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An Analysis of the Impact of Family and School
Stressors on Children's Emotional State in Canada

by

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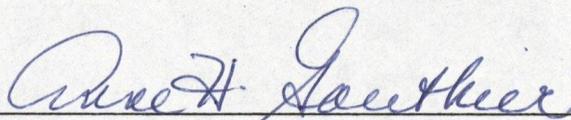
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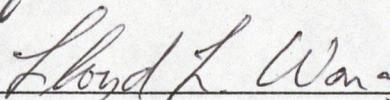
The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "An Analysis of the Impact of Family and School Stressors on Children's Emotional State in Canada" submitted by Tingting Lu in partial fulfillment of the requirements for the degree of Master of Arts.



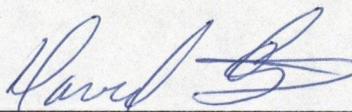
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Abstract

Many factors have been demonstrated to have an impact on children's emotional state in the literature. However, the possible impact of culture has been largely ignored in previous studies on children's emotional state. One of the contributions of this thesis is to integrate culture into a global framework to explain children's emotional state. This thesis carried out a series of analyses on children aged 4 to 11. Even though one of the main interests of this thesis is to explore the direct or indirect effect of Asian culture on children's emotional disorders, the variable that was used to capture the concept of "Asian culture" was found to be not statistically significant in bivariate analysis and the OLS regressions. However, Asian culture was found to be mediated through poverty and parenting style to affect children's emotional state.

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Dedication

To my Mother, for her unconditional love, support, and encouragement.

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Chapter One—Introduction

This thesis is a quantitative study of children’s emotional state. Children’s well-being is a topic of increasing concern for societies (Perry and Gillman, 2000; Featherstone, 1999; Vandewater and Lansford, 1998; Teghtsoonian, 1997; Scales and Brunk, 1990; Ross and Duff, 1982). As emphasized in a 2002 Government of Canada report, “the early years of life are critical in the development and future well-being of the child, establishing the foundation for competence and coping skills that will affect learning, behaviour, and health” (Government of Canada Report, 2002: 4). A common definition of well-being involves five domains: physical health, mental health, social knowledge, cognitive learning, and language communication (Government of Canada Report, 2002). These five domains are all very important and relate to each other. However, in this thesis I will concentrate only on one dimension of children’s mental health, namely, emotional disorders¹. There are three reasons for doing so. First, good mental health is crucial to protect children from emotional and behavioural problems, such as depression, anxiety, and drug use (Beiser et al., 1998, 2002). Second, not a lot of research about children’s mental health has been carried out using Canada data (most of the literature is based on American data). Third, the Canadian National Longitudinal Survey of Children and Youth (NLSCY), contains various questions about children’s mental health that allow an examination of the magnitude of mental health problems among Canadian children and of its determinants. The NLSCY has

¹ The way “emotional disorders” is measured in this thesis does not necessarily refer to serious mental illness. Instead, it measures children’s anxiety and unhappiness. The actual variable used is described on page 42.

been conducted every two years since 1994. The NLSCY, cycle 3 is employed in this thesis. The Cycle 3 was conducted from 1998 to 1999, and it sampled 31,194 children aged from 0 to 16 in Cycle 3.

Some studies have drawn attention to the links between children's school experiences and the presence of emotional disorders (Roeser et al., 1998; Chen and Li, 2000; Verma et al., 2002; Lee and Larson, 2000). In a study of the co-occurrence of children's school failures and their emotional disorders, Roeser et al. (1998) found that school problems and emotional disorders are interacting throughout children's schooling career. The difficulties that children have in school, such as low performance or failure in examinations, can increase the chance of children's emotional disorders. Likewise, the presence of children's emotional disorders may hinder their ability and motivation to learn. This will be especially the case for children who have little resources and support to rely on, for example, children living in poverty.

There has been a great deal of research which has suggested that children of Asian origin do perform better in school than Caucasian children (Portes and Ruben, 2001; Stevenson et al., 1993; Schmid, 2001; Khanna and Heiser, 2000). Moreover, some scholars have suggested that the high level of academic performance of Asian students may have some negative consequences on their mental health (Lau et al., 1999; Zhou and Bankston, 2000). However, the fact suggests a paradox. A comparative study among Chinese, Japanese, and American children showed that American children, not Japanese or Chinese children, reported most frequent feelings

of stress². Furthermore, American children stated that school was the most common source of stress despite the fact that they did not perform as well as Japanese and Chinese children on standard mathematics tests. In other words, the high educational achievement of Japanese and Chinese children did not appear to be associated with high (at least not the highest) level of stress (Stevenson, Chen, Lee, 1993). Stevenson et al. (1993) explain this finding by suggesting that American children do not have a clear idea about the importance of education and have to deal with too many demands other than school works (Stevenson, Chen, and Lee, 1993). Working hard to balance one's life can cause stress: a situation which would partly explain the paradox. However, the explanation is not sufficient to understand what indeed creates stress among children.

Among the other determinants of children's emotional disorders identified in the literature, poverty also has been found to be a risk factor (Thomson et al., 1994; Takeuchi et al., 1991; Beiser et al., 2002, 1998). Poverty can limit parents' ability to provide enough support to, and control for, children. Parents under financial stress are preoccupied and may not have enough time to communicate with their children or guide their behaviours. Due to economic constraints, children may not live in good quality physical and social environments. Therefore, children in poor families are disadvantaged and at higher risks of emotional disorders. Surprisingly, this does not appear to be the case for immigrant children. Beiser et al. (1998, 2002) reported that although more than one third of new immigrant children in Canada lived in poor

² Stress is a feeling which results from excessive pressures and environmental stimulation (Priest and Welch, 1998: 1).

families, new immigrant children had the lowest degree of emotional disorders as compared to other children.

As a result of its immigration policy, Canada is a multicultural country. Among the growing up Canadians, recent immigrant children and children of recent immigrants constitute 7.7% of the total children population in 1994 (Beiser, 1998). According to Statistics Canada, the number of immigrants from Eastern Asia has been increasing in recent years. In 2002, 48.4 percent of skilled workers and 63.2 percent of business class immigrants were from Asia and Pacific area. Therefore, it is necessary to have a better understanding of the mental health of immigrant children and children of immigrant families, and especially of children of Asian origin. Given the increase in Asian population and the lack of research on the emotional state of children of Asian origin in Canada, this thesis is devoted to an exploration of the relationship between culture (Asian vs. Non-Asian) and children's emotional state, and an examination on what other factors in children's daily life have an impact on emotional disorders. One of the contributions of this thesis is to introduce the issue of culture. In order to explore the possible effect of culture on children's emotional state, this thesis integrates the issue of culture into other determinants of children's emotional state. More specifically, this thesis will address two general questions related to the determinants of emotional disorders and three more specific ones related to Asian culture: 1. To what extent do Canadian children experience emotional disorders? 2. What factors affect children's emotional disorders? 3. Do children of Asian origin experience a different level of emotional disorders, as compared to

children of Non-Asian origin? 4. Does culture directly or indirectly affect children's emotional disorders? 5. What factors mediate the relationship between culture and children's emotional disorders?

This thesis will carry out a series of analyses on children aged 4 to 11. Bivariate and univariate analyses will be employed to provide the fundamental understanding of the data and the relationships between variables. Both Ordinary Least Square regression and path analysis will be carried out to examine children's emotional state from the perspective of various stressors, such as poverty, parenting style, school experience, and so on. One of the focuses of this thesis is to explore the effect of Asian culture on children's emotional state. In order to discover the direct and indirect effects of Asian culture on children's emotional state, a series of statistical models will be produced. More specifically, this thesis will aim at examining the possible difference in emotional state between children of Asian origin and children of non-Asian origin³. The thesis also aims at finding which stressors each group is sensitive to, discovering whether and how school experience affect children's emotional state, and exploring the reasons that may explain these differences between children of Asian origin and children of non-Asian origin.

The thesis is divided into seven chapters: Chapter 2 reviews the literature, Chapter 3 presents several theories and the theoretical model, Chapter 4 describes the

³ Due to the small sample size of children of Asian origin, this thesis is not able to divide children of Asian origin into sub-groups (immigrant children of Asian origin vs. native born children of Asian origin) to compare the differences between sub-groups.

methodology, Chapter 5 reports the results, Chapter 6 discusses the results, and Chapter 7 concludes the thesis.

Chapter Two—Literature Review

Numerous factors have been found to affect children’s emotional disorders, including schooling achievement, family structure, a family’s financial situation, support within the family, parenting style and parental depression. Below, I review some of the most important studies and findings related to these various factors. I conclude this chapter by summarizing some of the limitations of the literature and by highlighting the contribution of my thesis to the literature. I however start the chapter by defining mental health, as well as the key variable used in my empirical analysis, namely, emotional disorders.

2.1 Mental Health

The World Health Organization defines health as “a state of complete physical, mental, and social well-being” (WHO, 2001: 8). From this point of view, being healthy is not simply the absence of disease or infirmity. As the World Health Organization suggests, mental health is an important component of health, which allows a person to accomplish his or her emotional abilities, to be capable of coping with life’s stress, and to work productively. The general definition of mental health from the World Health Organization is that “mental health is the ability of the individual, the group and the environment to interact with one another in ways that promote personal well-being, the best possible development and use of mental skills, and the achievement of individual and collective aspirations, in keeping with the

ideals of justice, and with a view to achieving and preserving fundamental equality” (WHO, 2001: 8).

Stress is an unpleasant but unavoidable consequence of one’s life. Some stress can disappear over time. However, some stress can become more intensive and harmful over time. Acute stress may become one of the causes of mental health problems. Johnson (1986) argued that stress is related to the fact that people experience psychologically threatening, or troublesome situations and that these experiences produce negative outcomes. In the above case, stress can be defined as “a useful construct denoting a hypothetical state of the organism that is linked to various types of environmental stimuli on one hand and to various outcomes on the other” (Johnson, 1986:22). Johnson (1986) argued that “even without adopting a specific definition of stress, it is quite appropriate to speak of potential stressors and their impact on the individual and the degree to which the relationship between potential stressors and various outcomes are mediated by other variables” (P.23). Stress is not always harmful. In fact, sometimes stress can be stimulative and beneficial up to a certain amount. For example, an important examination is very stressful for university students. Most students are capable to handle this stress. Up to a certain amount, this stress can motivate students to be more productive. However, the level of this certain amount varies among people. Our body has its own defensive and healing system. Confronted to stress, we need to find a way to fight with it and even to make it beneficial. For most of us, we can successfully manage stress. Nevertheless, some of us sometimes fail in the battle with stress and develop mental health problem.

Not only adults need to face up to stress but children need as well. One of the mental health problems developed by children is emotional problem. During the process of growing up, children have to confront different kinds of stress. The stress can come from anywhere, such as schooling, moving, parents' conflict, and poverty. Most children are able to survive the stress and remain emotionally healthy. However, some children unfortunately develop emotional problems. Emotional problems are normally classified into two types of emotions and behaviours—externalizing behaviour characterized by aggression, hyperactivity, and noncompliance; and internalizing behaviour characterized by anxiety and depression (Campbell, 1995). In my thesis, the dependent variable—emotional disorders—is used to measure internalizing behaviour⁴.

2.2 Ethnicity, Educational achievement, and Emotional Disorder

Many studies have indicated that Asian parents have different beliefs on children's schooling achievement and different values regarding success, as compared to Non-Asian parents (Chao, 1994, 1995, and 1996; Goyette and Xie, 1999; Jose, Huntsinger, and Liaw, 2000; Kelley and Tseng, 1992; Gorman, 1998; Cummings, 1996; Shinn, 1986; Chen, 2001). In a study that compared the parental beliefs of Chinese American and European American mothers, Chao (1996) found that many European American mothers do not want to emphasize the importance of schooling

⁴ This thesis focuses strictly on emotional disorders. It is possible that the stressors and determinants examined in this thesis also apply to other types of emotional problems and to other dimensions of mental health. However, this thesis will not be empirically examining this.

achievement. On the other hand, Chinese mothers believe that hard working and effort are definitely leading to schooling achievement, and that receiving a good education directly affects children's future success and upward mobility. Asian parents assume that any educational achievement can be obtained through effort and is not just determined by ability. Thus they tend to push their children to obtain as high education as possible. In addition, Asian parents stress the acquisition of academic skills because of the instrumental value of education. That is, education is believed to be an effective way of achieving upward mobility for children themselves, and for the families tied to them.

Studies indicate that Asian culture does matter in schooling achievement. In a cross-national study of children's mathematics achievement, Chinese and Japanese children were found to greatly surpass their American counterparts (Stevenson et al., 1993). Stevenson et al. (1993) reported results from a survey carried out in 1990. They found that among fifth graders, only 4.1% of the Chinese children and 10.3% of the Japanese children had a score as low as American children. The lowest performance of American children was also observed with regard to reading tests. In the same study American children also scored lowest among eleventh graders. The recent international survey TIMSS-R (Third International Mathematics and Science Study-Repeat, conducted in 1999) revealed again the large gap in the academic achievement of Asian and Caucasian children. In terms of mathematics and science achievement, eighth-grade students from Asian countries, including Singapore, Korea,

Chinese Taipei, Hong Kong, and Japan, occupied the first top five positions among participating countries, including Canada and the United States (TIMSS-R, 1999).

In a within-country study, similar findings were obtained by Portes and Ruben (2001): immigrant children of Asian origin did a better job in school than other American children. In a national mathematics and reading test conducted in 1992, children of Chinese and Korean origin obtained the highest scores, followed by other Asian children (Portes and Ruben, 2001). In terms of Grade Point Average (GPA), children of Asian origin systematically held the top position. Portes and Ruben (2001) took a look at the process by which immigrant children adapted to the mainstream society and found that the superiority of immigrant children in schooling achievement declined over time. According to Portes and Ruben, this decline may be explained by the fact that “longer periods of U.S. residence and a more secure stake in the country lead to a less driven attitude, as immigrant youths learn to imitate their American peers” (Portes and Ruben, 2001:234). Consequently, the longer immigrant children had been in the USA, the less effort they tended to put on school work, hence losing their advantageous position.

The connection between school and children’s emotional disorders has drawn a lot of attention. School can be a source of stress for some students because of the long hours devoted to homework and because of the highly competitive examination system (Verma et al., 2002; Chen and Li, 2000; Lee and Larson, 2000). In turn, this stress can enhance the risk of emotional disorders. This is especially the case for Asian students. Asian students, on average, tend to devote long hours to study and

preparing for examinations. In a cross-national study about how children spend their time, Larson and Verma (1999) reported that East Asian students spend 50% of their waking time on school work, while American students only spend 19%. This high time allocation to education is the result of the widespread Confucian value that sees educational achievement as the major indicator of an individual's success and as the main way of obtaining a higher social status (Zhou, 1997; Zhou and Bankston, 1998; Chao, 1996; Kim and Rohner, 2002).

One of the reasons why Asian children or children of Asian origin tend to perform better at school is that Asian culture requires parents and children to place a very high value on education (Kao, 2002). In order to obtain higher educational achievement, Asian parents strongly emphasize hard work as the route to success. In the study by Stevenson et al. (1993), American parents regarded the innate ability of their children as the most important determinant of children's success, while Chinese and Japanese parents believed that effort was of primary importance. The studies of Khanna (2000) and Portes and Ruben (2001) also suggested that Asian immigrants were more ambitious and had higher educational aspirations than other groups. Following that logic, it is reasonable to argue that Asian parents exert more pressure on, and have higher expectations for, their children than other non-Asian parents. And because pressure and high expectations can create stress, it is therefore likely that immigrant children of Asian origin experience more stress than other children, and in turn, may be more likely to develop emotional disorders.

2.3 Ethnicity, Poverty, and Emotional Disorder

Asian population in North America has been depicted as a successful minority, especially after the initial 10 years of immigration (Lee, 1994). Many Asian immigrants were admitted to North America on the basis of their education and professional qualifications. In Canada in 2002, among the total immigrant population, 53.8 percent of them came under the Skilled Worker category. The immigration policy about Skilled Worker selects the best immigrants in terms of their education, working experiences, ability of adaptation, and English or French proficiency. New immigrants are usually poorer during the first years after immigration. However, after the initial 10 years of “catching up”, the economic differences are less and less visible (Lee, 1994; Beiser, 1998).

There has been a lot of evidence to suggest that a family’s financial situation is a source of ongoing stress. Masten et al. (1988) and Thomson et al. (1994) stated that children not only obtained economic resources from their parents, but these economic resources also correlate with the families’ living conditions, and quality of neighborhoods and schools. Families experiencing economic stress are likely to live in poor neighborhoods, which in turn tend to have higher crime rates and lower-quality schools. As a consequence, children living in poor neighborhoods tend to have access to less educational resources and fewer positive role models (Takeuchi et al., 1991; Thomson et al., 1994).

A substantial body of literature indicates that children living in economically disadvantaged families are more likely to be exposed to emotional disorders (Eamon,

2000; Duncan, Brooks-Gunn, and Klebanov, 1994; Mcleod and Shanahan, 1993; Brooks-Gunn and Duncan, 1997). Beiser et al. (1998) showed that poverty was related to immigrant status. Many immigrant families were typically poor when they initially moved to Canada. Beiser et al. (2002) reported that children of immigrants were more than twice as likely to live in poor families as non-immigrant children. According to Takeuchi et al. (1991) and Thomson et al. (1994), poverty is associated with a high risk of stressful feelings among children. However, in the Beiser's 2002 study, children of immigrants had a lower level of emotional problems than children from non-immigrant families. To this conflicting finding, Beiser et al. (2002) argued that poverty may have a different meaning to new immigrant families than to non-immigrant families. New immigrants did not view poverty as an unchanging situation but as an inevitable process of resettlement. This is consistent with the point addressed in other studies that the effects of persistent poverty are more serious and harmful than the effects of transient poverty (Duncan, Brooks-Gunn, and Klebanov, 1994; Eamon, 2000; Brooks-Gunn and Duncan, 1997; Mcleod and Shanahan, 1993). Furthermore, protective factors such as help from relatives, parental controls, and religious activities may decrease the risk of emotional disorders for children who are living under poverty (Khanna et al., 2000; Beiser et al., 1998; 2002).

