

Gender, Acculturation, and Protective Factors in the
Mental Health of Southeast Asian Youth in British Columbia

by

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Abstract

Purpose: There is a substantial gap in research that examines mental health in immigrant and visible minority groups. Even less research has considered the link between acculturation, mental health, and protective factors among these adolescents. This study investigated gender and acculturation-related differences in mental health and identified protective factors that buffer against emotional distress among Southeast Asian youth in British Columbia.

Methods: A secondary analysis was conducted using data from the 2008 BC Adolescent Health Survey. Measures included mental health (recent stress, despair, self-harm, suicide, and self-esteem); acculturation (foreign-born status, length of time in Canada, and language spoken at home); and theorized protective factors (family connectedness, school connectedness, and ethnic identity connectedness). Gender differences in level of protective factors were examined using general linear modeling and age-adjusted multivariate models predicting extreme stress and extreme despair were conducted separately by gender and included acculturation measures as well as protective factors.

Results: Southeast Asian girls reported significantly higher rates of mental health issues than boys including self-harm activity, suicidal intent, and attempted suicide. In addition, significantly greater numbers of Southeast Asian girls experienced extreme levels of stress and despair. In bivariate testing, acculturation was not significantly related to mental health. However, in the multivariate models, boys and girls who had lived in Canada for less than 5 years were more likely to report extreme levels of despair; girls in Canada for less than 10 years were also more likely to report extreme despair as well as extreme stress. Significant protective factors for boys and girls were family connectedness for both stress and despair as well as school connectedness but only among girls. Higher levels of ethnic identity connectedness were associated with lower odds of despair among boys but higher odds of stress among girls.

Discussion and Implications: Immigrant teens may be at higher risk for emotional distress, yet gender differences still exist in the mental health of Southeast Asian youth. Future research must account for gender and acculturation-related differences in mental health and to assess for protective factors that may help mitigate the negative effects of stressors on adolescent mental health.

Preface

Ethical approval for this study was received from the Behavioral Research Ethics Board at the University of British Columbia (UBC BREB Number H11-02950).

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Dedication

For Mama and Papa

GENDER, ACCULTURATION, AND PROTECTIVE FACTORS IN THE MENTAL HEALTH OF SOUTHEAST ASIAN YOUTH IN BRITISH COLUMBIA

Twenty percent of Canada's population is foreign-born; immigrant children have become the fastest-growing group in the child population; and 34 percent of youth living in Canada are reared in immigrant families (Statistics Canada, 2010). Every year, approximately 35,000 immigrant and refugee youth arrive in Canada and nearly 80 percent of these adolescents are 'visible minorities' (Citizenship and Immigration Canada, 2009). Southeast Asian groups and Filipinos represented the 7th and 4th largest visible minority groups respectively in 2006 (Statistics Canada, 2010); while in 2009 the Philippines ranked second in origin country for new immigrants (Citizenship and Immigration Canada, 2009). Although Southeast Asian youth represent a significant population in Canada, there remain substantial gaps in what we know about their health and limited research especially on their mental health.

The mental health of Canadian youth merits considerable attention, given well-established associations among chronic stress, physical illness, healthy human development, and positive mental health (Rew, 2005; Vo & Park, 2008). Recent findings on the cumulative effect of stress on mental health over the life course have challenged health care providers and researchers to explore factors in early life that may lead to serious mental health conditions in adulthood (Shonkoff, Boyce, & McEwen, 2009). Although there has been some focus on factors that contribute to mental health in the general population, it is important to examine how – and if – similar relationships and patterns exist for Southeast Asian youth in British Columbia.

Questions around the mental health of recent immigrants are especially salient given widening income inequities between newcomers and Canadian-born families and the well-established link between poverty and mental health (First Call: BC Child and Youth Advocacy

Coalition, 2011). Migration and the related process of acculturation can also be stressful experiences for immigrant youth, especially in the context of their developmental needs to experience a sense of belonging and to establish a personal identity within potentially distinct cultural spheres. These normative tasks may be further complicated by experiences of racial discrimination and stigmatization. Conversely, existing research has also demonstrated the remarkable resilience of immigrant children, despite greater risks, compared to their non-immigrant counterparts, for developing mental health problems (Beiser, Feng, Hyman, & Tousignant, 2002).

The intersections between gender, acculturation and mental health among Southeast Asian youth are the focus of this thesis project. Additionally, the research study provides a current snapshot of the mental health status of this population and explores the role of known protective factors, such as family connectedness, school connectedness and ethnic identity connectedness, in helping to buffer the effects of various life stressors on mental health. Lastly, implications for nursing practice are discussed and recommendations for future research proposed based on the findings.

The study is organized into five major sections beginning with an introduction to the research problem. Section II provides a brief review of relevant literature on mental health, immigrant youth and acculturation and proposes a theoretical framework to help guide the research methods described in the following section on Methodology. Section IV presents the results of the study and the final section provides a discussion of the major findings.

Background

Mental Health of Young Canadians

The mental health of children and adolescents is increasingly recognized as a public health concern in Canada. National statistics estimate that highly prevalent mental disorders may affect up to 20 percent of young individuals in Canada (Georgiades, Boyle, Kimber, & Rana, 2011). According to a recent report, 84% of youth in British Columbia reported feeling some stress or pressure in the last month and 14% indicated experiencing severe stress that restricted their ability to work or function properly (Smith et al., 2011). Six percent of adolescents in BC reported feeling levels of sadness, discouragement and hopelessness to the extent that “they wondered if anything was worthwhile and had difficulty functioning properly” (Smith et al.).

As previous research has demonstrated, how an adolescent responds- physically and psychologically- to emotional distress may vary by gender and age (Rew, 2005). Males and younger youth were less likely than females and older youth to report the highest levels of stress (Smith et al., 2011). Twenty two percent of female youth compared to 12 percent of male youth in BC indicated a history of self-harm; and females were more likely than males to report suicidal ideation and suicide attempt (Smith et al.). Risk factors for negative mental health include experience of sexual abuse, physical abuse, experience of harassment, having an unstable home life, living in poverty, and immigrant status (Smith et al.).

