et al., 1990) emphasizes family competence that is characterized by clear orientation for family needs, clear boundaries among members,

contextual clarity, relatively equal power with the process of intimacy, individual autonomy, comfortable family transactions, skilled negotiation and significant transcendent values (Beavers & Hampson, 2003). From these frameworks, affective involvement and clear boundaries are important components of effective family functioning. However, in the Chinese culture, family harmony, mutuality, connectedness among members, absence of conflicts and positive parent-adolescent relationships are considered as major attributes of a happy family (Shek & Chan, 1998). Family harmony and mutuality are stressed in Chinese family functioning, whereas emotional expressiveness and clear boundaries among family members are less emphasized.

Regarding adolescent developmental outcomes, the concept of “positive youth development” was used in the study (Catalano et al., 2002; Shek et al., 2007). It is a composite of positive developmental constructs that recognizes psychosocial competence, assets and abilities of adolescents (Damon, 2004; Shek et al., 2007). For instance, Lerner et al. (2009) identified six “C”s of positive youth development that include competence, confidence, connection, character, caring and contribution. Catalano et al. (2002) identified fifteen positive development attributes that illustrate adolescents’ potentials. In the Chinese culture where achievement is highly emphasized (Chao & Sue, 1996; Cheung & McBride-Chang, 2008), Chinese families are motivated to nurture cognitive competence, beliefs in the future, resilience, self-efficacy, and decision-making abilities of the adolescents. Cognitive competence represents one’s capability to acquire and utilize the skills of information processing, reasoning and analyzing, which is fundamental for goal setting and problem solving (Sun & Hui, 2012). Beliefs in the future signify one’s hopes, aspirations and future life goals (Sun & Shek, 2012). Resilience is the ability to achieve positive adaptation within the context of significant adversity (Luthar et al., 2000). Self-efficacy is one’s beliefs and abilities to execute and master different situations (Bandura, 1997; Tsang, Hui & Law,



2012), which is a building block for one's motivation and achievement (Bandura & Cervone, 1983). Self-determination is one's ability to select and take action according to one's choice (Deci & Ryan, 1985). According to self-determination theory, self-determination is crucial in determining one's motivation and autonomy (Deci & Ryan, 2000). These developmental attributes are especially important for adolescents growing up in single-parent families experiencing economic disadvantage. Resilience and cognitive competence promote adolescents' strengths to solve problems and deal with difficulties in their lives, whereas self-efficacy, self-determination and beliefs in the future are the cornerstones for adolescents to motivate and excel.

In this study, two research questions were addressed. The first question is: Are there any differences in the perceptions of family functioning between mothers and adolescents in poor Chinese single-mother families? Based on the theoretical accounts of individuation process of adolescents (Grotevant & Cooper, 1986) and the "generational stake" thesis (Bengtson & Kuypers, 1971), it was hypothesized that there would be differences in the perceptions of family functioning between mothers and adolescents, with adolescents having more negative perceptions than mothers (Hypothesis 1).

The second question is: Does mother-reported family functioning moderate the influence of adolescent-reported family functioning on adolescent developmental outcomes in poor Chinese single-mother families? Based on the previous studies, which found that parent-child discrepancies of perceived family functioning negatively influenced adolescent psychological competence in poor Chinese families (Leung & Shek, 2013), and that parent-reported conflicts moderated the influence of adolescent-reported conflicts on adolescent depression (Laird & De Los Reyes, 2013), it was hypothesized that mothers' reports of family functioning would moderate the influence of adolescents' reports of family functioning on adolescents' beliefs in the future (Hypothesis 2a), resilience (Hypothesis 2b), cognitive

competence (Hypothesis 2c), self-determination (Hypothesis 2d), and self-efficacy (Hypothesis 2e).

## **Method**

### **Participants and Procedures**

The data were collected from single-mother families experiencing economic disadvantage in Hong Kong. As a complete list of single-mother families was non-existent in Hong Kong and families tended to hide their family status so as to avoid social stigmatization, purposive sampling method was adopted in the study. Social service units including community centers, family service units, and children and youth service units across Hong Kong were invited to join the study. Finally, 17 social service units participated in the data collection. Social workers of the units were given training to identify the relevant families and collect data. Three criteria were used to identify the participant families: 1) Chinese families with adolescents lived with single mothers, 2) adolescents aged between 11 and 17; and 3) monthly household income was less than 50% of monthly median domestic household income based on Hong Kong Census 2011. There were 432 mother-adolescent dyads that participated in the study. Previous studies indicated that effect size (Cohen  $f^2$ ) of prediction of adolescent-reported family functioning on psychological competence in poor Chinese adolescents was 0.48 (Leung & Shek, 2013), and that of mother-reported family functioning on Chinese adolescents' wellbeing was 0.06 (Shek, 1997). Taking a more conservative effect size of 0.06, power analysis was performed with power at 0.8, alpha level at 0.05, the minimum sample size of 215 was estimated (Westland, 2010). Hence, a sample size of 432 dyads would be adequate for the study.

The mother-adolescent dyads of single-mother families participated in the study. Written informed consent of both mothers and adolescents was sought. The mothers were invited to

fill in the Mother Questionnaire that contained measures of family functioning, whereas the adolescents were invited to fill in the Adolescent Questionnaire that contained measures of family functioning and developmental outcomes, including measures of beliefs in the future, resilience, cognitive competence, self-efficacy and self-determination. The questionnaire was completed by each participant in a self-administered format separately so as to ensure confidentiality. In case the participants had difficulties in comprehending the questionnaires, items were read out by trained social workers in an interview format. Conforming to the ethics of human subject research, the study was approved and monitored by the Human Subjects Ethics Sub-committee of an internationally recognized university.

The mean age of the mothers was 43.5 ( $SD = 5.79$ ). There were 12 (2.8%) unmarried mothers, 302 (69.9%) were divorced, 27 (6.2%) were separated, 77 (17.8%) were widowed, and 8 (1.9%) mothers lost contact with spouses. A high proportion of mothers had low education level, with 308 mothers (71.6%) received education at junior secondary level or lower. There were 112 mothers (26.1%) born in Hong Kong, and 114 mothers (26.8%) had resided in Hong Kong for 6 to 10 years. Many families received Comprehensive Social Security Assistance (CSSA) ( $n = 315$ , 72.9%), which is in line with the profile of CSSA recipients from the Government (Census & Statistics Department, 2012). Those working mothers were mostly engaged in unskilled jobs ( $n = 43$ , 10.0%). The mean and mode of number of children in the families was 1.89 ( $SD = 0.84$ ) and 2, respectively.

In the adolescent sample, there were 211 boys (48.8%) and 221 girls (51.2%). The ratio compared favorably with the Hong Kong statistics. The mean age of adolescents was 13.7 ( $SD = 2.03$ ). There were 124 adolescents (27.7%) studying in Primary Six or below (Grade 6 and below), 203 (46.9%) in junior secondary level (Grade 7-9), and 105 (24.3%) in senior secondary level (Grade 10 and above). Majority of them were born in Hong Kong ( $n = 267$ , 61.8%), and the rest were immigrants from Mainland China.

