

ABSTRACT

Title of Thesis: THE RELATIONSHIP BETWEEN PARENTAL WARMTH
AND PARENTAL PRESSURE TO ACHIEVE WITH
ADOLESCENT DEPRESSION AND ANXIETY IN CHINA.

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Adolescents in mainland China are under strong family pressure to excel academically, and they experience psychological symptoms at higher rates than those found in Western countries, but little attention has been paid to the association between the two. This study investigated the relationship between parental warmth and parental pressure to achieve academically, and two forms of adolescent psychological maladjustment (depression and anxiety). A sample of 997 students were surveyed in four high schools in Beijing, China. Results indicated that perceived parental warmth correlated negatively with adolescents' levels of anxiety and depression symptoms, perceived parental pressure to achieve correlated positively with anxiety and depression symptoms, and parental warmth moderated the relationship between perceived parental pressure and adolescents' depression symptoms but not adolescents' anxiety symptoms.

Gender differences were explored, with significantly stronger correlations found for boys than for girls between pressure and symptoms of anxiety and depression.

THE RELATIONSHIP BETWEEN PARENTAL WARMTH
AND PARENTAL PRESSURE TO ACHIEVE WITH ADOLESCENT
DEPRESSION AND ANXIETY IN CHINA

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Chapter I: Introduction

Statement of the Problem

This study investigated the relationship between the parental characteristics of warmth and pressure to achieve academically with adolescent anxiety and depression in China. Some studies have shown higher levels of psychological maladjustment in Chinese children than in North American children (Chan, 1995; Cheung, 1986; Crystal et al, 1994; Dong, Yang, & Ollendick, 1994). Academic pressures have been identified as a source of stress for Chinese adolescents (DuongTran, Lee, & Khoi, 1996; Siu, & Watkins, 1997). Parental expectations for academic achievement are higher in China than in the United States, and Chinese parents report greater dissatisfaction with their children's performance (Chen, Liu, & Li, 2000). Some research indicates that Chinese children feel insufficiently acknowledged by their parents for their hard work (Uba, 1993). Although there have been some studies linking parental expectations with academic achievement (Campbell, 1996; Chen, Lee & Stevenson, 1996; Yao, 1985), these studies have not addressed the relationship between parental pressure to achieve and adolescent emotional adjustment.

Purpose of the Study

The correlation between adolescent psychological well-being and high parental warmth has been well-established in samples from various cultures, including studies in Africa, Asia, South America, and Europe (Rohner, 1986). Studies with Chinese children confirm the relationship between adolescent perceptions of parental warmth and emotional adjustment (Chen, Liu, & Li, 2000; Chen, Rubin & Li, 1995; Kim & Ge, 2000). In addition, a number of studies conducted in China have examined both parental

emotional support and parental control as they affect child adjustment (Chen, et al., 2000; Cheung & Lau, 1987; Falconier, 2001; Lau, Lew, Hau, Cheung, & Berndt, 1990; Leung, et al., 1998; Lin & Fu, 1990; Shek, 2000). Control, which can be positive or negative, relates to the level of coerciveness that the parent uses to maintain obedience and order, and it can convey both care and interference to the child (Cheung & Lau, 1987). Ho (1986) has described Chinese parents as exercising strict discipline over their children's dedication to academic achievement, but no study has looked at the relationship between children's perceptions of this area of control and their levels of anxiety and depression. The present study looked at parental demands for academic success as an element of control, and the interplay of such demands with parental support and empathy as they relate to child adjustment.

This study was guided by *ecological systems theory* that examines how individuals' personal functioning is affected by multiple levels of factors including individual personal characteristics, intra-familial processes, and extra-familial conditions (Bronfenbrenner, 1986). Ecological theory suggests that parental attitudes and behavior can influence the psychological functioning of adolescents, and that particular family characteristics may have different meanings and influences across cultures. Cultural influences have a strong role in establishing socialization goals relevant to parenting practices that may influence the development of children's mental health. For example, traditional Chinese values, including obedience to parents, respect for elders, emphasis on achievement, and selflessness, influence parents' child-rearing behavior (Wu, 1996; Xintian, 1985). Thus, the family provides the mediating processes and conditions within which the society's cultural messages of success and achievement play out.

Recent studies indicate that anxiety and depression in adolescents in China are at least as prevalent as the rates observed in Western countries (Kim & Ge, 2000), and some studies indicate a higher incidence (Cheung, 1986; Crystal et al, 1994). Children's emotional adjustment and problems continue to be largely neglected by both professionals and the public in Chinese society (Chen, Lui, & Li, 2000; Tomiki, 2000). In addition, few studies have explored the significance of family processes in adolescent symptoms (Kim & Ge, 2000).

Family therapy has been shown to be effective in treatment outcome studies in the U.S. and other Western countries, in reducing symptoms of adolescent depression and anxiety. Family therapy is not widely available in China today, but the opening of Chinese society to scientific exchanges with other cultures has led to the introduction of more Western-based psychotherapies (Lau, 1996). Nevertheless, before interventions that have been developed and tested in Western countries are applied in China, it is important to determine whether the family risk factors for depression and anxiety are similar or different in China. The present study provides useful data concerning the particular family characteristics potentially linked to childhood depression and anxiety. By surveying and analyzing adolescents' perceptions of family factors that are associated with psychological problems, culturally sensitive interventions may be developed that take into account cultural differences in child-rearing and educational practices. Interventions might include the development of more effective coping strategies by the adolescents and greater parental understanding of developmental impacts of the psychological costs of achievement pressures. In addition to the implications for families in China, the number of Chinese immigrants living in the U.S. is increasing (Uba, 1994).

The findings of this study may also assist educators and mental health professionals in the U.S. to understand the needs and appropriate intervention approaches for the increasing number of Chinese American families that they likely will encounter in their work.

Chapter II: Literature Review

Ecological Theory and Chinese Culture

Ecological theory uses a person-process-context model that suggests that individuals are influenced at multiple levels: the level of their own individual characteristics, the family level, and the cultural level (Bronfenbrenner, 1986). Family characteristics such as conflict and lack of cohesiveness have been shown to be associated with depression and anxiety in children. Parent-child interactions constitute an important context that may elicit and maintain a child's social and behavioral problems (Chen, Rubin, & Li, 1997; Shek, 1996).

On the other hand, positive family factors may buffer a child from difficulties experienced outside the family, such as conflictual relationships with peers or negative school experiences. Children with unsupportive parents will have fewer resources to cope with a range of life stressors, from medical problems to community violence. In turn, adolescent psychological and behavioral problems may reduce parental warmth or increase parental pressure to achieve. For example, parents of an adolescent whose depression includes a symptom of behavioral inertia may exert pressure on the child to complete school assignments. Such bi-directional influences among two or more family members' personal characteristics are consistent with the ecological model.

Just as the family influences the child, the broader culture influences the parents (Crystal et al, 1994). Parental attitudes and behaviors are guided and prescribed by socialization goals in the culture (Chen, Lui, & Li, 2000). Socialization goals vary across cultures, according to the specific qualities and outcomes in children that are valued and emphasized. These socialization values affect parenting practices, and these practices

may lead to certain types of problems being suppressed or promoted. Based on ecological factors, for example, researchers have predicted that the Chinese emphasis on social order and harmony in interpersonal relationships would facilitate the development of psychological problems related to over-controlled behavior, specifically depressed mood, anxiety, and somatization (Chen, Lui, & Li, 2000).

The ecological systems model looks to the particular features of a culture that may influence a given effect, and the process through which the effect takes place. Government policies, such as the One-Child-Policy established in 1979 to solve the problem of overpopulation, play a direct role in shaping family structure and functioning in China (Strom, Xie, & Strom, 1995). This policy has heightened the perception of children as precious and has generated more parental anxiety about academics (Leung, 1996). Other social policies may contribute to adolescent functioning. These include repressive government policies related to freedom of expression, labor initiatives requiring parents to work in distant cities, expanded educational opportunities for university students overseas, and fundamental changes in the openness of Chinese society to Western influences (Cheng, 1997; Cheung & Lau, 1987; Lau & Yeung, 1996).

Socio-economic realities also contribute to the pressure that Chinese students experience in high school today. A university education is the ticket to professional status and material comfort, but opportunities to attend college are far more limited than in Western countries. This context creates strong academic competition throughout primary and secondary school. In spite of a massive effort by the central government to expand higher education opportunities in China, in 1998 fewer than 5% of high school graduates went on to enroll in regular institutions of higher education (CERNET, 2000).

Education policies are relevant as well. In a study examining the link between academic performance and child depression, Chen, Rubin, and Li (1995) attributed the observed positive correlation in part to the public announcements used by Chinese schools to shame poor performers into improving. The humiliation and negative cognitions associated with the public shaming may facilitate the development of depression. Shame plays a prominent role in the socialization of Chinese children (Dong, Yang, & Ollendick, 1994).

The use of Bronfenbrenner's ecological theory for this study is supported by its consistency with Ko's (1980) Model of Mental Health, one of the few psychological models developed specifically for the Chinese (Cheung, 1986). Ko's model examines the balance between ego strength and pressure. Ego strength is equated with ability (biological), tolerance (psychological), and social support (family and community). Pressures include social, economic, and cognitive factors. Cheung (1986) argues that the study of Chinese psychopathology should take into account the situational and social contexts for psychological symptoms and manifestations of abnormal behavior. Thus, family environment, including parent characteristics such as warmth, may moderate the relationship between children's experienced pressures and coping abilities.

Parental Warmth

Studies indicate that across cultures parental warmth and acceptance predict a lower incidence of psychological maladjustment among children and adolescents (Baumrind, 1991; Rohner, 1986). Studies with Chinese children confirm the relationship between parental warmth and emotional adjustment (Chen, Rubin & Li, 1995; Cheung & Lau, 1985; Kim & Ge, 2000; Tao et al, 2000). Thus, warm parental affect and

acceptance are among the ecological variables that influence child functioning. Youth with warm parents are less likely to develop adjustment problems than those whose parents are unresponsive and rejecting of them (Chen, Lui, & Li, 2000). Parental warmth has meaning in Chinese culture that is similar to its meaning in the West (Ho, 1986; Lau, Lew, Hau, Cheung, & Bernt, 1990). Warmth is defined in terms of emotional support, caring, concern, affection, kindness and tenderness (Ho, 1986).

In one early study looking at antecedents of the development of adolescents' self-esteem, Cheung and Lau (1985) surveyed 700 Hong Kong high school students about their family and school environments. They found that higher self-esteem was associated with greater cohesion and expressiveness of feelings among family members and less conflict and aggression. This study also found that family was significantly more influential than the classroom environment in predicting high self-concepts in adolescents.

In Chinese culture, mothers are traditionally characterized as soft-hearted and tolerant (Ho, 1986). In an overview of the literature on parenting styles in China, Chao and Sue (1996) note that the high levels of restrictiveness and structure that characterize Chinese parents are combined with high maternal involvement, sacrifice, and nurturance. Maternal warmth and affection are seen to have a positive influence on children's social and cognitive development. Consistent with findings in many other countries, maternal warmth is recognized as a social and emotional resource for children in China.

Chen et al., (1997) conducted a four-year longitudinal study on maternal acceptance-rejection and children's social functioning and school adjustment in Shanghai, China. The original sample consisted of 480 second and fourth grade children,

and the follow-up data were collected from 162 sixth and eighth grade children from the original sample. This study's results suggested that aversive mother-child interactions are associated with maladaptive behaviors in children, and that the negative influence may be reciprocal. Although higher maternal acceptance was associated with fewer child behavioral problems four years later, it did not predict later social competence or academic adjustment.

Building on Chen et al.'s (1995) work, Chen, Liu, and Li (2000) added the dimension of indulgence, and investigated the different roles of paternal and maternal influence on the social, academic and psychological adjustment of 250 Chinese children over a two-year period. Psychological adjustment was operationalized as high scores on a measure of self-worth and low depression scores. Parenting styles of mothers and fathers were assessed separately. Although fathers' and mothers' levels of warmth were perceived similarly by children, maternal warmth significantly predicted later emotional adjustment such as positive self-regard and feelings of security, whereas the contributions of paternal warmth were non-significant. On the other hand, paternal warmth significantly predicted social competence, school adjustment and academic achievement, but maternal warmth did not (Chen, Liu, & Li, 2000). In another study with secondary school students, both maternal and paternal warmth were significantly negatively correlated with student anxiety, but paternal warmth had a stronger correlation than maternal warmth (Wang & Liu, 2000). These results suggest that either paternal or maternal warmth might serve as a protective factor that buffers children from social, emotional, and behavioral difficulties. Consequently, the present study examined adolescents' perceptions of both maternal warmth and paternal warmth.

Kim and Ge (2000) also investigated the relationship between Chinese American parenting practices and adolescent socio-emotional developmental outcomes. Consistent with their predictions, adolescents who perceived harshness from parents had heightened feelings of hostility from their surroundings due to cold and punitive discipline, associated with their feeling hopeless and a low sense of worth. These studies all suggest that adolescent perceptions of parental warmth and adolescent adjustment should be significantly correlated in the present study.

Parental Pressure to Achieve

Academic performance in school is important in Chinese culture (Chen, Rubin, & Li, 1995; Tseng & Wu, 1985). Chinese philosophy based on Confucian principles has emphasized the malleability of children and the importance of the environment in shaping human potential (Chen & Uttal, 1988). Confucian doctrine emphasizes that self-improvement and cultivation will change the world. Although innate ability is not unimportant, it is considered less important than effort in achievement. Thus, school failure is considered to be a failure of effort and personal will, areas within the control of the individual. Education is believed to be important as an intrinsic training toward the better development of the whole person. Chinese cultural values of human self-cultivation lead to a strong emphasis on effort in educational endeavors. Chinese children are socialized to believe that hard work and persistence in school will pay off.

Traditional Chinese families are hierarchical, characterized by filial piety (duty to parents), obedience, negation of conflict and reverence for parents and tradition (Cheung, 1986; Lin & Fu, 1990). Child achievement influences the reputation of the family, with academic failure bringing disgrace and shame to parents and ancestors (Ho, 1987; Hsu,

1985). Chinese students consider schoolwork as their duty toward their parents (Hau & Kalili, 1996). Chinese parents place great importance on academic achievement as a means to acquire personal advancement, higher social status, and respect (Lin & Fu, 1990). High parental aspirations result in constant monitoring and attention, particularly in the early years (Chen & Uttal, 1988; Wu, 1986). Home life is organized to promote studying, with regular daily schedules and academically-oriented activities planned for weekends (Chen, Lee, & Stevenson, 1996; Chou & Sue, 1996; Coldwell, 1997; Jing & Zuo, 1998). This high level of involvement and monitoring of homework is consistent with the literature describing Chinese parenting styles.