2.4 Ethnicity, Parenting, and Emotional Disorder

Some research has examined the parenting style of Asian parents. It is generally found that Asian parents are more authoritarian, controlling, and protective

than non-Asian parents (Kelley and Tseng, 1992; Chiu, 1987; Jose, Huntsinger and Liaw, 2000; Chao, 1994). This parenting style is established on one of the main Confucian concepts—filial piety (Ho, 1994; Kim and Wong, 2002). That is, parents have absolute authority and children should always try to please and obey their parents. Asian parents tend to teach their children about mutual dependence and encourage their children to see themselves as a part of the integrated wholes of their family, community, and society (Jose, Huntsinger and Liaw, 2000; Kelley and Tseng, 1992). Children are taught to show reverences for their elders in all circumstances. Any departure from this rule is not acceptable. The shame that comes from inappropriate behaviours does not only reflect on children themselves, but also reflect on their families. It follows that Asian parents take entire responsibility for their children's development, and are much more involved in child training than non-Asian parents.

Parenting style is often classified into three types—authoritative, authoritarian, and permissive parenting. Authoritative parents are characterized as having warm relationship with their children and setting up rules as well. Authoritarian parents are typified as highly controlling and having absolute standards for their children. Permissive parents are symbolized as being tolerant of misbehaviour and providing few rules for children (Chao and Willms, 2002). The literature suggests that authoritative parenting styles lead to children's better outcomes such as good schooling performance, a positive attitude toward school, and a high level of self-control. Children whose parents are authoritative are more likely to perform better in

school and to develop less emotional problems. In contrast, children whose parents are authoritarian are more likely to have parent-child conflicts and a greater risk of developing emotional disorders (Chao, 1994; Kim and Rohner, 2002).

2.5 Poverty, Parenting, and Parental Depression

There has been a lot of research looking into the relationship between poverty and parenting. It is well known that economic hardship leads to inconsistent, harsh, and ineffective parenting (Eamon, 2000; Mcleod and Shanahan, 1993; Bradley, Corwyn, Mcadoo, and Coll, 2001). Poor mothers are found to be less likely to communicate with their children and less likely to show warmth and affection toward children than non-poor mothers. Poverty not only affects parental attitude toward children, but it also leads to parental depression. Absence of social and parental supports may have negative consequences on children's mental health. Under economic stress, parents' emotional well-being is threatened, which in turn influence parents' attitudes toward children and whether parents have effective interactions with their children, both of which are known to be affecting children's emotional disorders (Takeuchi, 1991).

Several studies indicate that parental depression, especially maternal depression, has a negative impact on children's emotional state (Cornah et al., 2003; Hasan and Power, 2002; Albright and Tamis-Lemonda, 2002). Mothers' passive attitude toward life and difficulties tends to be associated with a higher risk of children's depression. Research shows that mothers providing a warm and supportive

family climate contribute to their children's emotional development, self-confidence, and self-regulation (Hasan and Power, 2002). Children growing up in optimistic families have abundant opportunities to learn different lessons on how to cope with difficulties and failure, which protect children from long-term stress and depression. In contrast, parental depression results in little support to, or control of, children. Children of depressed parents lack the knowledge and confidence to cope with problems and stressful life events (Hasan and Power, 2002). This situation leads to the accumulation of stress in childhood and is also harmful in establishing self-esteem.

2.6 Life Events

Life event has been found to be a very important determinant of children's mental health (Johnson, 1986; Lavee et al., 1987; McLanahan, 1983; Masten et al., 1988; Hodges et al., 1984; Portes and Ruben, 2001). "Children are exposed in varying degrees and in different ways to a wide range of situations that require coping and adaptation" (Johnson, 1986: 15). Previous stressful life events can result in children's emotional disorders. According to Lavee et al. (1987), stressful life events can be categorized into three types—1), unanticipated, undesired, and acute external events; 2), the effects of persistent stressors that bring long-term demands; and 3), the effect of normative and expected changes. McLanahan (1983) argued that certain life events, such as role transitions or status changes, may have a negative effect on children's mental health. For example, a newborn sibling changes the single child's role to an older sister or brother, which is sometimes hard to accept by some children. This role

transition may make the child depressed at the beginning and it takes time for the child to adapt to his or her new status in the family. Even the normative and expected changes, such as entering high school or moving to a new neighborhood, can cause severe stress if all the changes and life events were accumulated continually (Lavee et al., 1987).

According to Johnson (1986), life events include moving to a new place, changing school, birth of a new sibling, loss of job by parents, conflicts with parents, divorce of parents, remarriage of parents, competing with peers and so on. Those life events are experienced by immigrant children as well as other children. Immigrating to a new country may however be a particularly stressful life event, and newly immigrated children may need time to adapt to their new environment, including language and poverty. Starting from this point of view, new immigrant children may be at a higher risk of mental health problems if they do not have the resources to help them cope with their new environment.

Children's physical health is also strongly related to their mental health. As pointed out by Johnson (1986), exposure to long-term pain, chronic illness, and injury can contribute to children's depression and negative attitudes toward life and the future. Chronic illness, as the accumulation of life events, deteriorates children's mental health (Lavee et al., 1987). Long-term physical illness is found to cause significant and permanent interference with a child's emotional growth and development (Mattsson, 1972). Children, especially preschool children, have little knowledge about the causality and the nature of their illness. Therefore, children tend

to comprehend pain from illness as a result of punishment or mistreatment. Mattsson (1972) stated that children often attribute their illness to “being bad” and blame themselves for bringing trouble to their families, which in turn produces stressful feeling during their childhood. Hospitalization is another source of stress for children. Children with chronic illness sometimes have to stay in hospital for their treatment, which involves separation from their families, schools, and friends. Mattsson (1972) emphasized that children in hospital are expected to adjust to an unfamiliar frightening hospital environment as well as painful medical procedures. Those unusual experiences impose stress on children, and sometimes cause children’s emotional disorders.

2.7 Support within the Family

Much research has revealed that the family plays an important role in children’s emotional growth and development. Jackson et al. (2003) argued that positive relationship between family members leads to opportunities for children’s personal growth and results in better schooling achievement.

Support within the family comes mainly from two sources. One is the support from parents, and the other is the support from siblings. Parental support is found to be highly correlated with various children’s positive outcomes (Gecas and Schwalbe, 1986; Lempers and Clark-Lempers, 1990; Tocci and Engelhard, 1991). Children who often have access to parental support are more likely to have a higher level of self-esteem and happiness, and also to have higher schooling achievement than children

who have lower access to parental support. Support from parents becomes very important in improving good outcomes, especially for children growing up in economically disadvantaged families (Elder et al., 1995). In a study of school-aged children, Zauszniewski et al. (2002) found that children who do not have adequate interaction with parents are more likely to have difficulties in developing the capability to solve emotional problems.

Sibling relationship was described as warm, well-developed and functionally important during childhood in Cicirelli's study in 1994. Cicirelli (1994) concluded that the prime feature of sibling relationships is the emotional support and that older siblings usually play a role in providing care and assistance in school to their younger brothers and sisters. Especially for children in problematic families, siblings' emotional support has a protective impact on their mental health (Jenkins and Smith, 1990). In a study of Australian adolescents conducted by Amato (1989), academic competence was found to be associated with functional sibling relationship. Moreover, sibling support was shown to have a positive effect on children's attitude toward education and schooling achievement, especially for children with behaviour problems (East and Rook, 1992; Stormshak et al., 1996). The presence of siblings increases the possibility of sharing sadness and life events for children. During childhood, similar problems or life events may be experienced by children of the same family. Sibling interactions are also the opportunity for children to share experiences and to learn skills of coping with difficulties from each other. The siblings who

survived certain problems may provide others with effective solutions, thus reducing the risk of stress or depression for children.

2.8 Other Factors Related to Mental Health

Gender and age are also important determinants of children's mental health according to previous studies. Beiser et al. (1998, 2002) reported that girls were more likely to develop emotional disorders compared to boys and the risk of developing an emotional disorders increased with age. The study by Portes and Ruben (2001) concluded that girls exhibited higher depression levels, congruent with their lower self-esteem.

Portes and Ruben (2001) also pointed out that long-term residence in the U.S. can increase immigrant children's self-esteem. It is because the longer they live in the U.S., the deeper they are assimilated into the mainstream society. For instance, fluent bilingualism can reduce parent-child conflict and the feelings of embarrassment toward parents, and can further increase immigrant children's mental health.

Family structure is also related to the presence of children's emotional disorders. Most children with single parents, especially with single mothers, live in poor circumstances (Thomson et al., 1994; Takeuchi et al., 1991; Beiser et al., 1998; McLanahan, 1983). Family structure and poverty together influence children's mental health. The study by McLanahan (1983) indicated that children living in female-headed families were more likely than other children to experience stressful feelings because of the low level of social and psychological support they received.

Furthermore, growing up in a single-parent family was found to have a negative effect on children's mental health even after controlling for household income. The impact of single parent alone imposes pressure on children, such as being different from other peers, being separated from one of the parents, not having enough time to interact with parents, and so on. Other studies showed that children living in intact families were advantaged in several domains of well-being compared to children from divorced families (Hodges et al., 1984; Thomson et al., 1994; Beiser et al., 1998, 2002). The analysis by Dawson (1991) reinforced the finding that children living with a single parent or a step-parent were at higher risks of stress or mental health problems than children from intact families.

2.9 Limitations of the Literature and Contributions of this Thesis

Although numerous studies have examined the determinants of children's mental health, most of those studies are based on American data. Very few studies examine the mental health of Canadian children, and even fewer shed light on the effect of culture on the mental health of children of Asian origin in Canada. Beiser et al. (1998, 2002) studies, based on the NLSCY, are exceptions and started to explore the role of immigration in accounting for children's mental health. However, Beiser only pay attention to children's immigration status but neglected the possible differences among children from different ethnical groups in terms of culture in his 1998 study. Beiser included ethnicity in his 2002 study, but he did not clarify who are included in the Asian category and why they are included. This thesis will expand on

Beiser et al. (1998, 2002) by examining a wider range of theories, and by paying more attention to the effect of Asian culture on children's mental health. More specifically, poverty, parenting style, and schooling achievement will be examined as mediating factors.

Chapter Three—Theoretical Perspectives

As the previous review of literature clearly demonstrates, children's emotional state is affected by various factors. No single theory is however able to encompass all these factors and to explain all the processes related to children's emotional state. Therefore, several different theoretical perspectives will be used in this thesis, and together may help explain children's emotional state, the role of Asian culture, and other factors. These theoretical perspectives are: school stress, parental time spent with children, economic disadvantage, parental absence, parenting style, life stressful events, and resiliency. This Chapter is divided into four sections. In section 1, I briefly review some of the major theories that have been suggested in the literature to explain mental health among children. As explained, the studies of children's mental health in the family sociology literature have tended to examine discrete theoretical propositions instead of using the more general theories described in section 1. Therefore, in section 2, I will summarize the main theoretical propositions that have been examined in previous studies. In section 3, I integrate culture—with a special emphasis on Asian culture—in these theoretical propositions, since the theoretical propositions reviewed in section 2 mostly ignore the issue of culture. In line with a long tradition of work in family sociology, the approach adopted in this thesis is to integrate some of the theoretical propositions reviewed above into a more general theoretical framework (Thomas and Wilcox, 1987). I conclude this chapter in section 4 by explaining hypothesized mechanisms that link the theoretical elements and by introducing my main hypotheses.

3.1 Major Theories on Mental Health

“Mental health in childhood and adolescence is defined by the achievement of expected developmental cognitive, social, and emotional milestones and by secure attachments, satisfying social relationships, and effective coping skills” (U.S. Department of Health and Human Services, 1999). According to this definition, a mentally healthy child is expected to function well at home, in school, and in the community, to hold a positive attitude toward life, and to be free of disabling symptoms of mental illnesses.

The presence of normal development plays an important role in understanding mental health in children and the risk factors that children face. The absence of normal development may lead to mental disorders. The theories regarding development are taken as the basis to understanding children’s mental health. Several of them are reviewed below.

The theory of intellectual development was developed by Jean Piaget. It is based on several decades of observation of children on how they acquire knowledge. Piaget was the first one who pointed out that children take an active role in understanding the world around them and children have a different understanding of the world than do adults (U.S. Department of Health and Human Services, 1999). However, the theory of intellectual development is more descriptive and neglects the variability in individual’s development. The theory of behavioural development is another approach to understanding children’s development. It focuses on observation and explains development in terms of responses to stimuli (U.S. Department of Health

and Human Services, 1999). The theory of social development emphasizes that parent-child early relationship is crucial for children's mental health. Severe neglect and maternal deprivation occurring in early childhood are more likely to expose children to mental health problems (U.S. Department of Health and Human Services, 1999).

The theories introduced above can partially help us understand children's mental health; however, they cannot explain how children grow into healthy adults. Unlike other studies strongly oriented by "grand theories", "current approaches to understanding the etiology of mental disorders in childhood are driven by empirical advances in neuroscience and behavioural research rather than by theories" (U.S. Department of Health and Human Services, 1999). Instead of "grand theories", most of the research on children's mental health is concentrating on the risk factors that make children vulnerable to mental disorders.

It has been noted that both biological factors and stressful experiences during childhood have an effect on children's mental health. They may not necessarily cause mental health problems for children, but they may increase their likelihood. These factors are usually classified into two categories: internal and external (U.S. Department of Health and Human Services, 1999). Internal risk factors that may endanger children's mental health include prenatal damage caused by exposure to alcohol, drugs, and tobacco; low birth weight; and inherent biological vulnerability. External risk factors include poverty, hostile parenting, the lack of positive parent-

child relationship, dysfunctional family life, the presence of parental mental health problems, sibling influence, and stressful life events.

In line with current approaches to studying children's mental health, I will discuss in the following section the theoretical propositions that identify risk factors as potential determinants of children's mental health.

3.2 Theoretical Propositions

Different theoretical propositions are discussed below. They are distinguished into two groups: theoretical propositions for the main variables and theoretical propositions for the control variables. The main variables are those that this thesis is primarily interested in examining in terms of their effects on children's emotional state. The control variables are those that were found to relate to children's emotional state in the literature, but they are not the main focus of this thesis. However, in order to obtain valid results, these variables need to be controlled when we examine the effects of the main variables on children's emotional state.

3.2.1 Theoretical propositions for the main variables

School or education not only provides children with social and human capital, such as knowledge and skills, but may also result in stressful feeling. Masten et al. (1988) argued that children needed to compete with each other in school and had to bear the pressure from teachers, parents and peers if they could not do a good job in school. This pressure can make children feel depressed and lose confidence.

Therefore, schooling achievement and parental expectation are expected to increase the likelihood of children's emotional disorders.

Children obtain two key resources, money and time, from their parents. Parents' money may provide children with good quality neighborhood, schools, and living conditions. Parents' time may provide children with better support, control, and guiding. The combination of these two resources is expected to decrease the presence of children's emotional disorders (Thomson et al., 1994). According to Coleman (1988), the time parents spend with children may be considered as a form of "social capital" offered to children. When parents and children spend time together, children are expected to engage in conversation or interaction with their parents and to obtain suggestion or direction from their parents. Therefore, children who spend more time with their parents are expected to have a lower probability of emotional disorders.

From the economic disadvantage perspective (Takeuchi et al., 1991), chronic poverty is regarded as a form of ongoing stress. Children who live in low-income families have a higher probability of emotional disorders than children who live in high-income families. Poverty may restrict children from access to social support, high-quality neighborhoods, and good family environments. In turn, children who lack social and psychological support are more likely to develop emotional disorders, because they do not have enough resources to rely on and consult with. Anxiety related to the financial situation may cause conflict between parents, which is also expected to make children uncomfortable and stressed (McLanahan, 1983). The

accumulation of stressful feeling is expected to lead to emotional disorders for children.

As indicated by Portes and Ruben (2001), parent-child conflicts and feelings of embarrassment caused by parents can increase the likelihood of children's emotional disorders. Hostile parenting may make children feel stressed, and the lack of a good relationship between parents and children may limit parent-child communication and interaction, which in turn may reduce support and resources for children (Portes and Ruben, 2001; Beiser et al., 1998). Therefore, children exposed to ineffective parenting have higher risk of developing emotional disorders.

3.2.2 Theoretical propositions for the control variables

The parental absence perspective (Dawson, 1991) emphasizes that children living in single-parent families have a higher risk of experiencing emotional disorders than children living in two-parent families. Single parents are more likely to experience economic strains, which limit their ability and time to direct and support children. As Thomson et al. (1994) argued, children who lived in single-parent families or stepfamilies received less parental time and attention, and also suffered more economic pressures compared to children in intact families. Hence, children from non-intact families are at a higher risk of developing emotional disorders compared to other children.

The life stress perspective (Lavee et al., 1987; McLanahan, 1983; Johnson, 1986) argues that children who experience more life stress are more likely to

experience emotional disorders than children who experience less life stress. James H. Johnson (1986) stated that life events such as chronic illness were stressors in childhood. Long-term illness may result in depression for both children and their parents. Children with chronic illness often suffer continuous pain and are restricted in various activities. In the meantime, parents who have chronically sick children are more likely to suffer from depression as it is time and energy consuming to take care of a child with long-term illness. Such a situation creates extra work for parents and may lead to depression. In turn, parental depression will add further stress on children, for children may think it is their fault if they are sick and if their parents are depressed. Therefore, children with chronic illness are expected to be more likely to develop emotional disorders than other children.