## **Instruments**

### **Family functioning**

*The Chinese Family Assessment Instrument (CFAI)*. The *CFAI* is an indigenous 33-item self-report instrument assessing family functioning in Chinese populations (Shek, 2002). There are five dimensions in the *CFAI*, namely mutuality, communication, conflict and harmony, parental concern, and parental control. The respondents were asked to respond to the question on "how similar is this to your family environment?" according to each statement, and indicate their responses from five options of "very similar," "somewhat similar," "neither similar nor dissimilar," "somewhat dissimilar," and "very dissimilar." A sample statement is "family members care each other". The measurement showed good psychometric properties (Shek, 2002; Shek & Ma, 2010). Higher scores indicate higher levels of family functioning. The scale was demonstrated to have excellent reliability in both mother reports and adolescent reports (Mother:  $\alpha = 0.926$ , inter-item correlation coefficient = 0.310; Adolescent:  $\alpha = 0.946$ , inter-item correlation coefficient = 0.373).

### **Adolescent developmental outcomes**

*Chinese Positive Youth Development Scale (CPYDS)*. The *CPYDS* is a composite measure containing fifteen attributes of positive youth development (Shek et al., 2007). Five subscales were used in this study. 1) *Beliefs in the Future subscale (BF)*. A short form (3 items) was modeled after the items of the Chinese Hopelessness Scale (Shek, 1993). An example of Beliefs in the Future Subscale is "I have confidence to be admitted to university". 2) *Resilience subscale (RE)*. A short form (3 items) that was modelled after the items of the Chinese Beliefs about Adversity Scale (Shek, 2004) was used in the study. A sample item is "My belief is that even though tomorrow will become worse, I will still live in a good

manner". 3) *Cognitive Competence Subscale (CC)*. A short form (3 items) was modelled after the items of the Chinese version of the Social Problem-Solving Inventory (Siu & Shek, 2005). An example of the item is "I know how to see things from different angles". 4) *Self-determination Subscale (SDE)*. *SDE* measures the sense of autonomy, independent thinking and self-advocacy. Three items were developed after reviewing the literature (e.g., Hong Kong Youth Development Council, 2001). An example item is "I am confident about my decisions". 5) *Self-efficacy Subscale (SE)*. A short-form of two items, "I believe things happening in my life are mostly determined by me" and "I can finish almost everything that I am determined to do", modelled after the Chinese version of Mastery Scale (Shek, 2004) were used. Each item was rated on a 6-point Likert scale ranging from "Strongly disagree" to "Strongly agree". The five subscales showed acceptable internal consistency (*BF*:  $\alpha = 0.808$ , inter-item correlation coefficient = 0.596; *RE*:  $\alpha = 0.826$ , inter-item correlation coefficient = 0.613; *CC*:  $\alpha = 0.861$ , inter-item correlation coefficient = 0.675; *SDE*:  $\alpha = 0.827$ , inter-item correlation coefficient = 0.617; *SE*:  $\alpha = 0.689$ , inter-item correlation coefficient = 0.531).

### **Data Analyses**

Regarding Research Question 1, paired t-test was used to examine mother-adolescent differences in perceived family functioning. Cohen's *d* was used to determine the effect size (Cohen, 1988).

Regarding Research Question 2, polynomial multiple regression analyses (Edwards, 1994) were used to test the interaction effect of mother-reported and adolescent-reported family functioning on five components of positive youth development: beliefs in the future, resilience, cognitive competence, self-determination and self-efficacy. The polynomial multiple regression model, used in testing parent and adolescent discrepancies of perceived

family functioning on the prediction of adolescent developmental outcomes, is shown in the equation:

$$Y = b_0 + b_1 A + b_2 P + b_3 A^2 + b_4 AP + b_5 P^2 + e$$

While P and A represent mothers' and adolescents' reports of family functioning,  $b_2$  and  $b_5$  represent the linear and quadratic effects of mother reports at mean level of adolescent reports. Besides,  $b_1$  and  $b_3$  represent the linear and quadratic effects of adolescent reports at mean levels of mother reports, and  $b_4$  represents the interaction term between mother and adolescent reports. To avoid the misrepresentation of the quadratic effect of mother or adolescent reports by the interaction term,  $A^2$  and  $P^2$  were included in the equation (Ganzach, 1997; Laird & De Los Reyes, 2013). The scores of mother- and adolescent-reported family functioning were standardized. As suggested by Edwards (1994), a higher order model (i.e., cubic terms and quadratic interactions) would be added to the tested model to make sure that the complexity of the relationships was taken into account. Significant interaction terms were interpreted by plotting predicted outcome values and calculating simple slopes at high (+1 *SD*) and low (-1 *SD*) levels of the moderator as recommended by Cohen et al. (2003).

## Results

The descriptive statistics of the measures are presented in Table 1. Correlational analyses showed that mother-reported and adolescent-reported family functioning were positively associated with adolescents' beliefs in the future, resilience, cognitive competence, self-determination and self-efficacy (Table 2).

Regarding Research Question 1, paired t-test analyses showed that there was a significant mean difference between mothers' reports and adolescents' reports of family functioning,  $t = 5.370$  ( $p < .001$ ). Cohen's  $d$  value is 0.294, which is considered as small to medium according to Cohen's suggestion (1988). The mean and standard deviation of

mother-reported family functioning are 129.75 and 17.31 respectively, and those of adolescent-reported family functioning are 124.19 and 20.59 respectively. Mothers reported more positive family functioning than did adolescents. Hypothesis 1 was supported.

Regarding Research Question 2, the polynomial regression analyses were used to test the interaction effect of mother-reported and adolescent-reported family functioning on the five components of positive youth development: beliefs in the future, resilience, cognitive competence, self-efficacy, and self-determination.

For beliefs in the future, the results of the polynomial regression showed that the model significantly predicted adolescents' beliefs in the future ( $R = .411, p < .001$ ), which accounted for 16.9% of the variance of adolescents' beliefs in the future (Table 3). However, when a higher order model (i.e., quadratic interactions and cubic terms) was tested, the model became non-significant. The interaction between mother-reported and adolescent-reported family functioning significantly predicted beliefs in the future of adolescents ( $b = -.316, SE = .154, p < .05$ ; Table 3). The linear and quadratic terms of mother reports and linear term of adolescent reports predicted beliefs in the future. The positive association between adolescent-reported family functioning and beliefs in the future was stronger when mother-reported family functioning was low ( $b = 1.389, SE = .229, p < .001$ ; Table 4) than when it was high ( $b = .757, SE = .214, p < .001$ ; Table 4). As illustrated in Figure 1, if adolescents had negative views of family functioning, their beliefs in future scores would be the lowest when mothers also reported negative views of family functioning. However, the beliefs in future scores were higher if mothers had relatively positive perceptions of family functioning. On the other hand, for the adolescents who reported positive view of family functioning, the beliefs in future scores did not differ much under different levels of mother-reported family functioning. Hence, the findings suggest that mother-reported family functioning is a moderator of the influence of adolescent-reported family functioning on

adolescents' beliefs in the future.