The concept of “training” is a prominent feature of Chinese parenting, in which the use of power and control is closely associated with care, concern, and involvement (Chao & Sue, 1996). Whereas in U.S. studies, high parental control was found to correlate positively with adolescent malfunction, the same results did not occur with Chinese populations (Chen, Liu, & Li, 2000). To investigate differences in functional and dysfunctional control in Chinese families, Cheung and Lau (1987) conducted a study with 713 Chinese tenth-graders, in which restrictive and dominating aspects of parental control were measured separately from the more functional and order-keeping aspect of parental control. Higher adolescent self-esteem was associated with clearer organization and structure in families but with fewer rules and control. These distinctions can also be applied to the examination of parental pressure to achieve. To the extent that parental involvement and monitoring is perceived as organizing, Chinese youth may have low levels of psychological problems. If parental pressure to achieve is perceived as restrictive, using fear to motivate academic success, higher levels of anxiety and

depression can be predicted (Lau & Yeung, 1996). In the latter case, the dysfunctional control is also likely to correlate with less family cohesion, harmony and warmth (Chen, Liu, & Li, 2000; Hau & Kalili, 1996).

School pressures are cited in numerous studies as a major source of stress for Chinese students (DuongTran, Lee & Khoi, 1996; Siu & Watkins, 1997) and have been implicated in a number of psychological problems including school phobia, test anxiety, inattentiveness, and somatic disturbances (Cheung, 1986; Crystal, 1994; Hsu, 1985; Jing & Zuo, 1998). Children attend school for eight hours a day, Monday through Friday, and four hours on Saturday. The educational system has been described as an environment of “exam hell” (Wu, 1996). Chinese students in one large-scale cross-cultural study identified school as the most common source for their depressed mood (Crystal, et al., 1994).

Crystal, et al. (1994) compared the psychological adjustment of high school students from Japan, the U.S. and Taiwan. Chinese students in Taiwan reported less overall stress, academic anxiety and aggressive feelings than their American counterparts, but higher frequencies of depressed mood and somatic complaints. The lower stress levels were contrary to American perceptions that portray East Asian students as overburdened by the pressures of trying to maintain high levels of academic excellence. Crystal, et al., (1994) suggest that Chinese students may report lower levels of stress because of the strong family support cited in other studies. The students were asked about the sources of stress, feelings of parental satisfaction and expectations, and relationship to performance level in school. The Taiwanese students reporting high parental expectations and low levels of satisfaction tended to report greater psychological

distress than those with low parental expectations and high satisfaction. The present study will test whether or not these findings are replicated with students in mainland China, and will explore other dimensions of academic pressure including overt parent behaviors and attitudes.

In emphasizing educational attainment, Chinese parents set high standards for their children (Hau & Kalili, 1996; Leung, Lau, & Lam, 1998). In a survey of 390 Chinese mothers and 580 American mothers, Chen and Uttal (1988) report that Chinese mothers expressed significantly lower satisfaction with their children's school performance than American mothers. Unlike the American mothers, the satisfaction of Chinese mothers had little relation to their perception of how much their children liked school. Differences were also revealed in the responses of mothers to the following questions. The mothers were told to suppose that their child took a test with 100 possible points and an average score of 75. They were then asked what score they thought their child would get, and the score with which they would be satisfied. Both American and Chinese mothers expected their child would obtain 80 to 85 points. However, American mothers indicated that they would be satisfied with a score in mathematics that was an average of 7 points lower than the score they actually expected their child would receive, whereas Chinese mothers said they would be satisfied with a score that was an average of 10 points higher than what they expected their child would receive. Similar results were reported in Crystal's (1994) study, with Chinese students more likely than American students to report that their parents' expectations for them were too high. These findings may be linked to higher levels of adolescent anxiety and depression in Chinese adolescents.

Some studies have looked at the impact of high parental expectations and pressure on adolescent self-image (Coldwell, 1997; Verna, 1997). A New Zealand study of 108 New Zealand-born Chinese and 108 Caucasian New Zealand high school students found that stronger parental pressure for academic achievement by Chinese parents resulted in higher educational aspirations on the part of Chinese students, but the Chinese students had more negative self-perceptions of their abilities (Chung, Walkey, & Bemak, 1997). The authors concluded that Chinese students had a greater sense of obligation toward fulfilling the parental expectations, and were more fearful of parental responses to failure than were the European students. In a more recent study of 320 Asian American college students, the relationship between parent-child agreement on a child's choice of academic major and the child's psychological well-being was examined (Tomiki, 2000). Students who did not agree and acquiesce to their parents' expectations had higher levels of anxiety and depression than those who did agree with their parents' expectations. Uba (1994) cites several studies (not translated from Chinese) reporting that children in China feel insufficiently acknowledged by their parents for their hard work. The present study will build on these sources to examine whether or not there is a link for students living in mainland China between perceived parental pressure and adolescent anxiety and depression.

Chinese Adolescent Depression

Depression constitutes a significant phenomenon in childhood, and depressed children exhibit other emotional and behavioral problems such as negative self-perceptions, loneliness, and conduct disorders (Strauss et al., 1986). Depression stands out for its potential for influencing adolescent adjustment and long-term adult

psychological functioning negatively, with adolescent depression frequently developing into serious psychiatric disorders in adulthood (Chan, 1995).

Depression is prevalent in Chinese children (Cheung, 1986). In a study by Chen, Lee, and Stevenson (1996), 11th graders were found to have higher frequencies of depression than U.S. counterparts, but depression levels in earlier grades were comparable or lower than those in the U.S. sample. World Health Organization statistics indicate that Chinese adolescent suicide rates are higher than those in Western countries (Shek, 1996). In a study of 161 non-clinical Chinese adolescents assessed for depressive symptoms and coping strategies, 64% were found to be in the depressed range (Chan, 1995). Common depressive symptoms in Chan's study included low self-esteem, as well as a sense of failure, punishment and guilt. If such factors are confirmed in the present study, their possible correlation with parental pressure may suggest that specific coping strategies are needed in order to address adolescents' depression.

The theoretical and empirical literature indicates that depression in adolescents is influenced by characteristics of their interpersonal relationships as well as intrapersonal factors (Cumsille & Epstein, 1994). Specifically, low family cohesiveness and high conflict is linked with higher levels of adolescent depression. A number of studies have looked at the correlation between family factors and depression in Chinese children. For example, Chen (1995) examined the relationship between parental marital conflict and children's depression in a two-year longitudinal study involving 254 primary school age children in Shanghai. Depression was found to be stable over time, but academic difficulties were predictive of later depression only for children from families in which the mother was rejecting. Adverse parental relations also contributed to depressed affect.

Although studies have found that Western measures of depression have validity when used with Chinese samples, it is important to consider cultural factors in such research. Chinese individuals tend to view mental and physical health more holistically than Westerners, with the state of the mind and the body considered simultaneously (Jing & Zuo, 1998). Depression as an affective disorder is a Western concept and diagnostic category. Studies have indicated that Chinese are more likely to experience their emotional problems in terms of somatic symptoms, with complaints about appetite, sleep, headaches, and heart palpitations (Hsu, 1985). In a review of empirical studies, Crystal et al. (1994) report that Chinese undergraduates tend more often to express their depression in terms of somatic complaints, whereas their American counterparts were more likely to manifest cognitive and existential concerns. However, somatization is itself a Western construct that differentiates between physical and psychological symptoms. Chinese culture sanctions somatic preoccupation, whereas discussion of psychological states is not accepted or encouraged. In a review of Chinese scholarship on the issue, Cheung (1986) notes that depressed Chinese individuals tend not to report affective symptoms, whereas Westerners are more likely to talk about unworthiness and an existential lack of purpose. Only when asked will Chinese patients report sadness. In Hsu's (1985) example, a child who complains of a stomachache will get warm soup and tenderness; a child who complains that they are afraid will get a scolding. Significantly, there is no word for depression in the spoken Chinese language.

Chinese Adolescent Anxiety

Anxiety is a state characterized by emotional arousal, worry about perceived threats, cognitions involving specific fears, poor concentration, and physical symptoms

such as sweating, muscle tension, heart palpitations, and trouble breathing (Barlow, 2002; Dong et al., 1994). In an overview of mental health problems of Chinese school children, Jing and Zuo (1998) reported that anxiety was among the top five complaints. Anxiety has been linked in particular to school problems (Cheung, 1986).

The symptoms of anxiety and depression tend to be highly correlated and some researchers have argued that the two negative affective states should be combined under a global construct of general internalized distress (Chen, Rubin & Li, 1995; Dong et al., 1994). In a study on the convergent and discriminant validity of the two instruments used in the present research, the Children's Depression Inventory and the Revised Children's Manifest Anxiety Scale, Hodges (1990) found that the results supported the use of these self-report questionnaires as separate symptom inventories, though the sensitivity of each of the two measures was too low for making clinical diagnoses of individuals. Additional research has confirmed that unique, non-overlapping factors exist for depression (representing a negative view of oneself) and anxiety (representing worry), even after controlling for negative affect (Clark et al., 1994; Stark & Laurent, 2001; Yang et al., 2000).

Other studies with Chinese populations have been able to differentiate depression and anxiety and the characteristics associated with each. For example, Chou (2000) assessed perceptions of social support adequacy from family, friends, and significant others among 475 Chinese high school students. Chou found that perceived social support from family was more strongly inversely related to depression than was perceived support from friends, whereas perceived social support from friends was more strongly inversely related to anxiety than was perceived support from the family. By

examining both variables of depression and anxiety, this study will help to determine and confirm the relevant interplay of family factors with each form of psychological maladjustment.

In a study of the patterns and intensity of fear in 825 Chinese children and adolescents, Dong, Yang, and Ollendick (1994) reported higher levels of social-evaluative fears for some ages than those reported in Western samples from Australia, England, and the United States. These authors conjectured that these higher levels were due to the greater societal pressures that Chinese students are under to achieve in order not to bring shame upon themselves, their families and their country. Studies have depicted parents of Chinese children as restrictive, overly protective and emotionally unexpressive, using shame, emphasizing the opinion of others and isolating the children from social activities as disciplinary tactics (Dong, Yang, & Ollendick, 1994). If these parental tactics create strong fears of failure and performance, it is reasonable to predict that the children will experience higher anxiety. The present study is aimed at isolating specific parental attitudes and practices related to academic performance that predict aspects of anxiety such as debilitating worries, sense of doom, and nightmares.

Western studies that have focused on the impact of parental pressure to achieve on a child's emotional well-being find a strong relationship between pressure, test anxiety, and academic dissatisfaction (Coldwell, 1997). Such results may not be applicable to Chinese populations. As described above, Crystal et al.'s (1994) cross-cultural study of Chinese, Japanese, and American high school students found that Chinese students reported higher levels of parental expectations, a lower level of parental satisfaction, and less stress and academic anxiety than their American counterparts.

Given the high cultural value placed on school performance and relatively little attention to social and other aspects of the child's life in China, Chinese students may in fact feel less stressed by school pressures than their American counterparts who feel obliged not only to do well in school, but also to have many friends, be good at sports, date, and be employed in a part-time job (Crystal, et al., 1994). However, Chinese students reported higher frequencies of somatic complaints than American students, so it is possible that Chinese students experience anxiety but express it somatically rather than reporting emotional, cognitive, and behavioral symptoms. This study will explore further the range of physical, emotional, and cognitive symptoms reported by Chinese students and their link to perceptions of parental pressure.

Definitions and Hypotheses

Parental pressure to achieve is defined in this study as an adolescent's perceptions of parental high standards for academic achievement and dissatisfaction when the adolescent fails to meet those standards. The perception of pressure includes (a) urging from the parents to perform at higher levels, (b) disapproval of the child's effort in school, and (c) the child's belief that he or she cannot meet parental expectations. *Parental warmth* is defined as an adolescent's perception of his or her parent as affectionate and accepting, as opposed to rejecting or indifferent. *Adolescent depression* is defined as reported experiences of negative thoughts related to self-worth and hopelessness, behaviors including excessive crying, sleeping or eating problems, feelings of sadness or loneliness, and suicidality. *Adolescent anxiety* is defined as reported experiences of worry, poor concentration, physiological reactions such as

sweating or breathing problems, negative social-evaluative fears, and sensitivity about failure.

Very high parental expectations may encourage higher achievement in children and adolescents, but they may also contribute to psychological symptoms of depression and anxiety. Based upon the literature, parental pressure to achieve is high in Chinese families, but no one has examined the degree to which adolescent perceptions of parental pressure pose risks for them. Parental warmth, established as an important factor in child and adolescent adjustment, is expected to be a moderator of parental pressure to achieve. Adolescents with parents who communicate very high demands for school success but who are otherwise perceived as warm and nurturing would not be at as great a risk for psychological problems as those whose parents exert a high level of pressure without a concomitant level of warmth. The following are the specific hypotheses for this study:

Hypothesis 1: Perceived parental warmth is negatively associated with adolescent depression.

Hypothesis 2: Perceived parental warmth is negatively associated with adolescent anxiety.

Hypothesis 3: Perceived parental pressure to achieve is positively associated with adolescent depression.

Hypothesis 4: Perceived parental pressure to achieve is positively associated with adolescent anxiety.

Hypothesis 5: Perceived parental warmth moderates the relationship between perceived parental pressure to achieve and adolescent depression.

Hypothesis 6: Perceived parental warmth moderates the relationship between perceived parental pressure and adolescent anxiety.

Research Questions

In addition to the six hypotheses, several research questions explored the relationship between demographic characteristics of the sample and the dependent and independent variables. These demographic variables include adolescent's gender, parent's gender, parent's educational level and occupation, adolescent's age, adolescent's grade in high school, adolescent's academic performance (as measured by the average of their midterm exams in three core subjects), and adolescent's type of school (academically select or general). Adolescent desire for a university education was also examined for correlation with parental pressure and adolescent symptoms. Two final research questions looked at the relationship between levels of anxiety and depression. The rationales for the study's research questions are as follows.