Immigration, Acculturation and Protective Factors

Immigrant children in Canada, compared to their non-immigrant counterparts, are more than twice as likely to live in poverty and experience greater exposure to social and economic difficulties (Beiser et al., 2002). Migration-related factors such as proficiency in the official language and length of residence may also affect socioeconomic status (Beiser, 2005). For

instance, Beiser et al. (2002) found that over 30% of immigrant families in Canada live below the official poverty line during their first 10 years of residence in Canada. Among youth in BC, those living in extreme poverty were significantly more likely to report mental or emotional health conditions, suicidal intent, and suicide attempt (Smith et al., 2011). Although studies have examined the relationship between income and the mental health of children in the general population, poverty or material deprivation appears to have a unique effect among immigrant children in Canada (Beiser et al., 2002).

It is generally accepted that the processes of migration and resettlement may create unique challenges and potentially stressful experiences for immigrant youth (Salehi, 2010; Gungor, 2011). However, the body of literature on mental health among young immigrants is riddled with inconsistencies and conflicting results (Beiser, 2005; Stevens & Wollebergh, 2007; Georgiades, 2011). Findings based on studies from the 1980s and 1990s show lower levels of mental health issues, such as emotional problems, among children brought up in immigrant families, compared to non-immigrant children; however, more recent studies suggest that differences in the mental health of young immigrants may vary by specific health outcome, developmental period, and cohort effects (Georgiades et al.). Whereas lower levels of behavioral problems have been observed in immigrant youth compared to non-immigrant youth, immigrant adolescents appear to be at increased risk for emotional problems relative to non-immigrant cohorts (Hamilton, Noh & Adlaf, 2009).

A major developmental task during adolescence is identity development, a process which may be complicated for ethnic groups by the additional task of integrating their cultural or ethnic identity into their personal development of self (Rew, 2005). The concept of ethnic identity connectedness, as defined by Phinney (1992), is the extent to which an individual feels a sense of

belonging and commitment to his or her ethnic group. Previous research has found that adolescents who identified with their ethnic culture demonstrated more positive psychological adaptation and stronger indicators of mental health than those youth who did not identify as strongly to their ethnic group (Berry, Phinney, Sam, & Vedder, 2006¹).

Results from Berry et al.'s (2006¹) international study of acculturation and adaptation among immigrant youth demonstrate that adolescents who followed an integration pathway in acculturating to their new societies, that is those who retained their ethnic identity while developing connections with the dominant national society, experienced more positive psychological and sociocultural adaptation. Conversely, youth who were involved in neither culture, or who experienced confusion about their situation, experienced the lowest levels of adaptation (Berry et al.). Cultural connectedness, however, has not been consistently associated with positive mental health in the general population of youth and in a recent report was found to be associated with a decreased likelihood of positive mental health (Smith et al., 2011). The relationship between cultural connectedness and mental health is not fully understood and has yet to be examined among immigrant and Canadian-born Southeast Asian youth.

According to recent reviews, there is a paucity of current and reliable evidence on the mental health of immigrant youth in Canada (Georgiades et al., 2011; Salehi, 2010). Although some research has been conducted on the health of immigrant adolescents and youth, few studies have recognized the heterogeneity of immigrant populations in terms of origin country and levels of acculturation into Canadian society (Beiser, 2005; Salehi, 2010; Georgiades et al., 2011). Research findings from the National Longitudinal Survey of Children and Youth (NLSCY) are limited due to the survey's significant underrepresentation of immigrant families (Beiser et al., 2002; Ma, 2002).

Scholars in the field have advanced several recommendations for future research including a closer examination of the relationship between acculturation and adolescent health, distinguishing between newcomer and longer-term immigrant youth, and the application of acculturation theory in public health research (Flores & Brotanek, 2005; Salehi, 2010; & Cote, 2011). Some researchers argue against uni-dimensional models of acculturation and recommend more complex conceptualizations of acculturation beyond length of residence in the receiving country and language proficiency (Abraido-Lanza et al., 2006; Berry et al., 2006²). However, collecting the type of data needed for multi-dimensional models of acculturation requires considerable resources and can be difficult to achieve through population health surveys. Despite the limitations of unidimensional models, examining health outcomes based on immigrant status and length of residence in Canada may still provide useful information in studying potential relationships between acculturation and mental health at the population level.

There is a growing body of evidence on the importance of protective factors, such as family and school connectedness, in mitigating the effects of risk factors for various adolescent health outcomes (Saewyc & Tonkin, 2008; Saewyc & Edinburgh, 2010). Specifically, current research has demonstrated strong associations between mental health and connectedness to families and schools among youth in the general population (Smith et al., 2011). Family connectedness, a measure that assesses an adolescent's relationship with his or her parents and family, and school connectedness, youth's perception of their school environment and their relationships with their teachers, have emerged as two factors most consistently associated with positive mental health (Smith et al., 2011). Additionally, cultural connectedness, or ethnic identity, has been associated with positive psychological adaptation among immigrant youth (Ong, Fuller-Rowell & Phinney, 2010).

What is yet to be understood is whether the relationship between mental health and known protective factors is also found among visible minority groups in Canada, such as Southeast Asian youth. Migration-related factors such as length of residence in Canada may interact with the ecological contexts, such as families and schools, which support adolescent mental health. Moreover, the relationships between connectedness to ethnic identity, acculturation, and mental health necessitate greater scrutiny, especially among immigrant and newcomer youth in the process of navigating an entirely new physical and social context.

A significant gap in the literature exists. Current research is needed on the prevalence of mental health indicators among Southeast Asian youth. Additionally, health professionals must gain a greater understanding of the factors that may affect the mental health of immigrant and visible minority youth in Canada. To the author's knowledge, no studies to date have addressed these questions using a population-based Canadian sample of Southeast Asian youth.

Theoretical Framework

The proposed study will draw on concepts from ecological theory as well as theories of acculturation and adolescent ethnic identity development (Bronfenbrenner, 1977; Abraido-Lanza et al., 2006; Ong, Fuller-Rowell, & Phinney, 2010). While ecological theory recognizes the impact of both personal and ecological environments on adolescent development, cross-cultural identity development theories have helped emphasize the role of acculturation and ethnic identity on psychological well being (Berry et al., 2006¹). For immigrant youth, mental health evolves from the interactions among individual factors, such as gender and age, ecological influences such as connectedness to family and schools, and migration-related factors such as level of acculturation and ethnic identity.