From the perspective of resiliency (Masten et al., 1988; Rutter, 1979), children who are disadvantaged may develop normally, if they have grown up in protective environments. To the negative life events, such as parental divorce, failures in school, being sick and so on, the reactions and the abilities to adjust to such events are individually different. Protective factors such as sibling's support and intellectual ability are expected to help children adjust to, and go through, difficulties. The more compensation that children acquire from protective factors, the less likely they are to develop emotional disorders. Especially in disharmonious family, older siblings usually play a very important role in protecting their younger siblings from emotional disorders. Therefore, children with siblings are expected to be at lower risk of emotional disorders.

3.3 Asian Cultural Influence

The issue of culture has been ignored in the theoretical propositions presented in the previous section. However, culture is an important element related to children's mental health. The main variables appearing in previous theoretical perspectives, such as school aspirations, poverty, and parenting style, tend to be different in Asian culture. Asian culture is mainly influenced by Confucianism, which traditionally places a high value on education and views education as a source of prestige (Zhou and Bankston, 1998; Chao, 1996; Kim and Rohner, 2002). A recent study of Kao (2002) reveals that Asian parents have the highest educational aspirations as compared to white, black, and Hispanic parents after controlling for socioeconomic level. Stress from school could therefore especially be the case for children of Asian origin in Canada. For some immigrant children and the children of immigrants, their most crucial way of reaching upward mobility is to acquire skills and a high level of education (Zhou and Bankston, 1998; Portes and Ruben, 2001). Thus, children of Asian origin are expected to be more likely to develop emotional disorders than children of non-Asian origin because of the high pressure from parents regarding educational expectations.

Most Asian immigrants to Canada have good educational background and working skills as a result of Canada's immigration policy. In the first ten years of settlement, Asian families are more likely to be poor. However, due to their hard work, most of them will have settled down into their new country and approach the middle class standard after the initial years of adaptation (Zhou and Bankston, 1998; Kao,

2002). In addition, according to Kao (2002), Asian culture motives parents to save for their children's education regardless of income. Thus, children of Asian origin are less likely to be exposed to financial difficulties during schooling. Along with the economical disadvantage perspective, children of Asian origin, especially the new immigrant children are more likely to develop emotional disorders because of poverty than children of non-Asian origin. However, after the initial stage of settling down, children of Asian origin are less likely to develop emotional disorders than children of non-Asian origin (or at least to have similar emotional state as children of non-Asian origin).

Culture plays a crucial role in the socialization process and parenting practice. As stated by Chao (2000), cultural values shape the goals of socialization, which influence parenting style and practice, which in turn affect children's outcomes. For Asian parents, Confucianism forms the basis of the cultural model of childcare and education. According to Confucianism, a person cannot become a competent human being unless educated through deliberate efforts. The failure of becoming competent is not this person's fault, but his or her parents' fault. Therefore, it is the parents' responsibility to teach, and children's responsibility to learn. Another main concept of Confucianism is filial piety, which requires children to unconditionally respect and support their parents. Asian parents are less often to praise children or show children their affection, because they want to establish absolute authority and they are afraid children will not respect them if they appear affectionate. Thus, Asian parents are less likely to have positive interactions with their children and more likely to have a stern

parenting style. In line with the previous theoretical perspectives, especially the importance of a supportive and warm parental environment, it follows that children of Asian origin are more likely to develop emotional disorders than children of non-Asian origin.

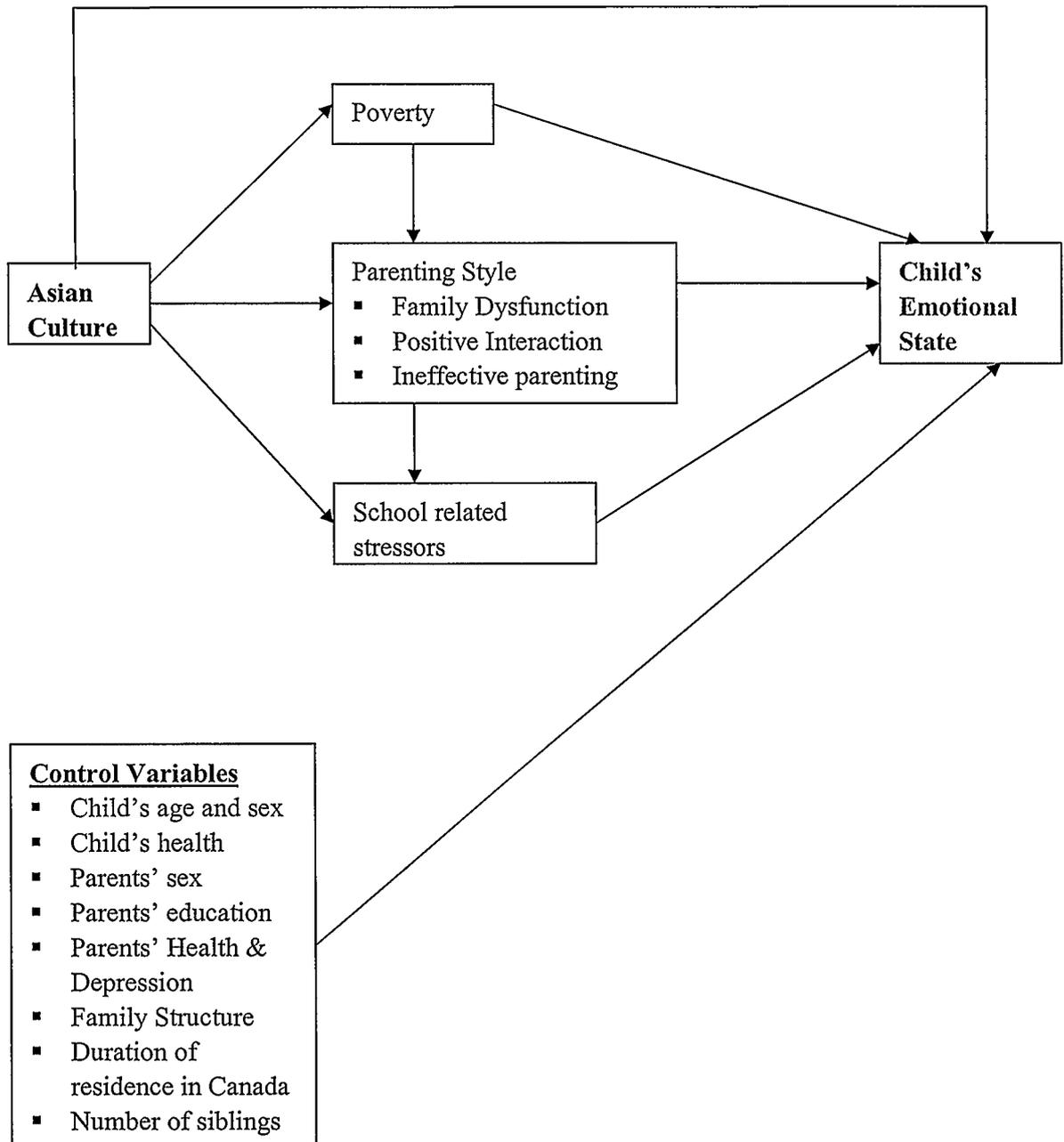
3.4 Theoretical Research Model

The long tradition of work in family sociology “emphasized the importance of conceptual framework, empirical findings, generalizations, variables, propositions, and finally a view of theory as interrelated sets of propositions” (Thomas and Wilcox, 1987: 85). Following this tradition, I integrate the theoretical propositions reviewed in Section 2 and the issue of culture into a more general theoretical framework. Hill (1966) stated that “building propositions and linking them into sets of propositions (of lower and higher orders) would produce theory” (Thomas and Wilcox, 1987). Therefore, it is legitimate to derive theories out of interrelated propositions.

In line with the review of literature and the discussion of the different theoretical perspectives, I present the theoretical model used in this thesis in Figure 3.1. The theoretical model posits that the effect of Asian culture is mediated through poverty, parenting style, and school aspiration to affect children’s emotional disorders⁵. The list of control variables includes variables which were found to have an effect on children’s emotional disorders in previous studies.

⁵ The causality between parenting style and children’s emotional state, and the causality between schooling achievement and children’s emotional state could be posited to be opposite to what is presented in Figure 3.1. More specifically, the presence of emotional disorders may result in less

Figure 3-1: Theoretical Model



parent-child interaction or lower quality of interaction, or even ineffective parenting. Children with emotional disorders may not perform well in school either. However, due to the limitation of cross-national data, these possible reverse causalities cannot be examined in this thesis. Only longitudinal data would allow this kind of testing.

Along with the theoretical model shown above, one main hypothesis and three secondary hypotheses are presented below.

Main hypothesis: Children of Asian origin are expected to have a higher level of emotional disorders than children of non-Asian origin because of the impact of Asian culture, more specifically the emphasis of success at school and the resultant stress that it imposes on children. This relationship between Asian culture and emotional disorders is expected to remain statistically significant even after controlling for other determinants, such as, poverty, parenting style, and schooling expectations/achievements. The alternative hypothesis is that children of Asian origin do not have a higher level of emotional disorders than children of non-Asian origin once one controls for other determinants. In other words, the presumed relationship between Asian culture and emotional disorders may be entirely accounted for by the indirect effect through poverty, parenting style, and schooling expectations/achievements.

Secondary hypothesis—A: Economic pressure is expected to result in a higher level of emotional disorders. That is to say, children living in poor families are expected to be at higher risk of emotional disorders. This is due to the fact that parents from poor families are expected to devote more time to making money in order to make ends meet, to have less time to interact with their children, to live in a low-quality neighborhood, to provide a less harmonious family environment, and to be less able to purchase mental health service when their children encounter emotional

disorders. Poverty, therefore, is expected to increase the likelihood of children's emotional disorders.

Secondary hypothesis—B: Parenting style is expected to affect children's emotional disorders. Namely, children growing up under hostile parenting are more likely to develop emotional disorders than other children. This is due to the fact that hostile parenting style is expected to lead to parent-child conflicts and to less effective supervision of children. Effective family functioning is expected to reduce the possibility of the appearance of emotional disorders. Functional families are expected to provide a warm family environment so that family members can turn to each other for help, share sadness, and pursue effective solutions to problems. Children who live in functional families have more opportunities to discuss their problems, express their feelings, and obtain support from other family members. Thus, children living in functional families are expected to have fewer problems of emotional disorders than children living in dysfunctional families. Positive interaction between parents and children is expected to reduce the likelihood of children's emotional disorders. Namely, children who have positive interactions with their parents are expected to have fewer problems of emotional disorders than other children. It is because children who have positive interactions with their parents are more willing to discuss their difficulties and problems, are more likely to accept their parents' suggestions and supervision, and are consequently less likely to develop emotional disorders

Secondary hypothesis—C: Educational aspiration is expected to have an impact on children's emotional disorders such that children who face high pressures

from parents regarding schooling achievement are expected to develop a higher level of emotional disorders. However, due to the fact that good schooling achievement can raise children's self-confidence and self-esteem, which in turn, protects children from emotional disorders, children who perform better in school are expected to have a lower level of emotional disorders.

In the next chapter, I will describe the dataset and the method of analysis used in this thesis.

Chapter Four—Methodology

This chapter describes the data and method of analysis employed in this thesis. It is organized in four sections: Section 1 describes the National Longitudinal Survey of Children and Youth and Section 2 describes the sample analyzed in this thesis. Section 3 explains the design of the study and the variables, while Section 4 concludes the chapter with a discussion of the statistical analytical procedure.

4.1 Data Source

The source of data for this study is the “National Longitudinal Survey of Children and Youth (NLSCY), Cycle 3”, which was conducted from the fall of 1998 to June of 1999. NLSCY is a longitudinal panel survey managed by Human Resources Development Canada (HRDC) and Statistics Canada. The main purpose of the NLSCY is to monitor the development and well-being of Canadian children as they grow from infancy to adulthood.

NLSCY has been conducted every two years since 1994. All three cycles examine various factors considered to have significant effects on children’s growth and development. NLSCY collects information on children’s health, development, temperament, behavior, relationships, child care, school experiences, participation in activities, and family history. Most of the information is collected from the parents on behalf of their children, by means of in-home interview. Additional information is also collected using questionnaires answered by the child’s teacher and principal. In

Cycle 3, children aged over 10 were also asked to answer a self-completed questionnaire.

The data used in this study is from the public file and the master file of Cycle 3 released by Statistics Canada. The public file contains basic information about children's characteristics, such as sex, age, and health condition; information about family characteristics, such as single-parent status, family functioning, and parenting style; and information about children's school experience. The master file includes specific information about ethnic identity and immigrant status of both children and PMK (Person Most Knowledgeable about children). The variables in the master file were suppressed in the public file. Thus, the data analysis reported in this thesis had to be carried out in the Prairie Regional Research Data Center (RDC) at University of Calgary.

There are several advantages gained by using the NLSCY, Cycle 3 as the source of data for my thesis. First, the NLSCY is the only nationally representative survey on children and adolescents in Canada. Second, the sample is randomly selected from the population of Canadian children, including most ethnicities in Canada, which makes the study of immigrant children possible. Third, Cycle 3 contains a larger sample of children aged from 4 to 11 years old, which is the target population for this study⁶.

However, secondary data analysis also presents limitations. First, although the NLSCY, Cycle 3 is designed to examine and understand as much as possible the

⁶ Note that Cycle 4 was made publicly available during the fall 2003. Cycle 4 was however not available when I started to work on my data analysis.

growth and development of children and youth, the survey does not include all factors related to children's development. For example, some factors such as feelings of embarrassment toward parents, parent-child conflict, children's self-esteem, and discrimination were found to have an effect on mental health in other studies (Portes and Ruben, 2001). However, they were not included in the NLSCY, Cycle 3⁷. Second, the NLSCY sampled children based on geographic division regardless of different distributions of immigrant children and ethnic groups in various provinces and areas in Canada. This possibly caused an under-representation of immigrant and ethnic groups (Beiser et al., 2002). Since one of the main tasks of this thesis is to explore the effect of Asian culture on children's emotional disorders, and since the population of Asian immigrants is not evenly distributed in Canada (Asian immigrants tend to land in metropolitan areas, such as, Vancouver, Toronto, Ottawa, and Calgary), the result is that the NLSCY may include a relatively small number of Asian children. Third, the NLSCY collected self-reported data only for children aged 10 and over. For children aged younger than 10, the data on their emotional disorders and schooling performance were all reported by the PMK (person's most knowledgeable about the child). The responses to questions on children's emotional disorders and schooling performance could be biased by PMKs' subjective attitudes. For example, PMKs could have negative views on their children, and could think that their children are not as happy as others. These biased responses could produce inaccurate data on children's emotional disorders and schooling performance. In short, although the

⁷ Information on children's self-esteem is available only for children aged 10 and over.

NLSCY is a very rich source of data, the limitations discussed above prevented a more detailed analysis of children's emotional disorders, as well as restricted the number of children of Asian origin in my analysis.

4.2 Sample

The NLSCY, Cycle 3 re-interviewed the children aged 4 to 16 that were sampled in Cycle 1 with additional samples of children aged 0 to 1 and 4 to 5. The children in each economic family were randomly selected, up to maximum of four children per household. Out of the total eligible children, a response rate of 88% was achieved in Cycle 3, with 87% of cases being fully completed and 1% of cases being partially completed. The longitudinal response rate is 90% with 89% of cases being fully completed and 1% of cases being partially completed (User Guide of NLSCY, Cycle 3, 1998).

In this thesis, the target population will be children aged 4 to 11 years old who are enrolled in school. The selection of the target population was based on the availability of the dependent variable. The dependent variable of this research is emotional disorders, which was measured with different instruments at ages 2-3 years old, 4-11 years old, and 10-15 years old. For reasons of comparability, the sample for this study was therefore limited to children aged 4 to 11 years old⁸.

⁸ Both children aged 4 to 11 years old and children aged 10 to 15 years old reported school information. However children aged 4 to 11 has the largest sample size, and especially has the largest sample size of children of Asian origin.

One of the most important contributions of this thesis is to examine the effects of children's school experience and parents' expectation of children's schooling achievements on their emotional disorders. Therefore, only children whose PMK reported that they were enrolled in school were selected for the analysis⁹.

In total, 31,194 children aged from 0 to 16 years old are included in NLSCY, Cycle 3. Out of this total sample, the number of children aged 4 to 11 years old is 16,144. Out of the total target population, the number of the children who are enrolled in school is 5,529.

4.3 Dependent and independent variables

Operationalization—Dependent Variable

The dependent variable used in this study is children's mental health, which is measured by the variable Emotional Disorders (age 4-11 years, CBEC08¹⁰). Emotional Disorders (Age 4-11 years) is a scale constructed by Statistics Canada on the basis of 8 questions¹¹. The possible responses for each question are: '1' never or not true, '2' sometimes or somewhat true, and '3' often or very true¹².

The child:

- A) Seems to be unhappy, sad or depressed (CBECQ6F)
- B) Is not as happy as other children (CBECQ6K)

⁹ There are about 10,000 children aged 4 to 11 years old who are not enrolled in school in Cycle 3. Most of them are age 4 and 5.

¹⁰ The code (CBEC08) refers to the name of the variable in the NLSCY.

¹¹ This variable is derived from the Ontario Child Health Study (OCHS). The definition of emotional disorders is that child's behaviour in the past six months is characterized primarily by feelings of anxiety and depression (Offord et al, 1989).