Similar results were found when adolescent resilience served as the outcome variables. Results of polynomial regression showed that the model significantly accounted for 26.2% of the variance of adolescents' beliefs in the future (Table 3). The interaction between mother- and adolescent-reported family functioning significantly predicted adolescent resilience ( $b = -.258, SE = .126, p < .05$ ; Table 3). The linear term of adolescent reports and quadratic term of mother reports predicted resilience. The positive association between adolescent-reported family functioning and resilience was stronger when mother-reported family functioning was low ( $b = 1.578, SE = .187, p < .001$ ; Table 4) relative to high ( $b = 1.062, SE = .175, p < .001$ ; Table 4). In adolescents having negative views of family functioning, congruency of low mother-reported and low adolescent-reported family functioning was associated with lower level of resilience. But the resilience scores were higher if mothers had relatively positive reports of family functioning. However, for adolescents who reported positive view of family functioning, there were higher resilience scores when mothers reported lower levels of family functioning (Figure 2). A higher order model did not yield significant prediction to adolescent resilience.

Regarding cognitive competence, the polynomial regression model significantly accounted for 17.7% of the variance of adolescents' cognitive competence (Table 3). The interaction between mother- and adolescent-reported family functioning significantly predicted cognitive competence of adolescents ( $b = -.314, SE = .130, p < .05$ ; Table 3). The linear and quadratic terms of adolescent reports, as well as the quadratic term of mother reports, predicted cognitive competence. The positive association between adolescent-reported family functioning and cognitive competence was stronger when mother-reported family functioning was low ( $b = 1.334, SE = .193, p < 0.001$ ; Table 4) relative to high ( $b = .706, SE = .181, p < .001$ ; Table 4). When adolescents had negative



reports of family functioning, their scores on cognitive competence were at the lowest level when mothers also reported negative views of family functioning. But the cognitive competence scores were higher when mothers reported relatively positively on family functioning. On the contrary, for adolescents who reported positive view of family functioning, cognitive competence scores were higher if mothers reported lower levels of family functioning (Figure 3). A higher-order model did not yield significant prediction to cognitive competence of adolescents.

Regarding self-determination, the polynomial regression model significantly accounted for 14.5% of the variance of adolescents' self-determination (Table 3). The interaction between mother- and adolescent-reported family functioning significantly predicted self-determination of adolescents ( $b = -.404$ ,  $SE = .139$ ,  $p < .01$ ; Table 3). Only linear and quadratic terms of adolescent reports predicted self-determination, but mother reports did not. The positive association between adolescent-reported family functioning and self-determination was stronger when mother-reported family functioning was low ( $b = 1.442$ ,  $SE = .206$ ,  $p < .001$ ; Table 4) relative to high ( $b = .634$ ,  $SE = .192$ ,  $p = .001$ ; Table 4). When adolescents reported negatively on family functioning, their self-determination scores were at the lowest level when mothers also reported negatively on family functioning. But the self-determination scores were higher when mothers reported relatively positively on family functioning. On the contrary, for the adolescents who reported positive views of family functioning, a reverse trend was obtained. The self-determination scores were higher if mothers reported lower levels of family functioning (Figure 4). A higher order model did not yield significant prediction between interaction term of mother- and adolescent-reported family functioning and self-determination of adolescents.

Lastly, the polynomial regression model significantly accounted for 11.8% of the variance of adolescents' self-efficacy (Table 3). The interaction between mother- and

adolescent-reported family functioning significantly predicted self-efficacy of adolescents ( $b = -.204, SE = .097, p < .05$ ; Table 3). The linear and quadratic terms of mother reports and the linear term of adolescent reports predicted self-efficacy. The positive association between adolescent-reported family functioning and self-efficacy was stronger when mother-reported family functioning was low ( $b = .761, SE = .144, p < 0.001$ ; Table 4) relative to high ( $b = .353, SE = .180, p = .009$ ; Table 4). When adolescents had negative views of family functioning, their self-efficacy scores were at the lowest level when mothers also had negative views of family functioning. However, self-efficacy scores were higher when mothers had a relatively positive view on family functioning. In contrast, when adolescents reported positive views of family functioning, their self-efficacy scores were higher in cases where mothers reported more negative views on family functioning (Figure 5). When a higher order model (i.e., quadratic interactions and cubic terms) was tested, the results became non-significant.

## Discussion

The study attempted to examine whether the interactions between mothers' reports and adolescents' reports of family functioning predicted adolescents' developmental outcomes in Chinese single-mother families experiencing economic disadvantage. The results indicate that there were significant differences between mother-reported family functioning and adolescent-reported family functioning in Chinese single-mother families experiencing economic disadvantage, with adolescents reporting less positively than did their mothers. Besides, interaction effects between mother-reported and adolescent-reported family functioning negatively predicted adolescent developmental outcomes indexed by beliefs in the future, resilience, cognitive competence, self-efficacy and self-determination.

The study brings theoretical and methodological advances to the literature. Theoretically, Chinese single-mother families experiencing economic disadvantage were selected as the target of study. They are the “hidden” and vulnerable community in the Chinese contexts due to social stigmatization (Leung & Shek, in-press). To the best of our knowledge, research on examining the discrepant views between parents and adolescents has never addressed this target community. Second, by examining interaction effects between mother-reported and adolescent-reported family functioning in the prediction of adolescent developmental outcomes, a more direct and clearer picture illustrating how parents’ reports and adolescents’ reports interact with each other in the prediction of adolescent development is possible. Methodologically speaking, as criticized by Laird and De Los Reyes (2013) that difference scores “cannot validly assess informant discrepancies” (p. 11), the study employed polynomial regression that effectively modeled congruence and discrepancy between parents and adolescents. The study provides evidence that mother-adolescent discrepancies of reporting family functioning predicted adolescents’ positive developmental outcomes, over-and-above the main effects of mothers’ reports and adolescents’ reports of family functioning.

The results echoed previous studies in that adolescents perceived family functioning as more negative than their mothers in Chinese single-mother families experiencing economic disadvantage. The theoretical explanations of individuation processes during the stage of adolescence (Grotevant & Cooper, 1986), the “generational stake” hypothesis (Lerner & Spanier, 1980), and family miscommunication and disorganization (Olson et al., 1983; Minuchin, 1985) may account for the discrepant views. As the study did not aim to examine the relative superiority of these hypotheses, future studies in this area are recommended.