Research Methods

Overview

This section will discuss the research methods used in the study to explore three overarching research questions:

1. What is the prevalence of mental health indicators such as self-esteem, stress, despair, self-harm, and suicide among Southeast Asian youth in BC?
2. Are there differences in reporting extreme stress and despair, based on age, gender, acculturation, ethnic identity, family connectedness or school connectedness?
3. What are the interrelationships between level of acculturation and ethnic identity, family connectedness, school connectedness, and emotional distress among Southeast Asian boys and girls?

Study Design

The present study explored the mental health status of Southeast Asian adolescents in British Columbia, who have migrated from countries in Southeast Asia including the Philippines, Vietnam, Cambodia, Laos, Indonesia and Thailand. A secondary analysis of data from the 2008 British Columbia Adolescent Health Survey was conducted to describe the prevalence of mental health indicators in this population and to examine the relationships between acculturation, ethnic identity connectedness, family connectedness, school connectedness, and mental health. The study population included participants in the BC Adolescent Health Survey who identified as Southeast Asian and who were either foreign-born (immigrants) or Canadian-born.

Ethical approval was obtained from the Behavioral Research Ethics Board at the University of British Columbia. In addition, permission to access the survey data was received from McCreary Centre Society.

Participatory Research Approach

A community-based participatory research approach guided the research design and interpretation of the findings. Members of the Southeast Asian communities in the Greater Vancouver area, health care providers involved in adolescent health services, and, most importantly, youth from McCreary Centre Society's Youth Advisory Council were invited early in the project to participate in an advisory role in the study. These seven individuals formed a community advisory group that met with the research team prior to data analysis and provided feedback on the study's objectives, research questions, and proposed analysis.

Following data analysis, the advisory group was re-convened to share preliminary findings from the study and to seek the community group's perspectives on ways to meaningfully and appropriately interpret the findings. Engaging the Southeast Asian community in the research process helped to ensure that the objectives and design of the study were relevant and appropriate. Further, it allowed representatives from the cultural groups under study to participate in the examination of issues that directly affect their lives, families and communities.

Data Set: The British Columbia Adolescent Health Survey IV, 2008

To test our research questions, we conducted a quantitative analysis of data from the 2008 British Columbia Adolescent Health Survey (BC AHS) IV. The BC AHS is a provincial cross-sectional survey that collects information on health and related socio-demographic characteristics of school-aged youth in BC to inform health care services and health promotion strategies in the province. The BC AHS IV samples approximately 10% of the provincial population of public school students in grades 7 to 12. The target population includes all students enrolled in grades 7 to 12 in regular public schools in BC using a stratified, cluster-sampling method.

In the original survey, participants from randomly selected classes in participating school districts were approached through letters sent to students and parents of students. The letter explained the questionnaire, its risks and benefits, and ways in which parents and students could access more detailed information about the topics in the survey. Depending on the school district, signed parental consent was required for students, especially younger students, or else parents were notified and encouraged to help their students make the decision about participating. However, students were considered able to consent to participate in the survey themselves (in some school districts, this was only older students). Students were given a second information sheet during the class period during which the survey was administered and were reminded that the survey was voluntary, that they could refuse to answer any questions, and that they could stop at any time. Students who completed the survey and handed it in were assumed to have given consent. Students who did not give assent were provided with other activities during the survey administration.

Data for the BC AHS IV were collected between February and June 2008, with public health nurses and nursing students administering the survey during class. The overall response rate in 2008 was 66% and the survey data from the 29,315 students who participated in the survey and provided usable data are weighted to adjust for differential probability of selection and scaled to reflect the 283,120 youth attending public schools in the province in grades 7 through 12 at the time of the survey. For the present study, participants who selected the response “Southeast Asian (e.g. Cambodia, Filipino, Indonesian, Vietnamese, etc.)” to the survey question “What is your cultural or ethnic background?” were selected from the full dataset. Participants who selected Southeast Asian as well as another response were also included.

The BC AHS IV was a paper-pencil survey containing 147 questions about a range of issues related to adolescent health including perceived physical and emotional health as well as sexual behavior, suicide, abuse and violence, and perceived peer social norms. The survey also collected socio-demographic information such as age, gender and ethnic background. Our study variables were developed from several questions in the survey including the family connectedness and school connectedness scales adapted from the National Longitudinal Study of Adolescent Health conducted in the United States (Resnick et al., 1997). To examine the concept of ethnic identity, we used a set of questions in the survey that were derived from Phinney’s Multigroup Ethnic Identity Measure (Phinney, 1992). Questions in the survey on self-harm behavior, suicidal intent, and suicide behavior were examined as components of mental health. The construct of self-esteem was also explored as an indicator of positive mental health and in the BC AHS IV was measured using an adapted Rosenberg’s self-esteem scale. Finally, two items from the emotional distress scale in the BC AHS IV, one question that measured stress and another despair, were chosen as key mental health indicators in multivariate analyses.

Table 3.1 Study Variables

CONCEPT	SURVEY ITEM in BC AHS	OPERATIONALIZATION
Gender	Q2. What is your sex?	Dichotomous. Response options: “male” and “female”.
Adolescent Development	Q1. How old are you?	Continuous. Response options: 12 and younger to 19 and older.
Acculturation	Q5. Were you born in Canada?	Dichotomous. Response options: Canadian-born and foreign-born.
	Q6. How long have you lived in Canada?	Categorical. Response options: less than 2 years, 2 to 5 years, 6 to 10 years, more than 10 years, all my life. Recoded into new categories: less than 5 years, less than 10 years and more than 10 years.
	Q9. How often do you speak a language other than English at home (such as Cantonese, Punjabi, French, etc.)?	Categorical. Response options: never, sometimes, most of the time. Recoded into dichotomous variable 'most of the time' where 0= never or sometimes and 1= most of the time.
Cultural connectedness	Multi-Ethnic Identity Measure-R scale	Continuous (0 – 1). Standardized score determined from average of all responses to the 6 items in the Multi-Ethnic Identity Measure-R scale with 1 representing the highest level and 0 the lowest level of connectedness. Psychometric evaluation demonstrates internal reliability of Cronbach’s alpha = .89 in 2008 (Saewyc & Homma, 2010).
	<p>Q8. Thinking about the ethnic or cultural group that you most identify with, how much do you agree or disagree with the following statements?</p> <ul style="list-style-type: none"> • I have spent time trying to find out more about my ethnic group, such as its history, traditions, and customs. • I have a strong sense of belonging to my own ethnic group. • I understand what my ethnic group means to me. • I participate in cultural practices of my own group, such as special food, music, or customs. • I have often talked to other people in order to learn more about my ethnic group. • I feel a strong attachment towards my own ethnic group. 	

