EXPLAINING THE LINK BETWEEN PARENTAL EDUCATIONAL EXPECTATIONS AND CHINESE HIGH SCHOOL STUDENTS’ ACADEMIC ACHIEVEMENT: THE ROLES OF PSYCHOLOGICAL DISTRESS, PARENTAL INVOLVEMENT, AND FILIAL PIETY

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EXPLAINING THE LINK BETWEEN PARENTAL EDUCATIONAL EXPECTATIONS AND CHINESE HIGH SCHOOL STUDENTS’ ACADEMIC ACHIEVEMENT: THE ROLES OF PSYCHOLOGICAL DISTRESS, PARENTAL INVOLVEMENT, AND FILIAL PIETY

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LIFESPAN DEVELOPMENTAL PSYCHOLOGY

ABSTRACT

The current study addressed the relationship between short-term and long-term parental educational expectations and Chinese high school students’ academic achievement. We proposed five factors and mechanisms to explain this relationship, including nonlinear associations of parental educational expectations with adolescents’ academic achievement, mediation effects of child psychological distress, mediation effects of parental involvement, effects of parent-child discrepancies in educational expectations, and moderating effects of filial piety. Four hundred and ninety-one 12th graders from a mainland Chinese high school and their parents were recruited in this study, with a mean age of 18.4 years and 57% girls. When not adjusting for previous achievement scores, we found: (1) No curvilinear effect of parental educational expectations on adolescents’ academic achievement, either for short-term or long-term expectations. (2) Adolescents’ psychological distress mediated effects of short-term but not long-term parental educational expectations on their academic achievement. Parents with high short-term expectations were related to low distress levels that in turn led to better children’s academic performance. (3) No mediation effects were found for parental involvement, either for short-term or long-term parental expectations. (4) When parent expectations were higher than children’s, greater parent-child discrepancies in short-term
educational expectations were associated with higher levels of distress and lower achievement; when child expectations were higher than parent’s, greater discrepancies were associated with lower levels of distress and higher achievement. Parent-child discrepancies in long-term educational expectations were only related to children’s academic achievement but not their psychological distress, and the association pattern of long-term expectational discrepancies with achievement performance was similar to that of short-term expectational discrepancies. (5) We found no moderating effects of filial piety on the direct and indirect effects of parental educational expectations and parent-child expectational discrepancies on children’s achievement. For analyses controlling for effects of previous achievement, most effects were attenuated due to the high correlation between previous and current achievement scores and none of the five hypotheses was supported under this condition. Limitations and implications of this study were discussed.
DEDICATION

This dissertation is dedicated to my parents and my fiancé, Jingyu
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CHAPTER 1
INTRODUCTION

Literature Review and Research Questions

It is well known that Asian cultures emphasize children’s educational achievement. This value orientation is rooted in Confucianism, an ancient Chinese philosophy that has survived for more than 2,000 years. At present, most Chinese still believe that academic success is the major force in shaping their children’s future. Not surprisingly, Chinese parents generally report high educational expectations for their children, including both Chinese immigrants and native Chinese (Crystal et al., 1994; Hao & Bonstead-Bruns, 1998; Mau, 1997). Subsequently, Chinese students are usually highly motivated and perform at a high level in academics (Phelps, 2005). In general, empirical studies and meta-analyses have established a solid link between high parental educational expectations and high child academic achievement, even after controlling for children’s prior achievement (Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2005, 2007; Rut&ick et al., 2009). Parents with high educational expectations promote children’s achievement through multiple ways, such as communicating with children about school experience, providing intellectual resources, and actively participating in school functions (Jeynes, 2005, 2007). In short, those parents are more involved in parenting practices that contribute to children’s scholastic achievement.
However, most of the studies on parenting and child achievement have been conducted in the U.S. Although some meta-analyses showed that the positive relationship between parental expectations and children’s academic achievement held across races (Jeynes, 2005, 2007), those few studies that included immigrant or native Chinese participants reported inconsistent results. In a cross-cultural comparison of direct and indirect effects of perceived parental educational expectations on adolescents’ academic achievement, no significant direct effects were reported for Asian participants (including Chinese and other Asians), but there was an indirect positive effect through students’ own educational expectations (Patrikakou, 1997). Two studies conducted in Hong Kong, China, suggested an opposite, negative effect of parental educational expectations on children’s achievement. One study found that a composite measure of perceived parental support, which included parental educational expectations, predicted adolescents’ lower academic achievement (Chen, 2005). The other study showed that high parental educational expectations contributed to low academic motivation (Chow & Chu, 2007), which is generally associated with low academic achievement (Areepattamannil & Freeman, 2008; Goldberg & Cornell, 1998). Other studies conducted in Mainland China reported either positive (Gu, 2005; Sun & Sun, 2001; Wan et al., 2003), negative (Gong, 2005), or negligible effects (Li, 1989; He, 2000) of parental educational expectations on children’s academic achievement or factors that have been reported to be positively related to children’s academic achievement.

The current study proposed several factors and mechanisms that may explain why parental educational expectations are not consistently positively related to academic achievement in Chinese adolescents. Those factors included: nonlinear associations of
parental educational expectations with adolescents’ academic achievement, child psychological distress, parental involvement in adolescents’ academic activities, parent-child discrepancies in educational expectations, and filial piety. We will discuss each factor in the following sections.

Curvilinear Effects of Parental Educational Expectations

The inconsistent findings among Chinese population may be partly due to differences in levels of educational expectations. Chinese American parents generally reported higher educational expectations than European American parents (Mau, 1997). It has been reported that Native Chinese parents, particularly those in big cities, generally hold unrealistically high academic expectations for their children. For instance, 95.5% of parents of K-12th graders in Shanghai expected their children to graduate from college, and 42.8% of them further expected a doctorate degree (Liu & Xiao, 2004). In reality, however, only 37% of high school graduates attend college in year 2008 (Ministry of Education of the People’s Republic of China, 2009). In contrast, in a nationally representative U.S. sample, 70% of parents expected their children to enter college and 28% actually enrolled in college. Only 11% parents expected post-college education of their children (Zhan & Sherraden, 2009).

Because Chinese parents seem to have unrealistically high educational expectations, such over-demanding expectations may have detrimental impacts on children’s academic achievement. This suggests a curvilinear effect of parental educational expectations on children’s academic achievement: moderate levels of parental educational expectations may have a facilitative effect on achievement, but
expectations that exceed a certain level may hinder children from achieving higher academic success.

**Psychological Distress**

Across different countries, low academic achievement is universally related to higher levels of internalizing symptoms, including academic stress, academic anxiety, and depression (Aluja & Blanch, 2002, 2004; Alva & Reyes, 1999; Chen, Rubin, & Li, 1995; Duchesne et al., 2008; Vaez & Laflamme, 2008). Additionally, students who perceive high educational expectations from parents tend to show greater psychological distress than those perceiving low expectations (Crystal et al., 1994). The adverse impact of high parental educational expectations has been commonly demonstrated in studies with Chinese students, especially its impact on academic stress and anxiety (Cui, 2005; Gong, 2005; Wan, 2002; Yip, Ngan, & Lam, 2003). Overdemanding expectation from parents can be an influential stressor that is detrimental to children’s mental health, especially if parents constantly compare their children with other students in a discouraging way (Guo, 2004). Therefore, psychological distress may be a mediator that links high parental academic expectations to low academic achievement among Chinese students.

**Parental Involvement**

Parental involvement is a multidimensional concept that encompasses a wide variety of parenting behaviors, such as communication with children about school experience, home supervision (e.g., restricting TV time, restricting going out with friends,
and check if homework is done), homework help, encouraging children to make good grades, and participating in school activities (Fan, 2001; Fan & Chen, 2001; Hill & Tyson, 2009). Studies conducted in the U.S. indicated that parental involvement in general is positively associated with children’s academic achievement (Gonzalez-Pienda et al., 2002; Jeynes, 2005, 2007; Kim & Rohner, 2002), and it partially mediates the effects of parental educational expectations on children’s achievement (Rutchick et al., 2009). However, certain dimensions of parental involvement (e.g., school participation) were found to be stronger predictors of child achievement than other dimensions (e.g., communication) (Fan & Chen, 2001; Hill & Tyson, 2009). Studies have even reported negative associations of parents’ helping with homework and home supervision with children’s academic achievement across different ethnic groups (Mau, 1997), perhaps because such behaviors were perceived as overcontrolling and jeopardized children’s independence in learning. Because Mau’s study was correlational and did not control for previous academic performance, it is also possible that poor performance resulted in more homework assistance and more restrictions at home.

These findings suggested that different dimensions of parental involvement may have differential associations with child achievement, although they were all reported to be positively related to parental educational expectations (Fan, 2001; Spera, 2004). According to Mau (1997), this differentiation is more pronounced for Asian American than European American families. This phenomenon suggests another potential reason that may explain the mixed findings regarding the association between parental educational expectations and children’s achievement in Chinese population: parents with high educational expectations may be more engaged in a variety of parenting practices,
which, however, may have contradictory influences on children’s achievement.

Separating the effects of different dimensions of parental involvement may help clarify the relationship between parental academic expectations and children’s academic achievement.

**Parent-Child Discrepancies in Educational Expectations**

Children’s own expectations for their educational achievement are substantially influenced by their parents’ expectations, and partially mediate the effects of parental educational expectations on academic performance (Patrikakou, 1997; Rutchick et al., 2009). On the other hand, various factors such as the school environment, peers’ values and behaviors, and low parental involvement can cause children to deviate from their parents’ expectations (Draper, 1997; Rutchick et al., 2009). Moreover, parent-child agreement on educational expectations positively predicts children’s achievement, whereas parent-child discrepancies (measured by the difference between parental and child expectations) are negatively related to achievement (Hao & Bonstead-Bruns, 1998). Such predictive effects were significant over and above the independent effects of parental and children’s educational expectations. Therefore, the difference between parental and children’s expectations can be another important factor affecting academic achievement. Because parent-child differences in educational expectations tended to be amplified in families with high parental expectations, the negative effects of parental education expectations on academic achievement may be partly explained by higher parent-child discrepancies in educational expectations.
Although no studies have suggested a relationship between parent-child expectational discrepancies and children’s mental health, parent-child discrepancies of other parenting behaviors have been related to children’s poorer adjustment (Guion, Mrug, & Windle, 2009). It is possible that low-expectation students with high-expectation parents may experience higher levels of stress, anxiety, and depression than students whose academic expectations match their parents’ expectations. Existing literature provided little insight into outcomes of high-expectation students with low-expectation parents. It would be interesting to examine the effects of parent-child discrepancies in this direction on children’s psychological and academic outcomes.

**Filial Piety**

Filial piety is a highly emphasized socialization goal in Chinese culture (Chao, 2000; Pearson & Rao, 2003). It refers to showing love, respect, and support to one’s parents, and earning and maintaining good reputation of the family. For adolescents in China and other Asian countries deeply influenced by Confucianism, academic success is a major way to express their filial piety because it gains good reputation for the family. As a result, many students view studying as an obligation to please their parents rather than a way to achieve personal goals (Kim & Park, 2006). Chow and Chu (2007) named this orientation of filial piety “self-sacrifice obedience”, and identified it as a motivating factor for academic achievement. Nevertheless, filial piety also predicts anxiety and depression in Chinese adolescents (Yeh, 2006), which in turn are associated with low academic achievement. In spite of those studies on how filial piety would affect academic performance, few studies have investigated the interaction between parental expectations
and filial piety in predicting adolescents’ academic achievement. Although research showed little evidence, it is possible that filial piety may moderate the direct and indirect effects of parental educational expectations on children’s academic achievement. Children with high levels of filial piety may have a strong sense of obligations to satisfy their parents’ expectation and may feel guilty if unable to do so. Therefore, under the condition of high filial piety, parental educational expectations may be more likely to promote academic performance as well as induce stress, anxiety, and depression, compared to the condition of low filial piety. In addition, filial piety may also moderate the effects of parent-child expectational discrepancies on achievement. Specifically, low-expectation children with high-expectation parents who have a strong sense of filial piety may feel increased levels of pressure and psychological distress than other students, which may result in poorer academic performance.