Furthermore, the results indicate that the interactions between mother-reported and adolescent-reported family functioning predicted adolescent developmental outcomes

indexed by beliefs in the future, resilience, cognitive competence, self-efficacy and self-determination. The influence of adolescent-reported family functioning on developmental outcomes is stronger under a low level of mother-reported family functioning than a high level of mother-reported family functioning. As illustrated in the figures, in adolescents who reported low levels of family functioning, adolescent developmental outcomes were at the lowest level when mothers also reported low levels of family functioning. Congruence of mother reports and adolescent reports of low levels of family functioning suggest miscommunication and conflicts within the family, which may hamper adolescent development (Minuchin, 1985). However, the scores of adolescent developmental outcomes would be relatively higher, if their mothers reported more positive family functioning. Based on a family capital theory (Coleman, 1990), effective family functioning provides a healthy, supportive and nurturing environment for the development of adolescents. Hence, it is reasonable that adolescent developmental outcomes are enhanced when mothers cherish a warm and healthy environment for their children's development. As adolescents generally had more negative perceptions of family functioning than mothers in the previous studies (Leung & Shek, 2013; Ohannessian et al., 2000; Shek, 2006) and current findings, it is understandable that mother-reported family functioning matters even for adolescents who reported a lower level of family functioning. As a conclusion, at a low level of adolescent-reported family functioning, mother-reported family functioning serves as a protective factor that moderates the impacts of adolescent-reported family functioning on adolescent development.

On the contrary, adolescents who reported a higher level of family functioning expressed better developmental outcomes when mothers reported a lower level of family functioning than those who reported a higher level of family functioning. There are two possibilities to account for the results. One possibility is that high levels of family functioning reported by

both mothers and adolescents indicate that mothers provide intensive care and nurturance for the adolescents as a compensation to their offspring due to family disruption (Nelson et al., 2007). Unfortunately, over-protection of mothers may cultivate a sense of reliance in adolescents towards their mothers, which may hinder adolescent development for resilience, effective problem-solving and decision making. This is particularly obvious in adolescents' self-determination. When mothers report a high level of family functioning, adolescents can rely more on their mothers in decision making. Whereas under a low level of family functioning reported by mothers, adolescents may need to be more determined in making their own decisions. In this case, congruency of high levels of mother-reported and adolescent-reported family functioning may not provide sufficient chances for adolescents to develop, perform, and practice.

Another possibility is that single-mothers may exhibit stress and depression in the face of marital breakdown and financial hardship (Jones et al., 2007). The multiple roles of family management, child rearing, and juggling of financial resources create extra burdens to single-mothers. This is particularly problematic when single-mothers have self-blame and perceive marital breakdown as their failure to hold their partner and maintain family solidarity (Anderson, 2003). Under these circumstances, single-mothers may report a lower level of family functioning. However, some adolescents who are more understanding and empathic on their mothers' situations may take up more family roles and obligations so as to smoothen their mothers' burdens. A sense of filial obligation was found to be associated with better family relationships and more motivation of Chinese adolescents (Fuligni & Zhang, 2004; Li et al., 2014). Adolescents may become more resilient, motivated, determined and competent in order to take up more family obligations, and they behave well so as to please their mothers (Fuligni et al., 1999; Leung & Shek, 2015). The findings also reflect the interdependent relationships between parents and children in the Chinese culture where

familism and collectivism is stressed (Yeh & Yang, 1997). Adolescents may perform more family duties so as to restore proper family functioning when they perceive mothers having difficulties in managing the family roles. Although adolescents and mothers may have discrepancies in perceived family functioning, they are not necessarily antagonistic with each other. On the contrary, they may work complementarily with each other for the family as a whole. As studies of family functioning, filial obligations and adolescent development in single-parent families are severely lacking, more future research on understanding the relationships is suggested.

### **Implications of the Study**

There are several methodological, theoretical and practical implications of the study. Methodologically speaking, the study is a good demonstration of the use of polynomial regression to examine how congruency and discrepancy of informant reports contributes to adolescent development. This approach is a methodological advance when compared with the historical approach of calculating discrepancy scores in assessing informant discrepancies, as it takes care of the interaction effects of informant reports above-and-beyond the influence of each individual informant report.

Theoretically, the study examined the influence of interaction effects of mother-reported and adolescent-reported family functioning on adolescent developmental outcomes in Chinese single-mother families experiencing economic disadvantage. In view of the paucity of research in this area, the present study brings an important addition to the social science literature. Second, the present findings suggest a stronger influence of adolescent-reported family functioning and developmental outcomes when mothers report a lower level of family functioning, which provides some leads for future research and model construction. This may

contribute to the study of adolescence by examining how congruent and discrepant views between mothers and adolescents on family functioning influence adolescent development.

Practically, echoing the previous studies (e.g., Leung & Shek, 2013; Ohannessian et al., 2000) that parents and adolescents might have different perceptions of family functioning, family practitioners should understand the views of different family members during clinical assessment and treatment. Family practitioners and youth counselors should be sensitive to different perceptions and interpretations of family functioning between the dyads, and facilitate their mutual understanding and dyadic communication.

Besides, the findings suggest that single-mother families having higher levels of mother-reported and adolescent-reported family functioning may have lower scores of adolescent developmental outcomes than those families reporting high levels of adolescent-reported family functioning but low levels of mother-reported family functioning. There is a possibility that the over-protective environment provided by mothers may hinder adolescents' pursuit of resilience, self-determination and other competencies. Youth counselors may consider providing more opportunities for adolescents to build their competence via adolescent developmental programs. Family life education programs are essential to enhance mothers' sensitivity and parenting strategies in nurturing their offspring.

Last but not the least, family practitioners and youth counselors should be aware of the impacts on adolescent development when adolescents report a higher level of family functioning and mothers report low level of family functioning. On one hand, it provides an optimistic view that even though single-mothers report low levels of family functioning, more effective family functioning reported by adolescents predicts better developmental outcomes of adolescents. On the other hand, adolescents may experience stress and pressure to maintain effective family functioning and strive for excellence, with the lack of family consensus and support. Researchers and family therapists suggested that "parentification" of

adolescents (i.e., children and adolescents assume roles and responsibilities of a parent; Walsh et al., 2006) is a common phenomenon exhibited in single-parent families (Garber, 2001; Peris & Emery, 2005). “Parentified” adolescents may need to take care of the needs of their parents and families at the expense of their own developmentally appropriate needs (Castro, Jones & Mirsalimi, 2004). Adolescents are pushed to be “adultified”, i.e., acquiring adult knowledge, taking up adult role and performing adult duties (Burton, 2007). Though there is evidence showing that “parentified” children are more resilient and assertive (Hooper, Marotta, & Lanthier, 2008), there are ample studies indicating that “adolescent parentification” is associated with enmeshed family relationships and adolescent pathological problems such as shame, excessive guilt, worries, and depression (Garber, 2001; Jurkovic, 1997, 1998). Family practitioners and youth counselors should be sensitive to the roles and stresses of adolescents and parents, and provide counseling service when necessary.