Family connectedness	<p>Q24. How close do you feel to your mother (or the person you consider to be your mother)?</p> <p>Q25. How much do you think your mother (or the person you consider to be your mother) cares about you?</p> <p>Q26. How close do you feel to your father (or the person you consider to be your father)?</p> <p>Q27. How much do you think your father (or the person you consider to be your father) cares about you?</p> <p>Q28. How true are the following statements?</p> <ul style="list-style-type: none"> • Most of the time, my mother (or the person I consider to be my mother) is warm and loving toward me. • Overall, I am satisfied with my relationship with my mother (or the person I consider to be my mother). • Most of the time, my father (or the person I consider to be my father) is warm and loving toward me. • Overall, I am satisfied with my relationship with my father (or the person I consider to be my father). <p>Q29. How much do you feel that people in your family understand you?</p> <p>Q30. How much do you feel that you and your family have fun together?</p> <p>Q31. How much do you feel that your family pays attention to you?</p>	<p>Continuous (0 – 1). Standardized score determined from average of all responses to the 11 items in the scale with 1 representing the highest level and 0 the lowest level of connectedness.</p> <p>Psychometric evaluation demonstrates internal reliability of Cronbach's alpha = .88 in 2008 (Saewyc & Homma, 2010).</p>
School connectedness	<p>Q39. How much do you feel that your teachers care about you?</p> <p>Q40. Since school started this year, how often have you had trouble getting along with your teachers?</p> <p>Q42. How much do you agree or disagree with the following statements?</p> <ul style="list-style-type: none"> • I feel like I am part of my school. • I am happy to be at my school. • The teachers at my school treat me fairly. • I feel safe at my school. 	<p>Continuous (0 – 1). Standardized score determined from average of all responses to the 6 items in the scale with 1 representing the highest level and 0 the lowest level of connectedness.</p> <p>Psychometric evaluation demonstrates internal consistency reliability of Cronbach's alpha = .83 in 2008 (Saewyc & Homma, 2010).</p>

Self-esteem	Q108. BC AHS Self-Esteem Scale drawn from the Rosenberg Self-Esteem Scale.	Continuous (0 – 1). Psychometric evaluation of the scale demonstrates internal consistency reliability of Cronbach's alpha = .88 based on 2008 data (Saewyc & Homma, 2010).
Stress	Q109. Item from emotional distress scale: During the past 30 days, have you felt you were under any strain, stress or pressure?	Ordinal. Response options: "Not at all" "Yes, a little/about usual" "Yes, some/more than usual" "Yes, quite a bit of pressure" "Yes, almost more than I could take" Recoded into dichotomous variable 'extreme stress' where 0= "Not at all" or "Yes, a little/about usual" 1= "Yes, some/more than usual", "Yes, quite a bit of pressure" and "Yes, almost more than I could take".
Despair	Q112. Item from emotional distress scale: During the past 30 days, have you felt so sad, discouraged, hopeless or had so many problems that you wondered if anything was worthwhile?	Ordinal. Response options: "Not at all" "A little" "Some, enough to bother me" "Quite a bit" "Extremely so, to the point I couldn't do my work or deal with things" Recoded into dichotomous variable 'extreme despair' where 0= "Not at all" or "A little" 1= "Some, enough to bother me", "Quite a bit" or "Extremely so, to the point I couldn't do my work or deal with things"
Self-harm behavior	Q107. How often have you cut or injured yourself on purpose (but were not trying to kill yourself)?	Categorical. Response options: "never", "1 to 2 times"; "3 or more times". Recoded into new variable 'at least 1 incidence of self-harm behavior' where 0= never and 1= at least 1 time
Suicidal intent	Q119. During the past 12 months, did you ever seriously consider killing yourself (attempting suicide)?	Dichotomous.

Suicidal behavior	During the past 12 months, how many times did you actually attempt suicide?	Categorical. Response options: “0 times”, “1 time”, “2 or 3 times”, “4 or 5 times”, and “6 or more times”. Recoded into new variable 'at least 1 suicide attempt' where 0= never and 1= at least 1 time
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Data Analysis

Data analyses were conducted using Statistical Package for the Social Sciences (SPSS) version 19. Within SPSS, the software module Complex Samples was used to incorporate the complex random cluster-stratified design of the BC Adolescent Health Survey and to account for this sampling frame into the analyses. Descriptive statistics were carried out to explore and describe the variables used in the analyses. Complex Samples frequency distributions were used to describe demographic and migration-related characteristics of the study population such as gender, foreign-born status, length of time lived in Canada, and language spoken at home other than English as well as to determine the prevalence of self-reported mental health indicators including stress, despair, self-esteem, self-harm behavior, suicide intent, and suicidal behavior. Distribution, measures of central tendency, variability, and missing data were also analyzed for interval level data such as age, self-esteem, family connectedness, school connectedness and the MEIM.

Several variables were recoded to allow for the analysis of certain concepts as operationalized in this study. For example, length of time lived in Canada was collapsed into three categories (less than 5 years, between 5 and 10 years, and over 10 years or all my life), a decision based on previous research on the links between length of stay and health status among

immigrant populations as well as on feedback from members of the community advisory group who were themselves newcomers and immigrants to Canada.

The distribution of the items stress and despair from the emotional distress scale were first examined individually. Following consultations with the thesis committee, it was agreed that both items would be dichotomized to extreme levels and low levels of stress and despair for both methodological reasons and clinical relevance. As health care providers, the committee understood the need for clearer demarcations between what levels of stress or despair may potentially be of clinical significance. Following the decision to recode these variables, descriptive frequencies were performed again to ensure consistency between the original data and recoded variables.

General linear modeling tests in Complex Samples were used to explore potential differences in connectedness to ethnic identity, family connectedness and school connectedness scores based on the three indicators of acculturation chosen for this study. These analyses helped to determine whether migration factors such as the length of time in Canada were related to the extent to which youth felt connected to their families and schools or their sense of belonging to an ethnic group. Similarly, cross-tabulation tests in Complex Samples were conducted to examine relationships between mental health, gender and acculturation. Exploring differences in the patterns of stress and despair between girls and boys was also important in supporting further analyses that were stratified by gender. Bivariate logistic regression was used to test associations between mental health and interval-level predictor variables in the study including age, family connectedness, school connectedness, and ethnic identity connectedness (MEIM).