**Short-term Versus Long-term Educational Expectations**

Measures of educational expectations in most studies that we reviewed focused on long-term expectations, that is, the highest educational degree people expect their children or themselves to achieve. Samples of commonly used questions included “How much education do you expect your child to complete?” or “How far in school do you expect your child to go?” Participants usually were provided options from “some high school” to “graduate or professional school after college” (Hong & Ho, 2005; Mistry et al., 2009). A few studies considered including a short-term measure of educational expectations and addressed differences between the short-term and long-term measures. Kiuru and colleagues (2007) studied associated variables of middle school students’
short-term and long-term educational expectations for themselves, measured by their expectations for the education level they will attain in the following 3 to 4 years and the highest education level they will eventually achieve, respectively. It was reported that students’ academic achievement was more strongly related to their short-term expectations than their long-term expectations. In addition, children’s problem behavior was related to their short-term expectations only. Although we found no reports on the distinction between parents’ short-term and long-term educational expectations, it is reasonable to anticipate that short-term and long-term parental expectations may also function in different ways in predicting children’s academic achievement.

Hypotheses of the Current Study

In summary, existing literature revealed inconsistent findings regarding the associations between Chinese parents’ educational expectations and their children’s academic achievement. While some studies found positive associations, others reported negative or no relationships between these constructs. The current study proposed five possible explanations for those contradictory findings. For all five hypotheses below, parental educational expectations were measured by two separate indicators, short-term expectations and long-term expectations, and short-term expectations were anticipated to be a stronger predictor than long-term expectations, based on previous studies.

1) Parental educational expectations may have a curvilinear effect on children’s academic achievement, over and above its linear effects. Educational expectations of parents may positively predict child achievement up to a certain level, and then display a negative effect at higher expectation levels. The curvilinear effect is depicted in Figure 1.
Figure 1. Illustration of possible curvilinear relationship between parental educational expectations and adolescents’ academic achievement.

2) Children’s psychological distress may act as a mediator between parental educational expectations and children’s achievement. High educational expectations of parents may predict low academic achievement through high levels of psychological distress (academic stress, test anxiety, and depression) in adolescents. This mediation model is depicted in Figure 2.

Figure 2. Proposed mediation effects of psychological distress on the association between parental educational expectations and children’s academic achievement.
3) Parental involvement may also mediate the effects of parental expectations on children’s academic achievement. However, specific dimensions of parental involvement may have conflicting influences. We hypothesized that multiple dimensions of parental involvement (communication, school participation, encouragement, home supervision, and homework assistance) are positively related to parental educational expectations. Nevertheless, children’s academic achievement may be positively associated with communication, school participation, and encouragement, but negatively associated with home supervision and homework assistance. The mediation model of parental involvement is illustrated in Figure 3.

Figure 3. Proposed mediation effects of five dimensions of parental involvement on the association between parental educational expectations and children’s academic achievement.

4) High discrepancies between parents’ and children’s educational expectations may predict low academic achievement over and above the effects of parental educational expectations alone, and this relationship may be mediated by psychological distress.
Moreover, we expect that the direction of parent-child discrepancies (i.e., whether the parent or the child has higher educational expectations) would make a difference. Parent-child discrepancies may only have negative effects on mental health and academic achievement for low-expectation children with high-expectation parents. We did not have specific assumptions for high-expectation children with low-expectation parents. Under the latter situation, the effects of parent-child discrepancies could be in either direction.

This model is depicted in Figure 4.

Figure 4. Proposed direct and indirect effects of parental educational expectations and parent-child expectational discrepancies in educational expectations on adolescents’ academic achievement.

5) Filial piety may moderate the direct effects of parental educational expectations and parent-child expectational discrepancies on children’s achievement and their mediated effects through psychological distress. Associations of parental educational expectations with academic performance and psychological distress may be stronger for children with high levels of filial piety, compared with other children. Similarly, the predictive effects of parent-child expectational discrepancies on psychological distress
and academic achievement may be stronger under the condition of high filial piety than those under low filial piety. The moderating model is illustrated in Figure 5.

Figure 5. Proposed moderating effects of filial piety on direct and indirect associations of parental educational expectations and parent-child expectational discrepancies with adolescents’ academic achievement.
CHAPTER 2

METHODS

Instrument Translation

Because participants were native Chinese, we prepared a Chinese version for all materials that were used in this study, including all questionnaires, informed consent form, and a letter to parents that explained the purpose and procedure of the study and asked for parents’ consent on their children’s participation in the study. The letter to parents was written in Chinese by the researcher, a native Chinese speaker. The informed consent form conformed to the guideline of Institutional Review Board (IRB) at University of Alabama at Birmingham and was translated into Chinese by an accredited translation agency. A back translation to English of the consent form was also provided by the agency and the researcher approved a satisfactory agreement between the original English version and the back translation. Both English and Chinese versions of the consent form were reviewed and approved by IRB.

As for the translation of the questionnaires, some measuring instruments used in the study were originally developed in Chinese and were maintained in the exact way that they were phrased. The researcher provided an English translation of those instruments only for the purpose of documentation. For other instruments that were originally developed in English, some of them have been translated and validated in studies that included Chinese participants, and those translations were adapted for the current study. We did not find existing Chinese translation for two instruments, the educational
expectation measure and the parental involvement measure. They were translated into Chinese using the procedure of instrument translation recommended by the World Health Organization (2010). First, the English instruments were forward translated into Chinese by the researcher who is a native Chinese speaker fluent in English. Another bilingual expert (in English and Chinese) familiar with psychological research was requested to resolve inadequate expressions of the translation. Then a third independent bilingual researcher who has no knowledge of the instruments translated them back to English. Discrepancies were discussed among the three translators until they reached agreement on a satisfactory version of translation.

Pilot Study

To verify the translational and cultural validity of the measures, we conducted a pilot study with 8 Chinese participants who were graduate students at University of Alabama at Birmingham. They were asked to review every item of the instruments regarding the phrasing and whether each item was a culturally appropriate measure of the underlying construct.

According to the pilot participants’ suggestions, several items were rephrased for more native expressions. A few items were modified in concern with their construct validity. For example, two items of the parental involvement scale were related to parents’ regulations on when and how long the child can watch TV. We extended the questions to regulations on watching TV, surfing the internet, or playing video/computer games, since watching TV is no longer the major in-home leisure activity for most adolescents in modern society. Some deletions were made after a group discussion. Three items in the
test anxiety scale asking about adolescents’ feelings for an intelligence test were deleted since intelligence tests are seldom used in Chinese middle high schools. Three items in the filial piety scale were considered too conservative and were deleted, including: “It is the descendants’ top responsibility to hold a memorial ceremony for their ancestor on special occasions”, “If the wife and the husband’s mother have an argument, the husband should always ask the wife to back off”, and “After the father passes away, his children should still follow his principles of life”.

Participants and Procedures

Participants were 12th grade students from a high school in Chongqing, China. This population was selected for two reasons. First, parents of senior high school students have likely developed clear and stable educational expectations for their children. Second, unlike the college application procedure in the U.S., admission to colleges in China is solely based on students’ performances on the college entrance exam at the end of the 12th grade. Therefore, 12th grade is generally considered the most stressful year in high school. As the college entrance exam approaches parents may also express their expectations more frequently and explicitly, compared to parents of elementary school and middle school students. In sum, we expected higher levels of parental expectations and adolescents’ academic distress among 12th graders and thus it might be easier to detect associations among the study variables.

All 816 12th graders from 12 classes in this high school were targeted at the beginning of the spring semester, 2011. The investigator explained this study to the students in classroom and distributed informed consent forms together with a letter to
parents for the students to take home. One consent/assent form was used for both the parent and the adolescent. Consent from only one of the parents was required for the student to participate. The investigator emphasized to students and parents (in the letter) the confidentiality of their answers and the voluntary nature of participating in the study. Students and their parents were given one week to read and sign the consent form, and were provided with the investigator’s contact information if they had any questions about the study or the informed consent document. One week later, head teachers of each class helped collect consent forms from students and forwarded them to the investigator. Teachers also signed the consent form as witnesses. We obtained consent from 701 (86%) student-parent pairs and all of them were asked to complete the questionnaires.

Students who provided parental informed consent and their own assent filled out a battery of questionnaires in a group session during the school study time in the evening. The group session took approximately 45 minutes. The investigator conducted the group session for one class at a time and it took one week to complete all 12 classes. The session was carried out in an empty room rather than in the students’ own classroom in order to separate the participants from those who did not provide consent. At the end of the session, students were given a questionnaire package to take home and to have it completed by their parents. In the cover letter of the parent questionnaire package, parents were asked to determine whether the father or the mother was primarily involved in the child’s academic activities, and this parent was asked to complete the questionnaires. Students were requested to bring the completed parent questionnaire back to school within one week. To protect the confidentiality of parents’ responses, we asked parents to seal the completed questionnaires in an enclosed envelope and sign across the
Teachers again helped collect parent questionnaires and forwarded them to the investigator. We obtained 573 valid student questionnaires and 491 parent questionnaires, and only the 491 pairs with complete data (70% complete rate) were used for analysis.

After the middle exam in April, we collected students’ test scores from the school records. The middle exam scores were used because the final exam of that semester would be the college entrance exam and the school would need permission from the Education Board of the City to disclose students’ information on the college entrance exam. Students’ test scores on finals from the previous semester were also collected. Each participating family was compensated with a payment of 25 RMB (approximately equal to 5 dollars). Payments were in cash and were given to participating students after they return the completed parent questionnaires. Parents were informed of the financial compensation in the consent form and in the questionnaire package.

Measures

Educational Expectations

Parents and adolescents both reported their long-term and short-term educational expectations. The long-term educational expectation was measured by participants’ responses to one single question: “How far in school do you expect you (your child) to go?” Six options were provided: ‘Less than high school’ (1), ‘High school graduation’ (2), ‘Three-year college’ (3) (equivalent to two-year college in the U.S.), ‘Four-year college’ (4), ‘Master’s degree’ (5), and ‘Doctorate degree’ (6). This question was originally used in the National Education Longitudinal Study of 1988 (NELS: 88; Ingels et al., 1990), a survey that included a nationally representative sample of 24,599 adolescents in the U.S.
A measure of the short-term educational expectations was specifically developed for this study with one single item: “Where do you expect yourself (your child) to stand academically among classmates by the end of this school year?” Participants responded on a 5-point scale ranging from ‘At the top’ (1) to ‘At the bottom’ (5). This short-term expectation question was reversely coded so that higher scores suggested higher expectations.

**Parent-Child Discrepancies in Educational Expectations**

Parent-child discrepancy was computed by subtracting scores of child expectations from scores of parent expectations. Thus, positive scores on the discrepancy variable indicated higher parent expectation and negative scores indicated higher child expectation. Scores of larger absolute values suggested greater discrepancies, regardless of the direction. For instance, scores of 3 and -3 represent the same degree of parent-child discrepancy, only that the former indicates higher parent expectations and the latter indicates higher child expectations.

**Parental Involvement**

Parents provided information on five dimensions of parental involvement, including parent-child communication (3 items), home supervision (5 items), homework assistance (1 item), school participation (3 items), and encouragement (4 items). All questions except the encouragement subscale were adapted from NELS: 88 (Ingels et al., 1990) and had been used in previous studies to measure parental involvement (Desimone, 1999). Parents’ responses to the parent-child communication subscale were rated on a 4-
point scale that ranges from ‘Not at all’ (1) to ‘Regularly’ (4) and were summed to
generate subscale score. Sample questions from the communication subscale included
“How often do you or your spouse/partner talk with your child about his or her
experience in school?” Higher scores on the communication subscale indicated higher
levels of communication between parents and child. The communication subscale had a
Cronbach’s $\alpha$ of .76.

For the home supervision subscale, three items were rated on a 4-point scale
ranging from ‘Often’ (1) to ‘Never’ (4) (e.g., “How often do you or your spouse/partners
limit the amount of time your child can spend watching television, surfing internet, or
play video/computer games?”), and two items were rated dichotomously: ‘Yes’ (1) versus
‘No’ (0) (e.g., “Are there family rules that are enforced for your child about maintaining a
certain GPA?”). Because items were rated on different scales, participants’ responses on
each item were standardized within the sample and standardized item scores were
averaged to generate the home supervision subscale score (Cronbach’s $\alpha = .67$). Some
items were reversely coded so that higher scores indicated more supervision.

The homework assistance subscale included only one item: “How often do you or
your spouse/partners help your child with his or her homework?” Parents rated this
question on a 4-point scale from ‘Often’ (1) to ‘Never’ (4). The item was reversely coded
so that higher scores were related to more assistance.

The school participation subscale included three items that were rated on a 4-point
scale from ‘None’ (1) to ‘More than four times’ (4) (e.g., “During the past semester, how
many times have you or your spouse/partner attended the school programs for parents?”).
Items of the school participation were summed to create the subscale score (Cronbach’s α = .64). Higher scores suggested higher levels of parental participation in school activities.