The research on gender differences related to Chinese parental expectations for their children is conflicting. Chinese cultural values view males as being of higher status than females (Ho, 1986). It may be that with regard to parental pressure to achieve, Chinese parents demand more of boys, with the result that boys will be more vulnerable to psychological adjustment problems. Yet, studies comparing Asian American parents with Caucasian American parents found that Asian parents have equal expectations for sons and daughters and encourage both to pursue higher education (Verna, 1997). Additionally, studies on Western samples have reported significant gender differences in depressive symptoms during adolescence, with girls scoring higher than boys (Cumsille & Epstein, 1994). Other studies with Chinese populations linking family factors and

adolescent symptoms have found no significant difference between males and females (Kim & Ge, 2000; Yang et al., 2000).

Gender differences between parents will also be examined, including whether or not the adolescents report significant differences in warmth and pressure from fathers versus mothers. One study found that children reported their fathers and mothers as equally warm or cold toward them (Chen, Lui, & Li, 2000), whereas others found differences in the relationship between father-child warmth and mother-child warmth (Chao & Sue, 1996). Another study demonstrated that children rate parent attributes similarly even when parents report varying roles, behaviors and expectations (Chen, Lui, & Li, 2000).

Whether Chinese adolescents attend highly selective “key” schools or the less demanding “ordinary” high schools may be an important factor in the degree of parental academic pressure that they experience. In one study with Chinese students, level of psychological maladjustment was not correlated with level of academic achievement (Crystal, 1994). Nonetheless, there may be differences in perceptions of parental pressure from students achieving at higher versus lower levels. Key school attendance represents higher achievement status, and this group may be less prone to psychological adjustment problems if parents are highly demanding. Alternatively, ordinary school students may feel more resigned about not meeting high parental expectations and thus have lower levels of symptoms associated with pressure to achieve. Similar to a comparison of key versus ordinary schools, a comparison of adolescents with lower exam averages versus higher exam averages will be explored. It is not clear if lower performing students will perceive greater pressure than high performing students. It may

be that higher performing students excel because of greater perceived pressure from parents.

The demographic questionnaire in this study asked students about their future plans, specifically assessing student personal motivation to go to college, apart from perceived pressure from parents to do so. Students with higher pressure parents who would prefer to pursue vocational or other paths after high school may be expected to experience less anxiety or depression than students who are highly motivated to go to a university. Alternatively, students who feel pressured by parents to attend a university even if they do not want to may report greater symptoms than those who are keenly interested in pursuing a university education.

In addition to the demographic variables to be analyzed, the relationship between anxious and depressed symptoms was examined. The degree to which these two forms of psychological maladjustment would be correlated, with distressed adolescents reporting both depression and anxiety (Dong, Yang, & Ollendick, 1994) was explored. Prior research has indicated differences between the two forms of maladjustment, with anxiety symptoms related more to worry and a sense of doom, and depression symptoms related more to lower levels of energy and a greater sense of hopelessness (Yang et al., 2000). To the extent that the measures in this study successfully differentiated between the two forms of psychological maladjustment, depression might be expected to correlate more strongly with parental warmth and anxiety to correlate more strongly with parental pressure to achieve. This study will further our understanding of the relationship between types of adolescent symptoms as well as their relationships with parenting variables.

Thus, the research questions posed in this study were as follows:

Research Question 1: Are there gender differences in the relationships between perceived parent characteristics of warmth and pressure and adolescent depression and anxiety?

Research Question 2: Is there a difference between the degree of association between paternal warmth and adolescent depression and anxiety, versus the degree of association between maternal warmth and adolescent depression and anxiety?

Research Question 3: Are there age and grade differences in the relationships between perceived parent characteristics of warmth and pressure and adolescents' depression and anxiety?

Research Question 4: Is student academic performance (measured by major school exam scores or selectiveness of school) related to perceived parent warmth and pressure, as well as to adolescent depression and anxiety?

Research Question 5: Is there a correlation between levels of anxiety symptoms and depression symptoms?

Research Question 6: Do depression and anxiety symptom levels have different degrees of association with parental warmth and parental pressure to achieve?

Chapter III: Method

Sample

The sample consisted of 997 students attending high schools in Beijing, China. Students attended one of four high schools: Beijing University Middle School, No. 80 Middle School, No. 2 Middle School, and No. 3 Middle School. The label “middle school” in China equates to the label “high school” in the U.S. Students were from Grades 1 through 3, roughly covering ages ranging from 16 to 19. These grades are equivalent to Grades 10 through 12 in the U.S. Classrooms were randomly selected to participate from each of the four schools. Participants represented approximately 15% of the total enrollment of the four schools.

Two high schools, Beijing University Middle School and No. 80 Middle School, were “key” schools, and two high schools, No. 2 Middle School and No. 3 Middle School, were “ordinary” schools. Key schools have stringent entrance requirements, with their students representing the high end of academic achievement. Ordinary schools have relatively lax entrance requirements; fewer of these students go on to pursue a university education. All schools are co-educational.

The sample was a convenience sample in that the schools chosen were those with which Dr. Fang had established a relationship with school officials supportive of mental health research. Nevertheless, the students targeted for recruitment into the study are likely to be representative of adolescents in key and ordinary high schools in Beijing. The obtained sample was self-selective because it was comprised of those students who volunteered to complete the questionnaires, with the consent of their parents. Only children’s perceptions, not parents’ perceptions, were measured for the four variables.

Research indicates generally low concordance between parent and child reports of symptoms of anxiety and depression (Hodges, 1990).

Measures

Parental warmth was measured using the child form of the *Parental Acceptance Rejection Questionnaire* (PARQ; Rohner, 1984). The PARQ is a self-report questionnaire that asks children to reflect on the way their parents treat them, assessing behavior in terms of four subscales: (a) perceived warmth and affection, (b) perceived hostility and aggression, (c) perceived indifference and neglect, and (d) perceived undifferentiated rejection. The complete questionnaire contains 60 questions, but for this study, only the Warmth/Affection subscale was used.

The Warmth/Affection subscale consists of 19 questions such as “My mother talks to me in a warm and loving way”; “My mother praises me to others”; and “My mother makes it easy for me to tell her things that are important to me.” Respondents answer the questions with a 4-point scale from 1 (almost never true) to 4 (almost always true). Scores range from 19 to 76, with a high score indicating maximum perceived warmth.

Rohner (1984) notes that although the questions are written to assess children’s perceptions of their mothers, who are usually the primary caretakers, the instrument can easily be changed to assess perceptions of fathers as well, by changing the word from “mother” to “father” in the questions. Participants in the present study answered both a Child PARQ (Warmth/Affection subscale) – Mother Version and a Child PARQ (Warmth/Affection subscale) - Father Version to allow analysis of differences in the relationship between paternal versus maternal warmth and child symptoms.

The scale's author supplied this researcher with a Chinese translation of an abbreviated Child PARQ. This translation combined select questions from each of the four subscales, for a total of 32 questions out the original 60 in the complete questionnaire, of which 8 were from the Warmth/Affection subscale. Using this translation as a guide, native Chinese speakers from the University of Maryland translated the remaining 11 questions in the Warmth/Affection subscale to provide a complete set of 19 translated Warmth/Affection questions for the Child PARQ. These Chinese translations were back-translated by separate Chinese speakers to insure that the translation captured the precise nuances and meanings of the original questions.

Rohner (1984) established evidence of validity and reliability criteria were established for each of the four subscales of the PARQ. Concurrent, convergent and discriminant validity were established by examining the correlations of the four PARQ subscales with three scales from Schaefer's (1964) Child's Report of Parent Behavior Inventory (CRPBI) and one scale from Bronfenbrenner's Parental Behavior Questionnaire (Rohner, 1984). The correlation between the PARQ Warmth/Affection subscale and the CRPBI Acceptance validation scale was significant, with $r = .83$ ($p < .001$), showing high concurrent validity of this subscale. Cronbach's coefficient alpha for the Child PARQ Warmth/Affection subscale was .90, indicating high internal consistency of items within this scale.

The PARQ was developed from cross-cultural research on parental acceptance and rejection that included holocultural methods (statistically measuring the relationship between variables in a large number of anthropological reports from more than one hundred countries), ethnographic and socialization research, and social-psychological and

developmental research with individual communities (Rohner, 1984). It has been used in dozens of countries and languages (Rohner, 1984). In one Chinese sample in which it was used to measure perceived parental warmth over a two year period, the PARQ had an internal consistency of .84 and .83 at Times 1 and 2, respectively (Chen, Rubin, & Li (1997).

Parental Pressure to Achieve was measured using a subscale of the *Inventory of Parental Influence* (IPI; Campbell, 1994). The IPI consists of a series of subscales designed to identify family members' perceptions of the following family processes: parental pressure, psychological support, parental help, emphasis on intellectual development, and monitoring/time management. Only the questions related to the first factor were used for this study, to identify adolescents' perceptions of the pressure that they perceive from their parents to achieve academically.

The instrument measuring pressure to achieve does not differentiate between paternal and maternal pressure to achieve, but rather assesses parental pressure as a single measure. It is likely that mothers and fathers vary in their levels of achievement orientation for their children, although one study found that children rate parent attributes similarly even where parents report varying roles, behaviors and expectations. To explore the relevance of parent gender, the IPI was modified for this study to replace each question about parents with separate questions for fathers and mothers, retaining the wording of the original items except for references to "mother" or "father" rather than "parents."

The IPI Parental Pressure factor consists of 9 statements to which respondents express their degree of agreement or disagreement in a Likert format: (a. strongly

disagree; b. disagree; c. uncertain; d. agree; e. strongly agree). Sample questions include “My father expects too much of me” and “I’m afraid to go home to my mother with a failing mark.” Scoring involves giving one point for each “strongly disagree” answer, two points for each “disagree” answer, three points for each “uncertain” answer, four points for each “agree” answer, and five points for each “strongly agree” answer. Therefore, total scores can range from 9 to 45, with a higher score indicating adolescent perceptions of more demanding parents who exert pressure to retain high levels of performance.

The IPI has been established as culturally valid in cross-national studies, specifically in studies of 700 academic Olympians from five countries (Campbell, 1996). Campbell’s Chinese translation was used in the present study. Campbell (2002) made modifications to the original instrument during tests with students and parents in China, to reflect items that were ambiguous in the local setting, reducing the number of questions on the Parental Pressure factor from thirteen to nine. Questions eliminated from the original IPI in the pilot testing consist of the following: “I think I could do well in school, but my parents feel I could do better;” “I am basically lazy, and if it were not for my parents I would not be doing as well as I am in school;” “When it comes to school, my parents expect the impossible;” “I don’t think I’m as smart as my parents think I am.”

Reliability for the IPI Pressure Factor has been established using Cronbach’s alpha to determine internal consistency. In one study using the IPI to examine the relationship between home environment and academic self-concepts, the alpha reliability coefficient for pressure was .96 (Verna, 1996). In a more recent factor analysis of the IPI

with 700 academic Olympians from 5 countries, the coefficient alpha reliability for the Parental Pressure Factor was .83 (Campbell, 2002).

Adolescent depression, a dependent variable, was measured using the *Children's Depression Inventory* (CDI; Kovacs, 1983). The CDI consists of 27 items designed to measure symptoms of depression in children and adolescents between the ages of 8 and 17. Each item consists of three statements that describe a range of symptom severity, from no to severe symptoms. Respondents are requested to select the statement from each group that describes them best for the past two weeks, such as "I never have fun at school" to "I have fun at school many times." The items are scored 0, 1, or 2, with a higher score indicative of increasing severity of disturbance. The total score can be obtained by summing all the items, with a possible total scale score range from 0 to 54.

The CDI was translated into Mandarin Chinese by the publisher Multi-Health Systems, and this translation was used in the present study. In one study with Chinese adolescents, a coefficient alpha of .84 for the CDI was found (Chen, Rubin, & Li, 1995). The measure was considered content-valid on the basis of the fact that items in the measure were similar to the descriptions of depressive symptoms in Chinese children. A more recent study using the CDI with 12 to 14 year old children also found no evidence that Chinese children had difficulty understanding the items (Chen, Liu, & Li, 2000).

Adolescent anxiety, another dependent variable, was measured using the *Revised Children's Manifest Anxiety Scale* (RCMAS; Reynolds & Richmond, 1985). The RCMAS is a 37-item scale designed to assess anxiety-related symptoms with a yes/no response format. The instrument consists of five subscales: (a) Total Anxiety, (b) Physiological Anxiety, (c) Worry-Over-Sensitivity, (d) Social Concerns-Concentration,

and (e) Lie Scale. The Total Anxiety score and the subscale scores are determined by the number of “yes” responses to the corresponding items. The Lie subscale, with all items negatively keyed, is intended to determine if the child was making a valid attempt to respond to the content of the anxiety subscales or was simply marking “yes” to every item or trying to please the examiner. In a study with Chinese children and adolescents, a coefficient alpha of .71 was reported, comparable to estimates for Western samples (Dong et al., 1994).

For the present study, the RCMAS was translated into Chinese, with permission from RCMAS’ publisher Western Psychological Services. The instrument was first translated into Chinese by a native Chinese graduate student at the University of Maryland, and then back-translated by separate native Chinese speakers to insure the translation was consistent with the original meaning.

Procedure

Questionnaires were distributed and completed by the students during February, 2003 (see Appendix A for copies of all instruments). Researchers from Beijing Normal University, led by Dr. Xiaoyi Fang, assisted in the collection and entry of the data. Dr. Fang is a professor and child psychologist with extensive research experience in child development. Through a University of Maryland doctoral student, ChengShuang Ji, this investigator’s thesis advisor Dr. Norman Epstein contacted Dr. Fang, who expressed interest in assisting with the study. Dr. Fang was assisted by graduate students in the psychology department at Beijing Normal University.

The team of researchers from Beijing Normal University contacted school officials in the four Beijing high schools, who gave their permission to conduct the research. The researchers then sent an announcement describing the study and a consent form (see Appendix C for a copy of the consent form) home with all students in randomly selected classrooms from each of the three grades in the schools. The announcement explained the purpose, design and benefits of the research study, and its approval by school officials (a copy of the announcement is attached in Appendix B). Students and their parents were informed that participation in the study was voluntary, noting that no teachers or administrators would know which students chose to participate, and that there were no negative consequences from choosing not to participate.