Finally, multiple logistic regression tests were performed to examine the relationships between mental health and the set of variables hypothesized to have an effect on stress and despair as well as the relative significance of these various factors in the hypothesized model. Regression modeling allowed the investigators to assess the overall robustness of the model in predicting the outcome variables and to identify factors that decrease or increase the likelihood of feeling extreme levels of stress and despair. All the variables explored in bivariate analyses were included into the regression models regardless of whether they were statistically significant at the bivariate level. This was to assess for potential interaction effects between the set of predictors as well as to examine the predictive value of the overall hypothesized model. The predictor variables were placed into the model in one block and the forced entry method or ‘enter’ was used to conduct the regression analyses. Inter-correlations were assessed to test for multicollinearity. No correlations between predictor variables were found at 0.7 or higher.

Analyses were stratified by gender, resulting in four regression models to examine stress and despair separately for boys and girls. This decision was based on findings from previous studies that demonstrate gender differences in mental health (Gilkinson, 2010; Rudolph, 2002; Smith et al., 2011). Conducting the analyses separately by gender also allowed us to explore whether the relationships between protective factors and emotional distress were similar or different for boys and girls. In other words, it not only showed us differences in prevalence of mental health indicators but also potentially unique interactions between the variables in the models based on gender.

Statistical results that yielded p values of less than .05 were considered significant. Standard errors were calculated using SPSS Complex Samples software and only results with standard errors of less than 12.99 are reported as per the survey methodology used for the BC AHS (Saewyc & Green, 2009). The percent of missing responses for all variables were less than 10% and cases with missing responses were excluded from the statistical analyses separately for each analysis.

Results

Overview

This chapter presents the key findings of this research study. It begins with a description of the sample including socio-demographic characteristics and the prevalence of specific mental health indicators in this population. It then follows with sections reporting on the relationships between mental health, gender, and migration-related factors. Finally, the chapter concludes with the results of multivariate analyses to test the models proposed to predict stress and despair among Southeast Asian youth in BC.

Characteristics of Southeast Asian Youth in British Columbia

This section describes the demographic characteristics of school-aged Southeast Asian youth in British Columbia based on analysis of the BC Adolescent Health Survey (BC AHS) IV conducted in 2008. The results presented in this section are derived from the weighted and scaled data to represent the BC adolescent population enrolled in grade 7 to 12 classrooms.

Approximately one in twenty students (5%) who participated in the British Columbia Adolescent Health Survey in 2008 identified as Southeast Asian. The unweighted and unscaled number of Southeast Asian participants is 1225 and the population estimate 14,283 youth across BC. There are significantly more Southeast Asian girls than boys, 55.8% compared to 44.2% respectively. Average age of the sample was approximately 15 years old and there was no significant difference in mean age by gender (*see Table 4.1*).

Most of the Southeast Asian youth in the sample (61.3%) were born in Canada, while about one in three (38.6%) were born in a foreign country. A large majority (69.4%) had lived in Canada for over 10 years and most (65.7%) never or only occasionally spoke a language other than English at home.

Level of acculturation did not differ significantly by gender in terms of being Canadian-born or foreign-born, time lived in Canada, or for speaking a language other than English at home. In short, there was no significant relationship between acculturation and gender. Neither was there a significant association between speaking a language other than English at home and age for both boys and girls. However, those born in a foreign country were significantly older than Canadian-born youth, a pattern observed among boys and girls. Among girls, mean age did not vary significantly based on length of time lived in Canada. However, Southeast Asian boys who had lived in Canada less than 5 years were significantly older than Canadian-born youth.

Table 4.1 Characteristics of Southeast Asian Youth in BC

	Gender		Test Statistic	<i>df</i>	<i>p</i>
	Boys	Girls			
% within entire pop.	44.2%	55.8%	*Adjusted $F = 5.85$	1	< .05
Mean age in years (SE)	14.86 (.08)	14.84 (.09)	$t = 1.90$	1	.85
Foreign born, %	39.8%	37.8%	Adjusted $F = .403$	1, 499	.53
Time lived in Canada, %			Adjusted $F = .034$	2, 987	.97
Less than 5 years	17.9%	18.5%			
5 to 10 years	12.5%	12.4%			
More than 10 years	69.6%	69.1%			
Language other than English spoken at home most of the time %	33.8%	34.8%	Adjusted $F = .104$	1, 499	.75

*The adjusted F is a statistical test used in IBM SPSS Complex Samples and is a variant of the Rao-Scott chi-squared statistic.

Mental Health and the Gendered Question

In general, Southeast Asian youth in BC report relatively high self-esteem although Southeast Asian boys reported higher self-esteem scores on average compared to girls (*see Table 4.2*). Most Southeast Asian youth (83.2%) had never cut or injured themselves intentionally. However, approximately 17% did report at least one instance of self-harm behavior, with Southeast Asian girls more likely on average to report self-harm than boys, 20.2 % vs. 12.5 % respectively (*see Table 4.2*).

Although the majority had never considered suicide, 12.7% of Southeast Asian youth reported suicidal ideation in the past 12 months. Southeast Asian girls reported significantly higher rates of suicidal ideation (15.7%) compared to boys (8.9%). In terms of actual suicide attempts, 6.6% of Southeast Asian students in BC reported attempting suicide in the past 12 months. Of note, Southeast Asian girls reported significantly higher prevalence of suicide activity compared to boys – greater than double the rates reported by their male counterparts (*see Table 4.2*).

Significant relationships between gender and mental health were also observed in the levels of extreme stress and despair reported by youth in this population. Southeast Asian girls were more likely than boys to report feeling under strain, stress or pressure in the past 30 days that was “almost more than [they] could take.” In addition, they reported significantly higher levels of despair compared to boys, as indicated by a greater proportion of extreme responses to the BC AHS question on despair, “During the past 30 days, have you felt sad, discouraged, hopeless, or had so many problems in past 30 days that wondered if anything was worthwhile?”