The encouragement subscale (e.g., “How often do you or your spouse/partner encourage your child to do well in school?”) was adapted from a previous study with a sample of Korean Americans in Los Angeles (Kim & Rohner, 2002). Reliability for the encouragement subscale was reported to range from .78 to .86 in the previous study. Parents responded to four items on a 4-point scale from ‘Often’ (1) to ‘Never’ (4) and items were reversely coded so that higher scores were related to more encouragement. Item scores were summed to generate the scale score (Cronbach’s α = .76).

**Psychological Distress**

Adolescents reported on three types of psychological distress measures that might be related to their academic performance: academic stress, test anxiety, and depression.

The academic stress scale was developed in Chinese by Zheng and colleagues and has been used in a survey on Chinese adolescents (Zheng et al., 2006). This scale included 8 items (e.g., “I don’t want to disappoint my parents”) that were rated on a 5-point scale from ‘Completely disagree’ (1) to ‘Completely agree’ (5). Item scores were summed to create the scale score and higher scores indicated higher levels of stress. Cronbach’s alpha for the academic stress scale was .65.

The Test Anxiety Scale for Children (TASC) was used to measure test related anxiety (e.g., “While taking an important exam, I find myself thinking of how much brighter the other students are than I am”). The TASC was originally developed in English with 37 items and showed good reliability in American population.
Wang (2001) translated the TASC into Chinese and reported a Cronbach’s $\alpha$ of .64 in Chinese population. Wang’s translation was used for the current study with minor modifications on a few items and deletion of three items related to intelligence test, based on the pilot study. The scale with 34 items reported an internal reliability of .78 in the current study. Adolescents responded either ‘Yes’ (coded as 1) or ‘No’ (coded as 0) to the 34 items, with five items reverse coded. Scores were summed to create the scale score and higher scores indicated higher levels of test related anxiety.

The Chinese version of the Center for Epidemiological Studies Depression Scale for Children (CES-DC; Wang, Wang, & Ma, 1999; Weissman, Orvaschel, & Padian, 1980) was used to measure students’ depression. Participants responded to 20 items on a 4-point scale ranging from ‘Not at all’ (1) to ‘A lot’ (4), with four items reverse coded. Items were then summed to create the scale score, and higher scores indicated higher levels of depression. The Chinese version of CES-DC has shown good internal reliability in previous studies (Cronbach’s $\alpha > .90$; Wang, Wang, & Ma) as well as in the current study (Cronbach’s $\alpha = .85$).

**Attitude toward Filial Piety**

Adolescents reported on the Filial Piety Scale (FPS). This scale was originally developed in Chinese by Ho (1996) and was later revised by Zhang and Zhang (2004). The revised version included 21 items that measured several important aspects of filial piety such as respect for parents and ancestors (e.g., “Children must respect their parents regardless of how good or bad their parents are”), obedience (e.g., “Adult children don’t
need to ask for parents’ opinions when choosing marriage partners”), reproduction (e.g., “To have someone take care of you in old age should not be the main purpose of raising children”), and supporting parents (e.g., “If reasonable, it is okay to put parents into a nursing home”). Three items were deleted based on the pilot study because those beliefs were considered overly conservative and may no longer be valued in modern society. Therefore, a scale of the remaining 18 items was used in this study with an internal reliability of .61. Adolescents responded on a 5-point scale ranging from ‘Completely disagree’ (1) to ‘Completely agree’ (5). Nine items were reversely coded and then items were summed to generate a total scale score. Higher scores suggested more approving attitudes toward filial piety.

**Academic Achievement**

Students’ academic achievement was measured by their total grade points of three main subjects on the midterm exam (in contrast to the generally used grade point average in the U.S.). The three subjects were Language (Chinese), Math, and English, with a highest possible grade of 150 on each subject. We only considered students’ performance on those three subjects because high school students in China have to choose a main study field between science and art since 11th grade and they would have a different focus of study thereafter. Those three subjects were common for students in both study fields. Students’ test scores were obtained from school record. Test scores on the final exam of the previous semester were also collected to be used as a covariate variable in analysis.
Social Desirability

Because some constructs measured in this study are highly emphasized and desirable in the culture (e.g., filial piety), participants may hide their true opinions on those questions and provide answers that are consistent with what the society approves. In order to reduce effects of such social desirability responding tendency, we included a measure of social desirability in the questionnaire as a covariate variable for analysis. The 24-item Social Desirability Scale used in the current study was developed by Wu (2008) based on a Chinese college student sample. Wu adapted 81 items from several commonly used social desirability scales such as the Marlowe-Crowne Social Desirability Scale (MCSD, Crowne & Marlowe, 1960) and the Balanced Inventory of Desirability Responding (BIDR, Paulhus, 1984), and a final list of 24 items was kept after a series of factor analyses. Wu reported an internal reliability of .80 on this 24-item scale. In the current study, adolescents responded on a 5-point scale from ‘Completely disagree’ (1) to ‘Completely agree’ (5). Sixteen items were reverse coded and items were summed to create the total scale score (Cronbach’s $\alpha = .82$). Higher scores on the scale indicated higher tendency seeking for social approval.

Demographics

Both parents and adolescents were asked to provide demographic information about adolescents’ date of birth, gender, ethnicity, and study field (science or art). There are 56 ethnic groups in China, although 90% are Han Chinese (National Bureau of Statistics of China, 2006). Participants’ responses on ethnicity were coded as ‘Han’ (1) and ‘Other’ (0). Parents also provided their education level and an estimate of their
annual family income. Parents’ education level was reported on a 12-point scale with categories ranging from ‘No formal education’ to ‘Doctorate degree’.
CHAPTER 3

RESULTS

Preliminary Analysis

*Missing Data*

One hundred and forty-eight (30%) out of the 491 participants had missing data on one or more variables, but only 2% of total data points were missing. Missing data mainly occurred on three questionnaires: 10 cases missed two questions on educational expectations in the child questionnaire; 9 cases skipped the last five items of the social desirability scale in the child questionnaire; and 9 cases skipped questions 4-12 on the parental involvement scale. It is conjectured that participants tended to miss those questions because we used duplex printing when making copies of questionnaires, and those questions all happened to be placed on the back sides and thus were more likely to be overlooked. Little’s MCAR test suggested that the missing pattern of our data was not missing completely at random, \( \chi^2 (772) = 1050.48, p < .001 \). To further test whether our data were missing at random (MAR), we checked how other variables were related to missingness. Two variables were related to missingness, adolescents’ study field and parents’ short-term educational expectations. Participants in the field of art or with lower short-term parental educational expectations were more likely to miss some items on the questionnaires. Missing data were handled with full information maximum likelihood (FIML) estimation in Mplus.
Assumption Testing

All outcome and mediator variables were tested for univariate normality. Shapiro-Wilk tests were all significant at .001 level, suggesting rejection of the normality assumption. Most variables were lightly or moderately skewed (skewness values varied from -.69 to .80, standard error = .12), and a visual check of their normality plots did not reveal severe deviations from normality. Only the parental involvement - encouragement scale had a considerably high negative skewness value (-1.53). Square root transformation, log transformation, and inverse transformation were applied to this variable to lessen the skewness, but none of them resulted in significant improvement. Therefore, the encouragement variable was kept on its original scale, as were all other variables. Because the normality assumption was violated, all main analyses utilized maximum likelihood estimation with robust standard errors (MLR estimator in Mplus) that is robust to non-normality.

Assumption of linearity was examined by checking linear associations between each pair of variables (including all predictors, mediators, and outcome variables) using scatterplots. No severe violation of linearity was found. Multicollinearity was tested by checking correlations among independent variables including mediators. All correlations were below 0.7. We also checked the collinearity statistics in a regression model predicting the dependent variable from all independent and mediating variables. Tolerance values were high and VIF values were close to 1, confirming the absence of multicollinearity among independent variables.
Descriptive and Bivariate Correlations

Table 1 presents descriptive information and bivariate correlations for all study variables. Both long-term and short-term parental education expectations were positively related to children’s academic achievement, and the significant associations between the squared expectation variables and academic achievement suggested a possible nonlinear relationship. Moreover, parent-child discrepancy in short-term educational expectations was related to academic achievement, whereas the difference in long-term expectations was not. For low expectation adolescents with high expectation parents, larger discrepancies in short-term expectations were associated with poor achievement. However, for high expectation adolescents with low expectation parents, larger short-term expectational discrepancies were linked to better academic achievement. Surprisingly, we only found associations of parental short-term but not long-term expectations with adolescents’ psychological distress. Higher short-term expectations from parents were related to higher levels of distress. Neither short-term nor long-term parental expectations were related to any of the parental involvement indicators. All predictors and mediators except parent-child discrepancy in long-term expectations, parental involvement - communication, and parental involvement - encouragement were significantly correlated with the outcome variable, adolescents’ academic performance. Higher expectations from parents, either for long-term or short-term achievement, were related to better academic performance; whereas high levels of psychological distress and parental involvement were related to poor academic performance.
Table 1. Descriptive Statistics and Bivariate Correlation among Variables

<table>
<thead>
<tr>
<th>Measures and Variables</th>
<th>Mean (SD)</th>
<th>Predictor Group 1</th>
<th>Predictor Group 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1. 2. 3. 4. 5. 6.</td>
<td></td>
</tr>
<tr>
<td><strong>Predictor Group 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Long-term parental</td>
<td>4.42 (0.77)</td>
<td>1.00</td>
<td></td>
</tr>
<tr>
<td>2. Long-term parental</td>
<td>0.59 (0.89)</td>
<td>.64*</td>
<td>1.00</td>
</tr>
<tr>
<td>3. P-C discrepancy in long-term expectation</td>
<td>-0.01 (0.69)</td>
<td>.48*</td>
<td>.29*</td>
</tr>
<tr>
<td><strong>Predictor Group 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Short-term parental</td>
<td>4.38 (0.80)</td>
<td>.23*</td>
<td>.05</td>
</tr>
<tr>
<td>5. Short-term parental</td>
<td>0.63 (1.32)</td>
<td>-.08</td>
<td>.10*</td>
</tr>
<tr>
<td>6. P-C discrepancy in short-term expectation</td>
<td>0.05 (0.79)</td>
<td>-.03</td>
<td>-.06</td>
</tr>
<tr>
<td><strong>Mediator Group 1</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Academic stress</td>
<td>28.26 (4.48)</td>
<td>.01</td>
<td>.04</td>
</tr>
<tr>
<td>8. Test anxiety</td>
<td>16.33 (5.34)</td>
<td>-.04</td>
<td>-.04</td>
</tr>
<tr>
<td>9. Depression</td>
<td>36.86 (8.47)</td>
<td>-.08</td>
<td>-.03</td>
</tr>
<tr>
<td><strong>Mediator Group 2</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. PI – Communication</td>
<td>8.44 (2.14)</td>
<td>.04</td>
<td>.06</td>
</tr>
<tr>
<td>11. PI – Supervision</td>
<td>0.00 (0.67)</td>
<td>.01</td>
<td>.03</td>
</tr>
<tr>
<td>12. PI – Homework</td>
<td>1.83 (0.82)</td>
<td>.00</td>
<td>.03</td>
</tr>
<tr>
<td>13. PI – School Participation</td>
<td>6.25 (2.10)</td>
<td>.02</td>
<td>.05</td>
</tr>
<tr>
<td>14. PI - Encouragement</td>
<td>13.76 (2.46)</td>
<td>.04</td>
<td>.02</td>
</tr>
<tr>
<td><strong>Outcome</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. Academic Achievement</td>
<td>275.24 (38.35)</td>
<td>.20*</td>
<td>.09*</td>
</tr>
<tr>
<td><strong>Covariates</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16. Age</td>
<td>18.43 (0.53)</td>
<td>-.02</td>
<td>.02</td>
</tr>
<tr>
<td>17. Female gender</td>
<td>57.3%</td>
<td>-.02</td>
<td>-.04</td>
</tr>
<tr>
<td>18. Science study field</td>
<td>73.7%</td>
<td>.02</td>
<td>.06</td>
</tr>
<tr>
<td>19. Parent education</td>
<td>4.73 (1.88)</td>
<td>-.04</td>
<td>-.08</td>
</tr>
<tr>
<td>20. Social Desirability</td>
<td>74.37 (11.74)</td>
<td>.05</td>
<td>.02</td>
</tr>
<tr>
<td>21. Previous Test Scores</td>
<td>292.85 (42.96)</td>
<td>.23*</td>
<td>.06</td>
</tr>
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</table>
Table 1. (continued)