### **Limitations of the Study**

There are several limitations of the present study. First, as the respondents were not randomly sampled, generalizability of the findings may be limited. Second, cross-sectional approaches as to research designs have the inherent problem of inferring cause-and-effect relationships. As such, a longitudinal research design is suggested for future studies. Third, as the findings were based on Chinese single-mother families experiencing economic disadvantage in Hong Kong, similar studies in different Chinese communities (e.g., mainland China) and the Western contexts are encouraged.

### **Conclusion**

The study shows that adolescents reported more negative family functioning than their mothers in Chinese single-mother families experiencing economic disadvantage. Furthermore,



it suggests that mother-reported family functioning moderates the relationship between family functioning and developmental outcomes reported by Chinese adolescents. The study not only provides empirical support to the previous studies (Leung & Shek, 2013; Ohannessian et al., 2000; Shek, 2006), but also advances our understanding on how the interaction between mother-reported and adolescent-reported family functioning contributes to adolescent developmental outcomes in Chinese poor single-mother families. The results suggest that adolescent developmental outcomes are at the lowest level when there is a congruence between mothers' reports and adolescents' reports of negative family functioning. However, adolescent developmental outcomes would reach a higher level when adolescents report more positive family functioning and mothers report less positive family functioning. The findings provide insights on how congruency and discrepancy between informant reports of family functioning would influence adolescent development, which has important implications for the study of adolescence. As a result, the study addresses Ohannessian et al.'s (2000) conclusion that "more research is needed to examine how and to what extent adolescents and their parents contribute to and are affected by discrepancies in their perceptions" (p.371).

## References

- Anderson, C. (2003). The diversity, strengths, and challenges of single-parent households. In F. Walsh, (Ed.), *Normal family processes: Growing diversity and complexity* (pp. 121-151). New York: Guilford.
- Bandura, A. (1997). Self-efficacy. Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191-215.
- Bandura, A., & Cervone, D. (1983). Self-evaluative and self-efficacy mechanisms governing the motivational effects of goal systems. *Journal of Personality and Social Psychology*, 45, 1017-1028.
- Beavers, W.R., Hampson, R.B., & Hugles, Y.F. (1990). *Beavers systems model manual*. Dallas, TX: Southwest Family Institute.
- Beaver, W.R., & Hampson, R.B. (2003). Measuring family competence: The Beavers Systems Model. In F. Walsh (Ed.), *Normal family processes: Growing diversity and complexity (3<sup>rd</sup> Ed.)* (pp. 549-580). New York: Guilford.
- Bengtson, V.L., & Kuypers, J.A. (1971). Generational differences and the developmental stake. *Aging and Human Development*, 2, 249-260.
- Burton, L. (2007). Childhood adultification in economically disadvantaged families: A conceptual model. *Family Relations*, 56, 329–345.
- Castro, D. M., Jones, R. A., & Mirsalimi, H. (2004). Parentification and the impostor phenomenon: An empirical investigation. *The American Journal of Family Therapy*, 32(3), 205-216.
- Catalano, R.F., Berglund, M.L., Ryan, J.A.M., Lonczak, H.S., & Hawkins, J.D. (2002, June 24). Positive youth development in the United States: Research findings on evaluation of positive youth development programs. *Prevention and Treatment*, 5(Article 15), 1-111.
- Chao, R.K., & Sue, S. (1996). Chinese parental influence and their children's school success:

- a paradox in the literature on parenting styles. In S. Lau (Ed.), *Growing up the Chinese way --- Chinese child and adolescent development* (pp. 93-120). Hong Kong: The Chinese University Press.
- Census and Statistics Department. (2012). *Feature Article: Statistics on Comprehensive Social Security Assistance Scheme, 2001 to 2011*. [Electronic version]. Retrieved February 20, 2016 from <http://www.statistics.gov.hk/pub/B71209FB2012XXXXB0100.pdf>
- Cheung, C.S., & McBride-Chang, C. (2008). Relations of perceived maternal parenting style, practices, and learning motivation to academic competence in Chinese children. *Merrill-Palmer Quarterly*, 54(1), 1-22.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences*. New Jersey: Lawrence Erlbaum Associates.
- Cohen, J., Cohen, P., West, S. G., & Aiken, L. S. (2003). *Applied multiple regression/correlation analysis for the behavioral sciences (3rd ed.)*. Hillsdale, NJ: Lawrence Erlbaum.
- Coleman, J.S. (1990). *Foundations of Social Theory*, Cambridge, MA: Harvard University Press.
- Damon, W. (2004). What is positive youth development? *Annals of the American Academy of Political and Social Science*, 591, 13-24.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York, NY: Plenum.
- Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological inquiry*, 11(4), 227-268.
- De Los Reyes, A., & Kazdin, A.E. (2004). Measuring informant discrepancies in clinical child research. *Psychological Assessment*, 16, 330-334.
- De Los Reyes, A., & Kazdin, A. E. (2005). Informant discrepancies in the assessment of

- childhood psychopathology: A critical review, theoretical framework, and recommendations for further study. *Psychological Bulletin*, 131, 483–509.
- De Los Reyes, A, Ohannessian, C.M., & Laird, R.D. (2016). Developmental changes in discrepancies between adolescents' and their mothers' views of family communication. *Journal of Child and Family Studies*, 25, 790-797.
- Edwards, J. R. (1994). The study of congruence in organizational behavior research: critique and a proposed alternative. *Organizational Behavior and Human Decision Processes*, 58, 51–100.
- Epstein, N.B., Bishop, D.S., & Levin, S. (1978). The McMaster model of family functioning. *Journal of Marriage and Family Counseling*, 4, 19-31.
- Epstein, N.B., Ryan, C.E., Bishop, D.S., Miller, I.W., & Keitner, G.I. (2003). The McMaster Model: A view of healthy family functioning. In F. Walsh (Ed.). *Normal family processes: Growing diversity and complexity* (pp. 581-607). New York: Guilford.
- Feinberg, M.E., Howe, G.W., Reiss, D., & Hetherington, E.M. (2000). Relationship between perceptual differences of parenting and adolescent antisocial behavior and depressive symptoms. *Journal of Family Psychology*, 14, 531-555.
- Fuligni, A.J., Tseng, V. & Lam, M. (1999). Attitudes toward Family Obligations among American Adolescents with Asian, Latin American, and European Backgrounds. *Child Development*, 70, 1030-1044.
- Fuligni, A.J., & Zhang, W. (2004). Attitudes toward family obligation among adolescents in contemporary urban and rural China. *Child Development*, 74, 180-192.
- Ganzach, Y. (1997). Misleading interaction and curvilinear terms. *Psychological Methods*, 2, 235–247.
- Garber, B. D. (2011). Parental alienation and the dynamics of the enmeshed parent–child dyad: Adultification, parentification, and infantilization. *Family Court Review*, 49(2),