Table 4.2

Gender Differences in Mental Health Among Southeast Asian Youth

	Gender		Test Statistic	<i>df</i>	<i>p</i>
	Boys	Girls			
Self-esteem, mean score range 0-1 (SE)	.76 (.01)	.68 (.01)	$t = 5.93$	492	.000
Self-harm behavior at least once in past 12 months, % (95% CI)	12.5% (9.8, 15.9)	20.2% (17.0, 23.8)	*Adjusted $F = 10.81$	1, 499	.001
Considered suicide in the past 12 months, % (95% CI)	8.9% (6.8, 11.6)	15.7% (12.6, 19.3)	Adjusted $F = 12.07$	1, 499	.001
Attempted suicide in the past 12 months, % (95% CI)	3.9% (2.6, 5.8)	8.6% (6.4, 11.5)	Adjusted $F = 11.26$	1, 499	.001
Feeling under strain, stress or pressure in past 30 days that was “almost more than [they] could take”, % (95% CI)	10.6% (8.0, 14.0)	17.2% (14.2, 20.7)	Adjusted $F = 7.94$	1, 499	.005
Feeling sad, discouraged, hopeless or had so many problems in past 30 days that wondered if anything was worthwhile and responded “extremely so, to the point I couldn’t do my work or deal with things”, % (95% CI)	5.1% (3.4, 7.5)	9.8% (7.6, 12.5)	Adjusted $F = 7.94$	1, 499	.005

*The adjusted F is a statistical test used in IBM SPSS Complex Samples and is a variant of the Rao-Scott chi-squared statistic.

Overall, Southeast Asian girls experienced poorer mental health compared to their male peers. Approximately 1 in 5 girls had engaged in self-harm behavior, 1 in 6 had considered suicide and nearly 1 in 10 had attempted suicide in the past 12 months. Gender-based differences were also observed in reporting problematic levels of stress and despair, with nearly 1 in 5 Southeast Asian girls indicating the highest level of stress, and 1 in 10 experiencing levels of despair that restricted their ability to cope or function.

Acculturation and Mental Health: Exploring the Healthy Immigrant Effect

Contrary to what was expected, there were no significant relationships between acculturation and mental health of Southeast Asian youth, even when examined by gender. None of the measures of acculturation used in the study – neither foreign-born status, length of time lived in Canada, nor speaking a language other than English at home most of the time – were linked to the mental health indicators in this population, whether self-harm behavior, suicidal intent, suicide behavior, stress or despair. Self-harm behavior was no more likely among foreign-born than Canadian-born Southeast Asian youth ($p = .38$); among youth who spoke a language other than English at home most of the time compared to those who did not ($p = .79$); or among newcomers to Canada compared to youth who had lived in Canada for the majority of their lives ($p = .09$). Those youth who had lived in Canada longer were no more likely than new immigrants to report at least 1 incidence of self-harm in the past 12 months.

Foreign-born and newcomers were no more likely to report suicidal intent in the past 12 months compared their Canadian-born peers and their more acculturated counterparts in terms of language (*see Tables 4.3.1 and 4.3.2*). Neither were there differences based on time lived in Canada (*see Tables 4.3.3 and 4.3.4*). Similarly, previous suicide attempt was not linked to foreign-born status, time lived in Canada or speaking a language other than English at home (*see Tables 4.3.5 and 4.3.6*). Reporting at least 1 suicide attempt in the last 12 months was not related to foreign-born status among Southeast Asian girls or boys; time lived in Canada for girls or boys; or speaking a language other than English most of the time at home for girls or boys. Lastly, experiencing extreme levels of stress and despair were not significantly associated with Canadian-born status, time lived in Canada, or speaking a language other than English at home most of the time.

Table 4.3.1

Immigrant Status and Mental Health of Southeast Asian Girls

	Immigrant Status		Adjusted <i>F</i>	<i>df</i>	<i>p</i>
	Foreign-born	Canadian-born			
Self-harm behavior at least once in past 12 months, % (95% CI)	21.9% (16.7, 28.3) SE 3.0%	19.1% (15.2, 23.7) SE 2.2%	0.62	1, 330	.43
Considered suicide in past 12 months, % (95% CI)	13.5% (9.5, 18.7) SE 2.3%	17.0% (13.1, 21.8) SE 2.2%	1.32	1, 330	.25
Attempted suicide in past 12 months, % (95% CI)	9.0% (5.8, 13.6) SE 1.9%	8.4% (5.9, 11.9) SE 1.5%	0.05	1, 330	.82
Extreme stress in past 30 days, % (95% CI)	15.1% (10.8, 20.7) SE 2.5%	18.5% (14.8, 22.8) SE 2.0%	1.13	1, 330	.29
Extreme despair in past 30 days, % (95% CI)	11.3% (7.6, 16.4) SE 2.2%	8.9% (6.5, 12.1) SE 1.4%	0.89	1, 330	.35

Table 4.3.2

Immigrant Status and Mental Health of Southeast Asian Boys

	Immigrant Status		Adjusted <i>F</i>	<i>df</i>	<i>p</i>
	Foreign-born	Canadian-born			
Self-harm behavior at least once in past 12 months, % (95% CI)	13.7% (9.2, 20.0) SE 2.7	11.8% (8.5, 16.1) SE 1.9	0.34	1, 285	.56
Considered suicide in past 12 months, % (95% CI)	11.6% (7.6, 17.2) SE 2.4	7.1% (4.9, 10.2) SE 1.3	2.84	1, 285	.09
Attempted suicide in past 12 months, % (95% CI)	4.2% (2.2, 7.9) SE 1.4	3.7% (2.2, 6.2) SE 1.0	0.09	1, 285	.77
Extreme stress in past 30 days, % (95% CI)	12.0% (7.5, 18.6) SE 2.8	9.8% (6.8, 13.8) SE 1.7	0.47	1, 285	.49
Extreme despair in past 30 days, % (95% CI)	6.2% (3.5, 10.8) SE 1.8	4.4% (2.5, 7.5) SE 1.2%	0.75	1, 285	.39

Table 4.3.3

Time Lived in Canada and Mental Health of Southeast Asian Girls

	Time Lived in Canada			Adj F^*	df	p
	< 5 years	5 – 10 years	> 10 years			
Self-harm behavior in past 12 months, % (95% CI)	25.0% (17.1, 35.0) SE 4.6	17.6% (10.6, 27.6) SE 4.3	19.2% (15.4, 23.7) SE 2.1	0.95	2, 642	.39
Considered suicide in past 12 months, % (95% CI)	11.9% (6.9, 19.9) SE 3.2	17.7% (10.5, 28.4) SE 4.5	16.1% (12.5, 20.6) SE 2.1	0.70	2, 652	.50
Attempted suicide in past 12 months, % (95% CI)	9.8% (5.3, 17.6) SE 3.0	10.8% (5.8, 19.3) SE 3.3	7.6% (5.2, 10.8) SE 1.4	0.64	2, 645	.53
Extreme stress in past 30 days, % (95% CI)	11.9% (6.8, 20.1) SE 3.3	22.7% (14.4, 34.0) SE 5.0%	17.6% (14.1, 21.8) SE 2.0	1.77	2, 657	.17
Extreme despair in past 30 days, % (95% CI)	12.5% (7.2, 20.8) SE 3.4	14.0% (7.6, 24.4) SE 4.2	8.3% (6.0, 11.2) SE 1.3	1.65	2, 659	.19

*The adjusted F is a statistical test used in IBM SPSS Complex Samples and is a variant of the Rao-Scott chi-squared statistic.