¹² In order to obtain the range between 0 and 16, Statistics Canada change the category 1 to 0, 2 to 1, and 3 to 2.

- C) Is too fearful or nervous (CBECQ6Q)
- D) Is worried (CBECQ6V)
- E) Cries a lot (CBECQ6CC)
- F) Appears miserable, unhappy, tearful, or distressed (CBECQ6II)
- G) Is nervous, high strung or tense (CBECQ6MM)
- H) Has trouble enjoying him/herself (CBECQ6RR)

Figure 4-1 reports the frequency distribution of the dependent variable including all children aged 4 to 11 years old. Figure 4-2 reports the distribution of the dependent variable after excluding those cases left out in the final regression (because of missing values on one or several of the independent and/or dependent variables).

Figure 4-1: Histogram of the dependent variable (all children aged 4 to 11, Unweighted number of cases)

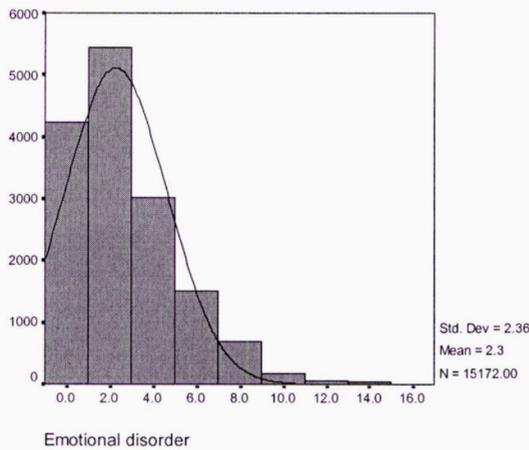
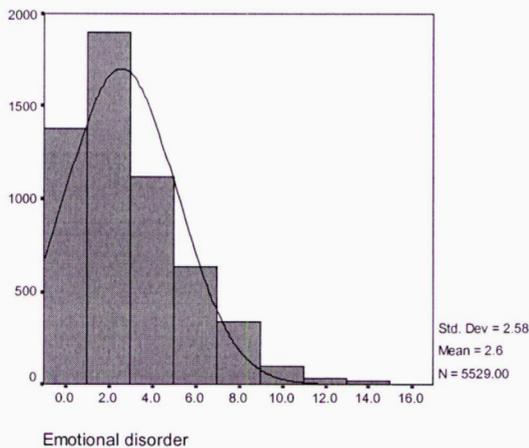


Figure 4-2: Histogram of the dependent variable (analytical sub-sample of children aged 4 to 11, Unweighted number of cases)



As seen in these two diagrams, most children score relatively low on the emotional disorders scale, which means that they have a good emotional state. The scale for the dependent variable varies between 0 and 16 with a mean around 2.6 (see the descriptive statistics in Table 4-1). A high score indicates the presence of behaviours associated with anxiety and emotional disorders. The original Cronbach's Alpha of CBECS08 (Emotional Disorders), as calculated by Statistics Canada, is 0.794.

Table 4-1 Descriptive details of Emotional disorders (CBECS08)

Sample	Mean	Standard Deviation	N of cases
All children aged 4 to 11	2.3	2.36	15172
Valid cases for my analysis	2.6	2.58	5529

Operationalization—Independent Variables

In line with the theoretical model presented in Chapter Three, the independent variables described here are divided into two groups: main variables and control variables. The main variables include child's ethnicity, ratio of income-to-needs, family dysfunction, positive interaction, ineffective parenting, child's overall schooling performance, child's attitude toward school, parental schooling expectations, and time spent on homework. The control variables include child's age, child's sex, number of siblings, child's health condition, PMK's sex, PMK's health condition, PMK depression score, years of PMK education, family structure, and new immigrant status. A summary of the independent variables and their coding or measurement is given in Table 4-2.

Table 4-2 Independent Variables Summary

Theoretical Concepts	Variables	Coding/Measurement Unit/Category
Main variables		
Asian culture	Child's ethnicity	Non-Asian (0), Asian (1)
Poverty	Income-to-needs	Ratio
Parenting style	Family dysfunction	Scale—0 to 36
	Positive interaction	Scale—0 to 20
	Ineffective parenting	Scale—0 to 25
School-related stressors	Child's overall performance	Scale—1 to 5
	Child's attitude toward school	Scale—1 to 5
	Parental school expectations	Scale—1 to 4
	Time spent on homework	Less than one hour, One hour to less than two hours, More than two hours (excluded category)
Control variables		
	Child's age	Years
	Child's sex	Male (0), Female (1)
Protective factor	Numbers of siblings	Count
Life event	Child's health condition	Good health (0), Chronic condition (1)
	PMK's sex	Male (0), Female (1)
	PMK health condition	Not good (0), Good (1)
	PMK depression score	Scale—0 to 36
	PMK years of education	Count
Parental absence	Family structure	Single parent, Two biological parents (excluded category), One biological and one step parent, Others
	New immigrant status	Immigrated more than 10 years ago (0) Immigrated less than 10 years ago (1)

Main Variables

Child's Ethnicity

The theoretical concept—Asian culture—is measured by a child's ethnicity. This variable captures whether the child is of Asian origin or not. If a child is of Asian origin, his/her parents will be assumed to share Asian culture and its related values regarding parenting and educational expectations. Following my theoretical argument, only Chinese, Japanese, Vietnamese, and Korean children, which share similar

cultural background, are considered as Asian in this thesis (Gudykunst, 2001). The variables, CSDCB4AB (Race or Color—Chinese), CSDCB4AJ (Race or Color—Japanese), CSDCB4AH (Race or Color—Vietnamese), and CSDCB4AK (Race or Color—Korean) in the NLSCY, Cycle 3 are used to compute the child's ethnicity. Child's ethnicity is dummy coded with those whose ethnic origin is Asian assigned a code of 1 (and others a code of 0).

Income-to-needs

This variable is created to measure the level of family poverty. Household income cannot provide a complete picture of family poverty without adjusting for family size. The ratio of income-to-needs is an easy way to convert household income into a variable that expresses a family's income as a proportion of the official poverty threshold¹³ for a family of that size (Acs and Gallagher, 2000). In short, the income-to-needs ratio is equal to household income (CINH03) divided by Canada's low income cut-off (CINH03A). If this ratio is less than one, it means that a family is under the poverty line. The higher the ratio, the better is the economic situation of a family.

Family Dysfunction

This variable is used to capture the process of family interaction and activities from which family members can obtain support and encouragement, and can benefit

¹³ Officially Canada does not have an official poverty line. Statistics Canada's low income cut-offs (LICOs) are instead used.

from a harmonious relationship. Family dysfunction is measured by the variable CFNHS01 in NLSCY, Cycle 3. CFNHS01 is a scale constructed by Statistics Canada with range from 0 to 36, which is constructed by the following unweighted items¹⁴. High score on this variable indicates a high level of family dysfunction. The original Cronbach's Alpha calculated by Statistics Canada is 0.88.

- A) Family misunderstand each other
- B) Can turn to each other for support
- C) Cannot talk to each other about sadness
- D) Family members accepted as they are
- E) Avoid discussing fears and concerns
- F) Express feelings to each other
- G) Lots of bad feelings in family
- H) Feel accepted for what they are
- I) Making decisions a problem for family
- J) Able to make decisions solve problems
- K) Do not get along well together
- L) Confide in each other

Positive Interaction

This variable was created by Statistics Canada to measure the quality of parent-child interaction. CPRCS03 is a derived score from the following weighted items and it ranges from 0 to 20. A high score indicates positive parent-child interactions. The original Cronbach's Alpha calculated by Statistics Canada is 0.727.

- A) How often do you praise the child
- B) Talk or play with each other for more than 5 minutes
- C) Respondent and child laugh together
- D) Does something special with the child
- E) Plays sports, hobbies, games with child

¹⁴ Unweighted items have to be used to construct this scale since the weights developed for the NLSCY are for children only, and not for parents.

Ineffective Parenting

This variable captures parenting style. The variable CPRCS04 in NLSCY, Cycle 3 is used to measure ineffective parenting. CPRCS04 is a scale derived from the following weighted items. The score varies between 0 and 25. A high score indicates a high level of ineffective parenting. The original Cronbach's Alpha calculated by Statistics Canada is 0.706.

- A) Get annoyed with child for disobedience
- B) Proportion of praise when talks to child
- C) Proportion disapproval when talks to kid
- D) Gets angry when punishing child
- E) Feels type of punishment depends on mood
- F) Problems managing child in general
- G) Has to discipline repeated same thing

Child's Overall School Performance

This variable captures children's overall performance in school. CEDCQ14D is a five-category variable about how children perform in school ('1' very well, '2' well, '3' average, '4' poorly, '5' very poorly). Although it is a categorical variable, the distance between each category is assumed to be equal for the purpose of this thesis. Therefore, this variable is treated as continuous ranging from 1 to 5. A high score indicates poor performance in school.

Child's Attitude Toward School

This variable is about whether children like going to school or not. It is computed from a categorical variable—CEDCQ17 (child looking forward to school: '1' almost never, '2' rarely, '3' sometimes, '4' often, '5' almost always). The distance

between each category is assumed to be equal in this thesis and this variable is therefore taken as a continuous variable varying between 1 and 5. A high score indicates positive attitude toward school.

Parental School Expectations

This variable is used to measure parents' belief in the importance of school. It is captured by a categorical variable—CEDCQ19A (academic progress is important at school: '1' strongly agree, '2' agree, '3' disagree, '4' strongly disagree). The distance between each category is assumed to be equal in this thesis. Thus, this variable is used as a continuous variable with variation between 1 and 4. The low score means high academic pressure from parents.

Time Spent On Homework¹⁵

This variable is used to describe how much time children spend on homework. This variable is recoded into two dummies from CEDCC14F. The new variable, 'timehw1', is recoded with time spent on homework less than one hour as being equal to 1. Those who spend more than one hour but less than two hours on homework are recoded as being equal to 1 into 'timehw2'. Children who spend more than two hours on homework are left out as the reference category.

Control Variables

¹⁵ Time spent on extra-curricular activities was originally included in this thesis. However, due to too many missing cases, this variable had to be excluded.

Child's Age

Children included in NLSCY, Cycle 3 are aged 0 to 16 years old (4 to 11 in my sample). The variable—Actual age of child (CMMCBQ1A)—is coded in years and calculated from questions about the child's birth date and year

Child's Sex

Child's sex is dummy coded (Male=0, Female=1).

Numbers of Siblings

This variable is derived from the variable CDMCD08 in the NLSCY, Cycle 3. This variable takes all siblings living in the household into account, which includes any full, half, step, adopted and foster siblings.

Child's Health Condition

This variable is used in this thesis to capture the child's physical health condition, in other words, whether the child is physically healthy or the child has a chronic disease that affects his or her daily life. It is derived from several variables that asked questions on various diseases. These diseases include asthma (only very serious asthma that restricts a child's activities), bronchitis, heart condition or disease, epilepsy, cerebral palsy, and kidney condition or disease. If the child suffers from any of these diseases, the child is coded as having chronic health problems, otherwise, the child is viewed as having a good health. The variable, child's health condition, is

dummy coded with those who have chronic health problems assigned a code of 1.

PMK's Sex

PMK is the person most knowledgeable about children. The sex of PMK is dummy coded with female as 1.

PMK Health Condition

This variable is used to indicate whether PMKs have a chronic disease, which will theoretically affect their attitude toward their children. The variable, PMK health condition, was dummy coded from CHLPQ01 in NLSCY, Cycle 3. CHLPQ01 is a question asking PMK about their health in general. It is represented by five categories—'1' excellent, '2' very good '3' good, '4' fair, '5' poor. In this thesis, the first three categories (excellent, very good and good) are taken as an indication of good health. Therefore, the variable PMK health condition was dummy coded with good health assigned a code of 1.

PMK Depression Score

This variable is used to capture PMK's mental health, for PMK's mental health problem may influence how a parent interacts with his or her children. In NLSCY, Cycle 3, CDPPS01 is a factor score derived from the following 12

unweighted items¹⁶. It ranges from 0 to 36. A high score suggests the presence of depression in PMK. The original Cronbach's Alpha calculated by Statistics Canada is 0.79.

- A) In past week, appetite was poor?
- B) In past week, could not share blues?
- C) In past week, was distracted?
- D) In past week, felt depressed?
- E) In past week, everything was an effort?
- F) In past week, felt hopeful about future?
- G) In past week, sleep was restless?
- H) In past week, was happy?
- I) In past week, felt lonely?
- J) In past week, enjoyed life?
- K) In past week, had crying spells?
- L) In past week, felt disliked?

PMK Years of Education

This variable indicates how many years of education PMKs have. It is measured by CEDPD04 (years of PMK education). It is from 0 to 20 years.

Family Structure

This variable describes what type of family children are living in. The variable, CDMCD03, was recoded into a new variable 'parstat' (child lives with parents) with four main family types: single parent family, two biological parents, one biological and one step parent, and others. Because of categorical data, the new variable—'parstat' needs to be recoded into three dummy categories. Parstat1 assigned single parent family a code of 1. Parstat2 assigned one biological and one step parent family

¹⁶ Unweighted items have to be used to construct this scale since the weights developed for the NLSCY are for children only, and not for parents.

a code of 1. Parstat3 assigned other family type a code of 1. Two biological parent family is the category left out of the analysis as the reference category.

New Immigrant Status

This variable is used to describe whether children live in a new immigrant family or not. According to Beiser et al. (1998), settling in a new country is a long-term process. Normally the initial 10 years after resettlement are very different from medium- and long-term resettlement. Therefore, a dummy variable is created to measure new immigrant status. The families which have immigrated to Canada more than 10 years ago are left out as the reference category (this includes families whose parents were born in Canada) and those who immigrated less than 10 years are coded as '1'.

4.4 Statistical Analytical Procedure

Overall design

This study employs quantitative secondary data analysis to explore the factors that influence children's emotional disorders. First, univariate analyses are run on all variables in order to determine the shape of the distribution of each variable and check for anomalies. Secondly, bivariate analyses are carried out on all combinations of pairs of variables (both dependent and independent variables) to detect potential

multicollinearity. The bivariate analyses include Pearson's correlation, crosstabs, and scatterplots. Comparisons of means and path analysis are also carried out¹⁷.

Finally, due to the continuous nature of the dependent variable, multiple OLS (Ordinary Least Squares) regression analysis is carried out to simultaneously examine the factors playing a role in children's emotional disorders. In line with the theoretical model, all independent variables are divided into two groups: the main variables and the control variables. The main variables contain four sub-groups: child's ethnicity, income-to-needs, parenting style, and school experience. Six nested models are estimated. Model 1 examines the direct effect of Asian culture on children's emotional disorders. It only includes child's ethnicity and the control variables. Model 2 includes child's ethnicity, income-to-needs, and the control variables. Model 3 includes child's ethnicity, income-to-needs, parenting style, and the control variables. Model 4 includes child's ethnicity, income-to-needs, parenting style, schooling achievement, and the control variables. Model 5 and 6 are designed to test the interaction between various independent variables and a child's ethnicity. A full analysis of residuals was also carried out in order to make sure the OLS assumptions were not violated.

Weighting

Statistics Canada releases the NLSCY, Cycle 3 with a weighting scheme that brings the data to population levels. The statistical software used in this thesis is

¹⁷ Not all these results are reported in the thesis. The same thing applies to the analysis of residuals.

STATA. The command *pweight* (population weight) in STATA is simply equal to the Statistics Canada's weight CWTCW01C.

Independence of observations

The Ordinary Least Squares regression has several assumptions. One of them is the assumption that observations are independent from each other. NLSCY sampled more than one child in each household. Children sampled from same household are highly likely to share similar characteristics, which results in violation of the assumption of independent observations. This violation could result in underestimated standard errors, which make independent variables more likely to be statistically significant. Thus, OLS regression is still unbiased but no longer valid. In order to fix this problem, I ran OLS regression in STATA with the command 'cluster'. The function of this command is to specify that the observations are independent across groups but not necessarily independent within groups (in this case, within families). This command affects the estimated standard errors and variance.

Homoscedasticity and Normality

Another assumption is that the residuals should have equal variance. Regression diagnostics was carried out in SPSS to ensure that all of these assumptions were met. These preliminary analyses suggested the possible presence of heteroscedasticity. Because of this, OLS regressions are conducted in STATA with robust standard errors, for STATA has the function to partly correct heteroscedasticity

problem. More precisely, I used the HC3 corrected standard errors as suggested by Long and Ervin (2000). Because of the nature of the dependent variable (see Figure 4-1 and Figure 4-2), I also checked the residuals to make sure that the normality assumption was met. This appeared to be the case despite the skewed distribution of the dependent variable.

In the following chapter, I will report a series of results. It includes univariate results, bivariate results, path analysis, and a series of OLS regression models.

Chapter Five—Results

This chapter contains four sections. Section 1 reports the descriptive statistics of the independent variables, Section 2 includes bivariate results, Section 3 introduces the results of path analysis, and Section 4 presents the results of the regression analysis. Numerous regression models were run to assess the robustness of the findings. Only the final six models are reported here.

5.1 Descriptive Statistics of Independent Variables

In order to see the basic features of the independent variables, Table 5-1 summarizes the means and standard deviations of the continuous independent variables, as well as the frequency distributions of the dummy variables.