- 322-335.
- Grotevant, H.D., & Cooper, C.R. (1986). Individuation in family relationships: A perspective on individual differences in the development of identity and role-taking skills in adolescence. *Human Development, 29*, 82-100.
- Guion, K., Mrug, S., & Windle, M. (2009). Predictive value of informant discrepancies in reports of parenting: Relations to early adolescents' adjustment. *Journal of Abnormal Child Psychology, 37*, 17-30.
- Hetherington, E. M. (1992). I. Coping with marital transitions: A family systems perspective. *Monographs of the society for research in child development, 57*(2-3), 1-14.
- Hong Kong Youth Development Council. (2001). *Holistic development in secondary school students in Hong Kong: Assessment and research*. Hong Kong: Hong Kong Youth Development Council.
- Hooper, L. M., Marotta, S. A., & Lanthier, R. P. (2008). Predictors of growth and distress following childhood parentification: A retrospective exploratory study. *Journal of Child and Family Studies, 17*(5), 693-705.
- Jones, D.J., Zalot, A.A., Foster, S.E., Sterrett, E., & Chesterm C. (2007). A review of childrearing in African American single mother families: The relevance of a coparenting framework. *Journal of Child and Family Studies, 16*, 671-683.
- Jurkovic, G.J. (1 997). *Lost Childhoods: The Plight of the Parentified Child*. Philadelphia: Brunner/Mazel.
- Jurkovic, G. J. (1998). Destructive parentification in families: Causes and consequences. In L' Abate L . (ed.) *Handbook of Family Psychopathology* (pp. 237-255), New York: Guilford.
- Laird, R. D., & De Los Reyes, A. (2013). Testing informant discrepancies as predictors of adolescent psychopathology: Why difference scores cannot tell you what you want to know and how polynomial regression may. *Journal of Abnormal Child Psychology, 41*,

1–14.

- Laird, R. D., & Weems, C. F. (2011). The equivalence of regression models using difference scores and models using separate scores for each informant: Implications for the study of informant discrepancies. *Psychological Assessment, 23*, 388–397.
- Lerner, R.M., & Knapp, J.R. (1975). Actual and perceived intra-familial attitudes of late adolescents and their parents. *Journal of Youth and Adolescence, 4*, 17-36.
- Lerner, R.M., & Spanier, G.B. (1980). *Adolescent development: A life-span perspective*. New York: McGraw-Hill.
- Lerner, J.V., Phelps, E., Forman, Y., & Roeser, R.W. (2009). Positive youth development. In R.M. Lerner, & L. Steinberg (Eds.), *Handbook of adolescent psychology* (pp. 524-558).
- Leung J.T.Y., & Shek, D.T.L. (2013). Parent-adolescent discrepancies in perceived family functioning and developmental outcomes in Chinese adolescents experiencing economic disadvantage. *International Journal of Disability and Human Development, 12*(2), 163-174.
- Leung J.T.Y., & Shek, D.T.L. (2014). Parent-adolescent discrepancies in perceived parenting characteristics and adolescent developmental outcomes in poor families. *Journal of Child and Family Studies, 23*(2), 200-213.
- Leung J.T.Y., & Shek, D.T.L. (in-press). Family Functioning, Filial Piety and Adolescent Psychosocial Competence in Chinese Single-mother Families Experiencing Economic Disadvantage: Implications for Social Work. *British Journal of Social Work*. DOI: 10.1093/bjsw/bcv119
- Li, X., Zou, H., Liu, Y., & Zhou, Q. (2014). The relationships of family socioeconomic status, parent-adolescent conflict, and filial piety to adolescents' family functioning in Mainland China. *Journal of Child and Family Studies, 23*, 29-38.
- Luthar, S.S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: a critical

- evaluation and guidelines for future work. *Child Development*, 71(3), 543-62.
- Minuchin, P. (1985). Families and individual development: Provocations from the field of family therapy. *Child Development*, 56, 289-302.
- Montemayor, R., & Flannery, D.J. (1991). Parent-adolescent relations in middle and late adolescence. In R.M. Lerner, A.C. Petersen, & J. Brooks-Gunn (Eds.), *Encyclopedia of adolescence* (pp. 729-734). New York: Garland.
- Nelson, J. A., O'Brien, M., Blankson, A. N., Calkins, S. D., & Keane, S. P. (2009). Family stress and parental responses to children's negative emotions: Tests of the spillover, crossover, and compensatory hypotheses. *Journal of Family Psychology*, 23(5), 671-679.
- Niemi, R.G. (1974). *How family members perceive each other: Political and social attitudes in two generations*. New Haven, CT: Yale University Press.
- Ohannessian, C.M., Lerner, R.M., Lerner, J.V., & von Eye, A. (2000). Adolescent-parent discrepancies in perceptions of family functioning and early adolescent self-competence. *International Journal of Behavioural Development*, 24(3), 362-372.
- Olson, D.H., McCubbin, H.I., Larsen, A.S., Muxen, M.J., & Wilson, M.A. (1983). *Families: What makes them work*. Thousand Oaks, CA: Sage.
- Peris, T. S., & Emery, R. E. (2005). Redefining the parent-child relationship following divorce: Examining the risk for boundary dissolution. *Journal of Emotional Abuse*, 5(4), 169-189.
- Shek, D.T.L. (1993). Measurement of pessimism in Chinese adolescents: The Chinese Hopelessness Scale. *Social Behavior and Personality*, 21, 107-119.
- Shek, D. T. (1997). The relation of family functioning to adolescent psychological well-being, school adjustment, and problem behavior. *The Journal of Genetic Psychology*, 158(4), 467-479.
- Shek, D. T. L. (2002). Assessment of family functioning Chinese adolescents: The Chinese

- Family Assessment Instrument. In N. N. Singh, T. Ollendick, & A. N. Singh (Eds.), *International perspectives on child and adolescent Mental Health* (pp. 297-316). Amsterdam, Netherlands: Elsevier.
- Shek, D. T. L. (2004). Chinese cultural beliefs about adversity: Its relationship to psychological well-being, school adjustment and problem behavior in Chinese adolescents with and without economic disadvantage. *Childhood, 11*, 63-80.
- Shek, D.T.L. (2006). Chinese family research: Puzzles, progress, paradigms, and policy implications. *Journal of Family Issues, 27*(3), 275-284.
- Shek, D.T.L., & Chan, L.K. (1998). Perceptions of the happy family in a Chinese context. *Journal of Youth Studies, 1*, 178-189.
- Shek, D.T.L., & Ma, C.M.S. (2010). The Chinese Family Assessment Instrument (C-FAI): Hierarchical confirmatory factor analyses and factorial invariance. *Research on Social Work Practice, 20*, 112-123.
- Shek, D.T.L., Siu, A.M.H., & Lee, T.Y. (2007). The Chinese Positive Youth Development Scale: A validation study. *Research on social Work Practice, 17*, 380-391.
- Siu, A.M.H., & Shek, D.T.L. (2005). The Chinese version of the Social Problem-solving Inventory: some initial results on reliability and validity. *Journal of Clinical Psychology, 61*, 347-360.
- Steinberg, L.D. (1991). Parent-adolescent relations. In R.M. Lerner, A.C. Petersen, & J. Brooks-Gunn (Eds.), *Encyclopedia of adolescence* (pp. 724-728). New York: Garland.
- Sun, R.C.F., & Hui, E.K.P. (2012). Cognitive competence as a positive youth development construct: A conceptual review. *TheScientificWorldJournal, Volume 2012*. Article ID 210953. DOI: 10:1100.2012/210953
- Sun, R. C.F., & Shek, D.T.L. (2012). Beliefs in the future as a positive youth development construct: A conceptual review. *TheScientificWorldJournal, Volume 2012*. Article ID