Table 4.3.4 Time Lived in Canada and Mental Health of Southeast Asian Boys

	Time Lived in Canada			Adj <i>F</i>	<i>df</i>	<i>p</i>
	< 5 years	5 – 10 years	> 10 years			
Self-harm behavior in past 12 months, % (95% CI)	19.5% (11.5, 31.2) SE 5.0	9.2% (3.6, 21.6) SE 4.2	11.4% (8.4, 15.2) SE 1.7	1.85	2, 570	.16
Considered suicide in past 12 months, % (95% CI)	12.1% (6.5, 21.3) SE 3.7	7.9% (3.0, 19.4) SE 3.8	8.3% (6.0, 11.4) SE 1.4	0.58	2, 567	.56
Attempted suicide in past 12 months, % (95% CI)	6.8% (3.3, 13.6) SE 2.5	1.9% (0.5, 7.4) SE 1.3	3.5% (2.1, 5.9) SE .9	1.84	2, 562	.16
Extreme stress in past 30 days, % (95% CI)	8.5% (3.0, 21.5) SE 4.3	7.4% (2.8, 18.1) SE 3.6	11.8% (8.7, 15.8) SE 1.8	0.52	2, 538	.59
Extreme despair in past 30 days, % (95% CI)	5.9% (2.8, 11.9) SE 2.2	4.6% (1.2, 15.3) SE 2.9	5.0% (3.1, 8.0) SE 1.2	0.08	2, 549	.92

Table 4.3.5

Language Spoken at Home and Mental Health of Southeast Asian Girls

	Speaking Foreign Language		Adjusted <i>F</i>	<i>df</i>	<i>p</i>
	Most of the time	Never/Sometimes			
Self-harm behavior in past 12 months, % (95% CI)	17.9% (13.1, 24.0) SE 2.8	21.4% (17.2, 26.2) SE 2.3	0.88	1, 330	.35
Considered suicide in past 12 months, % (95% CI)	16.8% (12.0, 22.8) SE 2.7	15.1% (11.4, 19.7) SE 2.1	0.24	1, 330	.62
Attempted suicide in past 12 months, % (95% CI)	10.2% (6.6, 15.5) SE 2.2	7.8% (5.4, 11.1) SE 1.4	1.02	1, 330	.31
Extreme stress in past 30 days, % (95% CI)	17.7% (14.2, 21.8) SE 1.9	16.2% (11.6, 22.2) SE 2.7	0.21	1, 330	.65
Extreme despair in past 30 days, % (95% CI)	9.8% (6.3, 15.1) SE 2.2	9.8% (7.3, 13.0) SE 1.4	0	1, 330	.99

Table 4.3.6

Language Spoken at Home and Mental Health of Southeast Asian Boys

	Speaking Foreign Language		Adjusted <i>F</i>	<i>df</i>	<i>p</i>
	Most of the time	Never/Sometimes			
Self-harm behavior in past 12 months, % (95% CI)	16.5% (11.0, 23.8) SE 3.2	10.6% (7.6, 14.5) SE 1.8	2.82	1, 285	.09
Considered suicide in past 12 months, % (95% CI)	7.9% (4.8, 12.7) SE 1.9	9.3% (6.6, 12.8) SE 1.6	0.29	1, 285	.59
Attempted suicide in past 12 months, % (95% CI)	5.8% (3.3, 10.0) SE 1.6	2.7% (1.4, 5.2) SE .9	2.96	1, 285	.09
Extreme stress in past 30 days, % (95% CI)	11.0% (7.0, 16.9) SE 2.5	10.5% (7.5, 14.6) SE 1.8	0.02	1, 285	.88
Extreme despair in past 30 days, % (95% CI)	6.1% (3.2, 11.2) SE 1.9	4.6% (2.8, 7.5) SE 1.2	0.44	1, 285	.51

Social Connectedness and Emotional Distress

This section reports on results from preliminary analysis of the relationships between mental health indicators and factors known to be associated with mental health. General linear modeling tests were conducted using Complex Samples to examine potential gender differences in level of connectedness to families, schools, and to ethnic identity (MEIM). Bivariate logistic regression tests were used to determine factors related to odds of experiencing high levels of emotional distress, as measured by stress and despair, among Southeast Asian girls and boys.

First, gender differences were observed in family connectedness scores, with Southeast Asian boys reporting significantly higher levels of family connectedness compared to their female peers (*see Table 4.4.1*). There were, however, no significant differences in level of school connectedness or in mean cultural connectedness scores between boys and girls.

Table 4.4.1

Gender Differences in Mean Scores for Connectedness Scales

	Gender		Wald <i>F</i>	<i>df</i>	<i>p</i>
	Boys	Girls			
Family Connectedness, Mean (SE)	.77 (.008)	.72 (.009)	11.76	1, 498	.001
School Connectedness, M (SE)	.69 (.007)	.69 (.007)	.001	1, 492	.972
Cultural Connectedness (Ethnic Identity), M (SE)	.65 (.009)	.66 (.007)	1.32	1, 494	.252

Higher scores of family and school connectedness were associated with significantly lower odds of extreme stress and despair among both Southeast Asian boys and girls (*see Table 4.4.2*). While there was no significant relationship between cultural connectedness and experiencing extreme stress for either gender, greater levels of cultural connectedness were related to significantly lower likelihood of reporting extreme despair among both girls and boys.