<table>
<thead>
<tr>
<th>Measures and Variables</th>
<th>Mediator Group 1</th>
<th>Mediator Group 2</th>
<th>Outcome</th>
</tr>
</thead>
</table>

**Predictor Group 1**
1. Long-term parental expectation
2. Long-term parental expectation - squared
3. P-C discrepancy in long-term expectation

**Predictor Group 2**
4. Short-term parental expectation
5. Short-term parental expectation - squared
6. P-C discrepancy in short-term expectation

**Mediator Group 1**
7. Academic stress 1.00
8. Test anxiety .34* 1.00
9. Depression .14* .39* 1.00

**Mediator Group 2**
10. PI – Communication .02 .01 -.09* 1.00
11. PI – Supervision .09* .03 -.02 .29* 1.00
12. PI – Homework .04 -.06 -.07 .23* .28* 1.00
13. PI – School Participation -.03 -.09* -.08 .23* .16* .22* 1.00
14. PI – Encouragement .07 .03 -.14* .46* .41* .18* .21* 1.00

**Outcome**
15. Academic Achievement -.16* -.13* -.25* .06 -.12* -.13* -.10* .02 1.00

**Covariates**
16. Age .00 -.02 .02 -.08 -.02 -.06 -.03 -.08 -.11*
17. Female gender .05 -.01 .06 .04 .04 .04 -.03 -.02 -.05
18. Science study field .00 -.04 -.17* .02 .03 -.07 .08 .09 .10*
19. Parent education .03 .00 -.06 .20* .08 .30* .18* .09 -.11*
20. Social Desirability -.15* -.37* -.55* .04 .06 .07 .00 .14* .17*
21. Previous Test Scores -.13* -.14* -.25* .08 -.09 -.11* -.05 .06 .78*

Note: PI – parental involvement.
Correlations among covariates ranged from (-).01 to .19.
* \( p < .05 \)
Main Analysis

All main analyses were conducted in Mplus Version 5.2. Five covariates including adolescents’ age, gender, study field, social desirability, and parents’ education level were included in all main analyses. Adolescents’ achievement scores from the previous semester was considered as another covariate in order to help clarify the direction of the effects between the independent variables and achievement at the end of the current semester. However, the correlation between scores from the previous and the current semester was very high ($r = .78, p < .001$), suggesting that using previous scores as a covariate may not leave enough variance in the dependent variable to be explained by the other predictors. Therefore, we conducted all main analyses both with and without previous achievement scores included as a covariate and will report both results. Parental educational expectations were measured by two separate indicators, short-term expectations and long-term expectations. Because they were hypothesized to function differently in predicting adolescents’ mental health status and behaviors, short-term and long-term educational expectations from parents were modeled in separate analyses instead of being combined into a single predictor.

Analyses without Previous Achievement Scores as a Covariate

_Hypothesis 1._ The first hypothesis was to test the curvilinear effect of parental educational expectations on children’s academic achievement. Parents’ educational expectations may positively predict child achievement up to a certain level, and then show a negative effect at high expectation levels.
We first examined the linear association between parents’ educational expectations and children’s academic achievement. Higher educational expectations in both short term and long term were linked to higher academic achievement, but short-term expectations appeared to be a stronger predictor than long-term expectations (see Figures 6 and 7).

To examine the curvilinear effects of parental educational expectations on adolescents’ academic achievement, a quadratic effect of parental expectations was created by computing the square of the centered parental expectation variable. The parental expectation variable was centered at the grand mean to reduce the correlation between the linear and the squared variable. The quadratic effect was then added to the previous model predicting children’s academic achievement from the centered parental educational expectations. All causal paths in the model were adjusted for the covariates including adolescents’ age, gender, study field, social desirability, and parents’ education level. Neither of the two squared variables significantly predicted children’s academic achievement, suggesting no curvilinear effect of parental expectations (see Figures 6 and 7).

![Diagram](diagram.png)

**Figure 6.** Hypothesized linear and curvilinear effects of short-term parental educational expectations on adolescents’ academic achievement (previous achievement scores not included as a covariate). Number in parenthesis shows the path coefficient before the squared variable was added to the model. **p < .001**
Hypothesis 2. The second hypothesis addressed the mediating effect of psychological distress on the association between parental educational expectations and children’s achievement. We expected that high educational expectations of parents may predict low academic achievement of children through high levels of psychological distress, a latent construct measured by academic stress, test anxiety, and depression.

Before testing the mediation model, the latent structure of psychological distress was examined with confirmatory factor analysis. The measurement model is shown in Figure 8 below. The fit of the measurement model was fair, $\chi^2 (10) = 53.60, p < .001; \text{CFI} = .82; \text{RMSEA} = .09; \text{SRMR} = .04$. Factor loading of academic stress was somewhat low (.25), but the other two observed variables had higher loadings on the latent variable. Taking all above information into consideration, we decided to keep the latent structure of psychological distress the way we proposed (as shown in Figure 8).
Next, the mediation models were tested using structural equation modeling. Two separate models were examined with short-term parental educational expectations and long-term parental educational expectations as the predictor, respectively. All causal paths in the models were adjusted for adolescents’ age, gender, study field, social desirability, and parent’s education level. The significance of the mediation effects was evaluated using the “indirect” command in Mplus.

For the short-term parental expectation model, we first examined the direct effect of short-term parental expectations on academic achievement without the mediator, as a prerequisite for mediation (Baron & Kenny, 1986). As indicated by the results above for Hypothesis 1, higher educational expectations were directly associated with higher academic achievement of adolescents (β = .32, p < .001). In the following step, the latent variable of children’s psychological distress was added to the model as a mediator. Analyses of indirect effects indicated a statistically significant mediation effect (β = .05, p < .05), accounting for 16% of the total effect of short-term parental expectations on children’s academic achievement. Higher psychological distress was associated with worse academic performance, as we expected. However, psychological distress was
negatively predicted by short-term parental expectations, which was contrary to our hypothesis. We hypothesized that higher parental expectations may lead to higher levels of distress and then lower academic achievement, whereas the results indicated that higher short-term parental expectations were associated with lower levels of distress that in turn predicted higher academic achievement of adolescents. This mediation model with all path coefficients is depicted in Figure 9.

For the long-term parental expectation model, we found a weaker but still significant direct effect ($\beta = .18, p < .001$). Consistent with the short-term parental expectations model, higher long-term parental expectations were also linked to higher achievement. However, the mediation effect of psychological distress was not significant ($\beta = .02, \text{n.s.}$), as reflected by the non-significant link between long-term parental
expectations and child distress. The long-term expectation mediation model with all path coefficients is depicted in Figure 10.

**Hypothesis 3.** The third hypothesis addressed another set of mediators, parental involvement, in the associations between parental educational expectations and children’s academic achievement. We examined five dimensions of parental involvement in the current study: communication, school participation, encouragement, home supervision, and homework assistance. We hypothesized that higher parental educational expectations may promote higher involvement on all five dimensions. Nevertheless, children’s academic achievement may only be positively associated with communication, school participation, and encouragement, but negatively associated with home supervision and homework assistance.
Because the five dimensions were expected to function in opposite directions, we did not adopt the approach used in hypothesis 2 to construct a latent variable of parental involvement. Instead, the five dimensions of parental involvement were modeled as five separate mediators that linked parental educational expectations to children’s academic achievement. They were entered into the model simultaneously and were allowed to covary. Similar to previous analyses, effects of short-term and long-term parental educational expectations were examined separately, and all causal paths in the models were adjusted for the covariates.

Short-term parental expectations were only associated with the homework assistance dimension of parental involvement. Higher levels of expectations promoted parents’ involvement in helping children with their homework. Three dimensions of parental involvement were significantly related to children’s academic achievement. Higher achievement was predicted by more parent-child communication, less parental participation in school activities, and less supervision at home (Figure 11). Contrary to our expectations, none of the five parental involvement dimensions mediated the link between short-term parental expectations and academic achievement of adolescents.
Figure 11. Five dimensions of parental involvement as possible mediators of the effects of short-term parental educational expectations on adolescents’ academic achievement (previous achievement scores not included as a covariate). Number in parenthesis shows the path coefficient before the mediators were added to the model. * p < .05  ** p < .001

Similar results were found for the long-term expectations model, except that long-term parental expectations did not predict any of the parental involvement dimensions. Higher achievement was again associated with more parent-child communication, less school participation, and less supervision at home (Figure 12). Consequently, no significant mediation effects were found.
Hypothesis 4. The fourth hypothesis stated that besides the effects of parental educational expectations, adolescents’ academic achievement may also be predicted by parent-child discrepancies in educational expectations. High expectations in parents in combination with low expectations in children may lead to high levels of distress and in turn result in low academic achievement. To address this hypothesis, psychological distress was modeled as a mediator linking parental educational expectations and parent-child discrepancies in educational expectations to children’s academic achievement.

Again, short-term expectations and long-term expectations were examined in separate models and covariates were included in all analyses. Figure 13 demonstrates the results of the short-term expectation model. The effects of short-term parental educational expectations repeated the results found in hypothesis 2, that higher short-term expectations from parents predicted higher academic achievement in adolescents, and the
effect was mediated through lower psychological distress of adolescents ($\beta=.05, p < .05$).

Parent-child discrepancies in short-term educational expectations were negatively associated with children’s academic achievement and positively associated with psychological distress, although the mediating effect of psychological distress did not reach statistical significance ($\beta=-.02, n.s.$).

![Diagram of mediation analysis](image)

Figure 13. Child psychological distress as a possible mediator of the effects of short-term parental educational expectations and parent-child discrepancies in short-term educational expectations on adolescents’ academic achievement (previous achievement scores not included as a covariate). Numbers in parentheses show the path coefficients before the mediator was added to the model. * $p < .05$ ** $p < .001$

Parent-child discrepancy was computed by subtracting child expectation scores from parent expectation scores. Thus, positive scores on the discrepancy variable indicate higher parental expectations, whereas negative scores indicate higher child expectations. Scores of the same absolute values suggest the same degrees of parent-child discrepancy but may differ in directions. To better illustrate the effects of parent-child discrepancies
on children’s psychological distress and academic achievement, we created charts that depict high parent expectation group (with positive discrepancy scores) separately from high child expectation group (with negative discrepancy scores), as shown in Figure 14 and 15.

Figure 14 demonstrates the relationship between parent-child discrepancies in short-term educational expectations and children’s academic achievement. When the discrepancy scores were positive, i.e., when parent expectations were higher than child expectations, greater discrepancies were related to lower achievement (High Parent Expectation line in the chart). However, when the discrepancy scores were negative, lower discrepancy scores actually referred to greater discrepancies (e.g., -4 indicates greater discrepancy than -1) and that were related to high achievement, as shown by the High Child Expectation line in the chart. This association pattern was consistent with our hypothesis. Finally, the high child expectation group as a whole attained better academic performance than the high parent expectation group.
Figure 14. Relationship between parent-child discrepancies in short-term educational expectations and children’s academic achievement (previous achievement scores not included as a covariate).

Figure 15 demonstrates the relationship between parent-child discrepancies in short-term educational expectations and adolescents’ experience of psychological distress. The same technique used above was employed to demonstrate the different effects of high parent expectations versus high child expectations. In general, the high child expectation group experienced less distress than the high parent expectation group. Moreover, when parent expectations were higher than children’s, greater discrepancies were associated with higher levels of distress; whereas when child expectations were higher, greater discrepancies were associated with lower levels of distress in adolescents.
Figure 15. Relationship between parent-child discrepancies in short-term educational expectations and children’s psychological distress (previous achievement scores not included as a covariate).

The model with long-term parental expectations is depicted in Figure 16. Again, effects of long-term parental expectations on psychological distress and academic achievement were similar to findings in hypothesis 2. Higher long-term expectations were linked to better academic performance, but not related to psychological distress. Subsequently no mediating effect of psychological distress was detected for the link between long-term parental expectations and achievement ($\beta=.02$, n.s.). Similarly, parent-child discrepancies in long-term educational expectations were associated with children’s academic achievement but not with their psychological distress levels, and the mediating effect of psychological distress was not significant ($\beta=.00$, n.s.).
Figure 16. Child psychological distress as a possible mediator of the effects of long-term parental educational expectations and parent-child discrepancies in long-term educational expectations on adolescents’ academic achievement (previous achievement scores not included as a covariate). Numbers in parentheses show the path coefficients before the mediator was added to the model. ** p < .001

The approach of separating high parent expectation group from high child expectation group was used again to demonstrate the effects of parent-child discrepancies in long-term expectations on children’s academic achievement. The association pattern was similar to that of short-term expectational discrepancies, only with a smaller slope. When parents’ expectations were higher, larger discrepancies were related to lower achievement; but when children had higher expectations, larger discrepancies were related to higher achievement. High child expectation group in general had better achievement than high parent expectation group.
Figure 17. Relationship between parent-child discrepancies in long-term educational expectations and children’s academic achievement (previous achievement scores not included as a covariate).