527038. DOI: 10:1100.2012/527038

- Tsang, S. K., Hui, E. K., & Law, B. (2012). Positive identity as a positive youth development construct: A conceptual review. *TheScientificWorldJournal*, 2012, Article ID 529691, 8 pages, 2012. doi:10.1100/2012/529691
- Walsh, S., Shulman, S., Bar-On, Z., & Tsur, A. (2006). The roles of parentification and family climate in adaptation among immigrant adolescents in Israel. *Journal of Research on Adolescence*, 16, 321-350.
- Westland, J.C. (2010). Lower bounds on sample size in structural equation modeling. *Electronic Commerce Research and Applications*, 9(6), 476-487.
- Yeh, M.H., & Yang, K.S. (1997). Chinese familism: conceptual analysis and empirical assessment. *Bulletin of the Institute of Ethnology, Academia Sinica (Taiwan)*, 83, 169-225. [in Chinese].

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## **Authors' Contributions**

JL conceived of the study, participated in its design and coordination and drafted the manuscript; DS participated in consultation of the research design, interpretation of the data and editing of the manuscript. LL participated in performing the statistical analysis, helped in interpreting the data and drafting the manuscript. All authors read and approved the final manuscript.

## **Conflicts of Interest**

The authors report no conflict of interests.

## **Compliance with Ethical Standards**

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### **Ethical approval**

The authors declare that all procedures performed in studies involving human participants were in accordance with the ethical standards of Human Subjects Ethics Sub-committee of The Hong Kong Polytechnic University.

### **Informed consent**

Informed consent was obtained from all individual participants included in the study.

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**Table 1.** Descriptive statistics of measuring variables ( $N = 432$ )

	Measuring variables	Range	Mean	SD	Cronbach's Alpha	Inter-item correlations coefficient
Mother	Family functioning	33-165	129.75	17.31	0.926	0.310
Adolescent	Family functioning	33-165	124.19	20.59	0.946	0.373
	Beliefs in the future	3-18	12.96	3.19	0.808	0.596
	Resilience	3-18	14.06	2.77	0.826	0.613
	Cognitive competence	3-18	13.79	2.71	0.861	0.675
	Self-efficacy	3-18	13.59	2.84	0.689	0.531
	Self-determination	2-12	9.06	1.96	0.827	0.617

**Table 2.** Correlations of the measuring variables

	1	2	3	4	5	6	7
1. Mother-reported family functioning	1.000						
2. Adolescent-reported family functioning	0.365***	1.000					
3. Beliefs in the future	0.231***	0.378***	1.000				
4. Resilience	0.176***	0.489***	0.617***	1.000			
5. Cognitive competence	0.198***	0.386***	0.605***	0.671***	1.000		
6. Self-determination	0.143**	0.357***	0.642***	0.817***	0.738***	1.000	
7. Self-efficacy	0.174***	0.306***	0.637***	0.511***	0.620***	0.653***	1.000

\*\*  $p < 0.01$ , \*\*\*  $p < 0.001$

**Table 3.** Parent and adolescent (adol.) reports as predictors of adolescent developmental outcomes

Family functioning	Beliefs in the Future				Resilience				Cognitive competence			
	<i>b</i>	<i>SE</i>	<i>B</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>B</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>B</i>	<i>p</i>
Constant	12.670	0.196		0.000	13.751	0.160		0.000	13.441	0.166		0.000
Mother report	0.445	0.159	0.139	0.005	0.115	0.130	0.042	0.377	0.247	0.135	0.102	0.067
Adol. report	1.073	0.159	0.336	0.000	1.320	0.130	0.476	0.000	1.020	0.134	0.284	0.000
Adol. X Mother	-0.316	0.154	-0.108	0.041	-0.258	0.126	-0.102	0.041	-0.314	0.130	-0.114	0.016
Mother squared	0.270	0.115	0.114	0.020	0.323	0.094	0.157	0.001	0.225	0.098	0.119	0.022
Adol. Squared	0.132	0.114	0.060	0.250	0.077	0.094	0.040	0.412	0.239	0.097	0.094	0.014
<i>R</i>			0.411	< 0.001			0.512	< 0.001			0.421	0.006
<i>R</i> <sup>2</sup>			0.169				0.262				0.177	

Family functioning	Self-determination				Self-efficacy			
	<i>b</i>	<i>SE</i>	<i>B</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>B</i>	<i>p</i>
Constant	13.336	0.176		0.000	8.830	0.124		0.000
Mother report	0.101	0.143	0.035	0.483	0.199	0.101	0.102	0.049
Adol. report	1.038	0.143	0.366	0.000	0.557	0.100	0.284	0.000
Adol. X Mother	-0.404	0.139	-0.155	0.004	-0.204	0.097	-0.114	0.037
Mother squared	0.180	0.104	0.086	0.084	0.173	0.073	0.119	0.018
Adol. Squared	0.222	0.103	0.113	0.032	0.127	0.072	0.094	0.079
<i>R</i>			0.386	0.014			0.343	0.022
<i>R</i> <sup>2</sup>			0.149				0.118	