Students who provided written consent to fill out the questionnaires and had written parental consent were given time in the classroom to fill them out. Teachers in participating classrooms left the room, and Beijing Normal University researchers administered the forms. The questionnaires were all distributed and collected within the classroom by the researchers, and non-participants were free to study quietly. The time required to complete the surveys was approximately one hour.

Data Coding

Demographic Information

Each respondent was assigned a three-digit identification number, starting at 001 and ending with 997. The child's gender was coded as 1 for males and 2 for females. The three grades of school were coded as 1 for Grade 1, 2 for Grade 2, and 3 for Grade 3, which equate to grades 10, 11, and 12 in the U.S. Ages were coded as the students'

actual ages. Schools were coded as 1 for Beijing University Middle School, 2 for No. 80 Middle School, 3 for No. 2 Middle School, and 4 for No. 3 Middle School.

Students were asked to identify family members with whom they currently lived. Answers were coded as follows: 1 = father, 2 = mother, 3 = sister, 4 = brother, 5 = paternal grandfather, 6 = paternal grandmother, 7 = maternal grandfather, 8 = maternal grandmother, 9 = aunt (father's sister), 10 = uncle (father's brother), 11 = cousin, 12.1 = step-mother, 12.2 = classmate, 12.3 = family friend, 12.4 = aunt (father's friend), 12.5 = aunt (mother's sister), and 12.6 = step-father.

Exam scores, the index of academic performance, were calculated by adding the numeric scores for Chinese Literature, English, and Math mid-year exams and calculating the mean score for each student. Before the means were calculated, a handful of responses that had been coded as "0" were eliminated, because a "0" score was interpreted as a non-response or missing data.

The two questions regarding the student's degree of ambition toward attending college were initially coded by the Chinese researchers as strongly agree = 1, somewhat agree = 2, somewhat disagree = 3, and strongly disagree = 4. These values were reverse coded so that a higher score would reflect higher ambition.

For parent education level and occupation, the following coding scales were used. Highest education levels were coded as 1 = elementary, 2 = some high school, 3 = high school graduate, 4 = vocational school, 5 = some college, 6 = college graduate, and 7 = advanced degree. Occupation categories were written in by the students and coded into categories from 1 to 20. These occupations included: 1. teacher; 2. doctor; 3. lawyer; 4. laborer; 5. service worker (included military, janitors, drivers, restaurant workers); 6.

company employee; 7. management; 8. government employee; 9. self-employed; 10. unemployed; 11. engineer/architect; 12. journalist/writer; 13. researcher; 14. farmer/peasant; 15. local government official/volunteer; 16. film director; 17. business person; 18. legal justice worker; 19. retired; 20. don't know. No additional details were provided to distinguish labels such as company employee and business person, or government employee and local government official/volunteer.

Coding of Instruments

PARQ.

For the PARQ, the instrument to measure warmth, the researchers in Beijing entered the data so that 1 = Almost Always True, 2 = Sometimes True, 3 = Rarely True, and 4 = Almost Never True. The questions in the PARQ are worded in the affirmative, such as “My mother tells me how proud she is of me when I am good” and “My mother makes me feel what I do is important.” In order to achieve consistency across all instruments so that a high score would reflect a high level of the variable being measured, these entries were reverse scored so that 1 was recoded as 4, 2 as 3, 3 as 2, and 4 as 1.

A single score for parental warmth for each student was created by adding together the answers to the 38 PARQ questions. In order to examine possible gender differences between mother's warmth and father's warmth, the 19 questions pertaining to maternal warmth constituted the Mother Warmth score and the 19 questions pertaining to paternal warmth constituted the Father Warmth score.

IPI.

The IPI measure for parental pressure was coded so that 1 = Strongly Disagree, 2 = Disagree, 3 = Uncertain, 4 = Agree, and 5 = Strongly Agree. No reverse scoring was

necessary as higher scores reflect higher degrees of perceived pressure. A total Pressure score was calculated by adding the child's responses to all 18 IPI questions. A Father Pressure score was calculated by adding the responses to questions 1 through 9, and a Mother Pressure score was calculated by adding the responses to questions 10 through 18.

RCMAS.

The students' responses to items of the RCMAS questionnaire used to measure anxiety were coded so that Yes = 1 and No = 2. Standard test administration and scoring for the RCMAS involves coding Yes = 1 and No = 0. Two changes were made to the initial coding for this sample to reflect the standard test administration and scoring for the RCMAS. First, responses to the RCMAS for this sample were reversed, consistent with the goal of higher scores reflecting higher anxiety as set forth in the RCMAS manual. A total anxiety score for each student was calculated by adding the numeric responses to the 28 questions on the scale, i.e., 37 total items minus 9 questions on the Lie Scale. A second manipulation, subtracting 28 from each total score, was required to maintain comparability with established norms for the RCMAS which use a "1" or "0" scale, rather than the "2" or "1" scale used in the present study. Thus the possible range for anxiety scores went from 28-56 to 0-28.

CDI.

The CDI used to assess depression was coded by the Chinese researchers so that an answer of 0 = 1, 1 = 2, and 2 = 3. Test procedures required that thirteen questions (numbers 2, 5, 7, 8, 10, 11, 13, 15, 16, 18, 21, 24, and 25) be reverse scored, which was done so that 0 = 3, 1 = 2 and 2 = 1 for these questions. Each student's total score was then

calculated by adding the original or recoded responses to all of the items. Adjustments were required after running the analyses to allow comparison between the results of this study and those that used the more standard scoring of the CDI (0 = 0, 1 = 1 and 2 = 2). Thus means for this measure appeared 27 points higher than established norms. In order to present the means in this study's sample using the commonly accepted 0, 1, 2 response scale, means were recalculated by subtracting 27 (the total number of questions) representing the 1-point increase in each answer.

Chapter IV: Results

Summary Results of Test Instruments

Descriptive Statistics for Test Instruments

Descriptive statistics for the two dependent and two independent variables are presented in Table 1. Additional detail about the results of each test instrument is provided below.

Table 1: Summary of Variable Means for Total Sample

Variable	<i>n</i>	Range	Minimum	Maximum	Mean	SD
Depression	937	18	1	19	14.82	7.56
Anxiety	979	28	0	28	10.51	5.90
Parental Pressure	954	69	18	87	46.66	13.32
Parental Warmth	946	107	45	152	113.93	19.25

PARQ.

Descriptive statistics for the PARQ measure for warmth are presented in Table 2.

Table 2: Descriptive Statistics for PARQ Scores for Total Sample:

	<i>n</i>	Range	Minimum	Maximum	Mean	Std. Deviation
Warmth (both parents)	946	107	45	87	113.93	19.25
Mother Warmth	966	57	23	76	61.53	11.31
Father Warmth	969	57	19	73	55.27	11.83

These mean scores were compared to the mean scores for a U.S. sample reported in Rohner's test handbook (Rohner, 1999). Rohner provided reference scores for test

users to evaluate the relative level of perceived warmth experienced by a specific group of respondents. In Rohner's sample, the Child PARQ for Mother Warmth was given to 220 4th and 5th grade students in Washington, DC in 1975. The mean score and standard deviation in Rohner's sample were 31.26 and 9.21, respectively. In Rohner's sample, however, all Warmth questions were reversed scored so that higher warmth would produce a lower score, in order to make the meaning of the warmth scale consistent with the direction of Rohner's perceived rejection scales (i.e., that high scores mean lower warmth). To make the comparison useful for the present study, using the Reverse Score Values Scale provided, Rohner's sample mean of 31.26 would be recalculated as 69.26. In addition, Rohner's Warmth scale contained 20 items, including a duplicate question: "My mother is interested in the things I do." This question was eliminated in the present study, resulting in a total of 19 instead of 20 questions. Thus in comparing the means of this study with Rohner's sample, Rohner's scores are likely to be between 1 and 4 points higher because of the duplicate question. The end result of these adjustments is that the Warmth mean scores found in the present study are somewhat lower than the norms from the U.S. sample. This difference is consistent with research identifying Chinese parenting styles as harsher and less physically demonstrative than Western parenting styles (Chen, Lui, & Li, 2000).

IPI.

Descriptive statistics for the IPI in the total sample are presented in Table 3.

Table 3: Descriptive Statistics for IPI Scores for Total Sample:

	<i>n</i>	Range	Minimum	Maximum	Mean	Std. Deviation
Pressure (both parents)	954	69	18	87	46.66	13.32
Father Pressure	964	36	9	45	22.83	6.98
Mother Pressure	973	40	10	50	26.44	8.48

Normative results for comparison were not available for the IPI version used in this study, revised by Campbell (2002) for use with Chinese students.

RCMAS.

The mean anxiety score for the total sample in this study was 10.51, with a standard deviation of 5.90. This mean is consistent with the means calculated in a broad range of studies reported in the RCMAS manual (Reynolds & Richmond, 2000). In a standardization sample studied in 1979, 4,972 children between the ages of 6 and 19 took the RCMAS. The children represented 80 school districts from 13 U.S. states. Table 3 displays the mean anxiety scores by sex and race for the U.S. sample in rows 1-4, and mean anxiety scores by sex for the Chinese sample in rows 5-6. However, the RCMAS manual separates out mean anxiety scores by age, which reveals that anxiety scores steadily decrease for the U.S. sample as age increases. For example, 6-year-olds had a mean anxiety score of 13.15 ($n = 186$), 12-year-olds had a mean anxiety score of 11.42 ($n = 411$) and children ages 17-19 had a mean anxiety scores of 7.74 ($n = 537$). Using the latter as the reference age group for the present study, it can be concluded that the Chinese participants had higher anxiety scores than their U.S. peers.

Table 4: RCMAS Means for U.S. and Chinese Samples by Gender

Sample subset	<i>n</i>	Mean	SD
White Males (US)	2208	10.55	5.31
Black Males (US)	289	13.17	5.52
White Females (US)	2176	12.17	5.58
Black Females (US)	299	15.40	4.58
Chinese Males (Present Study)	461	10.2	5.97
Chinese Females (Present Study)	518	10.8	5.84

CDI.

The CDI scores in the present study, with a mean score of 14.82 and SD =7.56, are consistent with normative samples reported for Chinese respondents in earlier studies. In a study of 621 secondary school students (grades 7-12) in Hong Kong, Chan (1997) found a mean score of 15.66 (SD=7.45). As discussed by Chan (1997), the Chinese mean is significantly higher than those from normative samples of U.S. adolescents, such as one study of 1266 U.S. adolescents aged 13-17, with a mean score of 9.18 (Kovacs, 1992).

Demographic Variables

Table 5 presents descriptive statistics for the study samples. The total sample size was 997 high school students, with 47% boys ($n = 470$) and 53% girls ($n = 527$). Ages ranged from 13 to 21, with 90% being between the ages of 16 to 18 ($M = 16.83$, $SD = 1.00$). Frequencies of students' ages are presented in Table 5.

Table 5: Age Distribution in the Total Sample

Age	Number	Percent	Cumulative Percent
13	1	.10	.10
14	2	.20	.30
15	68	6.80	7.10
16	331	33.30	40.40
17	310	31.20	71.60
18	258	25.90	97.50
19	22	2.20	99.70
20	1	.10	99.80
21	2	.20	100.00

Students were divided fairly evenly among the three high school grades: Grade 1: 36%, Grade 2: 31%, and Grade 3: 32%. Mid-year exam scores ranged from 107 to 300, with a mean of 203 (SD = 29). Ambition regarding attending college scores ranged from 2 to 8, with a mean of 6.70 (SD = 1.15). Thus, overall the students expressed a strong desire and intention to attend college.

As expected with China's existing One Child Policy, the vast majority of students in this sample were only children (89.7%). A total of 62% of the respondents lived with both parents and no other members of the household. Another 20.5% lived with one or more grandparents, and 2.1% reported living with a step-parent. Single parent households were identified in 7.3% of responses.

In order to compare students attending key schools versus ordinary schools, descriptive data from each school were separately analyzed, as presented in Table 6.

Table 6: Comparison of Descriptive Statistics by School

	Beijing Univ. Middle (High) School	No. 80 Middle (High) School	No. 2 Middle (High) School	No. 3 Middle (High) School
School Type	Key	Key	Ordinary	Ordinary
Family Income*	> \$854/month	\$731 - \$1220/month	< \$366/month	< \$366/month
n Respondents	200	305	215	277
Gender % Male/Female	56/44	49/51	40/60	47/53
Age Mean	16.6	16.6	17.1	16.8
Father % College Grad	74.5	27.1	7.3	23.7
Mother % College Grad	64.3	22.4	4.6	20.2
Exam Mean (SD)	228 (22)	212 (24)	188 (28)	194 (24)
Ambition for College Mean (SD)	6.86 (1.17)	6.63 (1.11)	6.57 (1.17)	6.79 (1.16)
IPI Parental Pressure Mean (SD)	39.91 (10.98)	42.08 (13.25)	52.38 (13.18)	48.76 (11.67)
PARQ Parental Warmth Mean (SD)	117.70 (18.15)	119.04 (16.58)	108.72 (20.91)	113.04 (18.53)
RCMAS Adolescent Anxiety Mean (SD)	36.48 (5.42)	39.21 (5.96)	39.43 (5.77)	38.45 (5.99)
CDI Adolescent Depression Mean (SD)	38.91 (6.11)	42.88 (7.38)	41.99 (7.60)	43.02 (8.1)

Note. Family income was originally reported in Renminbi (yuan) per month. The exchange rate was established as \$1.00 = 8.2 Renminbi. Foreign Exchange Table, *Washington Post*, 9/24/03. Ambition = student's score on scale assessing ambition and intent to attend college; IPI = Inventory of Parental Influence; PARQ = Parental Acceptance Rejection Questionnaire; RCMAS = Revised Children's Manifest Anxiety Scale; CDI = Children's Depression Inventory.

Regarding the parents' education levels, 53% of fathers and 59% of mothers had a high school degree as the highest level of education. The distribution of parental education levels is presented in Table 7.

Table 7: Parent Education for Total Sample

Highest Education Level	Father Percent	Father Cumulative Percent	Mother Percent	Mother Cumulative Percent
Elementary	1.0	1.0	2.0	2.0
Some High School	16.0	17.0	14.6	16.6
High School Graduate	36.0	53.0	42.7	59.3
Vocational School	14.4	67.3	13.6	72.9
Some College	3.1	70.5	2.3	75.2
College Graduate	17.9	88.4	18.2	93.5
Advanced Degree	11.6	100.0	6.5	100.0

The frequencies of parents' occupations appear in Table 8. Roughly 40% of the students identified at least one parent in a professional occupation, including teacher, doctor, lawyer, management, engineer/architect, journalist/writer, researcher, or director.