**Hypothesis 5.** The last hypothesis addressed the moderating effects of filial piety on the model specified in hypothesis 4, that is, the direct and indirect effects of parental educational expectations and parent-child expectational discrepancies on children’s achievement. It was anticipated that predictive effects of the two independent variables would be stronger under the condition of high filial piety than under low filial piety.

To test the moderating effects, the entire sample was divided into two subgroups: low filial piety group (below the sample mean on filial piety) and high filial piety group (above the sample mean on filial piety). We compared the fit of a constrained model (all paths fixed to be equal across the groups) with the fit of an unconstrained model (all paths were allowed to vary across the groups). Because MLR estimation was used in our analyses, a scaled chi-square difference test between the constrained and unconstrained models was conducted to examine the moderating effect of filial piety (Satorra & Benter,
2001). No moderation was found either for the short-term expectation model, $\Delta \chi^2 (26) = 19.94$, n.s., or for the long-term expectation model, $\Delta \chi^2 (26) = 28.80$, n.s.

**Analysis with Previous Achievement Scores as a Covariate**

The analyses above were run again with adolescents’ achievement scores from the previous semester included as an additional covariate. Not surprisingly, most effects were attenuated due to the high correlation between previous and current achievement scores. Only some associations of short-term parental expectations remained significant.

**Hypothesis 1.** As shown in Figures 18 and 19, neither short-term nor long-term parental educational expectations were associated with children’s academic achievement after controlling for previous achievement. No curvilinear effect was found either.

![Diagram](image)

**Figure 18.** Hypothesized linear and curvilinear effects of short-term parental educational expectations on adolescents’ academic achievement (previous achievement scores included as a covariate). Number in parenthesis shows the path coefficient before the squared variable was added to the model.
Figure 19. Hypothesized linear and curvilinear effects of long-term parental educational expectations on adolescents’ academic achievement (previous achievement scores included as a covariate). Number in parenthesis shows the path coefficient before the squared variable was added to the model.

_Hypothesis 2._ Since we found no direct link between parental educational expectations and children’s academic achievement in the first hypothesis, there was no need to further examine any mediation effects on this link. Nevertheless, we ran the mediation models in order to check the significance of other paths in the models. After accounting for the effects of previous achievement scores, only the association between short-term parental expectations and psychological distress remained significant. Consistent with the results when previous test scores were not included, higher short-term parental expectations were related to lower levels of distress in adolescents. Mediation models of psychological distress with previous achievement scores included as a covariate are shown in Figures 20 and 21.
Figure 20. Possible mediation effects of child psychological distress in the link between short-term parental education expectations and adolescents’ academic achievement (previous achievement scores included as a covariate). Number in parenthesis shows the path coefficient before psychological distress was added to the model. * p < .05  ** p < .001

Figure 21. Possible mediation effects of child psychological distress in the link between long-term parental education expectations and adolescents’ academic achievement (previous achievement scores included as a covariate). Number in parenthesis shows the path coefficient before psychological distress was added to the model. ** p < .001
Hypothesis 3. No mediation effect was found for any of the five parental involvement dimensions when controlling for previous achievement. Only one path linking short-term parental expectations to homework assistance was still significant. Parents with higher short-term expectations tended to provide more help on children’s homework. No effects were found for the long-term expectation model. Mediation models of parental involvement with previous achievement scores included as a covariate are shown in Figures 22 and 23.

Figure 22. Five dimensions of parental involvement as possible mediators of the effects of short-term parental educational expectations on adolescents’ academic achievement (previous achievement scores included as a covariate). Number in parenthesis shows the path coefficient before any mediator was added to the model. * p < .05
Hypothesis 4. Effects of short-term parental expectations were enhanced when modeled together with parent-child discrepancies in short-term expectations (Figure 24). Higher short-term expectations from parents predicted higher academic achievement and lower levels of distress in adolescents, although the mediation effect of distress was not significant due to the absence of a link between distress and achievement. Parent-child discrepancies in short-term expectations were related to children’s academic achievement even after controlling for previous achievement scores, but they were not related to psychological distress. When parents’ expectations were higher, larger discrepancies were related to lower achievement, but when children had higher expectations, larger discrepancies were related to higher achievement. The patterns of results were similar to the model without previous achievement scores as a covariate, only that all effects were weakened either to a smaller magnitude or to a statistically nonsignificant level. No
significant effects were found for the long-term expectation model (Figure 25).

Figure 24. Child psychological distress as possible mediator of the effects of short-term parental educational expectations and parent-child discrepancies in short-term educational expectations on adolescents’ academic achievement (previous achievement scores included as a covariate). Numbers in parentheses show the path coefficients before the mediator was added to the model. * p < .05  ** p < .001
Figure 25. Child psychological distress as possible mediator of the effects of long-term parental educational expectations and parent-child discrepancies in long-term educational expectations on adolescents’ academic achievement (previous achievement scores included as a covariate). Numbers in parentheses show the path coefficients before the mediator was added to the model. ** p < .001

Hypothesis 5. The same multiple group approach was applied to the current analysis of moderating effects of filial piety. Consistent with previous results, no moderating effect was found either for the short-term expectation model ($\Delta \chi^2 (30) = 36.64$, n.s.) or the long-term expectation model ($\Delta \chi^2 (30) = 36.46$, n.s.).
CHAPTER 4
SUMMARY AND DISCUSSION

Summary of Findings

This study examined five hypotheses that we proposed to explain the conflicting association patterns of parental educational expectations with children’s academic achievement among native and immigrant Chinese families. Main analyses were first conducted without adjusting for previous achievement, and then were repeated with previous achievement included as a covariate. For analyses not controlling for previous achievement, only two hypotheses were partly supported by our analyses, whereas the other three hypotheses were not supported. Specifically, partial support was obtained for the following hypotheses: (1) Adolescents’ psychological distress mediated the linear effects of short-term but not long-term parental educational expectations on their academic achievement, but the mediated effect was in the opposite direction, with higher parental short-term expectations related to low distress levels that in turn led to better children’s academic performance. (2) Parent-child discrepancies in short-term educational expectations were related to adolescents’ academic achievement directly, as well as indirectly through psychological distress, but the indirect effect did not reach a significant level. When parent expectations were higher than children’s, greater discrepancies were associated with higher levels of distress and lower achievement; when child expectations were higher than parent’s, greater discrepancies were associated with
lower levels of distress and higher achievement. Parent-child discrepancies in long-term educational expectations were also related to children’s academic achievement in a pattern that was similar to the short-term expectational discrepancies, but not related to children’s psychological distress.

The remaining hypotheses were not supported: (1) we did not find a curvilinear effect of parental educational expectations on adolescents’ academic achievement, either for short-term or long-term expectations. (2) None of the five parental involvement dimensions mediated effects of parental educational expectations on children’s academic achievement. (3) There were no moderating effects of filial piety on the direct and indirect effects of parental educational expectations and parent-child expectational discrepancies on children’s achievement.

For analyses controlling for effects of previous achievement, most effects were attenuated due to the high correlation between previous and current achievement scores and none of the five hypotheses was supported under this condition. Only several associations of short-term parental expectations and parent-child discrepancies in short-term expectations remained significant.

Discussion of Findings

Curvilinear Effects of Parental Educational Expectations (Hypothesis 1)

Consistent with most previous studies (e.g., Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2005, 2007; Rutchick et al., 2009), we found a positive linear association between parental expectations of children’s education achievement and children’s academic performance. However, there was no curvilinear effect of short-term or long-
term educational expectations of parents on adolescents’ academic achievement. As expected, the Chinese parents in our sample reported high levels of educational expectation. For short-term expectations, 53% of parents expected a rank at the top and additional 34% of parents expected their children to rank above average at the end of the school year. For long-term expectations, 67% of parents expected their children to complete four-year college study, and additional 30% expected graduate degrees. Even with such high levels of educational expectations, we still detected no curvilinear effect, suggesting that very high levels of parental educational expectations do not have the hypothesized detrimental impact on children’s achievement.

Previous studies rarely reported direct negative effects of parental expectations on children’s educational achievement. Some studies included educational expectations as a part of a composite measure of parental support that was negatively related to achievement (Chen, 2005). Other studies suggested an indirect negative effect. For instance, studies reported associations of high expectations with low academic motivation (which could be related to low achievement) and associations of high perceived expectational stress (which could be related to high expectations) with low academic achievement (Chow & Chu, 2007; Gong, 2005). Future studies may focus more on the possible indirect negative effects of parental expectations on academic achievement through various mediators, such as academic motivation and stress of perceiving high expectations from parents.
Mediating Effects of Psychological Distress (Hypothesis 2)

We expected that high levels of distress would mediate the link between high parental expectations and low academic achievement of children. Surprisingly, however, high short-term educational expectations of parents were related to lower levels of distress, and this association remained significant even after adjusting for previous achievement performance. Long-term parental expectations were not related to children’s psychological distress. Other than being perceived as a stressor (Crystal et al., 1994), high educational expectations are also an indicator of stronger parental support and positive parental involvement (Chen, 2005; Fan & Chen, 2001), which are generally related to better psychological adjustments including less distress and depression (Henry, Sager, & Plunkett, 1996; Meadows, Brown, & Elder, 2006). To clarify the effects of educational expectations on children’s psychological adjustment, it would be helpful to also include other important aspects of parental behaviors that may co-occur with educational expectations (e.g., communication about school-related matters, provision of educational resources, emotional support, and behavior control and monitoring).

Other than parents’ behaviors, children’s characteristics could also play a role. In general, better achieving students are characterized as more socially competent and having better self-regulation skills such as emotional regulation and autonomy for study, compared with low achieving students (Oades-Sese et al., 2011; Soenens et al, 2012). Study also found that improvement in self-regulation skills can significantly reduce adolescents’ internalizing mental health symptoms (Rapp-Paglicci, Stewart, & Rowe, 2011). Therefore, those characteristics may protect adolescents from the pressure of their high expectation parents.
Distress may not only function as a mediator, but also moderate the effects of educational expectations. Kaplan and colleagues (2005) examined the interaction between school stress and children’s educational expectations, and reported a significant moderating effect of school stress on the association of expectations with test grades. Under low levels of stress, higher expectations were related to better grades, but under high stress levels, higher expectations were related to poorer grades. Kaplan et al.’s study provided another possible explanation for the mixed results regarding the association of educational expectations with academic achievement in the literature, and future studies may examine whether the effects of parental educational expectations also vary as a function of child distress level.

Mediating Effects of Parental Involvement (Hypothesis 3)

We expected that certain dimensions of parental involvement, including communication, school participation, and encouragement, would explain a positive link between parental expectations and achievement. On the other hand, home supervision and homework assistance were expected to explain a negative link between parental expectations and achievement. The results showed that only the homework assistance dimension of parental involvement was associated with short-term parental expectations, and this link remained significant even after adjusting for previous achievement performance. Parents with higher short-term academic expectations tended to provide more assistance with children’s homework. Unfortunately, homework assistance was not found related to adolescents’ academic achievement, suggesting no mediating effect of homework assistance between short-term parental expectations and achievement. No
associations between long-term parental expectations and parental involvement were found; therefore none of the parental involvement dimensions mediated the effects of long-term parental expectations on achievement.

When not adjusting for previous achievement, less parent-child communication, more parental supervision at home, and higher school participation were predictive of poor academic performance of students, although these effects disappeared when previous achievement was included as a covariate. Also, none of the three dimensions were related to short-term or long-term parental expectations. As hypothesized, low frequency of communication could be an indicator of low parental support whereas high levels of parental supervision may be perceived by children as overcontrolling, thus the two factors may both induce negative feelings that adversely influence children’s academic performance. School participation was anticipated to have a positive effect, but the findings indicated a negative effect, suggesting that higher parental participation in school activities was related to poorer academic performance of children. However, since this effect disappeared after controlling for previous academic performance, it is also possible that parents were more likely to be contacted by school and teachers if they had low achieving children.