Table 5-1 Descriptive statistics and Frequency distribution of Independent variables (Children aged 4 to 11 enrolled in school, N=9265, Weighted¹⁸)

Independent variables	Mean	Standard Deviation	% Distribution	N of Cases
Child's ethnicity (1=Asian)	1	-	2.5	230
	0	-	97.5	9035
Income-to-needs	2.15	1.56	-	9265
Family dysfunction	8.50	5.02	-	9265
Positive interaction	12.14	2.66	-	9265
Ineffective parenting	8.82	3.66	-	9265
Child's overall performance	1.82	0.89	-	9265

¹⁸ Both univariate and bivariate analyses were carried out with weighted data in SPSS. Path analysis and OLS regression were carried out with weighted data in STATA because of the problem of heteroscedasticity. However, the use of two statistical software results in discrepancy over the number of cases (The number of cases is 5529 in OLS regressions carried out in STATA, while it is 9265 using SPSS.). The discrepancy may be due to different ways SPSS and STATA weigh the data, with SPSS weighted data resulting in an inflated number of cases even after adjusting the weights (i.e. dividing by the mean weight).

Child's attitude toward school	4.46	0.95	-	9265
Parental school expectations	1.61	0.55	-	9265
Time spent on homework (1=Less than one hour)	1	-	81.2	8525
	0	-	18.8	1740
Time spend on homework (1=More than one hour Less than two hours)	1	-	16.9	1566
	0	-	83.1	7699
Child's age	8.39	1.67	-	9265
Child's sex (1=Female)	1	-	48.9	4531
	0	-	51.1	4734
Numbers of siblings	1.36	0.87	-	9265
Child's health condition (1=Chronic condition)	1	-	6.7	617
	0	-	93.3	8648
PMK's sex (1=Female)	1	-	93.1	8621
	0	-	6.9	644
PMK health condition (1=Good)	1	-	93.6	8672
	0	-	6.4	593
PMK depression score	4.57	5.45	-	9265
PMK years of education	12.81	2.09	-	9265
Family structure (1=Single parent)	1	-	15.1	1396
	0	-	84.9	7869
Family structure (1=One biological and one step parent)	1	-	5.4	501
	0	-	94.6	8764
Family structure (1=Other family type)	1	-	1.2	110
	0	-	98.8	9155
New immigrant status (1= Immigrate less than 10 years)	1	-	5.4	496
	0	-	94.6	8769

5.2 Means Comparison

In order to detect initial patterns between the dependent variable and the independent variables, means comparison was carried out for the independent variables that are categorical using two independent-sample T-test (for two-categorical variables) and one-way ANOVA (for multi-categorical variables), while

zero-order Pearson's correlation was carried out for the independent variables that are continuous. These analyses were carried out using SPSS. All tests were carried out assuming unequal variances. These means are presented in Table 5-2, and Pearson's correlation coefficients are reported in Table 5-3.

Table 5-2 Mean comparison of dependent variable and categorical independent variables for children aged 4 to 11 (Weighted)

Dummy Variable	Mean	t-value
Child's ethnicity		-4.418***
Non-Asian (0)	2.74	
Asian (1)	1.97	
Child's sex		-0.507
Male (0)	2.74	
Female (1)	2.71	
Child's health condition		5.201***
Good (0)	2.68	
Chronic condition (1)	3.25	
PMK's sex		-0.669
Male (0)	2.79	
Female (1)	2.72	
PMK health condition		-8.739***
Not good (0)	3.63	
Good (1)	2.66	
New immigrant status		-2.928***
Not new immigrant (0)	2.74	
New immigrant (1)	2.39	
Categorical variable	Mean	Post Hoc Tests¹⁹
Time spent on homework		
Less than one hour	2.69	1.208***
One hour to two hours	2.76	1.132***
More than two hours	3.89	Reference
Family structure		
Single parent	3.57	-1.016***
One biological and one step parent	2.86	-0.305
Other	2.74	-0.191
Two biological parents	2.55	Reference

* $p < 0.01$ (two-tailed test)

¹⁹ Games Howell with unequal variances assumed is used as Post Hoc test.

Although the above results are based only on bivariate statistics, interesting patterns emerge. First, the difference between the mean values for emotional disorders for children of Asian origin and children of non-Asian origin is statistically significant, although, in the opposite direction to what was expected. On average, children of Asian origin have a lower level of emotional disorders than children of non-Asian origin before controlling for other independent variables. Second, the difference between the means for girls and boys is not statistically significant either. On average, boys and girls have a pretty similar level of emotional state. That is to say, children's sex is not a statistically significant factor on their emotional state. Third, children with good health and children with chronic illness do have statistically significantly different means with chronically sick children having a higher level of emotional disorders than physically healthy children. This implies that children's health condition can be an important determinant of their emotional state. Fourth, the difference between the means for female and male PMK is not statistically significant. PMK's gender does not have a statistically significant impact on children's emotional disorders (at least before controlling for other independent variables). Fifth, the difference between the means for healthy and unhealthy PMK does appear to be statistically significant. On average, children whose PMK is healthy have a lower level of emotional disorders than those whose PMK is unhealthy. This indicates that PMK's health condition has a significant impact on children's emotional state. Sixth, the difference between the means for children from new immigrant families and non-new immigrant families is found to be statistically significant. On average, children

from new immigrant families have a lower level of emotional disorders than those from non-new immigrant families. This suggests that new immigrant status does significantly affect children’s emotional state. Seventh, the difference between the means for children who spend more than two hours on homework and those who spend less than one hour is found to be statistically significant. This is also the case for those who spend one to two hours. On average, children who spend more hours on homework have a higher level of emotional disorders. Lastly, the difference between the means for children from single-parent families and those from two biological parents families is statistically significant. This suggests that children from two biological parents families are on average more likely to have a good emotional state than other children.

Table 5-3 Pearson’s correlation coefficients of dependent variables and continuous independent variables (Weighted)

Continuous variables	Emotional disorders
Income-to-needs	-0.082***
Family dysfunction	0.199***
Positive interaction	-0.148***
Ineffective parenting	0.386***
Child’s overall school performance	0.180***
Child’s attitude toward school	-0.175***
Parental school expectations	0.065***
PMK depression score	0.278***
PMK years of education	-0.020***
Child’s age	0.055***
Number of siblings	-0.056***

*** correlation is significant at 0.001 level (two-tailed)

Table 5-3 indicates that all the independent variables that are continuous are significantly related to children’s emotional disorders. The direction of the zero-order correlation coefficients shows that poverty, family dysfunction, ineffective parenting,

poor schooling performance, high parental schooling expectations, PMK depression score, and child's age increase the likelihood of emotional disorders. Out of these variables, the Pearson's correlation coefficient of ineffective parenting is the largest. It suggests that ineffective parenting has an important impact on children's emotional disorders. PMK depression is the second most correlated factor. In fact, all those factors related to family and parenting are highly correlated to children's emotional disorders. In another word, what happened to children in their families plays a very crucial role on their emotional disorders. Furthermore, Table 5-3 also suggests that positive interaction, positive attitude toward school, PMK high education, and number of siblings reduce the level of emotional disorders.

One of the aims of this thesis is to discover the role of Asian culture on children's emotional state. In order to start understanding the differences between children of Asian origin and those of non-Asian origin with regard to potential key determinants of children's emotional disorders, I also carried out a series of T-tests between a child's ethnicity and continuous independent variables²⁰. The results are reported in Table 5-4.

Table 5-4 T-test between child's ethnicity and continuous independent variables (Weighted)

Continuous variables	Child's ethnicity	Mean	t-value
Income-to-needs	Asian	2.356	2.007**
	non-Asian	2.146	
Family dysfunction	Asian	9.893	4.269***
	non-Asian	8.462	

²⁰ Crosstabs with chi-square were also carried out between child's ethnicity and categorical independent variables. However, due to the too few cases in each cell, those results were suppressed by the Prairie Regional Research Data Center (RDC) at the University of Calgary.

Positive interaction	Asian	11.735	-2.335**
	non-Asian	12.149	
Ineffective parenting	Asian	6.969	-7.805***
	non-Asian	8.871	
Child's overall school performance	Asian	1.935	1.911
	non-Asian	1.822	
Child's attitude toward school	Asian	4.559	1.614
	non-Asian	4.456	
Parental school expectations	Asian	1.605	3.997***
	non-Asian	1.750	
PMK depression score	Asian	4.539	0.094
	non-Asian	4.574	
PMK years of education	Asian	12.480	2.399**
	non-Asian	12.815	
Child's age	Asian	8.008	-3.552***
	non-Asian	8.405	
Number of siblings	Asian	1.348	-0.214
	non-Asian	1.360	

*** P< 0.01 level **P<0.05

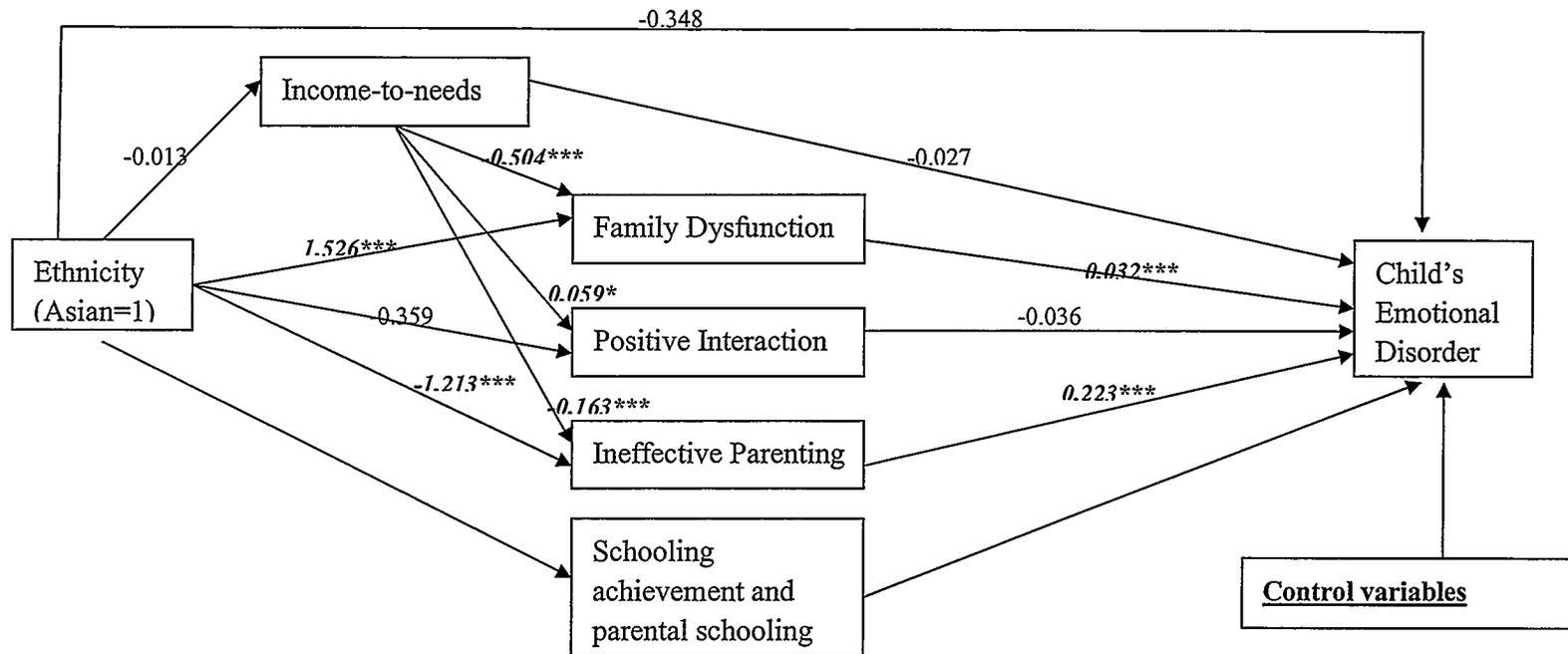
The above table reveals four important patterns. One is that the difference between the mean values of family dysfunction for children of Asian origin and children of non-Asian origin was found to be statistically significant. On average children of Asian origin have a higher level of family dysfunction than children of non-Asian origin. The second finding is that on average PMK of children of Asian origin reported lower score of ineffective parenting than those of children of non-Asian origin. The difference was found to be statistically significant. This suggests that children of Asian origin are less likely to receive ineffective parenting than those of non-Asian origin. Another important finding is that the difference between the mean values of parental educational expectations for children of Asian origin and children of non-Asian origin is small, but it was found to be statistically significant. Parents of children of Asian origin do on average have higher educational expectations for their children than those of children of non-Asian origin. The last

finding is that children of Asian origin are on average younger than children of non-Asian origin. Beside the above four variables that were found to be statistically significant at 0.01 level, income-to-needs, positive interaction, and PMK years of education were found to be statistically significant at 0.05 level. First, on average, children of Asian origin have a higher mean value of income-to-needs as compared to children of non-Asian origin. That is to say, children of Asian origin are less likely to experience poverty than children of non-Asian origin. Secondly, on average, children of Asian origin reported to have a lower level of positive parent-child interaction than children of non-Asian origin. Finally, the mean difference of PMK years of education between children of Asian origin and children of non-Asian origin is very small but statistically significant. On average, PMKs of children of Asian origin have a slightly lower education than PMKs of children of non-Asian origin.

5.3 Results of Path Analysis

This section presents a path diagram (Figure 5-1) that shows how a child's ethnicity is mediated by poverty, parenting style, and school experience, and affects a child's emotional state. To keep the diagram simple, only theoretically important path coefficients are reported here.

Figure 5-1: Path Analysis for children aged 4 to 11 (Weighted results)



This path diagram reveals similar patterns to those that were found in Section 1, as well as new patterns. The effect of child's ethnicity on his/her emotional disorders is not found to be statistically significant. However, some indirect effects of child's ethnicity are found to be statistically significant. A child's ethnicity has an impact on family dysfunction and ineffective parenting, which are found to have significant effects on children's emotional disorders. Another important finding is that poverty is found to have an indirect impact on children's emotional disorders through family dysfunction, positive interaction, and ineffective parenting: all of which in turn affect children's emotional disorders. However, the direct effect of poverty is not found to be statistically significant.

The path diagram sheds some light on the possible causal relationship between variables. It helps illustrate the direct and indirect effect of a child's ethnicity on his/her emotional state. The following OLS regression results make it clear which variables are statistically significant in terms of their impact on children's emotional disorders, net of the effect of the other variables.

5.4 OLS Regression Results

Six models are reported in this section. Table 5-5 contains four nested models. The first model includes only a child's ethnicity and all the control variables, the second model adds income-to-needs, the third model adds parenting style, and the fourth model adds schooling achievement. The purpose of successively adding different theoretical indicators is first to examine the direct effect of a child's ethnicity on children's emotional disorders, secondly to explore the individual effect of each group of theoretical indicators. One should note that the addition of school-related variables causes a substantial decrease in the number of cases from 13474 to 5529.

This is due to the fact that only children who are enrolled in school have valid values for the school variables. In order to examine the indirect effect of a child's ethnicity, a series of interaction terms between a child's ethnicity and other independent variables that are theoretically related to a child's ethnicity was added in Model 5 and 6 (see Table 5-6).

Table 5-5: OLS Regression results for children aged 4 to 11 (Weighted results) (Dependent variable=Emotional Disorder)

	Model 1		Model 2		Model 3		Model 4	
	b	Robust S.E.	b	Robust S. E.	b	Robust S. E.	b	Robust S.E.
Intercept	0.780*	0.401	0.818**	0.404	-0.198	0.543	1.438*	0.861
Child's ethnicity (Asian=1)	-0.411	0.361	-0.379	0.365	-0.200	0.334	-0.348	0.433
Income to needs			-0.078**	0.033	-0.044	0.029	-0.027	0.034
Family dysfunction					0.020**	0.009	0.032***	0.012
Positive interaction					-0.039**	0.017	-0.036	0.023
Ineffective parenting					0.218***	0.013	0.223***	0.017
Child's overall performance							0.242***	0.069
Child's attitude toward school							-0.274***	0.063
Parental expectation							0.008	0.125
Time on homework (Less than one hour=1)							-0.992**	0.444
Time on homework (Less than two hours=1)							-1.057**	0.457
Child's age	0.133***	0.017	0.137***	0.017	0.139***	0.019	0.087***	0.031
Child's sex (Female=1)	-0.057	0.087	-0.071	0.088	0.075	0.082	0.192*	0.109
Numbers of siblings	-0.139***	0.039	-0.129***	0.050	-0.151***	0.048	-0.129**	0.061
Child's health condition (Chronic condition=1)	0.363*	0.203	0.337	0.206	0.338*	0.195	0.300	0.255
PMK's sex (Female=1)	-0.001	0.176	-0.026	0.179	-0.241	0.165	-0.163	0.210
PMK health condition (Good=1)	-0.187	0.216	-0.216	0.213	-0.343**	0.175	-0.364*	0.208
PMK depression score	0.120***	0.010	0.122***	0.010	0.078***	0.010	0.071***	0.012
PMK years of education	0.045**	0.021	0.056**	0.022	0.040*	0.021	0.059**	0.029
Family type (Single parent=1)	0.335**	0.150	0.240	0.156	0.250*	0.143	0.375**	0.183
Family type (One bio and one step parent=1)	0.129	0.221	0.154	0.215	0.107	0.201	0.097	0.239
Family type (Other family type=1)	0.419	0.351	0.350	0.362	0.059	0.325	0.177	0.347
New immigrant status (Less than 10 years=1)	-0.357*	0.197	-0.333*	0.195	-0.190	0.212	-0.274	0.266
N of Cases		14013		13726		13474		5529
R square		0.096***		0.099***		0.201***		0.232***

*p<0.1, **p<0.05, ***p<0.01 (two-tailed test) b: unstandardized regression coefficients S.E.: standard errors

**Table 5-6: OLS Regression results for children aged 4 to 11 with interaction terms
(Weighted results) (Dependent variable=Emotional Disorder)**

	Model 5		Model 6	
	b	Robust S. E.	b	Robust S.E.
Intercept	1.500*	0.868	1.441*	0.867
Child's ethnicity (Asian=1)	-2.500	2.097	1.787	3.427
Income to needs	-0.030	0.034	-0.032	0.034
Family dysfunction	0.032***	0.012	0.031***	0.012
Positive interaction	-0.038	0.023	-0.038	0.023
Ineffective parenting	0.219***	0.017	0.219***	0.017
Child's overall performance	0.237***	0.069	0.233***	0.070
Child's attitude toward school	-0.269***	0.063	-0.262***	0.063
Parental expectation	0.010	0.124	0.030	0.126
Time on homework (Less than one hour=1)	-0.965**	0.430	-0.972**	0.426
Time on homework (Less than two hours=1)	-1.021**	0.440	-1.007**	0.436
Child's age	0.089***	0.031	0.091***	0.031
Child's sex (Female=1)	0.195*	0.109	0.195*	0.109
Numbers of siblings	-0.130**	0.061	-0.132**	0.061
Child's health condition (Chronic condition=1)	0.303	0.256	0.322	0.257
PMK's sex (Female=1)	-0.184	0.211	-0.199	0.211
PMK health condition (Good=1)	-0.380*	0.208	-0.374*	0.211
PMK depression score	0.071***	0.012	0.071***	0.012
PMK years of education	0.057**	0.029	0.058**	0.029
Family type (Single parent=1)	0.363**	0.181	0.358**	0.180
Family type (One bio and one step parent=1)	0.093	0.239	0.092	0.239
Family type (Other family type=1)	0.194	0.338	0.247	0.331
New immigrant status (Less than 10 years=1)	-0.334	0.257	-0.329	0.255
Ethnicity*family dysfunction	0.032	0.087	0.018	0.077
Ethnicity*positive interaction	-0.014	0.109	-0.022	0.091
Ethnicity*ineffective parenting	0.208	0.137	0.136	0.128
Ethnicity*income to needs	0.232	0.225	0.385**	0.188
Ethnicity*child's overall performance			0.074	0.334
Ethnicity*child's attitude toward school			-0.507	0.564
Ethnicity*parental expectation			-0.998	0.738
N of Cases	5529		5529	
R square	0.234***		0.235***	

*p<0.1, **p<0.05, ***p<0.01 (two-tailed test)
b: unstandardized regression coefficients
S.E.: standard errors

As shown in Tables 5-5 and 5-6, child's ethnicity does not appear to be statistically significant in any of the six models. With regard to the possible interaction between child's ethnicity and other independent variables, only the interaction term between child's ethnicity and income-to-needs is found to be statistically significant at the 0.05 significant level (I will come back to this result on page 75 and page 87).