Table 8: Frequencies of Parent Occupations

Occupations	Total Percent Fathers	Total Percent Mothers
Laborer	22.1	14.6
Management	16.3	10.3
Company employee	11.6	16.0

Service (military, janitorial, food worker, driver)	11.4	12.2
Chinese government employee	10.0	9.0
Self-employed	10.0	6.7
Teacher	6.9	9.5
Unemployed	3.6	11.2
Engineer/Architect	4.3	4.8
Doctor	1.7	4.4
Journalist/writer	.3	.1
Lawyer	.2	.1
Retired	.2	.7
Researcher	.2	.1
Film business	.2	0
Legal justice	.2	0
Business person	.1	0
Local government volunteer/worker	.1	0
Don't know	0	.1

Tests of the Hypotheses

Hypothesis 1: Perceived parental warmth will be negatively associated with adolescent depression.

A Pearson correlation coefficient was computed to test the relationship between perceived parental warmth scores (combined subscales for mother and father) as assessed by the PARQ and depression scores as assessed by the CDI. Results indicate that there is a significant relationship between perceived parental warmth and depression ($r = -.39, p < .0001$). Consistent with the hypothesis, depression and warmth are negatively correlated.

Hypothesis 2: Perceived parental warmth will be negatively associated with adolescent anxiety.

A Pearson correlation coefficient was computed to test the relationship between perceived warmth scores (combined subscales for mother and father) as assessed by the PARQ and anxiety scores as assessed by the RCMAS. Results indicate a significant relationship between perceived parental warmth and anxiety ($r = -.32, p < .0001$). Anxiety and warmth are negatively correlated as hypothesized.

Hypothesis 3: Perceived parental pressure to achieve will be positively associated with adolescent depression.

A Pearson correlation coefficient was computed to test the relationship between perceived parental pressure scores (combined subscales for mother and father) as assessed by the IPI and adolescents' depression scores assessed with the CDI. A significant positive correlation was found ($r = .35, p < .0001$).

Hypothesis 4: Perceived parental pressure to achieve will be positively associated with adolescent anxiety.

A Pearson correlation coefficient was computed to test the relationship between perceived parental pressure scores (combined subscales for mother and father) as assessed by the IPI and adolescents' anxiety scores. Results indicate a significant positive correlation ($r = .38, p < .0001$).

Table 9: Pearson Correlation Coefficients for Relationships Between Parental Warmth and Pressure and Adolescent Anxiety and Depression (Summary of Hypotheses 1 – 4)

	Parental Warmth	Parental Pressure
Adolescent Anxiety		
Pearson Correlation	-.32	.38
Sig. (1-tailed)	< .001	< .001
<i>n</i>	929	936
Adolescent Depression		
Pearson Correlation	-.39	.35
Sig. (1-tailed)	< .001	< .001
<i>n</i>	890	899

Hypothesis 5: Perceived parental warmth will moderate the relationship between perceived parental pressure to achieve and adolescent depression.

To examine the interaction of perceived parental warmth and perceived parental pressure on adolescent depression, a 2 (high/low pressure) by 2 (high/low warmth) analysis of variance (ANOVA) was computed. Although both parental warmth and parental pressure to achieve are scored as continuous variables, each variable was dichotomized through a median split for use in this 2 X 2 ANOVA. The median scores, displayed in Table 10, were chosen as the closest score approximation to the 50th percentile. Pressure scores of 46 or below were considered Low Pressure, 47 or above as

High Pressure. Warmth scores of 116 or below were considered Low Warmth, 117 or above as High Warmth.

Table 10: Median Scores of High-Low Categories of Pressure and Warmth

Variable	N	Score	Cumulative Percent Achieving Median Score
Parental Pressure	954	46	50.5
Parental Warmth	946	116	50.3

As portrayed in Table 11, the results for this multivariate F test indicate a significant interaction effect between parental pressure and parental warmth with regard to adolescent depression; $F(1, 865) = 5.94, p = .02$. Warmth appears to have a significant moderating effect on pressure, with the difference in depression scores between low pressure and high pressure groups greater when warmth is low than when warmth is high. This result is consistent with the hypothesis.

Table 11: Mean Adolescent Depression as a Function of Parental Pressure and Warmth

	Low Parental Pressure	High Parental Pressure
Low Parental Warmth	13.97	18.31
High Parental Warmth	12.20	14.03

Note. Interaction significant at $p = .02$

Hypothesis 6: Perceived parental warmth will moderate the relationship between perceived parental pressure and adolescent anxiety.

To examine the interaction of perceived parental warmth and perceived parental pressure on adolescent anxiety, a 2 (high/low pressure) by 2 (high/low warmth) analysis

of variance (ANOVA) was computed. As in the test of Hypothesis 5, the two independent variables were dichotomized through median splits.

As portrayed in Table 12, no significant interaction effect was found in adolescent anxiety scores as a function of combinations of levels of parental pressure and warmth, $F(1, 900) = 2.57, p = .11$. That is, more parental pressure and less parental warmth combined to yield greater anxiety in an additive way. Contrary to the hypothesis, warmth did not moderate the main effect of pressure on the anxiety measure.

Table 12: Mean Adolescent Anxiety as a Function of Parental Pressure and Warmth

	Low Parental Pressure	High Parental Pressure
Low Parental Warmth	37.31	41.21
High Parental Warmth	36.18	38.82

Note. Interaction $p = .11$

Exploratory Analyses

Research Question 1: Are there gender differences in the relationships between perceived parent characteristics of warmth and pressure and adolescent depression and anxiety?

To determine whether there were any significant gender differences between boys and girls for each of the hypotheses, separate Pearson correlation coefficients were calculated for females only and males only. The results presented in Table 13 indicate that boys had a higher correlation than girls between parental pressure and anxiety and between parental pressure and depression. The differences between the correlations for males and females appear to be less for the association between parental warmth and anxiety, and between parental warmth and depression, with males exhibiting a slightly

higher correlation than females on the first and females slightly stronger correlation on the second.

Table 13: Comparison of Boys' and Girls' Correlations between Parenting Characteristics and Adolescent Anxiety and Depression.

Adolescent Anxiety	Parental Warmth		Parental Pressure	
	Males	Females	Males	Females
Pearson Correlation	-.31	-.34	.43	.33
Sig. (1-tailed)	<.001	<.001	<.001	<.001
<i>n</i>	435	494	444	492
Adolescent Depression	Males	Females	Males	Females
Pearson Correlation	-.40	-.38	.42	.27
Sig. (1-tailed)	<.001	.001	<.001	<.001
<i>n</i>	418	472	425	474

Differences between the male and female correlations were then tested for significance using *r*-to-*z* transformations. The test of significance used was:

$$Z = z_1 - z_2 / \text{the standard error of the difference}$$

Each correlation coefficient *r*₁ and *r*₂ was transformed into a *z* value. The standard error of the difference between those two independent values of *z* is calculated as:

$$\text{square root of } 1/(n_1 - 3) + 1/(n_2 - 3)$$

where *n*₁ and *n*₂ are the sizes of the two samples whose correlations are being compared.

The probability value was set at *p* <.05 (two-tailed, because there was no hypothesis about whether females or males would have a larger correlation). This probability is less conservative than the *p* <.01 set for the tests of the hypotheses because these research questions were exploratory in nature.

The results, presented in Table 14, indicated that the difference between correlations for boys and girls was significant with regard to the relationships between pressure and anxiety and between pressure and depression. The difference between boys and girls was not significant with regard to the relationship between warmth and depression or between warmth and anxiety.

Table 14: Tests for Significance Between Boys' and Girls' Correlations

Variables Correlated	Boys <i>r</i>	Girls <i>r</i>	Z statistic	Probability (2-tailed)
Warmth and Anxiety	-.31	-.34	.41	.341
Warmth and Depression	-.40	-.38	.18	.429
Pressure and Anxiety	.43	.33	1.68	.046
Pressure and Depression	.42	.27	2.19	.014

To determine whether there were gender differences with regard to the interaction effects of parental warmth and pressure on adolescent anxiety and depression, ANOVAs similar to those computed for Hypotheses 5 and 6 were done separately for males and females. These results, summarized in Tables 15 through 18, indicate that only in the case of depression scores for girls was there a significant interaction effect between parental pressure and warmth. There was a non-significant trend for the interaction of parental pressure and warmth for boys. In both the girls' significant interaction effect and the trend for the boys' interaction effect, the higher depression associated with high versus low parental pressure was greater under low parental warmth than under high parental warmth. Thus, there was some evidence of a gender difference, such that parental warmth significantly moderated the relationship between parental pressure and

girls' depression, but there was only a trend toward a moderating effect for boys' depression, and no moderating effect for either boys' or girls' anxiety.

Table 15: Cell Means for Male Anxiety as a Function of Parental Pressure and Warmth

	Low Parental Pressure	High Parental Pressure
Low Parental Warmth	37.47	41.45
High Parental Warmth	36.14	39.01

$$F(1, 900) = 2.08; p = .15$$

Table 16: Cell Means for Male Depression as a Function of Parental Pressure and Warmth

	Low Parental Pressure	High Parental Pressure
Low Parental Warmth	14.30	18.62
High Parental Warmth	11.99	14.41

$$F(1, 865) = 3.4; p = .07$$

Table 17: Cell Means for Female Anxiety as a Function of Parental Pressure and Warmth

	Low Parental Pressure	High Parental Pressure
Low Parental Warmth	37.21	41.08
High Parental Warmth	36.18	38.84

$$F(1, 900) = 2.32; p = .13$$

Table 18: Cell Means for Female Depression as a Function of Parental Pressure and Warmth

	Low Parental Pressure	High Parental Pressure
Low Parental Warmth	13.90	18.17
High Parental Warmth	12.16	13.93

$$F(1, 865) = 5.8; p = .02$$

Research Question 2: Is there a difference between the degree of association between *paternal* warmth/pressure and adolescent depression and anxiety, versus the degree of association between *maternal* warmth/pressure and adolescent depression and anxiety?

Before comparing the differences in correlations of the variables for fathers and mothers, mean pressure and warmth scores for each are presented below. These results indicate that students perceived both greater warmth and greater pressure from mothers than from fathers. The differences between mothers and fathers on both the warmth ($t(945) = 16.35, p < .001$) and pressure measure ($t(953) = 17.33, p < .001$) were statistically significant.

Table 19: Perceived Warmth Scores and Perceived Pressure Scores for Fathers and Mothers

Variable	Fathers	Mothers
Perceived Warmth Mean (SD)	55.27 (11.83)	61.53 (11.30)
Perceived Pressure Mean (SD)	22.82 (6.98)	26.47 (8.48)

The difference between the separate Pearson correlation coefficients calculated for each hypothesis for adolescents' ratings of fathers' and of mothers' warmth and pressure in relation to adolescents' anxiety and depression (presented in Table 20) were tested for significance, using the same Z test described in the analysis for Research Question 1. For three of the associations (warmth and anxiety, warmth and depression, and pressure and anxiety) the correlations between the variables had higher values for mothers than for fathers, and there was a higher correlation coefficient for fathers than for mothers for the relation between pressure and depression. However, based on a

probability value of $p < .05$ (two-tailed, because there was no hypothesis about whether fathers or mothers would have a larger correlation), the Z test results indicate that the difference in correlations between fathers and mothers was only statistically significant for the correlation between warmth and depression (see Table 21).

Table 20: Correlations Between Perceptions of Parental Pressure and Warmth and Adolescent Anxiety and Depression, Separately for Mothers and Fathers (for Combined Male and Female Students).

	Parental Warmth		Parental Pressure	
	Mothers	Fathers	Mothers	Fathers
Adolescent Anxiety				
Pearson Correlation	-.30	-.25	.35	.33
Sig. (1-tailed)	<.001	<.001	<.001	<.001
<i>n</i>	948	952	955	946
Adolescent Depression				
Pearson Correlation	-.36	-.30	.32	.30
Sig. (1-tailed)	<.001	<.001	<.001	<.001
<i>n</i>	908	911	915	909

Table 21: Tests for Significance for Differences in Correlations of Variables for Fathers Versus Mothers

Variables Correlated	Fathers <i>r</i>	Mothers <i>r</i>	Z statistic	Probability
Parental Warmth and Adolescent Anxiety	-.25	-.30	1.06	.145
Parental Warmth and Adolescent Depression	-.30	-.36	1.79	.037
Parental Pressure and Adolescent Anxiety	.33	.35	.50	.308
Parental Pressure and Adolescent Depression	.32	.30	.57	.284

Research Question 3: Are there age and grade differences in the relationships between perceived parent characteristics of warmth and pressure and adolescents' depression and anxiety?

Statistics for each of the three grades are were calculated separately, as presented in Table 22. As would be expected, mean age increases with each grade. Overall, the mean scores on parent characteristics and adolescent symptoms appear to be quite stable across grades.

Table 22: Comparison of Variables Among Grades 1-3 (U.S. Grades 10-12)

Variable	Grade 1 Mean	Grade 1 SD	Grade 2 Mean	Grade 2 SD	Grade 3 Mean	Grade3 SD
Age	15.89	.63	16.90	.58	17.82	.59
Exam Score	206.97	25.30	207.00	31.55	194.85	30.17
Ambition Score	6.77	1.10	6.68	1.13	6.66	1.23
Parental Warmth	114.70	18.80	113.70	18.84	113.31	20.14
Parental Pressure	46.89	13.84	47.02	13.13	46.09	12.94
Anxiety	38.81	5.68	38.64	6.08	38.03	5.97
Depression	14.68	7.57	15.11	8.17	14.73	6.94

Separate Pearson correlation coefficients were calculated for each hypothesis for each of the three grades, and differences among these correlations by grade were tested for significance. As shown in Table 23, the correlation between warmth and anxiety appears to be weaker in Grade 3, and the correlations between warmth and depression, and between pressure and anxiety appear to be stronger in Grade 2. However, based upon the tests for significance using *r*-to-*z* transformations as described in the analysis for Research Question 1 above, none of the differences in correlations among the grades achieve statistical significance. Sample tests for significance were checked for those observed differences between classes that were the largest, including: correlation of warmth and depression for Grade 2 versus Grade 3 ($p = .06$); correlation of pressure and

anxiety for Grade 1 versus Grade 2 ($p = .17$); correlation of pressure and anxiety for Grade 2 versus Grade 3 ($p = .15$).