In general, there were few associations between parental involvement and other variables. This pattern of results may be partly due to the measure of parental involvement used in this study. Since the parental involvement instrument was adapted from U.S. studies and has not been validated in Chinese population before, some items may not be culturally appropriate. For example, most Chinese parents only passively participate in school activities, that is, meetings and contacts with teachers are mostly
initiated by the school. In our sample, 60% of parents attended the school programs for parents once or twice during the past semester, and perhaps that was because the school only held such programs once or twice in that semester. Since higher parental school participation was associated with children’s poorer academic performance, it is possible that this and similar items may reflect students’ poor achievement and school-initiated meetings to address it, rather than parent-initiated involvement. Thus, more research is needed on more culturally appropriate measures of parents’ active involvement in children’s academic activities, and the cultural validity of this construct in general.

Similarly, the encouragement scale may not be a good measure for Chinese parents. Our sample reported particularly high scores on the encouragement scale, with a mean of 13.8 and a standard deviation of 2.5 on a possible range of 4-16. That means most scores fell into the high end of the scale range. Parents also reported relatively high levels of communication (mean = 8.4, SD = 2.1, with a possible range of 3-12). The low scale variability of those measures may have contributed to the difficulty of detecting their associations with other variables. Previous studies suggested that the construct of parental involvement is somewhat different in Chinese vs. Western culture, and parental encouragement was the most highly rated aspect of parental involvement among Chinese parents (Kung, 2003). This may explain why parents in this study reported such high scores on the encouragement scale. In addition, encouragement and communication may be easier to practice compared to other involvement dimensions such as supervision, homework help, and school participation, since the former two types mostly involve verbal participation whereas the latter three types are more time consuming and require more physical involvement.
In addition to the cultural validity issue, the parental involvement measure could also be improved by including more general parental behaviors. Previous studies suggest that students’ academic performance is predicted not only by education-related parental involvement, but also by involvement in a broader spectrum of activities, including involvement in children’s leisure activities and communication about general life experiences (Cia et al., 2008). A meta-analysis showed that general involvement was more related to students’ academic achievement than specific educationally related dimensions such as communication about school matters and supervision of studying (Fan & Chen, 2001). Thus, future studies should consider including more general parental behaviors in addition to education-specific behaviors, such as parent-child communication on more general topics than school life, emotional support from parents when children are distressed and frustrated, and parent-child relationship quality.

Other than the measurement issue, the effectiveness of translating expectations into actual parenting practice may depend on parents’ socioeconomic status (SES), especially their own educational levels. Parents could hold high expectations for their children regardless of their own educational attainment (Kirk et al, 2011), but well educated parents are more involved in children’s academic activities than those with low education (Hayes, 2011). Hayes’s study also found an interaction between family SES and their educational expectations predicting parental involvement at home. The association between parental expectations and home involvement was higher for high SES families compare to low SES families. More studies are needed regarding how the influences of parental educational expectations would be moderated by parent’s educational level and other SES measures.
Effects of Parent-Child Discrepancies in Educational Expectations (Hypothesis 4)

We expected a direct effect of parent-child expectational discrepancies on children’s achievement over and above the effects of parental expectations alone, and that this effect would be moderated by the direction of parent-child discrepancies. As expected, the discrepancies between parents’ and children’s expectations were predictive of children’s academic achievement, and the predictive effect of short-term expectational discrepancies was maintained even after adjusting for previous achievement. Consistent with our hypothesis, the direction of the discrepancy mattered. Only when parents’ expectations were higher than children’s expectations, the discrepancy was associated with poorer academic performance. If the child had higher expectations than the parent, higher expectational discrepancies were associated with higher achievement. These results suggested a moderating effect of the direction of parent-child discrepancies, which we evaluated directly with multigroup modeling. Specifically, we created a low-expectation child with high-expectation parent group and a high-expectation child with low-expectation parent group, and tested equivalence of the predictive effects of parent-child expectational discrepancies across the two groups. Participants with perfect agreement between parent and child on educational expectations (i.e., participants with a discrepancy score of 0) were excluded from this analysis. Unfortunately, most parents and children reported agreement rather than disagreement on their educational expectations. Three hundred thirty-six (68%) and 312 (63%) participants reported a discrepancy score of 0 on long-term and short-term expectations, respectively, leaving a small sample (about 150 parent-child pairs) for the multigroup analysis. Perhaps due to
the small sample size, the analysis did not reveal a significant moderating effect of the discrepancy direction.

The results also suggested that child distress may mediate the effect of parent-child discrepancies in short-term educational expectations on children’s academic achievement; however, this indirect effect did not reach a statistical significance. Nevertheless, these results suggested that high discrepancies may influence children’s mental health. Children who had lower educational expectations than their parents were more likely to report feeling stressed and depressed, compared with children who had higher educational expectations than their parents. It is possible that children who do not internalize high parental expectations perceive these expectations as stressful. This may lead to anxiety and depression that can be harmful to their academic performance. On the other hand, if children develop high expectations on their own instead of being forced by parents, they might be more motivated to perform academically and experience better emotional functioning. However, since those results were obtained without adjusting for previous achievement performance, it is also possible that poor achievement may lead to more depression and distress in adolescents and those adolescents may then develop lower expectations (Tynkkynen, Tolvanen, & Salmela-Aro, 2012). More longitudinal studies are needed to clarify the causal relationships among those variables.

A different, potentially useful approach to examining child and parental expectations may be to test the interaction between these two expectations rather than analyzing their discrepancies. As suggested by our findings, the effects of parental expectations on achievement may be attenuated when children have low expectations, while the effect may be enhanced when children also report high expectations.
Moderating Effects of Filial Piety (Hypothesis 5)

We expected stronger effects of parental educational expectations on children’s academic performance under the condition of high filial piety, compared with low filial piety children. Contrary to expectations, we found no moderating effects of filial piety for the effects of either short-term or long-term parental expectations on children’s achievement. We also examined main effects of filial piety on children’s distress and achievement and obtained no significant results. Our findings are not consistent with previous studies that suggested a direct role of filial piety in academic achievement (Chow & Chu, 2007) or a moderating effect of filial piety type on relationships between parental influences and students’ academic achievement (Chen, 2010) among Chinese population. Such inconsistency may be explained by different types of piety that were not measured in this study. Chen distinguished two types of filial piety, reciprocal filial type, characterized by close relationship and exchange of emotional support, and authoritarian filial type, characterized by emphasis on obedience. In families reporting the reciprocal filial type, a stronger association between parental influences and students’ academic achievement was obtained compared to the authoritarian type families. This approach of identifying different filial types might be more appropriate to evaluating the role of filial piety in achievement than our strategy to examine high and low filial piety groups. Moreover, the filial piety measure used in this study may not be most appropriate for adolescents. Because the measure was developed for adults, several items asked about people’s opinions toward choosing career, choosing marriage partner, and having a child. Adolescents may not be mature enough to have developed sophisticated attitudes and perspectives toward those issues. Future studies would benefit from utilizing measures of
filial piety that are more appropriate for adolescents and that distinguish between different types of filial piety.

**Short-term Versus Long-term Educational Expectations**

As we expected, parents’ short-term and long-term educational expectations functioned differently in predicting children’s academic achievement. In general, short-term expectations were more strongly related to other measured variables than long-term expectations, and even discrepancies in short-term expectations were more strongly related to other study variables than long-term expectational discrepancies. Such difference may be explained by how parents develop and are affected by their short-term and long-term expectations. When setting up short-term achievement goals, parents may take into consideration their children’s prior performance and be more realistic, forming expectations that can be reached by the children. Since Chinese parents usually feel highly obligated to promote children’s academic performance (Kung, 2003), such feelings of obligation may be reflected in their efforts to translate the short-term expectations into practice. Subsequently, they may express their expectations more frequently and become more involved in activities that may encourage children’s achievement, such as showing love and care for the child, optimizing the learning environment, providing emotional and financial support, and communicating with the child about problems and difficulties encountered in studies. Although adolescents may feel more pressured with high expectation parents, they may also receive more support and be more motivated to achieve. These speculations may also partly explain why short-term parental expectations were associated with low levels of children’s distress in this
study. By contrast, when it came to long-term expectations (for the next 5-10 years), parents may feel less in control of whether or not such expectations can be achieved, with the fulfillment being more dependent on the children’s behavior. Therefore, parents may communicate their long-term expectations but they may be less likely to translate them into other parenting behaviors that may affect the child in a more immediate way.

Adjusting for Previous Achievement Performance

We conducted our main analyses in two ways, with and without adjusting for previous achievement scores. Because the two achievement scores were highly correlated (r = .78), including previous achievement as a covariate left little variance in the dependent variable and resulted in a loss of significant relationships between predictors and academic achievement compared to analyses not adjusting for prior achievement. In fact, we foresaw this problem in advance and collected students’ test scores from two semesters prior to our survey (i.e., spring 2010 and fall 2011). We assumed that the dependent variable (test scores from spring 2011, after completing the survey) would be less strongly related to scores from two semesters ago (spring 2010) than from one semester ago (fall 2010). Unfortunately, the two correlations were nearly identical (r=.79 and .78). Thus, we chose scores from the previous semester since its correlation with the dependent variable was slightly lower. To avoid similar problems in the future, it would help to use previous scores from more distant past or to include students’ performance on a different but related test as covariate, such as an IQ test.
Strengths, Limitations, and Implications

Strengths of this study included a large sample from mainland China, inclusion of multiple informants, and the use of both short-term and long-term educational expectations. Most studies with Chinese populations recruited participants from Hong Kong, Taiwan, or immigrant Chinese in the U.S. However, samples from mainland China are more representative of the majority of Chinese population and findings based on those samples may provide some new insight into cross-cultural phenomena. We collected both parents’ and adolescents’ reports for some but not all constructs, as data from multiple informants are usually less biased than data from a single source (Kraemer et al., 2003). Finally, measures of short-term educational expectations have rarely been used in previous studies that have focused primarily on long-term expectations. According to the present results, short-term expectations are a stronger predictor of children’s mental health status and academic achievement than the commonly used long-term expectations. Thus, future studies should consider including short-term (or both short-term and long-term) expectations in relation to other important aspects of adolescents’ lives.

Several limitations need to be noted. First, most of our findings were based on cross-sectional analyses that did not control for previous achievement performance. Thus, the causal relationships among the studied variables cannot be inferred. Future studies should use longitudinal designs and consider using other measures of academic abilities as covariates to avoid high correlations between such covariates and the outcomes of academic achievement. As discussed above, some instruments used in this study were not appropriate for the target population, such as the parental involvement scale and filial
piety scale. Future research needs to include culturally valid instruments. Additionally, it may be helpful to include broader measures of parental involvement, such as those that include the provision of emotional support and more general communication with children. Finally, future studies may need to address the moderating effects of children’s stress level on the association of parental educational expectations with achievement, since it has been suggested that the promoting effect of parental expectations only exists under low stress condition (Kaplan, Liu, & Kaplan, 2005).

In conclusion, the study confirmed the previously reported promoting effects of high parental educational expectations on children’s academic achievement (e.g., Fan & Chen, 2001; Hill & Tyson, 2009; Jeynes, 2005, 2007; Rutchick et al., 2009). Contrary to hypotheses and some previous studies (Cui, 2005; Gong, 2005; Wan, 2002; Yip, Ngan, & Lam, 2003), this study indicated that high short-term parental expectations was related to low and not higher levels of distress in children. It is possible that parental expectations for high educational achievement are associated with a range of other positive parenting behaviors that encourage children’s academic achievement, as well as emotional adjustment. On the other hand, negative parenting behaviors such as neglect, harsh discipline, and family conflict may attenuate the promoting effects of parental expectations. Further research should include the interactive effects of a wider range of parenting behaviors to provide more insight on the effects of parental expectations for children’s functioning. This study also found some interesting effects of parent-child discrepancies in educational expectations. Only when parents’ expectations were higher than children’s did we find that greater discrepancies were associated with higher levels of distress and lower achievement of adolescents. This suggests that high parental
expectations alone do not adversely affect children’s mental health and academic performance. However, when parents have high expectations and their children have low expectations, the disagreement may become detrimental to children’s functioning. However, other causal explanations would also be consistent with these findings and need to be addressed in future research. On the other hand, when children’s expectations are higher than parents’, they may be more self-motivated and show better emotional adjustment and higher achievement. These findings imply that future studies should not only focus on parents’ educational expectations, but also include children’s own expectations and how parental and children’s expectations jointly affect adolescents’ adjustment.
REFERENCES


Chen, J. J. (2005). Relation of academic support from parents, teachers, and peers to Hong Kong adolescents’ academic achievement: The mediating role of academic


Cui, Y. (2005). The Research of the Relationship Among the Expectation of Parents of Junior High School Students in Macau, Students' Achievement Motivation and
Anxiety (Master thesis, South China Normal University, China, 2005). (in Chinese)


APPENDIX A

DISSERTATION INSTITUTIONAL REVIEW BOARD APPROVAL
UAB Institutional Review Boards for Human Use (IRBs) have an approved Federalwide Assurance with the Office for Human Research Protections (OHRP). The Assurance number is FWA00005960 and it expires on September 29, 2013. The UAB IRBs are also in compliance with 21 CFR Parts 50 and 56.