From the economic disadvantage perspective, children living in poor families are expected to be at higher risk of emotional disorders. Income-to-needs is used to measure this perspective. Income-to-needs is found to be significant only in model 2, before introducing other main variables. In model 2, income-to-needs appears as having a negative impact on children's emotional disorders. More specifically, with one unit increase in income-to-needs, children's emotional disorders decreases by 0.078 unit while controlling for other factors. This variable is not statistically significant in the other four models. This unexpected result may be caused by the quality of data²¹. Or it may be that the effect of income disappears when one controls for other determinants of children's emotional disorders such as parenting style.

From the perspective of parent-child relationship and parenting style, children growing up under hostile parenting are expected to have a higher level of emotional disorders than children growing up in a more positive family environment. Family dysfunction score, positive interaction, and ineffective parenting are used to capture this perspective. Family dysfunction score remains statistically significant from model 3 to model 6. Since the high score on this variable indicates dysfunction, the results of model

²¹ According to the NLSCY, Cycle 3 User Guide, respondents in poor families are more likely to refuse to report their household income. An imputation was made by Statistics Canada to replace these missing values.

4 suggest that when the dysfunction score increases by one unit, children's emotional disorders score increases by 0.032 unit, controlling for all other factors.

Positive interaction between parent and child is found to be a statistically significant factor in reducing children's emotional disorders in model 3 only. With one unit increase in positive interaction, children's emotional disorders score is reduced by 0.039 unit, controlling for all other independent variables. High quality of parent-child relationship therefore protects children from mental health problems. This effect however disappears after controlling for school-related variables in Model 4.

In line with family dysfunction, ineffective parenting also remains statistically significant from model 3 to model 6. With one unit increase in ineffective parenting, children's emotional disorders score increases by 0.223 unit, while controlling for all other factors. Children brought up under ineffective parenting are therefore more likely to have emotional disorders than children brought up in a more effective environment. The standardized regression coefficient for ineffective parenting is also the largest indicating that ineffective parenting plays the most important role in children's emotional state (results with the standardized regression coefficients are not reported here).

These three variables, positive interaction, family functioning, and ineffective parenting are all related to parenting so that they may be highly correlated. However, the VIF statistics indicates that there is no multicollinearity problem (results are not reported here). Also, the fact that all three variables are statistically significant suggests that they capture different dimensions of parenting.

From the school stress perspective, we expected school to be a source of stress for children. Children who do not do well in school may be stressed because of the criticism

and disappointment of their teachers, parents, and even peers. Therefore, children who do not do well in school are expected to have a higher level of emotional disorders than children who do well. Due to the limitation of secondary data, there is no perfect measure of school stress in the NLSCY, Cycle3. Thus, several variables are used to estimate school stress. They are (1) the child's overall performance in school, (2) the child's attitude toward school, (3) parental schooling expectations, and (4) the amount of time that children spend on homework,

Out of these four predictors, only 'parental schooling expectations' is never statistically significant from model 4 to model 6. The variable capturing the child's overall schooling performance is found to be highly significant across the three models. Since a high score of this variable indicates poor performance in school, with one unit increase in this variable, children's emotional disorders score increases by 0.242 unit, controlling for all other variables in model 4. Good performance in school therefore reduces the level of emotional disorders. One possible explanation is that the better children perform in school, the more confident they are about themselves and therefore the lower their level of emotional disorders. The variable of child's attitude toward school negatively influences children's emotional disorders. When this variable increases by one unit, children's emotional disorders score decreases by 0.274 unit, controlling for all other variables. On the other hand, the more children like school, the less they are at risk of displaying emotional disorders.

The two dummy variables of time spent on homework are both statistically significant from model 4 to model 6. In model 4, the emotional disorders score of children who spend less than one hour per day on homework is 0.992 unit lower than that

of children who spend more than two hours per day on homework, controlling for all other independent variables. Also, the emotional disorders score of children who spend more than one hour but less than two hours per day on homework is 1.057 unit lower than children spending more than two hours per day on homework. This means that high time allocation on homework increases the level of emotional disorders.

Children' age appears to have a highly significant impact on their emotional state across the six models. In model 4, results suggest that for each additional year, children's emotional disorders score increases by 0.087 unit, while controlling for all other independent variables²². The results therefore suggest that older children have a higher level of emotional disorders.

Previous studies have shown that children's sex is related to their emotional state such that girls are more likely to suffer from emotional disorders than boys (Beiser et al. 1998, 2002). Child's sex starts appearing as being statistically significant ($p < 0.01$) from model 4 to model 6. Girls' emotional disorders score is 0.192 unit higher than boys, controlling for all other factors.

The numbers of siblings is highly significant across all six models. In model 4, with one additional sibling, children's emotional disorders score decreases by 0.129 unit, while controlling for all other factors. The presence of siblings appears to be playing an important role in maintaining children's good emotional state. Children with siblings may have more opportunity to talk about their sadness or depression with their siblings, and may also obtain some suggestion or guidance from their siblings. Therefore, the risk of emotional disorders is lower for children with a larger number of siblings.

²² Note that the dependent variable ranges between 0 and 16.

According to the life event perspective, children with chronic health problems experience a more stressful life and are more likely to exhibit higher emotional disorders. However, my results suggest that the indicator of child's health condition is significant only in models 1 and model 3. Both model 1 and 3 suggest that the emotional disorders score of children with chronic health problem is about 0.34 unit higher than those who are healthy, while controlling for all other factors.

PMK's sex does not appear to be statistically significant across six models. PMK health condition starts appearing as being statistically significant from model 3 to model 6. The results of model 4 suggest that the emotional disorders score of children with healthy PMK is 0.364 unit lower than those with unhealthy PMK, controlling for all other factors.

The depression score of PMK continues to be statistically significant across all six models. When the depression score of PMK increases by one unit, children's emotional disorders score increases by 0.071 unit, controlling for all other factors. Children with PMK who are depressed are therefore more likely to have emotional disorders.

PMK educational level is also found to be statistically significant across all six models. However, the sign of the regression coefficient is positive. Namely, children whose parents have higher education are more likely to develop emotional disorders than those with lower educational parents. This unexpected result may be explained by the fact that parents who have higher education tends to spend more time at work, and therefore have less time supervising their children²³.

²³ PMK employment status was originally included in the analysis. However, it is highly correlated to PMKs' years of education and household income that is used to compute income-to-needs ratio. One of the assumptions of OLS requires the independence of independent variables. Due to this assumption, PMK employment status was excluded from the analysis.

According to the parental absence perspective, children living in single-parent families are more likely to show signs of emotional disorders. Three dummy variables are used to describe family type, with the category “two biological parent families” left out as the reference group. Among the three dummy variables, only the one for single parent families is statistically significant across the six models. In model 4, the emotional disorders score of children living in single parent families is 0.375 unit higher than children in two biological parent families, while controlling for all other independent variables.

The last variable in model 4 is new immigrant status. This variable is examining whether the length of residence in Canada has an impact on children’s emotional state. It is found to be statistically significant in models 1 and 2. Both of them indicates that emotional disorders score of children from families immigrating less than 10 years ago is about 0.3 unit lower than those from families that have resided in Canada for more than 10 years.

In order to explore the possible indirect effect of Asian culture on children’s emotional disorders, several interactions between a child’s ethnicity and other independent variables were examined in model 5 and model 6²⁴. However, only the interaction term between a child’s ethnicity and income-to-needs was found to be statistically significant in model 6. It suggests that for children of non-Asian origin, with one unit increase in income-to-needs, the level of children’s emotional disorders decreases by 0.032 unit while controlling for other factors, while for children of Asian

²⁴ The main focus on this thesis is to explore the direct or indirect impact of Asian culture on children’s emotional disorders, and to examine the mediated relationship between other independent variables and Asian culture. Thus only the interaction terms between a child’s ethnicity and other mediating independent variables were included in the OLS regressions. Other interaction terms (i.e. poverty*ineffective parenting) were not examined in this thesis.

origin, with one unit increase income-to-needs, the level of children's emotional disorders increases by 2.14 when controlling for other factors.

Overall, most theoretical factors that were found to have an impact on children's emotional disorders in the literature are also found to be statistically significant in my regression models. Some variables—child's health condition, PMK health condition, new immigrant status, time spent on homework, and family structure—that were found to affect children's emotional disorders in Table 5-2 remain statistically significant in regression models. However, the statistical significance of child's ethnicity in Table 5-2 disappeared after controlling for other independent variables. Family dysfunction, positive interaction, and ineffective parenting were found to be highly correlated to children's emotional disorders in Table 5-3 and remained statistically significant in the OLS regressions and path analysis. However, some variables related to school such as parental expectations was found to be statistically significant in Table 5-4 and is not statistically significant in the OLS regressions after controlling for other independent variables. The control variables that were believed to affect children's emotional disorders, such as child's age and sex, number of sibling, PMK depression, single-family are also found to be statistically significant in the OLS regressions.

Even though one of the main interests of this thesis is to explore the direct or indirect effect of Asian culture on children's emotional disorders, the variable that was used to capture the concept of "Asian culture" was found to be statistically significant in the bivariate analysis and the path analysis but not in the OLS regressions. In another word, the level of emotional disorders is not different between children of Asian origin and children of non-Asian origin after controlling for other factors (although ethnicity

does matter in its interaction with poverty). The specific explanation of this unexpected result will be provided in next chapter.

Chapter Six—Discussion

The objective of this thesis is to explore the impact of specific risk factors on children's emotional state with a particular attention to the effect of Asian culture. The study of children's emotional state involves more than one theoretical perspective. Several different theoretical propositions have been integrated in this thesis in order to explain children's emotional state. I will briefly review those theoretical propositions here. Influenced by Asian culture, parents of children of Asian origin tend to place more emphasis on educational achievement than parents of children of non-Asian origin (Kao, 2002; Chao, 1996; Jose, Huntsinger, and Liaw, 2000; Fuller, 1986). This high pressure for educational achievement has been shown to have a negative impact on children's emotional state in the literature. Thus, children of Asian origin are expected to be at higher risk of emotional disorders than children of non-Asian origin. The economic disadvantage perspective suggests that poverty, especially long-term poverty, is not good for children's emotional state (Thomson et al., 1994; Takeuchi et al., 1991; Beiser et al., 2002, 1998). Poverty is expected to increase the likelihood of children's emotional disorders. The theoretical proposition related to parenting style and family environment states that ineffective parenting and dysfunctional family environment are harmful to children's emotional state (Portes and Ruben, 2001; Beiser et al., 2000, 1998; Chao, 1994; Kim and Rohner, 2002; Chao and Willms, 2002). Children who grow up in dysfunctional families and are exposed to ineffective parenting are expected to have a higher level of emotional disorders than other children. The theoretical proposition regarding resiliency suggests that it is possible for some children who are growing up in a disadvantage environment to develop normally if they have protective factors such as siblings' support

or other resources to rely on (Masten et al., 1998; Rutter, 1979). In this thesis, the number of siblings is examined as a protective factor of children's emotional state. Children who have more siblings are expected to be at lower risk of emotional disorders. The theoretical proposition related to life stress suggests that life event such as chronic sickness can endanger children's emotional state (Lavee et al., 1987; McLanahan, 1983; Johnson, 1986). From this point of the view, chronic physical health problem is expected to increase the likelihood of children's emotional disorders. The parental absence perspective indicates that single-parent families are responsible for children's emotional disorders (Dawson, 1991; McLanahan, 1983; Beiser et al., 2002, 1998; Avison, 1995). Single-parent family structure is expected to increase the likelihood of children's emotional disorders. In the following, each of these propositions is discussed in view of the empirical results presented in the last chapter.

6.1 Do the Results Support the Theoretical Propositions?

6.1.1 Theoretical proposition related to Asian origin

Although children of Asian origin were hypothesized in this thesis to have a higher level of emotional disorders than children of non-Asian origins, a child's ethnicity was not found to be statistically significant in any of the six models presented in the last chapter. And in fact, as reported in Table 5-2 children of Asian origin start with a lower level of emotional disorders than children of non-Asian origin. This result is inconsistent with some studies that argue that Asian culture imposes more pressure on the individual than other cultures (Fuller, 1986; Sato, 1999). This argument states that in Asian culture, an individual's accomplishment and social status represent his or her family and benefit

his or her family members. Academic achievement is the primary mean to obtain a decent job, good salary, high social class, and even a good marriage, which are all about personal accomplishment. Asian parents therefore often impose pressure on their children even during their early schooling years in order for them to succeed in school and in life. Starting from this point of the view, these authors argue that children of Asian origin are exposed to a more stressful life than children of non-Asian origin. This argument has been supported by many studies about school stress and children's emotional state. For example, Lee and Larson (2000) compared students in Korea and those in United States. They found that Korean students (high school seniors) generally spend about 7.7 hours per day on their homework and preparing for examinations, in contrast, American students (high school seniors) only spend 3.7 hours per day on school work. They also found that influenced by this high time allocation on homework, Korean students experience more depression than American students. However, most studies that found that pressure regarding educational achievement was related to children's emotional disorders were carried out in Asian countries and compared the children who were born and raised in Asian countries with those who were born and raised in western countries. It is possible that this 'Asian' mechanism is not present among children growing up in Canada where children of Asian origin represent a minority (but in some case a large minority).

The non-statistical significance of ethnicity as found in this thesis may also, or alternatively, be due to the small sample size of children of Asian origin in the analytical sub-sample used in the thesis. Only 52 children of Asian origin aged 4 to 11 enrolled at school were left in the OLS regressions. This small number of cases may have restricted

the statistical significance. Another possible explanation is that the competition in school or when entering university is relatively lower in Canada than in Asia so that Asian parents in Canada have less worries about making sure that their children excel so as to be admitted to the university. It is therefore possible that Asian parents in Canada tend not to impose higher pressure on children than non-Asian parents in contrast to parents in Asia. It is also possible that Asian parents become more Canadianized in terms of culture as they extend their stay in Canada. Second or third generation of Asian parents may gradually adapt to Western culture and therefore hold similar values in terms of educational achievement and the importance of an individual's success. Or it may be the fact that being Asian or not has little to do with children's emotional disorders, although—and as seen in this thesis—the presence of school stress plays a major role in children's emotional state.

6.1.2 Theoretical proposition related to schooling performance

Another hypothesis explored in this thesis is that schooling performance and parental schooling expectation are expected to affect children's emotional state. More specifically, children who have a good performance at school are expected to have a lower level of emotional disorders. Child's overall schooling performance is found to be statistically significant. The better children perform at school, the lower is their emotional disorders. Time spent on homework is also found to be statistically significant. Children who spend longer hours on homework are more likely to develop emotional disorders. Long hours allocated to homework is considered a source of stress from school. These findings correspond to previous studies, such as the 2000 study of Lee and Larson. Table

5-4 shed some light on the effect of Asian culture on children's schooling performance and parental expectations. On average, parents of children of Asian origin have higher expectations regarding schooling achievement than parents of children of non-Asian origin. However, this pattern disappeared after controlling for other factors in the multivariate analysis.