Table 23: Comparisons of Pearson Correlation Coefficients for Grades 1-3 (U.S. Grades 10-12)

	Grade 1 <i>r</i>	Grade 2 <i>r</i>	Grade 3 <i>r</i>
Warmth and Anxiety	-.33**	-.35**	-.30**
Warmth and Depression	-.41**	-.43**	-.33**
Pressure and Anxiety	.36**	.42**	.35**
Pressure and Depression	.33**	.39**	.31**

**Correlation is significant at the .01 level (1-tailed).

Research Question 4: Is student academic performance (measured by mid-year school exam scores) related to perceived parent warmth and pressure, as well as to adolescent depression and anxiety.

To test whether students who scored higher on their exams had statistically significant differences in anxiety and depression from students who scored lower on their exams, comparisons were made between the groups. Exam scores were divided into Higher Score and Lower Score through a median split.

Table 24: Mean Anxiety and Depression Scores for Higher and Lower Exam Results

	Depression Mean Score	Anxiety Mean Score
Higher Exam Scores	13.66	38.04
Lower Exam Scores	15.94	39.16

Results showed statistically significant differences between higher and lower exam score students, with higher score students reporting lower anxiety and depression. The t -test result for the depression measure was $t(848) = 4.52, p < .0001$, and the t -test result for the anxiety measure was $t(883) = 3.036, p < .002$.

Research Question 5: Is there a correlation between levels of anxiety symptoms and depression symptoms?

A Pearson correlation coefficient was calculated to determine the relationship between anxiety scores and depression scores for all students. The result was a high positive correlation of .73, $p < .0001$.

Research Question 6: Do depression and anxiety symptom levels have different degrees of association with parental warmth and parental pressure to achieve?

In comparing the relative degrees of association between depression and anxiety with the parenting characteristics of pressure and warmth within the entire sample, results show that the correlation between depression and warmth ($-.40, p < .0001$) has a higher value than the correlation between anxiety and warmth ($-.32, p < .0001$). On the other hand, the correlation between depression and pressure ($.35, p < .0001$) is slightly lower than the correlation between anxiety and pressure ($.38, p < .0001$). In tests for significance (see Table 25), neither of the differences in correlations proved to be significant at the $p < .05$ level, although there was a trend toward significance ($p = .08$) for the stronger correlation of depression than anxiety with warmth.

Table 25: Tests for Significance for Differences in Correlations between Anxiety and Depression with Independent Variables Parental Pressure and Warmth

Variable Correlated	Anxiety r	Depression r	Z Statistic	Probability (2-tailed)
Pressure	.38	.35	.739	.23
Warmth	-.32	-.40	1.40	.08

Chapter V: Discussion

Summary and Interpretation of Results

The Relationship Between Family Factors and Adolescent Depression and Anxiety

The results of this study confirm that there is a strong relationship between adolescent reports of depression and anxiety, and two family characteristics: perceived parental warmth and perceived parental pressure to achieve. As expected, adolescents with higher scores for parental warmth had lower levels of depression and anxiety. Previous studies in China and many other cultures previously established the importance of warmth, acceptance and nurturing to adolescent well-being (Rohner, 1999).

Adolescents with higher perceived parental pressure to achieve also reported higher levels of depression and anxiety. That is, there was a strong correlation between adolescents' symptoms of anxiety and depression and parent attitudes and behaviors perceived as pushy and demanding with regard to academic performance. These findings were consistent with the hypotheses, that given the importance of academic achievement within Chinese culture, adolescent symptoms of anxiety (e.g., worry, subjective tension, physiological symptoms) and depression (e.g., hopelessness, sad mood, self-criticism, inertia, fatigue) would be associated with adolescent reports of school pressures from parents.

Whereas parental warmth and support has been studied extensively with Chinese populations, the process of parental pressure regarding schoolwork has not. Much of the research conducted to date with the instrument used in this study to measure pressure has been cross-cultural in emphasis, seeking to identify differences between ethnic groups such as Chinese Americans and Caucasian families in promoting academic success in

children (Campbell, 1994; Verna, 1996). The present study provides a more detailed look at the intra-cultural differences in perceived parental pressure by native Chinese students, all of whom share the cultural heritage of prizing education and hard work. The link found in this study between high parental pressure scores and psychological maladjustment provides valuable data about possible costs of intense parent involvement in their children's school performance in mainland China. The use of pressure to motivate children, while intended to promote their long-term well-being, may impede their overall functioning and limit their potential.

Ecological theory provides a useful framework for examining these findings. Bronfenbrenner (1986) theorized that forces in both the near (labeled *microsystems*) and far (labeled *mesosystems*) environments serve as powerful influences on a child's development. The incessant academic pressure that children perceive from their parents, within the family microsystem, makes sense within the context of the cultural mesosystem of traditional Chinese values that equate dedication, drills, and duty with achievement. Intervening factors reinforce the demanding parental role, in the form of broader level *exosystems* such as government policies that assess, identify and reward academic accomplishments throughout childhood. The results of this study would indicate that the cumulative effect of these family and societal stressors on Chinese youth is exacting an unintended toll of psychological problems.

The child is the center of Bronfenbrenner's focus, and this study examined parental attitudes and behavior from the child's perspective. The bi-directional nature of ecological theory indicates that children will influence their families. Although the hypotheses were based on an assumption that parental warmth and pressure may play

causal roles in the development of adolescents' anxiety and depression, it is not possible to say from this study's cross-sectional data whether higher pressure and lower warmth from parents caused adolescent anxiety and depression or whether adolescents with high anxiety and depression scores elicited and/or perceived more pressure and less warmth from parents. It also is possible that the causal process may work in both of those directions, and over time a circular process may develop in which parental behavior affects adolescent well-being *and* adolescent functioning affects parenting

As hypothesized, there was a significant interaction effect between parental warmth and pressure with regard to adolescent depression. The association between parental pressure and adolescent depression was significantly lower for warmer parents, indicating that parental warmth moderates the relationship between pressure to achieve and depression. In contrast, contrary to expectations, the interaction between parental warmth and pressure did not prove to be significant with regard to adolescents' anxiety. These results indicate a stronger protective function of parental warmth for adolescent depression than for anxiety.

One possible explanation for the lack of a moderating effect of warmth on the correlation between parental pressure and adolescent anxiety is that anxiety symptoms (feeling nervous, worried, and inadequate to cope with impending danger) may be more direct products of high parental and self-imposed academic expectations than depression symptoms (feeling lonely, sad, and hopeless). Parental warmth in the form of active expressions of interest and love may reduce depression by elevating a child's self-esteem yet might be perceived to some degree as extra pressure for children eager to meet high

parental academic expectations. The processes of warmth and pressure may, in effect, cancel each other out for anxious children.

As expected, there was a strong correlation overall between anxiety and depression scores for the sample population. That association is consistent with the assumption in this study that anxiety and depression are two major forms of personal distress that are likely to occur in adolescents interacting with their parent as they face a developmental milestone of preparing for college and/or entry into job and career. The correlation between anxiety and depression also is consistent with prior findings from many studies on both adult and child samples. Both anxiety and depression correlated negatively with parental warmth and positively with parental pressure. There were no hypotheses made about different degrees to which depression and anxiety might correlate with warmth and pressure, although a research question sought to examine whether differences might be found. The results of the study indicated that there were no significant differences.

These results underscore the difficulty in devising measures of depression and anxiety that adequately distinguish these two constructs. Although both instruments used to assess those variables in this study, the CDI and the RCMAS, have been used with Chinese populations, it may be that their application to Eastern cultures does not transfer effectively. Even within Western cultures, however, there has been an extended debate about the usefulness of distinctions between anxiety and depression in children, as well as substantial research evidence that measures of anxiety and depression commonly are highly correlated (Chen, Rubin, & Li, 1995; Dong et al, 1994; Hodges, 1990). Given this methodological limitation, Chinese researchers have advocated using a more global

assessment of negative affect rather than specific measures of anxiety and depression (Dong et al., 1994). Nevertheless, in the present study there was a trend toward significance with regard to the differences between the correlations of anxiety and depression with warmth, with depression having the stronger correlation. This supports earlier studies identifying the link between parental warmth and self-esteem (Chen, Liu, & Li, 2000; Kim & Ge, 2000) because the CDI depression scale more directly measures self-concept than the RCMAS anxiety measure. Thus, there is some evidence for discriminant validity of anxiety and depression measures in this study, but it is modest at best.

Findings Regarding Gender

For each of the relationships investigated in this study, comparisons were made between males and females. No dramatic differences were found; the two genders had similar negative correlations of parental warmth with adolescent depression and anxiety, and positive correlations of parental pressure with depression and anxiety. There were some significant differences in the strengths of the correlations for pressure, however, with boys reporting significantly stronger positive correlations between pressure and both anxiety and depression than girls. One possible explanation for this difference may be that lower cultural expectations for Chinese girls to succeed academically puts high parental pressure in a more positive light for them than for boys. From an ecological perspective, girls have internalized the traditional Confucian hierarchy between males and females, as translated by their parents' perspectives. Chinese girls reporting high perceived pressure from their parents may experience their parents' involvement as contrary to traditional norms favoring male education as more valuable to society. Parent

pressure might therefore enhance a girl's sense of hope and self-esteem, resulting in significantly lower depression scores for girls. If the causal influence is in the reverse direction, it may be that parents of depressed girls are less likely to pressure them, whereas the parents of depressed boys may feel compelled to maintain their high expectations precisely because of the cultural expectations for boys.

Regarding the hypothesized moderating effect of parental warmth, comparisons between boys and girls in the interaction effect between parental pressure and warmth indicated a significant interaction with regard to depression scores for girls, but a non-significant interaction effect for girls' anxiety, boys' depression, and boys' anxiety (although there was a trend toward significance for boys' depression). As noted above, an analysis for the total sample indicated that warmth did not moderate the main effect of pressure for anxiety but it did moderate the effect of pressure for depression. Based on the separate gender analysis, this moderating effect on depression is stronger for girls than for boys. Girls appeared to be more sensitive to perceived warmth from parents, which significantly reduced the differences in depression scores between high-pressure and low-pressure parents. These findings were also consistent with an earlier study of multicultural students in New York that examined the interplay of family processes and self-concept in boys and girls (Verna, 1996). In that study, family pressure on academics was found to be detrimental to self-concepts in both girls and boys, whereas family support and help were found to be a primary force in increasing self-concepts in daughters, but not sons.

These results suggest important gender differences in the importance of parental warmth to adolescent well-being. From the perspective of ecological theory, boys are

likely to be socialized to fulfill cultural expectations of success, and overt parental pressure to achieve may trigger strong feelings of failure, shame, and dishonor, unmitigated by parental warmth. In contrast, feelings of well-being in girls appear to be strongly associated with positive statements of encouragement and appreciation by parents, and the impact of such parental warmth seems to soften the negative feelings associated with parent criticisms and exhortations to study harder. These emotional differences between Chinese boys and girls may have cultural roots, reflecting pervasive traditional views of females as more nurturing and oriented toward interpersonal connection.

Gender differences between parents were also explored by having students answer warmth and pressure questions separately about their mothers and fathers. Students reported perceptions of both higher pressure and higher warmth from mothers than from fathers. This is consistent with the traditional role of mothers as more prominent in the rearing of children (Chao & Sue, 1996), although it seems counter to prior evidence that fathers' parenting roles emphasize guiding their children toward school achievement (Ho, 1986). In one study exploring the relationships among parent gender, parent control, and child functioning, fathers were perceived as significantly less warm and more domineering than mothers, particularly by sons (Lau et al., 1990). If academic pressure is seen as an element of control, the respondents in this sample might be expected to report higher pressure from fathers than from mothers. One explanation for higher mother pressure scores in this study might be that mothers, as primary caretakers, are more likely to be involved in the day-to-day activities described in the items on the pressure measure, such as asking whether homework is complete or commenting on grades received. Thus,

even though fathers are traditionally more responsible for the education of their children, mothers may be more prominent in voicing their expectations.

With regard to the relationship between parent characteristics and adolescent symptoms, the correlation between parental pressure and adolescent depression was slightly higher for fathers, and the correlations between pressure and anxiety, and warmth and anxiety were slightly higher for mothers. Nevertheless, only one of these differences was statistically significant: the negative correlation between parental warmth and adolescent depression was significantly stronger for mothers than for fathers. This again is consistent with past studies confirming the more central role of mothers in the emotional support of their children (Chao & Sue, 1996; Chen, Liu, & Li, 2000). The fact that the differences in the relationships between adolescent symptoms and perceived father pressure versus perceived mother pressure were not significant supports arguments that family life in China is changing, with fathers and mothers adopting more egalitarian roles (Eaton, 1998). Gender roles, workforce changes, and other organizing principles within Chinese society are all relevant ecological factors in understanding child development.

Other Demographic Factors

The mean ambition score, reflecting the importance that the adolescent places on university education, was consistently high in every grade and school sampled in this study. This appears to indicate that Beijing high school students have high expectations of continuing their education beyond high school, and national statistics bear this out. Through an ambitious plan to reform higher education by the Central Committee of the Chinese Communist Party, enrollment in regular institutions of higher education has

soared from 1.7 million in 1985 to 3.4 million in 1998, with a projected 16 million in 2005 (CERNET, 2000).

No significant differences were found among the three high school grades with regard to the relationship between perceived parental pressure and warmth and adolescent depression and anxiety. These findings are somewhat surprising with regard to anxiety and depression scores, given that students in their final year of high school face imminent changes and decisions about their futures, adding external pressures. The results of this study reinforce the conclusion that family functioning is an important variable in adolescent adjustment throughout young adulthood. In fact, Chinese parents are urged by the educational system to foster high academic performance in their children beginning in elementary school, and students also face academic path-defining examinations for entry into middle and high school. Thus, by the time students reach high school, their levels of anxiety and depression in relation to parental pressure are likely to be well-established.