Principal Investigator: SU, WEI
Co-Investigator(s): MRUG, SYLVIE
Protocol Number: F101122007
Protocol Title: Academic Achievement of Chinese High School Students

The IRB reviewed and approved the above named project on 12/15/2010. The review was conducted in accordance with UAB's Assurance of Compliance approved by the Department of Health and Human Services. This Project will be subject to Annual continuing review as provided in that Assurance.

This project received FULL COMMITTEE review.

IRB Approval Date: 12/15/2010
Date IRB Approval Issued: 12/18/10
Identification Number: IRB00000196

Ferdinand Uthaler, M.D.
Chairman of the Institutional Review Board for Human Use (IRB)

Investigators please note:

The IRB approved consent form used in the study must contain the IRB approval date and expiration date.

IRB approval is given for one year unless otherwise noted. For projects subject to annual review research activities may not continue past the one year anniversary of the IRB approval date.

Any modifications in the study methodology, protocol or consent form must be submitted for review and approval to the IRB prior to implementation.

Adverse Events and/or unanticipated risks to subjects or others at UAB or other participating institutions must be reported promptly to the IRB.
APPENDIX B

INFORMED CONSENT FORM
For Children/Minors (persons under 19 years of age) participating in this study, the term *You* addresses both the participant ("you") and the parent or legally authorized representative ("your parent").

**Explanation of Procedures**

We are asking you to take part in a research study. The researchers want to know more about factors that may influence adolescents’ academic achievement. The study is conducted by researchers at the Department of Psychology, University of Alabama at Birmingham. The study will enroll 350 participants from one high school in Chongqing, China.

If you agree to take part in this study, we will ask you to complete a battery of questionnaires. The questionnaires will ask the parent questions about educational expectations for your child and your involvement in the child’s academic activities. The adolescent questionnaires will also ask about educational expectations for yourself, some of your experiences that may be related to academic performance, and your attitudes toward filial piety. It will take about 45 minutes to complete the questionnaires and you (the adolescent) will be paid 50RMB for your time. At the end of the study, we will collect the adolescent’s test scores on finals for this semester and for two previous semesters from the school records.

**Risks and Discomforts**

Answering our questions should not cause you much risk or discomfort. Some people may feel a little uncomfortable answering some of the questions. You may skip any questions you do not wish to answer.

**Benefits**

You may not benefit directly by being a part of this study. However, what we learn from you may help us better understand how to promote adolescents’ academic performance.
Confidentiality
All the information we obtain in this study will be kept private to the extent permitted by law. Only people who are working with the study will see your confidential information. This includes people from the UAB Institutional Review Board and the Office for Human Research Protections (OHRP). These people work to protect participants from any possible harm from being in the study. To do so, they sometimes need to look at people’s personal information.

Your name will NOT be placed together with your answers to the questions. We will assign a number to you, and only this number will be connected to the information you give us. Your information will be grouped with information from other participants. All the information from you and the other people will be analyzed and reported together.

Refusal or Withdrawal without Penalty
You do not have to be a part of this study. It is your choice. You are free to say no at any time. If you agree to be part of the study, you can change your mind and get out of it at any time.

Cost of Participation
There is no cost to be a part of this study.

Payment for Participation in Research
We will pay you (the adolescent) 25RMB in cash for participating in the study.

Payment for Research-Related Injuries
UAB has not provided for any payment if you are harmed as a result of taking part in this study. If such harm occurs, treatment will be provided. However, this treatment will not be provided free of charge.

Significant New Findings
The investigator or a member of the study staff will tell you about anything we find out during the study that may affect whether you want to stay in the study.

Questions
We will be glad to answer any questions about the study. If you have any questions, concerns, or complaints about the research or a research-related injury including available treatments, please contact the principal investigator, Wei Su, at 023-85385055 (China) or 001-205-4476254 (U.S.), or send email to weisu@uab.edu. If you have questions about your rights as a research participant, or concerns or complaints about the research, you may contact Mr. Wenju Su, a teacher at the Yongchuan No.7 Middle High School. Mr. Wenju Su may be reached at 023-49471005. You may also contact Ms. Sheila Moore. Ms. Moore is the Director of the Office of the Institutional Review Board for Human Use (OIRB) at UAB and may be reached by email at irb@uab.edu.
Legal Rights
You are not waiving any of your legal rights by signing this informed consent form.

Signatures
You are making a decision whether or not to have your child participate in this study. Your signature indicates that you have read the information provided above and decided to allow your child to participate.
You will receive a copy of this signed informed consent document.

Signature of Parent       Date
Or Legally Authorized Representative

Signature of Investigator     Date

Signature of Witness

Assent of Child
_________________________(name of child/minor) has agreed to participate in research titled Academic Achievement of Chinese High School Students

Signature of Child       Date
APPENDIX C

PARENT QUESTIONNAIRE
# Academic Achievement of Chinese High School Students

## Instruction

This study is conducted by researchers at the Department of Psychology, University of Alabama at Birmingham. This study will investigate factors that may influence adolescents’ academic achievement. We will ask you questions about your educational expectations for your child and your involvement in the child’s academic activities. All the information we obtain in this study will be kept private to the extent permitted by law. Only people who are working with the study will see your confidential information. Some people may feel a little uncomfortable answering some of the questions. You may skip any questions you do not wish to answer.

We ask both you and your child to participate in this study. You child has completed the student questionnaire at school. Now you are going to fill out the parent questionnaire. The “child” mentioned in all the following questions refers to the one child of yours who participates in this study.

We will only need one of the parents to participate, either the father or the mother. Before you or your spouse get started, please answer the following question first:

Is the father or the mother primarily involved in the child’s academic activities?

- [ ] Father  
- [ ] Mother

We will need the one parent who is primarily involved in the child’s academic activities to complete the questionnaire. If you and your spouse contribute equally to the child’s study, then either you or your spouse would fill out the questionnaire. You or your spouse has one week to complete the questionnaire. When you are finished, please seal the completed questionnaire in the envelop that we provided and sign across the flap. Your child will take it back to school.

If you have any questions, concerns, or complaints about the study or the questionnaire, please contact the investigator, Wei Su, at 023-85385055 or weisu@uab.edu. Thank you very much for your participation.
Parent Questionnaire

The following questions ask some basic information about your child.

1. Your child’s date of birth: _______________________

2. Your child’s gender:  
   - Male  
   - Female

3. Your child’s ethnicity:  
   - Han  
   - Other (Please specify: ________)

The following questions ask some basic information about you.

4. How are you related to the child? You are the:  
   - Father  
   - Mother  
   - Others (Please specify: ___________)

5. What is your education level?  
   - 01) No formal education  
   - 02) Some elementary school  
   - 03) Elementary school graduate  
   - 04) Some middle school  
   - 05) Middle school graduate  
   - 06) Some high school  
   - 07) High school graduate or equivalence  
   - 08) Some college  
   - 09) Associate degree  
   - 10) Four-year college degree  
   - 11) Master’s degree  
   - 12) Doctorate degree

6. What is your occupation: __________________________________________

7. How many family members regularly live with you (including yourself) □_____

8. During the past 12 months, the total combined income of all family members who regularly live with you is approximately (before tax): ______________________
The following questions ask your educational expectations for your child. Please choose the one answer that best describes you.

1. How far in school do you expect your child to go?
   - □ 1) Less than high school
   - □ 2) High school graduate
   - □ 3) Associate college
   - □ 4) Four-year college
   - □ 5) Graduate school - Master’s degree
   - □ 6) Graduate school - Doctorate degree

2. Where do you expect your child to stand academically among classmates by the end of this school year?
   - □ 1) At the top
   - □ 2) Above average
   - □ 3) Average
   - □ 4) Below average
   - □ 5) At the bottom

The following questions ask your involvement in your child’s academic activities. Please choose the one answer that best describes you.

1. How often do you or your spouse/partner talk with your child about his or her experience in school?
   - □ 1. Not at all
   - □ 2. Rarely
   - □ 3. Occasionally
   - □ 4. Regularly

2. How often do you or your spouse/partner talk with your child about his or her plans for high school?
   - □ 1. Not at all
   - □ 2. Rarely
   - □ 3. Occasionally
   - □ 4. Regularly
3. How often do you or your spouse/partner talk with your child about his or her plans for after high school?
   - [ ] 1. Not at all
   - [ ] 2. Rarely
   - [ ] 3. Occasionally
   - [ ] 4. Regularly

4. How often do you or your spouse/partners check on whether your child has done his or her homework?
   - [ ] 1. Often
   - [ ] 2. Sometimes
   - [ ] 3. Rarely
   - [ ] 4. Never

5. How often do you or your spouse/partners limit the amount of time your child can spend watching television, surfing the internet, and/or playing video/computer games?
   - [ ] 1. Often
   - [ ] 2. Sometimes
   - [ ] 3. Rarely
   - [ ] 4. Never

6. How often do you or your spouse/partners limit the amount of time for your child going out with friends on school nights?
   - [ ] 1. Often
   - [ ] 2. Sometimes
   - [ ] 3. Rarely
   - [ ] 4. Never

7. Are there family rules that are enforced for your child about maintaining a certain GPA?
   - [ ] 1. Yes
   - [ ] 2. No

8. Are there family rules that are enforced for your child about doing homework (for example, finish homework before watching television, surfing the internet, and/or playing video/computer games)?
   - [ ] 1. Yes
   - [ ] 2. No

9. How often do you or your spouse/partners help your child with his or her homework?
   - [ ] 1. Often
   - [ ] 2. Sometimes
   - [ ] 3. Rarely
   - [ ] 4. Never

10. During the past semester, how many times have you or your spouse attended the school programs for parents?
    - [ ] 1. None
    - [ ] 2. Once or twice
    - [ ] 3. Three or four times
    - [ ] 4. More than four times
11. During the past semester, how many times have you or your spouse/partner contacted the school about your child’s academic performance?

☐ 1. None    ☐ 2. Once or twice    ☐ 3. Three or four times    ☐ 4. More than four times

12. During the past semester, how many times have you or your spouse/partner contacted the school about your child’s behavior in school?

☐ 1. None    ☐ 2. Once or twice    ☐ 3. Three or four times    ☐ 4. More than four times

13. How often do you or your spouse/partner encourage your child to do well in school (for example, to get along with classmates and teacher, to help others, and/or to actively participate in school activities)?


14. How often do you or your spouse/partner encourage your child to study hard on schoolwork and tests?


15. How often do you or your spouse/partner encourage your child to do homework before playing?


16. How often do you or your spouse/partner encourage your child to listen carefully to the teacher when doing his/her work in school?


Thank you for your participation!
APPENDIX D

CHILD QUESTIONNAIRE
Academic Achievement of Chinese High School Students

Instruction

This study is conducted by researchers at the Department of Psychology, University of Alabama at Birmingham. This study will investigate factors that may influence adolescents’ academic achievement. We will ask you questions about your educational expectations for yourself, some of your experiences that may be related to academic performance, and your attitudes toward filial piety. All the information we obtain in this study will be kept private to the extent permitted by law. Only people who are working with the study will see your confidential information. Some people may feel a little uncomfortable answering some of the questions. You may skip any questions you do not wish to answer.

If you have any questions, concerns, or complaints about the study or the questionnaire, please contact the investigator, Wei Su, at 023-85385055 or weisu@uab.edu. Thank you very much for your participation.

Date: _____/_____/________
Student Questionnaire

The following questions ask some basic information about you.

1. Your name: _______________________

2. Your date of birth: _______________________

3. Your gender: □ Male □ Female

4. Your ethnicity: □ Han □ Others (Please specify: ________)

The following questions ask your educational expectations for yourself. Please choose the one answer that best describes you.

5. How far in school do you expect to go?
   □ 1) Less than high school
   □ 2) High school graduate
   □ 3) Associate college
   □ 4) Four-year college
   □ 5) Graduate school - Master’s degree
   □ 6) Graduate school - Doctorate degree

6. Where do you expect to stand academically among classmates by the end of this school year?
   □ 1) At the top
   □ 2) Above average
   □ 3) Average
   □ 4) Below average
   □ 5) At the bottom
The following sentences describe some learning experiences that people may have. Please choose the one answer that best describes you.