6.1.3 Theoretical proposition related to poverty

According to the economic disadvantage perspective, poverty is expected to cause children's emotional disorders. In other words, children who are living in poor families are at higher risk of developing emotional disorders. As reported in Chapter Five, income-to-needs, my measure of poverty, was found to be statistically significant and to be associated with an increase in emotional disorders. This finding is consistent with previous literature, such as studies by Beiser (1998, 2002) and Avison (1995) about family structure and mental health. As discussed in Chapter Five, the interaction term between a child's ethnicity and poverty was found to be statistically significant. It is suggested that poverty functions differently for children of Asian origin and children of non-Asian origin. Poverty results in higher risk of emotional disorders for children of non-Asian origin. In contrast, children of Asian origin are less vulnerable to poverty.

6.1.4 Theoretical proposition related to parenting style

Parenting style was hypothesized in this thesis to play an important role in children's emotional state. Family dysfunction, lack of positive parent-child interaction, and ineffective parenting are expected to cause children's emotional disorders. That is,

children living in dysfunctional families are expected to have a higher level of emotional disorders. Children who lack positive interaction with their parents are expected to be at higher risk of emotional disorders. Children whose parents conduct ineffective parenting are also expected to develop emotional disorders. The results presented in Chapter Five highly support the previous hypothesis about the effect of parenting style on children's emotional state. Family dysfunction, positive parent-child interaction, and ineffective parenting are all found to be statistically significant. Family dysfunction and ineffective parenting increase children's level of emotional disorders, while positive parent-child interaction reduces children's emotional disorders. These findings are in line with other research. For example, both Beiser (1998, 2002) and Chao and Willms (2002) reported in their studies on the basis of the NLSCY that parenting practices and family environment impact children's emotional state. The bivariate results reported in Table 5-4 suggest that on average, the parents of children of Asian origin reported a lower level of ineffective parenting and a lower level of positive parent-child interaction than parents of children of non-Asian origin. However, these patterns disappeared after controlling for other factors in the multivariate results.

6.1.5 Other theoretical propositions

Children's age and sex are expected to have an impact on children's emotional state. As reported in Chapter Five, older children were found to be more likely to develop emotional disorders, and so were girls. Findings are consistent with numerous studies including Beiser (1998, 2002).

According to the perspective of resiliency, children who have protective factors, such as family's or peer's support, can develop normally even in disadvantaged environments. The support from sibling is considered as one type of protective factor. Children who have more siblings are expected to have a lower level of emotional disorders. The number of siblings was found to be statistically significant in the results of the OLS regression. The increase in the number of siblings causes the decrease of emotional disorders, which is in line with the finding of the Cicirelli's 1994 study.

The life event perspective suggests that children with long-term physical problems are expected to have a higher level of emotional disorders. Child's health condition is only statistically significant in my regression analyses before controlling for child's schooling performance and parental schooling expectation. Among the significant results, children with chronic physical health problem are found to have a higher level of emotional disorders than children who are healthy. This is consistent with Lavee's 1987 study.

Parents' physical and emotional health conditions are expected to play an important role in children's emotional state. Parents with chronic health problem and parents who are depressed are expected to increase children's emotional disorders. The results presented in Chapter Five suggest that children whose PMK has chronic health problem have higher emotional disorders than other children. Children whose PMK has higher score of depression are also found to have a higher level of emotional disorders, which is consistent with Hasan and Power's 2002 study.

According to the perspective of parental absence, children living in single-parent family are expected to have a higher level of emotional disorders. My results do support

this hypothesis. Children living in single-parent families are found to have a higher level of emotional disorders than those living in two-biological parent families. This is consistent with Dawson's 1991 study.

6.2 Further Discussion on the Possible Impact of Asian Culture

One of the research questions asked in this thesis referred to the direct effect of Asian culture on children's emotional state as well as the indirect effect of Asian culture. I discussed earlier the possible reasons why Asian culture was not found to have a statistically significant direct impact on children's emotional state. Below, I discuss the possibility that Asian culture may indirectly affect children's emotional state. Asian culture was hypothesized to be mediated by poverty, parenting style, and parental educational expectations to affect children's emotional state. Thus, a series of path analyses was carried out in order to understand the mediated relationship between Asian culture and those independent variables measuring poverty, parenting style, and parental educational expectations. As shown in Figure 5-1 in Chapter Five, the mediated relationship between a child's ethnicity (a measure of Asian culture) and poverty, and the one between a child's ethnicity and parental educational expectations were not found to be statistically significant. However, both the mediated relationship between a child's ethnicity and family dysfunction and the one between a child's ethnicity and ineffective parenting were found to be statistically significant. This result suggests that even though Asian culture was not found to directly affect children's emotional state, Asian culture may still have an impact on children's emotional state through dysfunctional family and ineffective parenting style.

6.2.1 Comparison with the studies by Beiser

As compared to Beiser (1998, 2000), who also used the NLSCY, this thesis produced some similar and dissimilar results. Beiser et al. (1998) found that poverty, parental depression, dysfunctional family, ineffective parenting style, and single-parent family structure are responsible for the increase of the likelihood of children's emotional disorders. He also found that older children are more likely to develop emotional disorders, so do girls. These findings are supported by this thesis. In order to discover the effect of Asian culture and what factors indeed play a role in influencing children's emotional disorders, this thesis includes several variables related to schooling achievement and expectations, and adds more control variables beside those that Beiser included in his study. Beside those determinants that Beiser (1998, 2002) found statistically significant, this thesis also found that good schooling performance, positive attitude toward school, and the presence of siblings reduce the likelihood of emotional disorders, whereas, long hours spent on homework, a child's chronic physical health problem, and PMK's long-term health problems increase the likelihood of emotional disorders. This thesis expanded Beiser's 1998 and 2002 studies and reinforced his findings with the exception of new immigrant status. Beiser et al. (2002) suggested that children's new immigration status reduces the likelihood of emotional disorders. Namely, new immigrant children were found to be less likely to have emotional disorders. The variable, new immigrant status was only found to be statistically significant before controlling for parenting style and school stress in my analysis. The discrepancy between the findings in my thesis and Beiser et al. (2002) may be accounted by the addition of

variables related to schooling achievement and parental educational expectations. Or it may be due to the fact that OLS regression in Beiser et al. (2002) was conducted in SPSS, with ordinary rather than robust standard errors. This could result in regression coefficients that are statistically significant in SPSS (because of smaller standard errors) and non-statistically significant in STATA.

6.2.2 Discussion on the interaction term

In order to discover the indirect impact of Asian culture on children's emotional state, several interaction terms between a child's ethnicity and other main independent variables were examined in regression models. However, only the interaction term between a child's ethnicity and poverty was found to be statistically significant. This suggests that poverty has a different impact for children of Asian origin and children of non-Asian origin. As reported in Table 5-6, with one unit decrease in income-to-needs (means increase in poverty) the level of emotional disorders of children of Asian origin decreases by 2.14 unit while controlling for other factors, while the level of emotional disorders of children of non-Asian origin increases by 0.032 unit after controlling for other factors. For children of non-Asian origin, poverty increases the likelihood of emotional disorders as demonstrated in many previous studies. However, poverty does not display the same pattern for children of Asian origin. Poverty is not a negative factor on children's emotional state. In fact, poverty decreases the likelihood of emotional disorders for children of Asian origin. This suggests that poverty possibly means different thing to children of Asian origin. Poverty may be perceived as part of a persistent reality by children of non-Asian origin. However, for children of Asian origin, poverty may only

represent a transient process. Children of Asian origin may view poverty as a temporary situation and may have hopes to eventually overcome it.

6.2.3 Discussion on the indirect impact of Asian culture

The path analysis shed some light on the indirect impact of Asian culture on children's emotional disorders. As suggested in Figure 5-1, Asian culture has an indirect impact on children's emotional disorders through family dysfunction and ineffective parenting. Children of Asian origin have a higher level of family dysfunction and a lower level of ineffective parenting as compared to children of non-Asian origin. This result is consistent with Table 5-4. Both family dysfunction and ineffective parenting lead to children's emotional disorders. Children of Asian origin have a higher level of family dysfunction and therefore they are expected to have a higher level of emotional disorders. At the same time, children of Asian origin have a lower level of ineffective parenting, which decreases the likelihood of emotional disorders. Asian culture is mediated by these two factors in opposite directions. The final impact of Asian culture on children's emotional disorders may disappear if the two opposite effects have the same level of influence.

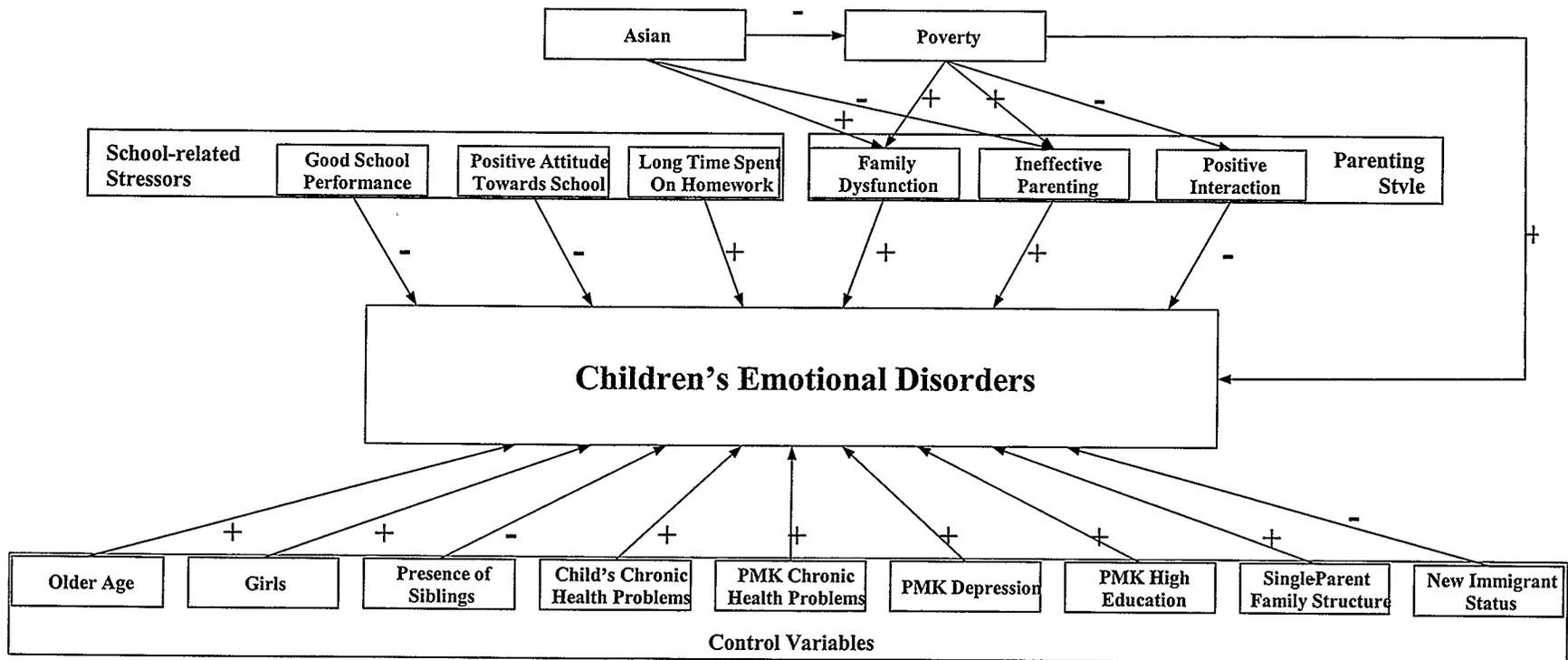
6.3 An Empirical Model of Children's Emotional Disorders

In order to obtain a clearer picture of important independent variables that were found to impact children's emotional disorders in this thesis, I conclude this chapter by presenting a diagram (Figure 6-1) of the relationship between statistically significant factors (found in the path analysis and the OLS regressions) and emotional disorders. The

theoretical model presented in Chapter Three expected that Asian culture has a direct impact on children's emotional disorders as well as an indirect impact such that the effect of Asian culture is mediated through poverty, parenting style, and school aspiration to affect children's emotional disorders. It also expected that poverty is mediated through parenting style to influence children's emotional disorders, and school aspiration is mediated through parenting style to impact children's emotional disorders. In the meantime, the control variables were also expected to have an impact on children's emotional disorders. The empirical model tells a slightly different story. First, Asian culture is not mediated through school aspiration to affect children's emotional disorders due to the results that mediated relationship between Asian culture and school aspiration was not found to be statistically significant neither in the path analysis nor in the OLS regressions. Secondly, school aspiration is not mediated through parenting style to influence children's emotional disorders. Even though the bivariate results suggested a link between Asian culture and school aspiration/parental expectations, the OLS regressions and the path analysis did not support this result.

Overall, even though Asian culture was not found to be statistically significant in the OLS regression, it is important to be aware that Asian culture may have some indirect impact on children's emotional disorders, since Asian culture was found to be mediated through parenting style and poverty to affect children's emotional disorders.

Figure 6-1 Empirical Model



Note: '+' indicates increase.

'-' indicates decrease.

Only statistically significant results are reported here.

Chapter Seven—Conclusion

Many factors have been demonstrated to have an impact on children's emotional state in the literature. On the basis of a thorough review of this literature, factors were found to include poverty, parenting style, family functioning, family structure, parents' physical and emotional health condition, and child's schooling performance. However, the possible impact of culture has been largely ignored in previous studies on children's emotional state. For example, Beiser et al. (1998) examined different risk factors on children's emotional disorders by using the NLSCY, but he did not test for the possibility that children of Asian origin may be more likely to suffer from the pressures from school in terms of high parental educational expectations²⁵. In addition, Chao and Willms (2002) also used the NLSCY to study the effects of parenting practices on children's outcomes. However, they overlooked the possible differences of parenting practice between different ethnic groups, themselves caused by different beliefs. One of the contributions of this thesis is to integrate culture into a global framework to explain children's emotional state. The focus of this thesis was to assess the effect of Asian culture, especially the emphasis on education, as a possible source of stress and as potentially negatively affecting children's emotional state.

However, the variable measuring Asian culture—a child's ethnicity—failed to be statistically significant in this thesis. While the effect of culture may in fact not have an impact, it is also possible that the measurement of culture through the single question of ethnicity may be so crude or blunt that it does not capture the subtleties of culture and thus hides the real impact of culture²⁶.

²⁵ More precisely, Beiser et al. (2002) included a variable for Asian origin, but they did not include school-related variables.

²⁶ Other explanations are also provided on page 78 to 81.

When looking at the other determinants identified in previous research, most of those other important factors were also found to have an impact on children's emotional state in this thesis. The results presented in the previous chapters suggest that poverty, family dysfunction, ineffective parenting, long time spent on homework, older age, being a girl, child's chronic health problems, PMK chronic health problems, PMK depression, PMK high education, and single-parent family structure are all associated with a higher level of emotional disorders. In contrast, positive interaction, good schooling performance, positive attitude toward school, presence of siblings, and new immigrant status can help reduce the level of emotional disorders.

So, what do these results mean in terms of the five main questions asked at the very beginning of this thesis? First, to the question of the extent to which children experience emotional disorders, it appears that the majority of Canadian children are in fact emotionally healthy. About 70% of Canadian children score lower than the mean in terms of their emotional disorders. And only 3% of Canadian children score higher than 12, which is indicative of a high level of emotional disorders. Second, to the question of what factors affect children's emotional disorders, findings from this thesis show that poverty, parenting style, family functioning, schooling performance, child's age, child's sex, numbers of siblings, physical health, family structure, and parents' physical and emotional health condition all affect children's emotional state.

Third, with regard to the question of whether children of Asian origin experience a different level of emotional disorders, there appears to be no statistical difference between the emotional state of Asian and non-Asian children. Contrarily to what was expected, a child's ethnicity has no statistically significant effect on his/her emotional state. Similarly, a child's new immigrant status is also found to be statistically non-significant.

Fourth, to the question of the possible direct and indirect effect of culture, child's ethnicity is found to have no direct effect on children's emotional state in both the OLS regressions and the path analysis. Child's ethnicity remains statistically non-significant across six models of the OLS regressions. However, the path analysis shed some light on the possible indirect effect of culture. The results obtained show that a child's ethnicity has a statistically significant impact on both family dysfunction and ineffective parenting, and in turn, both family dysfunction and ineffective parenting are found to have statistically significant effects on children's emotional state (the corresponding interaction terms in the OLS regression models were however NOT statistically significant). Therefore, the results from the path analysis suggest that culture has an indirect effect on children's emotional disorders. And fifth, to the question about mediating factors, this thesis suggests that the factors mediating the relationship between culture and children's emotional disorders are family dysfunction and ineffective parenting.

Encouraged and benefited by the Canadian immigration policy, candidates across the world immigrate to Canada after successfully enduring the strict selection process, start a new life in Canada, and make their own contributions to the Canadian way of life. Most of them are at the stage of starting families and raising young children in Canada. How well their children do in Canada may directly affect the willingness of immigrants to stay in Canada, and may also influence the quality of immigrants' life. Not only do adult immigrants experience a hard time settling in a new environment, but children, especially young children, do also experience this hardship. This process of adaptation sometimes is even harder for young children, because they have fewer coping skills than adults. Therefore, after immigrating to Canada, parents need to put more work on protecting their children from emotional

disorders during this vulnerable time. New immigrants' families possibly encounter some financial difficulties during the time that they initially settle down in Canada. Children's emotional state may be affected by economic difficulties. However, as found in this thesis, the influence from families, especially parenting style, plays a crucial role in determining children's emotional state. That is to say, it is possible to protect children from emotional disorders caused by poverty if new immigrants make an effort on building up a functional family environment. More specifically, parental warmth, positive parenting, and trustful family relationships are all beneficial to children in terms of reducing their risk of emotional disorders.