Differences in psychological adjustment were also explored between high achieving and low achieving students. Students with higher exam scores had lower depression and anxiety scores. One explanation is that academic competence likely generates parental approval, rewarding high performing students for their conformance to societal norms and values. Thus, academic success may be a positive factor in regard to adolescent well-being, although the causal direction in this association may be the opposite, namely that better adjusted adolescents perform better in school. Previous studies have established a link between family functioning and school adjustment (Shek, 1997), and this study confirms such a relationship. Alternatively, a third factor such as

coping skills may account for both adolescent emotional well-being and school performance.

In comparing students from two selective key schools and two less selective ordinary schools (see Table 6), no clear overall distinctions in parent-adolescent relationships and adolescent emotional well-being were found. One key school appeared to be far more exclusive than the other based upon family income, and one ordinary school appeared to be quite similar to the less exclusive key school in terms of parent education level. If we compare the more exclusive key school with the least advantaged ordinary school, stronger differences appear, with the key school students reporting higher parental warmth, lower parental pressure, lower student anxiety, and lower student depression levels than the ordinary school students. Opportunities are expanding for more ordinary school students to pursue education beyond high school, including degree and non-degree programs, vocational colleges, junior colleges, bachelor's degree programs, adult learning centers, and correspondence schools, often with fees adjusted for need (CERNET, 2000). Such changes may decrease whatever differences do exist between students in less competitive and more competitive schools.

Limitations of the Study and Areas for Future Research

There are various potential threats to the validity of the findings of this study. The limitations include the cross-sectional design, the limits to which the sample is representative of Chinese adolescents and parents in general, and the reliance on adolescent self-reports only.

The cross-sectional design of this correlational study did not allow conclusions to be drawn about the direction of influence between family factors and adolescent

maladjustment. Longitudinal studies will be needed to clarify if adolescent depression and anxiety influence parental warmth and the amount of pressure that parents place on adolescents to achieve, if family factors primarily influence child adjustment, or if the influences are mutual.

The gender differences and similarities found in this study also suggest areas for further exploration. Analyses of the higher pressure scores for boys requires further research to better understand how boys and girls experience and report parental pressure differently. Because the direction of the influence is not known, additional research is also needed to identify whether parents react differently to psychological symptoms in daughters versus sons.

This study was conducted in Beijing, one of China's most modern cities. Yet more than 70% of China's population is rural (Wu, 1996). The findings may have limited generalization for non-urban Chinese families, particularly in light of the gap between rural and urban economic and educational opportunities (Chang & Kleinman, 2002). Other demographic variables were not controlled statistically, including parental educational level, occupation, and income level, which may be relevant to the hypotheses of this study. Further research is needed to more clearly isolate family socioeconomics and school quality as factors relevant to adolescent psychological well-being.

Only the adolescents, not parents, were surveyed, limiting the conclusions that can be drawn from this study's findings. There is some research to support adolescents as accurate reporters of their family environments. For example, Kim and Ge, (2000) surveyed both parents and adolescents and found that the two sets of perceptions were aligned, although some differences between father reports and adolescent reports were

found. Cumsille and Epstein (1994) found that the strongest predictor of depressive symptoms in adolescents was their subjective cognitive appraisals of family cohesiveness, suggesting that adolescent perceptions are the best measure of the link between family functioning and depression. Thus, parents' perceptions of family characteristics may differ from their children's perceptions, but it may be the adolescents' subjective experiences that most strongly influence their psychological adjustment. Adding assessments of parent perceptions would strengthen this line of research.

Because the sample was self-selective, with only students who volunteered to participate and whose parents provided permission, the results could pose threats to the external validity of the study. Both students and parents who were concerned about revealing existing problems in parenting and/or adolescent functioning may have decided against the adolescent's participation. It is possible that self-selection resulted in a sample of students with lower levels of depression or anxiety, or more positive perceptions of their parents, than the general population.

Threats to the validity of this study also exist because of the similarity in the methods used to assess the four variables. The relationships found among the variables might be due at least in part to the reliance on adolescent self-report measures rather than alternative sources such as observations by outside raters (i.e., common method variance may have inflated correlations). As noted above, the high correlation between depression and anxiety scores also indicates weak discriminant validity between the CDI and RCMAS measures used in this study.

Implications

This study examined the relationship between parent expectations and demands regarding schoolwork and the psychological adjustment of high school students and confirmed a strong association between the two. This correlation suggests that the variable of parent pressure to achieve is worthy of future research and clinical attention in work with adolescents suffering from symptoms of depression and anxiety. The direction of the influence between parent characteristics and adolescent adjustment is not known, but even if anxious or depressed children are more likely to perceive pressure or increase the parents' demands, parent attitudes and behaviors about academic success would appear to be an appropriate focus in mental health treatments.

This study confirms the strength of ecological theory as a useful framework for analysis of data regarding adolescent adjustment. The theory is bi-directional both from the perspective of children and their parents, and from the perspective of families within the ecosystem. Thus identification of potential mental health problems of children may facilitate government policy changes and development of new services for families. One of the stated goals of the Chinese educational reform movement is to help provide for the psychological health of primary and secondary school students (in addition to providing political, ideological and moral education) (CERNET, 2000). Among the areas being addressed by the central government are concerns that students are overly burdened by their workloads. In a teleconference on January 7, 2000, the Minister of Education challenged local education departments to take effective measures aimed at reducing inappropriate workloads (Dongping, 2000). Syllabi recently have been modified to delete content deemed too complicated and difficult for junior middle school students

(Dongping, 2000). These changes within the educational system should parallel government efforts to direct public attention to the damaging effects of excessive academic pressure on students. As the nation shifts from “examination-oriented education” to a more wholistic approach to education, families may become more aware of the link between adolescent well-being and high parent expectations for scholarship.

This study contributes to the existing literature by providing evidence that parenting dimensions other than warmth have significant implications for adolescent developmental outcomes in China. Other studies have identified a number of other family influences on depressed and anxious moods such as level of family conflict (Chen, Li, & Rubin), harsh discipline styles (Kim & Ge, 2000), marital quality (Shek, 1997), and degree of parental monitoring (Chen, Liu, & Li, 2000), but none have examined the role of pressure for school success. Parent pressure may be associated with adolescent depression and anxiety due to the importance of both child obedience and educational status in Chinese values. Shifts within the broader culture will have a significant influence on children, but ecological theory suggests that it is within the family that the child will experience cultural values most directly and concretely.

A number of studies have shown that Chinese child-rearing styles combine the control and strictness considered authoritarian by European and American parents with loving care and involvement (Chao, 1994; Lin & Fu, 1990). Through the concept of *chiao shun*, Chinese parents value organized control, expectations and discipline to train their children in appropriate and expected behaviors, and they equate such training with concern for a child’s success (Chao, 1994). For parents, such training is intended to serve the child in developing disciplined habits and to serve the family’s goals for

interdependence and harmony. The present study looks at the child's perception of these parental values of strict standards of academic performance and isolates academic pressure as a family factor correlated with symptoms of childhood depression and anxiety. Thus this study validates assumptions in ecological theory that both broader social mores and specific family characteristics play a significant part in child development.

The link between parent academic expectations and adolescent mental health suggests that treatment options for adolescent symptoms of depression and anxiety should include family therapy. Mental health services in China are undergoing dramatic changes as part of China's transition to a freer market economy. Among the services quite recently available and rapidly expanding in China are university counseling centers, mental health hotlines, private psychotherapy clinics, expanded pharmaceutical choices, and foreign training opportunities for professionals (Gerlach, 1999). Family therapy is not generally available in China but is increasingly being discussed at conferences and in the literature. The systemic framework of family therapy would appear to be particularly well-suited to the treatment of individuals in China, given the primacy of family interdependence in Confucian thought. Indigenous treatments for psychiatric disorders in China have long incorporated family members in the care of "identified patients" (Chang & Kleinman, 2002). As the stigma of psychological symptoms decreases with expanded development of psychiatric knowledge in the culture, family members are increasingly seeking help for family and relationship difficulties (Chang & Kleinman, 2002). This study would support attention to parent-child interactions regarding demands and expectations for academic success. The findings would also support use of therapy

treatment models that emphasize, model, and validate the important role of parental praise and unconditional acceptance in the well-being of children. These conclusions would be equally applicable to the treatment of Chinese American families who share the cultural identity, traditions, and values of native Chinese families.

Teenage depression and suicide is a concern worldwide, and this study confirms earlier research that indicates Chinese youth report higher depression scores than U.S. sample norms (Chen, Lee & Stevenson, 1996; Shek, 1996). Severe anxiety complaints are also on the rise (Jing & Zuo, 1998). The Chinese government has recently issued public statements that mental health is now a top public health priority, but the challenges are enormous. There is a critical shortage of hospital beds for the severely ill, and few people can afford the new fee-for-service conditions (Chang & Kleinman, 2002). In both human costs and economic costs, it has become imperative for policies to address incipient disorders such as childhood depression that potentially predict clinical depression in adulthood (Cumsille & Epstein, 1994).

Consistent with ecological theory, influences on children must be addressed holistically. Bronfenbrenner (1986) calls the intersection of microsystems a mesosystem, in which there is an overlap of influences from various settings. The stronger the links and complementarity between these settings, the greater of the influence on development. One possible avenue for addressing the role of parents in promoting their children's well-being is the use of "parent schools" established throughout China in the 1990s (Falconier, 2001). These schools were created by government to encourage parents to strengthen their children's intellectual and moral character, and to provide them with scientific teaching methods to educate their children. No attention in parent schools has been given

to individual psychological factors or family dynamics that are relevant to the development of healthy productive children (Falconier, 2001). Parent teachers who have been trained not only in school curricula and rules for proper behavior, but also on the symptoms and treatments of anxiety and depression for both boys and girls, could provide parents with information important to the overall well-being of their children. To the extent that this and other studies reinforce the importance of direct expressions of parental love to Chinese children, parent teachers may introduce parents to new skills that balance the pervasive Chinese ethos valuing indirect communications. Particularly in rural areas where access to mental health care is significantly inferior to urban centers (Chang & Kleinman, 2002), parent schools may fill an important role in expanding the awareness of family factors that may contribute to high functioning children and contribute to a more productive future for the country.

Conclusion

Taking into account the larger cultural context as well as specific family variables, this study increased understanding of adolescent functioning in China. Specifically, the relationship between adolescent perceptions of parental warmth and pressure to achieve and adolescent reports of anxiety and depression were examined. The results indicate that China's goal of a highly educated populace may be jeopardized unless more emphasis is given by educational and health institutions to the link among schoolwork pressures, psychological problems in children and parent academic expectations. The positive correlation between perceived parental warmth and adolescent symptoms suggests that parenting style is an important factor in the mental health of children. The fact that high warmth had only modest moderating impact on the influence

between parent pressure and adolescent symptoms invites broader exploration of parent behaviors that will promote both mental health and academic success in Chinese youth.

APPENDIX A: High School Student Adjustment Survey

High School Student Adjustment Survey

Attached are five questionnaires you are invited to complete for a study on high school students' adjustment and family characteristics. On each questionnaire, please answer all the questions as best you can. It is important that you answer all of the questions.

It is important for your answers to be anonymous. Please do not write your name or any identifying information on any of the pages in order to preserve your privacy and confidential information. Also, please do not discuss your answers with your classmates after the questionnaires are completed.

Some questions ask about sensitive topics such as suicidal thoughts, feeling rejected by parents, and negative self-concepts. If you are experiencing great distress in your personal life such as suicidal thoughts, we strongly encourage you to contact your school counselor to discuss your feelings.

There are no right or wrong answers to the questions. Each questionnaire provides different instructions for answering the questions. Please read the instructions carefully before answering the questions.

Demographic Questionnaire

Sex (Check one) Male _____ Female _____

Age (Write in) _____

Grade Level in School (Write in) _____

Check off all family members you currently live with

Father	_____	Aunt	_____
Mother	_____	Sister	_____
Grandfather	_____	Brother	_____
Grandmother	_____	Cousin	_____
Uncle	_____		

Below, list your current classes and grade for each on most recent mid-semester exam

Class	Exam Score
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

Future Plans (Check answer that most nearly describes you)

	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
Getting a university education is very important to me				
I would prefer not to go to university after high school				

Father's Education Level (Check highest level obtained)

- Some High School _____
- Graduated High School _____
- Vocational School _____
- Some College _____
- Graduate College _____
- Advanced Degree _____

Father's Occupation (Write in) _____

Mother's Education Level (Check highest level obtained)

- Some High School _____
- Graduated High School _____
- Vocational School _____
- Some College _____
- Graduated College _____
- Advanced Degree _____

Mother's Occupation (Write in) _____

IPI

Directions: Please mark the box that corresponds to your answer.

1. My father doesn't believe me when I tell him that "I have no homework."	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
2. School would be more pleasant if my father was not as strict.	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
3. My father is never pleased with my marks.	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
4. I'm afraid to go home to my father with a failing mark.	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
5. My father expects too much of me.	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
6. My father pressures me too much with my homework.	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
7. My father is "pushy" when it comes to my education.	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
8. My father does not feel I'm doing my best in school.	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
9. My father is pleased <u>only</u> if I get 100% on tests.	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree

10. My mother doesn't believe me when I tell her that "I have no homework."	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
11. School would be more pleasant if my mother was not as strict.	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
12. My mother is never pleased with my marks.	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
13. I'm afraid to go home to my mother with a failing mark.	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
14. My mother expects too much of me.	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
15. My mother pressures me too much with my homework.	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
16. My mother is "pushy" when it comes to my education.	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
17. My mother does not feel I'm doing my best in school.	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree
18. My mother is pleased <u>only</u> if I get 100% on tests.	Strongly Disagree	Disagree	Uncertain	Agree	Strongly Agree

PARQ

Here are some statements about the way mothers and fathers act toward their children. The first set of questions asks about your mother. The second set of questions asks about your father. Four boxes are provided after each sentence. If the statement is basically true about the way your mother or father treats you, then ask yourself, “Is it almost always true?” or “Is it only sometimes true?” For example, if you think your mother almost always treats you that way, put an X in the box under **Almost Always True**. If the statement is sometimes true about the way your mother treats you, then mark **Sometimes True**. If you feel the statement is basically untrue about the way your mother treats you, then ask yourself, “Is it rarely true?” or “Is it almost never true?” If it is rarely true about the way your mother treats you, put an X in the box under **Rarely True**. If you feel the statement is almost never true, then mark **Almost Never True**.