1. I don’t want my classmates to look down upon me because I make bad grades.
   - 1. Completely disagree
   - 2. Somewhat disagree
   - 3. Neither agree or disagree
   - 4. Somewhat agree
   - 5. Completely agree

2. I don’t want to disappoint my parents.
   - 1. Completely disagree
   - 2. Somewhat disagree
   - 3. Neither agree or disagree
   - 4. Somewhat agree
   - 5. Completely agree

3. If I make good grades, my parents would not think I am stupid even if I am not good at other things.
   - 1. Completely disagree
   - 2. Somewhat disagree
   - 3. Neither agree or disagree
   - 4. Somewhat agree
   - 5. Completely agree

4. If I make good grades, my teachers would not think I am stupid even if I am not good at other things.
   - 1. Completely disagree
   - 2. Somewhat disagree
   - 3. Neither agree or disagree
   - 4. Somewhat agree
   - 5. Completely agree

5. I don’t want to disappoint my teachers.
   - 1. Completely disagree
   - 2. Somewhat disagree
   - 3. Neither agree or disagree
   - 4. Somewhat agree
   - 5. Completely agree

6. My curriculum is overwhelming.
   - 1. Completely disagree
   - 2. Somewhat disagree
   - 3. Neither agree or disagree
   - 4. Somewhat agree
   - 5. Completely agree

7. I feel pressures from tests and the college entrance exam.
   - 1. Completely disagree
   - 2. Somewhat disagree
   - 3. Neither agree or disagree
   - 4. Somewhat agree
   - 5. Completely agree

8. My parents are over-demanding.
   - 1. Completely disagree
   - 2. Somewhat disagree
   - 3. Neither agree or disagree
   - 4. Somewhat agree
   - 5. Completely agree
The following sentences describe test experiences that people may have. Please choose the one answer that best describes you.

<p>| | | | |</p>
<table>
<thead>
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<tbody>
<tr>
<td>1.</td>
<td>While taking an important exam, I find myself thinking of how much brighter the other students are than I am.</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>2.</td>
<td>While taking an important exam, I perspire a great deal.</td>
<td>Yes</td>
<td>No</td>
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<td>3.</td>
<td>During class examinations, I find myself thinking of things unrelated to the actual course material.</td>
<td>Yes</td>
<td>No</td>
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<td>4.</td>
<td>I get to feeling very panicky when I have to take a surprise exam.</td>
<td>Yes</td>
<td>No</td>
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<td>5.</td>
<td>During a test, I find myself thinking of the consequences of failing.</td>
<td>Yes</td>
<td>No</td>
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<td>6.</td>
<td>After important tests, I am frequently so tense my stomach gets upset.</td>
<td>Yes</td>
<td>No</td>
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<td>7.</td>
<td>I freeze up on things like intelligence tests and final exams.</td>
<td>Yes</td>
<td>No</td>
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<td>8.</td>
<td>Getting good grades on one test doesn't seem to increase my confidence on the second.</td>
<td>Yes</td>
<td>No</td>
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<td>9.</td>
<td>I sometimes feel my heart beating very fast during important exams.</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>10.</td>
<td>After taking a test, I always feel I could have done better than I actually did.</td>
<td>Yes</td>
<td>No</td>
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<td>11.</td>
<td>I usually get depressed after taking a test.</td>
<td>Yes</td>
<td>No</td>
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<td>12.</td>
<td>I have an uneasy, upset feeling before taking a final examination.</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>13.</td>
<td>When taking a test, my emotional feelings do not interfere with my performance.</td>
<td>Yes</td>
<td>No</td>
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<td>14.</td>
<td>During a course examination, I frequently get so nervous that I forget facts I really know.</td>
<td>Yes</td>
<td>No</td>
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<td>15.</td>
<td>I seem to defeat myself while working on important tests.</td>
<td>Yes</td>
<td>No</td>
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<td>16.</td>
<td>The harder I work at taking a test or studying for one, the more confused I get.</td>
<td>Yes</td>
<td>No</td>
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<td>17.</td>
<td>As soon as an exam is over, I try to stop worrying about it, but I</td>
<td>Yes</td>
<td>No</td>
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<td>18.</td>
<td>During exams, I sometimes wonder if I'll ever get through school.</td>
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<td>19.</td>
<td>I wish examinations did not bother me so much.</td>
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<td>20.</td>
<td>I think I could do much better on tests if I could take them alone and not feel pressured by time limits.</td>
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<td>21.</td>
<td>Thinking about the grade I may get in a course interferes with my studying and performance on tests.</td>
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<td>22.</td>
<td>If examinations could be done away with, I think I would actually learn more.</td>
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<td>23.</td>
<td>On exams I take the attitude, &quot;If I don't know it now, there's no point in worrying about it.&quot;</td>
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<td>24.</td>
<td>I really don't see why some people get so upset about tests.</td>
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<td>25.</td>
<td>Thoughts of doing poorly interfere with my performance on tests.</td>
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<td>26.</td>
<td>I don't study any harder for final exams than for the rest of my coursework.</td>
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<td>27.</td>
<td>Even when I'm well prepared for a test, I feel very anxious about it.</td>
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<td>28.</td>
<td>I don't enjoy eating before an important test.</td>
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<td>29.</td>
<td>Before an important examination, I find my hands or arms trembling.</td>
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<tr>
<td>30.</td>
<td>I seldom feel the need for &quot;cramming&quot; before an exam.</td>
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<td>31.</td>
<td>The university should recognize that some students are more nervous than others about tests and that this affects their performance.</td>
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<td>32.</td>
<td>It seems to me that examination periods should not be made such intense situations.</td>
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<td>33.</td>
<td>I started feeling very uneasy just before getting a test paper back.</td>
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<td>34.</td>
<td>I dread courses where the instructor has the habit of giving &quot;pop&quot; quizzes.</td>
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</table>
The following sentences describe people’s emotional feelings. Please choose the one answer that best describes you. During the past week:

1. I was bothered by things that usually don’t bother me.
   - [ ] 1. Not at all
   - [ ] 2. A little
   - [ ] 3. Some
   - [ ] 4. A lot

2. I did not feel like eating, I wasn’t very hungry.
   - [ ] 1. Not at all
   - [ ] 2. A little
   - [ ] 3. Some
   - [ ] 4. A lot

3. I wasn’t able to feel happy, even when my family or friends tried to help me feel better.
   - [ ] 1. Not at all
   - [ ] 2. A little
   - [ ] 3. Some
   - [ ] 4. A lot

4. I felt like I was just as good as other kids.
   - [ ] 1. Not at all
   - [ ] 2. A little
   - [ ] 3. Some
   - [ ] 4. A lot

5. I felt like I couldn’t pay attention to what I was doing.
   - [ ] 1. Not at all
   - [ ] 2. A little
   - [ ] 3. Some
   - [ ] 4. A lot

6. I felt down and unhappy.
   - [ ] 1. Not at all
   - [ ] 2. A little
   - [ ] 3. Some
   - [ ] 4. A lot

7. I felt like I was too tired to do things.
   - [ ] 1. Not at all
   - [ ] 2. A little
   - [ ] 3. Some
   - [ ] 4. A lot

8. I felt like something good was going to happen.
   - [ ] 1. Not at all
   - [ ] 2. A little
   - [ ] 3. Some
   - [ ] 4. A lot

9. I felt like things I did before didn’t work out right.
   - [ ] 1. Not at all
   - [ ] 2. A little
   - [ ] 3. Some
   - [ ] 4. A lot
10. I felt scared.

11. I didn’t sleep as well as I usually sleep.

12. I was happy.

13. I was more quiet than usual.

14. I felt lonely, like I didn’t have any friends.

15. I felt like kids I know were not friendly or that they didn’t want to be with me.

16. I had a good time.

17. I felt like crying.

18. I felt sad.

19. I felt people didn’t like me.

20. It was hard to get started doing things.
The following sentences describe people’s attitudes toward filial piety. Please choose the one answer that best describes you.

1. If reasonable, it is okay to put parents into a nursing home.

|---|------------------------|----------------------|----------------------------|------------------|---------------------|

2. It is worthwhile to sacrifice everything for parents.

|---|------------------------|----------------------|----------------------------|------------------|---------------------|

3. When parents are still alive, adult children should stay close to where the parents live.

|---|------------------------|----------------------|----------------------------|------------------|---------------------|

4. Adult children don’t need to ask for parents’ opinions on choosing their marriage partners.

|---|------------------------|----------------------|----------------------------|------------------|---------------------|

5. Children should not be engaged in dangerous activities, because parents will worry about them.

|---|------------------------|----------------------|----------------------------|------------------|---------------------|

6. Parents should not interfere with children’s decisions on careers.

|---|------------------------|----------------------|----------------------------|------------------|---------------------|

7. To have someone take care of you in old age should not be the main purpose of raising children.

|---|------------------------|----------------------|----------------------------|------------------|---------------------|

8. Children must respect for their parents regardless of how good or bad their parents are.

|---|------------------------|----------------------|----------------------------|------------------|---------------------|
9. To make parents look good should not be the main purpose of studying/working hard.


10. To have a son to carry the family name should not be the main purpose of getting married.


11. Adult children can make their own decisions without asking for parents’ opinions.


12. Children need not necessarily respect for people who their parents respect for.


13. Even though parents are still alive, adult children own all money they make.


14. Children must obey their parents no matter what.


15. If parents ask their children to do something, they should do it right away.


16. Everyone should spend holidays with his/her family.


17. Children should attribute all of their achievements to their parents.


18. Children should show good manners in front of their parents and seniors.

Please read the following sentences and choose the one answer that best describes you.

1. I have thought about things that I don’t tell other people about.
   - □ 1. Completely disagree
   - □ 2. Somewhat disagree
   - □ 3. Neither agree or disagree
   - □ 4. Somewhat agree
   - □ 5. Completely agree

2. There have been occasions when I felt like yelling.
   - □ 1. Completely disagree
   - □ 2. Somewhat disagree
   - □ 3. Neither agree or disagree
   - □ 4. Somewhat agree
   - □ 5. Completely agree

3. It’s hard for me to shut off a disturbing thought.
   - □ 1. Completely disagree
   - □ 2. Somewhat disagree
   - □ 3. Neither agree or disagree
   - □ 4. Somewhat agree
   - □ 5. Completely agree

4. I don’t always know the reasons why I am mad.
   - □ 1. Completely disagree
   - □ 2. Somewhat disagree
   - □ 3. Neither agree or disagree
   - □ 4. Somewhat agree
   - □ 5. Completely agree

5. I often feel that no one needs me.
   - □ 1. Completely disagree
   - □ 2. Somewhat disagree
   - □ 3. Neither agree or disagree
   - □ 4. Somewhat agree
   - □ 5. Completely agree

6. On occasions I have had doubts about my ability.
   - □ 1. Completely disagree
   - □ 2. Somewhat disagree
   - □ 3. Neither agree or disagree
   - □ 4. Somewhat agree
   - □ 5. Completely agree

7. When I am doing something important, I am sometimes irritated by people who ask favors of me.
   - □ 1. Completely disagree
   - □ 2. Somewhat disagree
   - □ 3. Neither agree or disagree
   - □ 4. Somewhat agree
   - □ 5. Completely agree

8. I am a completely rational person.
   - □ 1. Completely disagree
   - □ 2. Somewhat disagree
   - □ 3. Neither agree or disagree
   - □ 4. Somewhat agree
   - □ 5. Completely agree

9. There have been occasions when I have taken advantage of someone.
   - □ 1. Completely disagree
   - □ 2. Somewhat disagree
   - □ 3. Neither agree or disagree
   - □ 4. Somewhat agree
   - □ 5. Completely agree
10. I don’t easily get tired.


11. I am very confident of my judgments.


12. I always try to practice what I preach.


13. I don’t always know the reasons why I do the things I do.


15. I sometimes try to get even rather than forgive and forget.


16. I have said something bad about a friend behind his or her back.


17. On occasions I have laughed at dirty jokes.


18. When I was young I sometimes stole things.

19. It’s difficult for me to fully concentrate on one thing.


20. I get confused easily.


21. I am fully in control of my own fate.


22. I have done things that I don’t tell other people about.


23. I never take things that don’t belong to me.


24. I have never intensely disliked anyone.


Thank you for your participation!