Children are vulnerable to the pressure caused by school life regardless of ethnicity. Unsatisfactory performance at school may endanger children's emotional state. Confronted to failure, children may feel humiliated, and sometimes, they may also have to face teases from peers. Some children might be strong enough to go through the related stress by themselves, however, some children need help and support from their parents. In order to protect children from emotional disorders caused by school pressure, parents need to spend more time communicating with their children, to help children release the pain from failure, to encourage children to build up their confidence, and more importantly, to guide children to do a better job next time.

All parents love their children, but some of them do not know how to communicate with their children. Some parents hold a biased belief about parenting. For example, some parents are too strict on their children and want to fully control their children's behaviours. Most of the time, biased belief about parenting is harmful to children's emotional state, sometime even responsible for children's deviant behaviours. In order to protect children from emotional disorders, some services

directed at helping parents to achieve better parenting skills need to be established and introduced to parents.

Finally, I would like to conclude this chapter by discussing future avenues of research. One of the limitations of the NLSCY is that it did not consider differences in the density of some ethnical groups across Canada when it carried out its sampling. This resulted in an under-representation of children from minority ethnic groups and children from immigrant families. In order to generalize findings from this thesis to the Canadian population, a larger sample size of ethnic groups is required. Another important point is that cross-national analysis does not allow us to examine the true causality between children's emotional disorders and other factors. The NLSCY has already released 4 cycles. The longitudinal data could be employed to make a further exploration of causalities between emotional disorders and other independent variables (something that was beyond the scope of this Master's thesis). Lastly, the concept of mental health can be examined by many other dimensions. This thesis only focus on one dimension—emotional disorders. The NLSCY also includes variables related to other dimensions of mental health, such as behaviour problem, aggression, and hyperactivity. Future research could draw more attention on other dimensions, and more interestingly, could compare how the same independent variables affect differently, or similarly, different dimensions of mental health.

Bibliography

- Acs, Gregory and Gallagher, Megan (2000). "Income inequality among America's children" *New federalism: National Survey of America's Families, Series B, No. B-6, January*. (www.urban.org/url.cfm?ID=309307)
- Albright, Martina B. and Tamis-LeMonda, Catherine S. (2002). "Maternal depressive symptoms in relation to dimensions of parenting in low-income mothers" *Applied developmental science, 6(1)*: 24-34.
- Amato, Paul R. (1989). "Family processes and the competence of adolescents and primary school children" *Journal of youth and adolescence, 18(1)*: 39-53.
- Avison, William R. (1995). "Family structure and mental health" *Chapter 12 in Ann Maney and Juan Ramos (Eds.), Socioeconomic Conditions, Stress and Mental Disorders: Toward a New Synthesis of Research and Public Policy. Washington, DC: Mental Health Statistical Improvement Program (MHSIP), National Institute of Mental Health.*
(www.mhsip.org/nimhdoc/socioeconmh_home.htm)
- Beiser, Morton, Hou, Feng, Hyman, Ilene, and Tousignant, Michel (1998). "Growing up Canadian—A study of new immigrant children" *Applied Research Branch Strategic Policy Human Resources Development Canada*.
- Beiser, Morton, Hou, Feng, Hyman, Ilene, and Tousignant, Michel (2002). "Poverty, family process, and the mental health of immigrant children in Canada" *American journal of public health, Feb. 92(2)*: 220-228.
- Bradley, Robert H., Corwyn, Robert F., Mcadoo, Harriette P., and Coll, Cynthia G. (2001). "The home environments of children in the United States Part I: variations by age, ethnicity, and poverty status" *Child development, 72 (6)*: 1844-1867.
- Brooks-Gunn, Jeanne and Duncan, Greg J. (1997). "The effects of poverty on children" *The future of children: children and poverty, 7 (2)*: 55-71.
- Campbell, Susan H. (1995). "Behavior problems in preschool children: A review of recent research" *Journal of child psychology and psychiatry, 36 (1)*: 113-150.
- Chao, Ruth K. and Willms, J. Douglas (2002). "The effects of parenting practices on children's outcomes" *Chapter 8 (pp. 149-166) in Willms, J. Douglas (Ed.) Vulnerable children. The University of Alberta Press.*
- Chao, Ruth K. (1994). "Beyond parental control and authoritarian parenting style: understanding Chinese parenting through the cultural notion of training" *Child development, 65*: 1111-1119.
- Chao, Ruth K. (1995). "Chinese and European American cultural models of the self reflected in mothers' childrearing beliefs" *Ethos, 23 (3)*: 328-354.

- Chao, Ruth K. (1996). "Chinese and European American mothers' beliefs about the role of parenting in children's school success" *Journal of cross-cultural psychology*, 27 (4): 403-423.
- Chao, Ruth K. (2000). "The parenting of immigrant Chinese and European American mothers: relations between parenting styles, socialization goals, and parental practices" *Journal of applied developmental psychology*, 21(2): 233-248.
- Chen, Xinyin and Li, Bo-shu (2000). "Depressed mood in Chinese children: development significance for social and school adjustment" *International journal of behavioral development*, 24(4): 472-479.
- Chen, Huabin (2001). "Parents' attitudes and expectations regarding science education: comparisons among American, Chinese-American, and Chinese families" *Adolescence*, 36 (142): 305-313.
- Chiu, Lian-Hwang (1987). "Child-rearing attitudes of Chinese, Chinese-American, and Anglo-American mothers" *International journal of psychology*, 22 (4): 409-419.
- Cicirelli, Victor G. (1994). "Sibling relationship in cross-cultural perspective" *Journal of Marriage and the family*, 56: 7-20.
- Coleman, James S. (1988). "Social capital in the creation of human capital" *American journal of sociology*, 94: 95-120.
- Cornah, Deborah, Sonuga-Barke, Edmund, Stevenson, Jim, and Thompson, Margaret (2003). "The impact of maternal mental health and child's behavioural difficulties on attributions about child behaviours" *British journal of clinical psychology*, 42: 69-79.
- Cummings, William K. (1996). "Asian values, education and development" *Compare: A journal of comparative education*, Oct, 26 (3): 287-304.
- Dawson, Deborah A. (1991). "Family structure and children's health and well-being: Data from the 1988 national health interview survey on child health" *Journal of marriage and the family*, August (53): 573-584.
- Duncan, Greg J., Brooks-Gunn, Jeanne, and Klebanov, Pamela K. (1994). "Economic deprivation and early childhood development" *Child development*, 65: 296-318.
- Eamon, Mary K. (2000). "Structural model of the effects of poverty on externalizing and internalizing behaviors of four-to-five-year-old children" *Social work research*, 24 (3): 143-154.
- East, P. L. and Rook, K. S. (1992). "Compensatory patterns of support among children's peer relationships: a test using school friends, nonschool friends, and siblings" *Developmental psychology*, 28: 163-172.

- Elder Jr., Glen H., Eccles, Jacquelynne S., Ardelt, Monika, and Lord, Sarah (1995). "Inner-city parents under economic pressure: perspectives on the strategies of parenting" *Journal of marriage and the family*, 57: 771-784.
- Fuller, Bruce (1986). "Contrasting achievement rules: socialization of Japanese child" *Research in sociology of education and socialization*, 6: 165-201.
- Featherstone, B. (1999). "Taking mothering seriously: the implications for child protection" *Child and family social work*, Feb. 4(1): 43-53.
- Gecas, Viktor and Schwalbe, Michael L. (1986). "Parental behavior and adolescent self-esteem" *Journal of marriage and the family*, 48: 37-46.
- Gorman, Jean Cheng (1998). "Parenting attitude and practices of immigrant Chinese mothers of adolescents" *Family relations*, 47: 73-80.
- Government of Canada (2002). "The well being of Canada's young children: Government of Canada report 2002" *Federal/Provincial/Territorial early childhood development agreement*.
(www.socialunion.gc.ca/ecd/2002/reportb-e.pdf)
- Goyette, Kimberly and Xie, Yu (1999). "Educational expectations of Asian American youths: determinants and ethnic differences" *Sociology of Education*, 72 (Jan): 22-36.
- Gudykunst, William B. (2001). *Asian American ethnicity and communication*. SAGE Publication.
- Hasan, Naheed and Power, Thomas G. (2002). "Optimism and pessimism in children: a study of parenting correlates" *International journal of behavioral development*, 26(2): 185-191.
- Hodges, William F., Tierney, Carol W., and Bushsbaum, Helen K. (1984). "The cumulative effect of stress on preschool children of divorced and intact families" *Journal of marriage and the family*, August: 611-617.
- Ho, David Yau-Fai (1994). "Filial piety, authoritarian moralism, and cognitive conservatism in Chinese societies" *Genetic, social & general psychology monographs*, 120(3): 349-366.
- Jackson, Yo, Sifers, Sarah K. Warren, Jared S., and Velasquez, Dori (2003). "Family protective factors and behavioral outcome: the role of appraisal in family life events" *Journal of emotional and behavioral disorders*, Summer, 11(2): 103-111.
- Jenkins, Jennifer M. and Smith, Marjorie A. (1990). "Factors protecting children living in disharmonious homes: maternal reports" *Journal of the American academy of child and adolescent psychiatry*, 29: 60-69.

- Johnson, James H. (1986). Life events as stressors in childhood and adolescence. *Developmental clinical psychology and psychiatry*. SAGE publications.
- Jose, Paul E., Huntsinger, Carol S., Huntsinger, Phillip R., and Liaw, Fong-Ruey (2000). "Parental values and practices relevant to young children's social development in Taiwan and the United States" *Journal of cross-cultural psychology*, 31(6): 677-702.
- Kao, Grace (2002). "Ethnic differences in parents' educational aspirations" *Research in sociology of education*, 13: 85-103.
- Kelley, Michelle L. and Tseng, Hui-Mei (1992). "Cultural differences in child rearing: A comparison of immigrant Chinese and Caucasian American mothers" *Journal of cross-cultural psychology*, 23 (4): 444-455.
- Khanna, Nikki D. and Heiser, Jill (2000). "Adolescent academic achievement and ethnicity: Risk and protective factors" *Southern sociological society (Association Paper, 2000)*.
- Kim, Kyoung-ho and Rohner, Ronald (2002). "parental warmth, control, and involvement in schooling: predicting academic achievement among Korean American Adolescents" *Journal of cross-cultural psychology*, 33(2): 127-140.
- Kim, Su Yeong and Wong, Vivian Y. (2002). "Assessing Asian and Asian American parenting: A review of the literature" Chapter 13 (pp. 185-201) in Kurasaki, Karen S., Okazaki, Sumie, and Sue, Stanley (Ed.) *Asian American mental health: Assessment theories and methods*. Kluwer Academic/Plenum Publishers, New York.
- Larson, Reed W. and Verma, Suman (1999). "How children and adolescents spend time across the world: Work, play, and developmental opportunities" *Psychological Bulletin*, 125 (6): 701-737.
- Lavee, Yoav, McCubbin, Hamilton I., and Olson, David H. (1987). "The effect of stressful life events and transitions on family functioning and well-being" *Journal of marriage and the family*, Nov. (49): 857-873.
- Lau, Sing, Chan, Dennis W.K., Lau, Patrick S.Y. (1999). "Facets of loneliness and depression among Chinese children and adolescents" *Journal of social psychology*, Dec. 139(6): 713-729.
- Lee, Sharon M. (1994). "Poverty and the U.S. Asian population" *Social science quarterly*, 75 (3): 541-559.
- Lee, Meery and Larson, Reed (2000). "The Korean 'examination hell': long hours of studying, distress, and depression" *Journal of youth and adolescence*, 29(2): 249-271.

- Lempers, Jacques D. and Clark-Lempers, Dania (1990). "Family economic stress, maternal and paternal support and adolescent distress" *Journal of adolescence*, 13: 217-229.
- Long, J. Scott and Ervin, Laurie H. (2000). "Using heteroscedasticity consistent standard errors in the linear regression model" *American Statistician*, Aug. 54(3): 217-224.
- Masten, Ann S., Garmezy, Norman, Tellegen, Auke, Pellegrini, David S., Larkin, Kevin, and Larsen, Andrea (1988). "Competence and stress in school children: The moderating effects of individual and family qualities" *Child psychol. psychiat.* 29(6): 745-764.
- Mattsson, Ake (1972). "Long-term physical illness in childhood: a challenge to psychosocial adaptation" *Pediatrics*, November, 50(5): 801-811.
- McLanahan, Sara S. (1983). "Family structure and stress: A longitudinal comparison of two-parent and female-headed families" *Journal of marriage and the family*, May: 347-359.
- McLeod, Jane D. and Shanahan, Michael J. (1993). "Poverty, parenting, and children's mental health" *American sociological review*, 58 (3): 351-366.
- Offord, David R., Boyle, Michael H., Fleming, Jan E., Blum, Heather M., and Rae-Grant, Naomi I. (1989). "Ontario child health study: Summary of selected results" *Canadian journal of psychiatry*, 34: 483-491.
- Portes, Alejandro and Ruben, R. (2001). *Legacies—The story of the immigrant second generation*. University of California press.
- Perry, Jenkins M. and Gillman, S. (2000). "Parental job experiences and children's well-being: The case of two-parent and single-mother working-class families" *Journal of family and economic issues*, Summer, 21(2): 123-147.
- Priest, Simon and Welch, Jim (1998). "A psychologist's definition of stress" Gower, Aldershot.
- Rutter, M. (1979). "Protective factors in children's responses to stress and disadvantage". *Primary prevention of psychopathology, vol 3: social competence in children (pp. 49-74)*. Hanover, new Hampshire: University press of New England.
- Roeser, Robert W., Eccles, Jacquelynne S., and Strobel, Karen R. (1998). "Linking the study of schooling and mental health: selected issues and empirical illustrations at the level of the individual" *Educational psychologist*, 33(4): 153-176.
- Ross, C. E. and Duff R. S. (1982). "Medical care, living conditions, and children's well-being" *Social forces*, 61(2): 456-474.

- Sato, Yoshiko (1999). "A comparative study of socialization between Japanese and English pre-school children" *International journal of Japanese sociology*, 8 (Nov.): 51-76.
- Scales, P. and Brunk, B. (1990). "Keeping children on top of the states policy agendas" *Child welfare, Jan./Feb.* 69(1): 23-32.
- Schmid, Carol L. (2001). "Educational achievement, language-minority students, and the new second generation" *Sociology of education, extra issue*: 71-87.
- Shinn, Doh C. (1986). "Education and the quality of life in Korea and the United States: a cross-cultural perspective" *Public opinion quarterly*, 50: 360-370.
- Statistics Canada and Human Resources Development Canada (1998). "National Longitudinal Survey of Children and Youth, Cycle 3: User Guide".
- Stevenson, Stevenson W., Chen, Chuansheng, and Lee, Shin-Ying (1993). "Mathematics achievement of Chinese, Japanese, and American children: Ten years later" *Science, Vol. 259, 1 Jan*: 53-58.
- Stormshak, Elizabeth A. and Bellanti, Christina J. (1996). "The quality of sibling relationships and the development of social competence and behavioral control in aggressive children" *Developmental Psychology*, 32: 79-89.
- Thomson, Elizabeth, Hanson, Thomas L., and McInanahan, Sara S. (1994). "Family structure and child well-being: Economic resources vs. Parental behaviors" *Social forces, Sept.* 73(1): 221-242.
- Thomas, Darwin L. and Wilcox, Jean Edmonston (1987). "The rise of family theory: a historical and critical analysis" *Chapter 4 (pp. 81-102) in Sussman, Marvin B. and Steinmetz, Suzanne K. (Ed) Handbook of marriage and the family. Plenum Press.*
- Takeuchi, David T., Williams, David R., and Adair, Russell K. (1991). "Economic stress in the family and children's emotional and behavioral problems" *Journal of marriage and the family, Nov.* (53): 1031-1041.
- Teghtsoonian, K. (1997). "The work of caring for children: contradictory themes in American child care policy debates" *Women and politics*, 17(2): 77-99.
- Tocci, Cynthia M. and Engelhard, George (1991). "Achievement, parental support and gender differences in attitudes toward mathematics" *Journal of educational research*, 84: 280-286.
- U.S. Department of Health and Human Services (1999). "Mental Health: A report of the Surgeon General-executive summary" *Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse and Mental Health services Administration, Center for Mental Health services, National Institutes of Health, National Institute of Mental Health.*
(www.surgeongeneral.gov/library/mentalhealth/toc.html)

- Vandewater E. A. and Lansford J.E. (1998). "Influences of family structure and parental conflict on children's well-being" *Family relations*, Oct. 47(4): 323-330.
- Verma, Suman, Sharma, Deepali, and Larson, Reed W. (2002). "School stress in India: effects on time and daily emotions" *International journal of behavioral development*, 26(6): 500-508.
- World Health Organization (2001) "Through Children's Eyes: A collection of drawings and stories from the WHO Global School Contest on Mental Health". Dr. Myron Belfer: Department of Mental Health and Substance Dependence. (www.who.int/mental_health).
- Zauszniewski, Jaclene A., Chung, Chae Weon, Chang, Hsiu-Ju, and Krafcik, Karen (2002). "Predictors of resourcefulness in school-aged children" *Issues in mental health nursing*, 23: 385-401.
- Zhou, Min (1997). "Growing up American: The challenge confronting immigrant children and children of immigrants" *Annual review of sociology*, 23(1): 63-95.
- Zhou, Min, Bankston, Carl L. (1998). "Experiences in adaptation to American schools" Chapter 6 (pp. 131-159) in *Growing up American: How Vietnamese children adapt to life in the United States*. Russell Sage Foundation.
- Zhou, Min, Bankston, Carl L. (2000). "Immigrant and native minority groups, school performance, and the problem of self-esteem" *Southern sociological society (Association Paper, 2000)*.