MY MOTHER . . .	Almost Always True	Sometimes True	Rarely True	Almost Never True
1. Says nice things about me.				
2. Talks to me about our plans and listens to what I have to say.				
3. Encourages me to bring my friends home, and tries to make things pleasant for them.				
4. Makes it easy for me to tell her things that are important to me.				
5. Makes me feel proud when I do well.				
6. Praises me to others.				
7. Talks to me in a warm and loving way.				
8. Says nice things to me when I deserve them.				
9. Is really interested in what I do				
10. Makes me feel wanted and needed.				
11. Tells me how proud she is of me when I am good.				
12. Makes me feel what I do is important.				
13. Tries to help me when I am scared or upset.				

14. Cares about what I think and likes me to talk about it.				
15. Lets me do things I think are important, even if it is inconvenient for her.				
16. Tries to make me feel better when I am hurt or sick.				
17. Lets me know she loves me.				
18. Treats me gently and with kindness.				
19. Tries to make me happy.				

MY FATHER . . .	Almost Always True	Sometimes True	Rarely True	Almost Never True
20. Says nice things about me.				
21. Talks to me about our plans and listens to what I have to say.				
22. Encourages me to bring my friends home, and tries to make things pleasant for them.				
23. Makes it easy for me to tell him things that are important to me.				
24. Makes me feel proud when I do well.				
25. Praises me to others.				
26. Talks to me in a warm and loving way.				
27. Says nice things to me when I deserve them.				
28. Is really interested in what I do.				
29. Makes me feel wanted and needed.				
30. Tells me how proud he is of me when I am good.				
31. Makes me feel what I do is important.				
32. Tries to help me when I am scared or upset.				
33. Cares about what I think and likes me to talk about it.				
34. Lets me do things I think are important, even if it is inconvenient for him.				
35. Tries to make me feel better when I am hurt or sick.				
36. Lets me know he loves me.				
37. Treats me gently and with kindness.				
38. Tries to make me happy.				

RCMAS: What I Think and Feel

Directions: For each question, circle the word Yes if you think the sentence is true about you. Circle the word No if you think it is not true about you. Circle an answer for every sentence, even if it is hard to choose one that fits you. Do not circle both Yes and No for the same sentence.

- | | | |
|--|-----|----|
| 1. I have trouble making up my mind. | Yes | No |
| 2. I get nervous when things do not go the right way for me. | Yes | No |
| 3. Others seem to do things easier than I can. | Yes | No |
| 4. I like everyone I know. | Yes | No |
| 5. Often I have trouble getting my breath. | Yes | No |
| 6. I worry a lot of the time. | Yes | No |
| 7. I am afraid of a lot of things. | Yes | No |
| 8. I am always kind. | Yes | No |
| 9. I get mad easily. | Yes | No |
| 10. I worry about what my parents will say to me. | Yes | No |
| 11. I feel that others do not like the way I do things. | Yes | No |
| 12. I always have good manners. | Yes | No |
| 13. It is hard for me to get to sleep at night. | Yes | No |
| 14. I worry about what other people think about me. | Yes | No |
| 15. I feel alone even when there are people with me. | Yes | No |
| 16. I am always good. | Yes | No |
| 17. Often I feel sick in my stomach. | Yes | No |
| 18. My feelings get hurt easily. | Yes | No |
| 19. My hands feel sweaty. | Yes | No |

20. I am always nice to everyone.	Yes	No
21. I am tired a lot.	Yes	No
22. I worry about what is going to happen.	Yes	No
23. Other children are happier than I.	Yes	No
24. I tell the truth every single time.	Yes	No
25. I have bad dreams.	Yes	No
26. My feelings get hurt easily when I am fussed at.	Yes	No
27. I feel someone will tell me I do things the wrong way.	Yes	No
28. I never get angry.	Yes	No
29. I wake up scared some of the time.	Yes	No
30. I worry when I go to bed at night.	Yes	No
31. It is hard for me to keep my mind on my schoolwork.	Yes	No
32. I never say things I shouldn't.	Yes	No
33. I wiggle in my seat a lot.	Yes	No
34. I am nervous.	Yes	No
35. A lot of people are against me.	Yes	No
36. I never lie.	Yes	No
37. I often worry about something bad happening to me.	Yes	No

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CDI

On this questionnaire are groups of statements. For each group, pick the one statement that best describes the way you feel. Circle the number (0,1, or 2) beside the statement you picked. Please read all the statements in each group before making your choice.

1. 0 I am sad once in a while.
 1 I am sad many times.
 2 I am sad all the time.

2. 0 Nothing will ever work out for me.
 1 I am not sure things will work out for me.
 2 Things will work out for me O.K.

3. 0 I do most things O.K.
 1 I do many things wrong.
 2 I do everything wrong.

4. 0 I have fun in many things.
 1 I have fun in some things.
 2 Nothing is fun at all.

5. 0 I am bad all the time.
 1 I am bad many times.
 2 I am bad once in a while.

6. 0 I think about bad things happening to me once in a while.
 1 I worry that bad things will happen to me.
 2 I am sure that terrible things will happen to me.

7. 0 I hate myself.
 1 I do not like myself.
 2 I like myself.

8. 0 All bad things are my fault.
 1 Many bad things are my fault.
 2 Bad things are not usually my fault.

9. 0 I do not think about killing myself.
 1 I sometimes think about killing myself but I would not do it.
 2 I want to kill myself.

10. 0 I feel like crying every day.
 1 I feel like crying many days.
 2 I feel like crying once in a while.
11. 0 Things bother me all the time.
 1 Things bother me many times.
 2 Things bother me once in a while.
12. 0 I like being with people
 1 I do not like being with people many times.
 2 I do not want to be with people at all.
13. 0 I cannot make up my mind about things.
 1 It is hard to make up my mind about things.
 2 I make up my mind about things easily.
14. 0 I look O.K.
 1 There are bad things about my looks.
 2 I look ugly.
15. 0 I have to push myself all the time to do my school work.
 1 I have to push myself many times to do my school work.
 2 Doing school work is not a big problem.
16. 0 I have trouble sleeping every night.
 1 I have trouble sleeping many nights.
 2 I sleep pretty well.
17. 0 I am tired once in a while.
 1 I am tired many days.
 2 I am tired all the time.
18. 0 Most days I do not feel like eating.
 1 Many days I do not feel like eating.
 2 I eat pretty well.
19. 0 I do not worry about aches and pains.
 1 I worry about aches and pains many times.
 2 I worry about aches and pains all the time.
20. 0 I do not feel alone.
 1 I feel alone many times.
 2 I feel alone all the time.

21. 0 I never have fun at school.
1 I have fun at school only once in a while.
2 I have fun at school many times.
22. 0 I have plenty of friends.
1 I have some friends but I wish I had more.
2 I do not have any friends.
23. 0 My school work is alright.
1 My school work is not as good as before.
2 I do very badly in subjects I used to be good in.
24. 0 I can never be as good as other kids.
1 I can be as good as other kids if I want to.
2 I am just as good as other kids.
25. 0 Nobody really loves me.
1 I am not sure if anybody loves me.
2 I am sure that somebody loves me.
26. 0 I usually do what I am told.
1 I do not do what I am told most times.
2 I never do what I am told.
27. 0 I get along with people.
1 I get into fights many times.
2 I get into fights all the time.

APPENDIX B: Announcement Informing Parents and Students About the Study

[Beijing Normal University Letterhead]

Date

Dear Parents,

_____ High School has agreed to participate in a research study conducted by Beijing Normal University in conjunction with the University of Maryland, U.S.A. We are attempting to learn more about high school students' experiences as they prepare for their college education. In our research study, students will be asked to complete a set of questionnaires about perceived family characteristics and adolescent depression and anxiety. No information that would identify individual participants will be collected, in order to insure that confidentiality is protected. A major benefit of the study is that it will increase knowledge about factors that are associated with levels of anxiety and depression among high school students, and the findings may help develop effective forms of counseling for students who are experiencing high levels of stress.

Your child's participation in this study would be very helpful to the success of the project. However, there will be no consequences to your child or to you if your child does not participate in this research. Teachers and administrators from the high school will not be in the classrooms when the questionnaires are distributed. Beijing Normal University researchers will distribute the questionnaires only to those students who return the attached consent forms. It is estimated that it will take less than one hour for students to complete the questionnaires, which will be administered on _____. We do not anticipate that participating in the research will be stressful for the students; however, if at any time a student experiences discomfort while participating, he or she can stop participating, with no negative consequences.

Attached is a consent form that describes the study's purpose and procedures and asks for your written permission for your child's participation in the research project, as well as your child's written consent to participate. If you and your child both agree that he or she will participate, both of you should sign and date the consent form and return it to the child's teacher in the high school by the end of the week, in the sealed envelope we have provided. Also, if you decide that you do not want your child to participate, please put the unsigned consent form into the envelope, seal it, and have your child return it to the teacher. Therefore, the teacher will return all of the sealed envelopes to the researcher from Beijing Normal University and the teacher will have no knowledge about which students will participate.

Sincerely,

APPENDIX C: Consent Form

Research on Adolescent Perceptions CONSENT FORM

(Page 1 of 3) Initialed by Parent and Child _____

Research Purpose and Procedures

This study on adolescent adjustment is intended to provide research data about adolescent perceptions of family characteristics and adolescent levels of depression and anxiety. The research will be conducted by Professor Fang Xiaoyi of the Institute of Developmental Psychology at Beijing Normal University in conjunction with Professor Norman Epstein and Ms. Pamela Riley of the Department of Family Studies at the University of Maryland, U.S.A. The results of the research will provide important information to mental health professionals about factors that are associated with adolescent distress, and may lead to the development of more effective mental health services to treat anxiety and depression. Participation by students will be helpful in producing useful results, but there is no requirement for any student to participate.

If a student and his or her parents give their permission by signing this consent form, the student then will participate in the research by completing questionnaires at school. These questionnaires will be distributed and collected in students' classrooms by researchers from Beijing Normal University. It will take approximately one hour to complete the questionnaires. While students are completing the questionnaires in their classrooms, teachers and school administrators will not be present in the classroom, and will not know whether or not a particular student participated. This study is voluntary. No identifying information such as the students' names or addresses will be collected, so the students' responses to the questionnaires will be anonymous. To insure privacy, students will be instructed by the researchers not to discuss the decision to participate nor the content of their responses with one another. Students who decline to participate should not sign the consent form but should place it into the envelope provided, seal the envelope, and return it to their teachers.

Risks and Benefits

The questionnaires consist of statements about a student's perceptions about family relationships, as well as any anxiety and depression symptoms that the student may experience in daily life. There are no known risks to students from participating in this research. The researchers will inform the students before the questionnaires are distributed that it is unlikely that they will feel upset by thinking about the questions. If a student does become upset by completing the questionnaires, the researchers will assist the student in obtaining referrals to appropriate sources of counseling. Students will also be informed that school counselors are aware of the existence of the research and are available to talk to any student who wishes to discuss their reactions to the study.

The students will be told that they should feel free to stop working on the questionnaires at any time if they do not wish to continue. There will be no consequences to any student who chooses not to participate. Students who choose not to participate can use the hour for quiet studying.

Students who complete the questionnaires will not receive any personal benefits from participating. However, their responses will provide valuable information about adolescents' experiences and will help mental health professionals develop treatments for adolescents who experience anxiety or depression.

Confidentiality

Because all students will seal their questionnaires in envelopes and return them to the researchers, school teachers and administrators will not know which students completed questionnaires and which students left them blank. Students' names will never be disclosed at any time. All completed questionnaires will be stored by Dr. Fang in locked file drawers in his offices at Beijing Normal University. Any written reports of the overall results of the research study will not contain names of any of the participants.

Parents and students who have any concerns about this research can contact Professor Fang Xiaoyi at the Institute of Developmental Psychology at Beijing Normal University (Tel. 62208232). Professor Norman Epstein can be contacted by telephone at the University of Maryland at 001301-405-4013. This research has been reviewed and approved by the Institutional Review Board of the University of Maryland, U.S.A. Participants and their parents can contact the University of Maryland Institutional Review Board at 001301-405-4180 if they have questions or concerns about a student's rights as a research participant.

Parental Consent for Child's Participation in this Research

I understand that this research project will be conducted and administered in compliance with all applicable laws and school policies. I have read this consent form, and I have had any questions I may have about the research answered. I consent for my child _____ (name) to participate in the research by completing the questionnaires at school. I understand that I am free to withdraw my consent and my child is free to discontinue his or her participation in this study at any time without penalty. I have received a copy of this consent form.

Parent's Signature

Printed Name

Date

Student's Consent to Participate in this Research

I have read this consent form, I have had any questions I may have about the research answered, and I consent to participate in the research study. I understand that I can discontinue my participation at any time, without any penalty to me.

Student's Signature

Printed Name

Date

Appendix D: Letter Informing School Counselors About the Study

[Beijing Normal University Letterhead]

Date

Dear [Name of School Counselor]

Professor Fang Xiaoyi from Beijing Normal University, and Professor Norman Epstein from the University of Maryland, U.S., have received permission from school officials to conduct a research study with students at [name of school]. The purpose of the study is to gather research data about the relationship between family characteristics and adolescent levels of depression and anxiety. The results of the research will provide important information to mental health professionals about factors that are associated with adolescent distress, and may lead to the development of more effective mental health services to treat anxiety and depression.

Students who volunteer to participate in the study will complete questionnaires during school hours. A set of these questionnaires is attached so you will be familiar with them. Parents and students will be informed that participation is voluntary, and there will be no negative consequences from choosing to participate or not.

Student confidentiality will be protected in several ways. All students will return their consent forms to the school for forwarding to the researchers, whether or not they choose to participate, so teachers and school administrators will not know who is or is not participating in the study. Teachers will not be present in the classrooms when the surveys are distributed, only a researcher from Beijing Normal University will be present in the classroom. No personal identifying information will be collected to insure anonymity of responses.

It is not likely that students who participate will experience distress from answering questions about anxiety, depression, parental warmth, and parental pressure. However, prior to distributing the questionnaires, the researcher will inform the students that they should feel free to stop answering questions if they feel distressed. Additionally, they will be told that you, as the school counselor, are available to talk to any student who wishes to discuss his or her reactions to the research.

Your support of this research is deeply appreciated. We will share with you the general results of the research study when the analysis is completed. If you have any questions, please do not hesitate to contact Professor Fang Xiaoyi at the Institute of Developmental Psychology at Beijing Normal University (Tel 62208232).

Sincerely

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