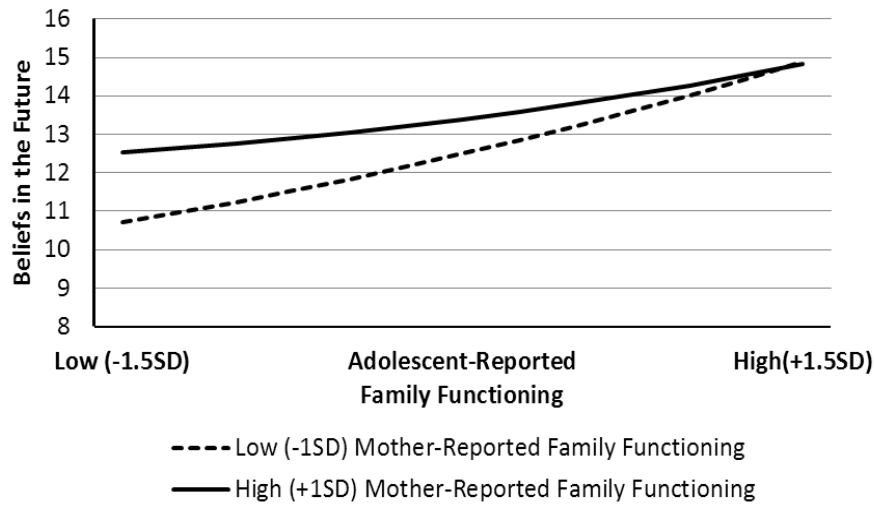
**Table 4.** Simple slope analyses of prediction of adolescent-reported family functioning on adolescent developmental outcomes having mother-reported family functioning as a moderator

Family functioning	Beliefs in the Future				Resilience				Cognitive competence			
	<i>b</i>	<i>SE</i>	<i>B</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>B</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>B</i>	<i>p</i>
Higher level of mother-reported family functioning (+1 SD)	0.757	0.214	0.237	< 0.001	1.062	0.175	0.383	< 0.001	0.706	0.181	0.260	< 0.001
Lower level of mother-reported family functioning (-1 SD)	1.389	0.229	0.435	< 0.001	1.578	0.187	0.569	< 0.001	1.334	0.193	0.492	< 0.001

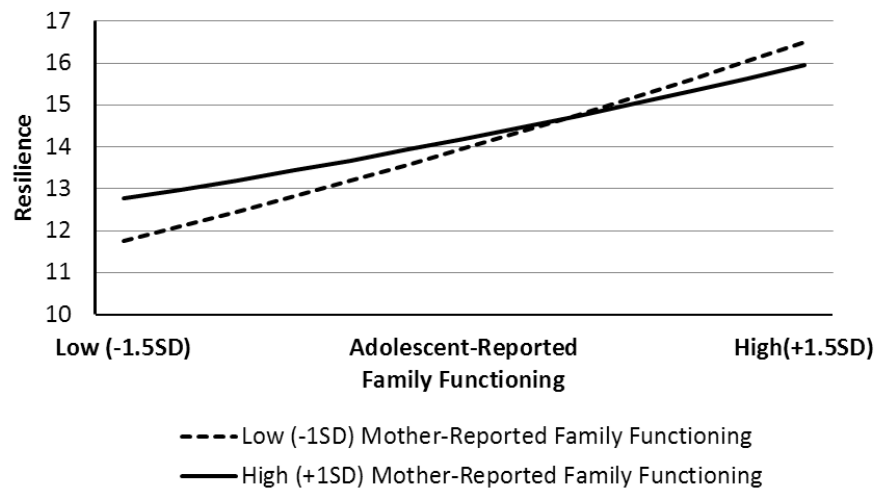
Family functioning	Self-determination				Self-efficacy			
	<i>b</i>	<i>SE</i>	<i>B</i>	<i>p</i>	<i>b</i>	<i>SE</i>	<i>B</i>	<i>p</i>
Higher level of mother-reported family functioning (+1 SD)	0.634	0.192	0.223	0.001	0.353	0.135	0.180	0.009
Lower level of mother-reported family functioning (-1 SD)	1.442	0.206	0.508	< 0.001	0.761	0.144	0.388	< 0.001

**Fig. 1** Predicted values of beliefs in the future as a function of adolescent-reported family functioning at high and low levels of mother-reported family functioning

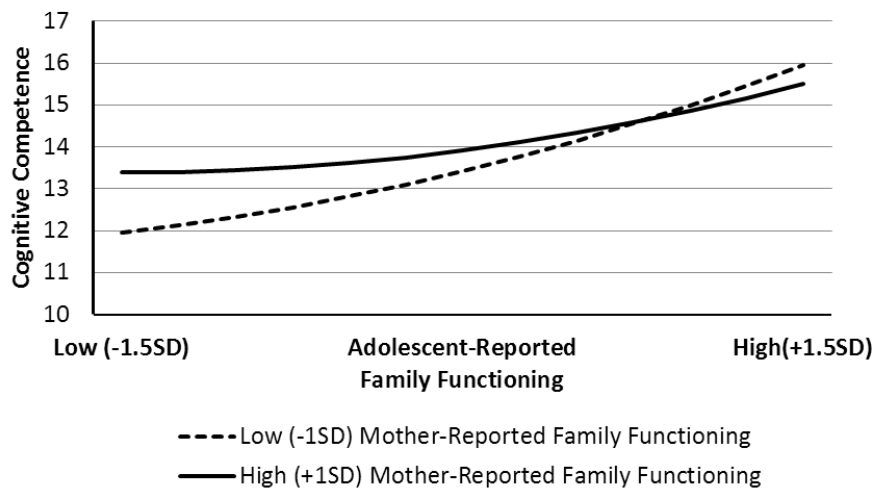




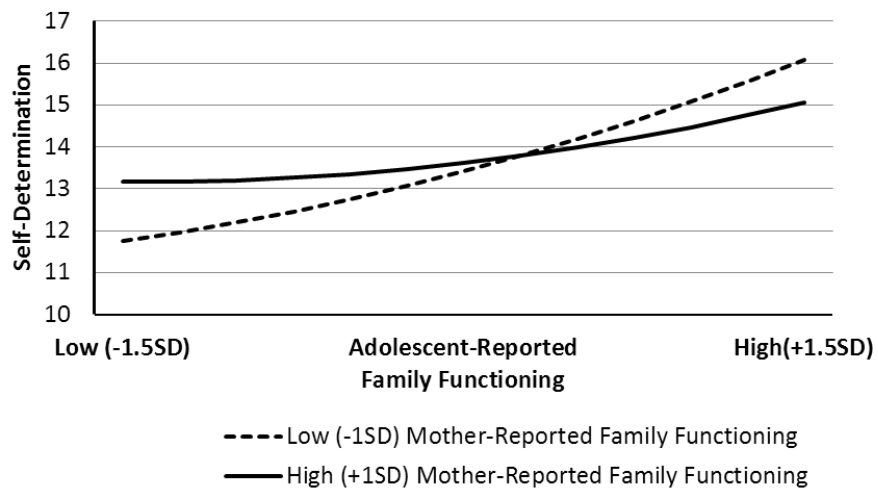
**Fig. 2** Predicted values of resilience as a function of adolescent-reported family functioning at high and low levels of mother-reported family functioning



**Fig. 3** Predicted values of cognitive competence as a function of adolescent-reported family functioning at high and low levels of mother-reported family functioning



**Fig. 4** Predicted values of self-determination as a function of adolescent-reported family functioning at high and low levels of mother-reported family functioning



**Fig. 5** Predicted values of self-efficacy as a function of adolescent-reported family functioning at high and low levels of mother-reported family functioning