Table 4.4.2

Connectedness Scales and Odds of Extreme Stress

	Girls			Boys		
	OR*	95% CI	<i>p</i>	OR*	95% CI	<i>p</i>
Family connectedness	0.046	[0.018, 0.120]	< .001	0.053	[0.015, 0.19]	< .001
School connectedness	0.032	[0.010, 0.103]	< .001	0.068	[0.017, 0.281]	< .001
Cultural connectedness (MEIM)	0.71	[0.23, 2.14]	.53	0.67	[0.14, 3.17]	.61

* Unadjusted odds ratios

Table 4.4.3

Connectedness Scales and Odds of Extreme Despair

	Girls			Boys		
	OR*	95% CI	<i>p</i>	OR*	95% CI	<i>p</i>
Family connectedness	0.012	[0.004, 0.040]	< .001	0.017	[0.003, 0.087]	< .001
School connectedness	0.016	[0.004, 0.065]	< .001	0.019	[0.003, 0.118]	< .001
Cultural connectedness (MEIM)	0.082	[0.021, 0.329]	< .001	0.072	[0.011, 0.461]	.005

* Unadjusted odds ratios

What Matters Most for Promoting Mental Health?

The predictive value of the overall model for emotional distress proved to be a good fit for assessing despair among Southeast Asian boys (model $X^2 = 41.64$, $p < .001$), and girls, (model $X^2 = 80.28$, $p < .001$). There were significant links between extreme despair, length of time lived in Canada, and protective factors such as family connectedness, school connectedness and cultural connectedness, although the relationships varied by gender (*see Table 4.5.1*).

Similarly, older age was linked to lower odds of despair among girls (odds ratio = 0.84); yet the inverse relationship was observed among Southeast Asian boys (odds ratio = 1.30).

Table 4.5.1

Predictors of Extreme Despair in Southeast Asian Youth

	Boys			Girls		
	OR	95% CI	Sig.	OR	95% CI	Sig.
Age	1.30*	[1.02, 1.66]	.033	0.84*	[0.70, .995]	.043
Foreign-born status	0.55	[0.15, 2.05]	.371	0.36	[0.12, 1.04]	.060
Non-immigrant (lived in Canada >10 years)	Ref		.062	Ref		.015
Long-term immigrant (lived in Canada 5 - 10 years)	1.30	[0.21, 7.91]	.775	4.64**	[1.49, 14.46]	.008
Recent immigrant (lived in Canada < 5 years)	5.34*	[1.24, 23.05]	.025	4.84**	[1.50, 15.62]	.008
Speaking a foreign language at home most of the time	1.27	[0.49, 3.32]	.622	0.79	[0.40, 1.58]	.508
Cultural connectedness (Ethnic identity)	0.11*	[0.01, 0.98]	.048	0.40	[0.08, 2.10]	.277
Family connectedness	0.05**	[0.01, 0.37]	.003	0.02***	[0.004, 0.06]	< .001
School connectedness	0.13	[0.01, 1.53]	.106	0.08**	[.014, 0.46]	.005

* $p < .05$; ** $p < .01$; *** $p < .001$

With regards to migration or acculturation-related factors, only length of time lived in Canada was associated with despair. Our findings suggest that recently immigrated Southeast Asian youth appear to be at greater risk for experiencing extreme despair (*see Table 4.5.1*). Among boys, living in Canada for less than 5 years was associated with over five times greater odds of extreme despair, after controlling for all other variables. However, among girls, this increased risk was observed not only in recent immigrants but also among long-term immigrant youth who have lived in Canada for less than 10 years.

Family connectedness conferred greatest protection for mental health and was significantly associated with 95% lower likelihood of experiencing extreme despair among boys (AOR= 0.05) and 98% among girls (AOR= 0.02). School connectedness was associated with 93% lower odds of extreme despair but only among girls (AOR= 0.08). Conversely, cultural connectedness was related to significantly lower odds of despair among boys (AOR= 0.11) but this relationship was not observed among Southeast Asian girls.

The predictive value of the overall model also proved to be a good fit for assessing factors related to extreme stress among Southeast Asian boys, (model $X^2 = 33.06$, $p < .001$), and girls, (model $X^2 = 69.91$, $p < .001$). Family connectedness was the only significant predictor of stress among boys and was associated with 91% lower odds of reporting extreme levels of stress (AOR= 0.09). Among girls, significantly lower odds of stress were related to higher levels of family connectedness as well as school connectedness (*see Table 4.5.2*). Conversely, long-term immigrant status, or living in Canada between 5 and 10 years, appears to confer increased risk of extreme stress among girls when compared to their peers who have lived in Canada for over 10 years or all their lives. Paradoxically, ethnic identity was associated with markedly greater odds of reporting extreme levels of stress in female Southeast Asian youth (*see Table 4.5.2*).

Table 4.5.2

Predictors of Extreme Stress in Southeast Asian Youth

	Boys			Girls		
	AOR	95% CI	Sig.	AOR	95% CI	Sig.
Age	1.16	[0.98, 1.38]	.084	1.088	[0.96, 1.23]	.174
Foreign-born status	2.09	[0.96, 4.55]	.064	.602	[0.29, 1.26]	.176
Non-immigrant (lived in Canada >10 years)	Ref		.253	Ref		.027
Long-term immigrant (lived in Canada 5 - 10 years)	0.39	[0.12, 1.30]	.125	2.422*	[1.09, 5.38]	.030
Recent immigrant (lived in Canada < 5 years)	0.57	[0.21, 1.54]	.269	.986	[0.41, 2.38]	.975
Speaking a foreign language at home most of the time	0.82	[0.41, 1.65]	.577	.705	[0.43, 1.17]	.178
Cultural connectedness (Ethnic identity)	2.57	[0.48, 13.86]	.274	4.151*	[1.10, 15.72]	.036
Family connectedness	0.09**	[0.02, 0.42]	.002	.068***	[0.02, 0.21]	< .001
School connectedness	0.17	[0.03, 1.03]	.054	.074***	[0.02, 0.29]	< .001

* $p < .05$; ** $p < .01$; *** $p < .001$

Discussion

Summary of Findings

In general, most Southeast Asian boys and girls in BC experience relatively positive mental health. Although some individuals struggle with mental health issues, the majority of these youth are not engaging in self-harm behavior or suicidal activity. As hypothesized, we observed consistent gender differences in all mental health indicators, with Southeast Asian girls reporting poorer mental health overall compared to boys. Although factors related to acculturation and migration were not associated with mental health at the bivariate level, length of time lived in Canada emerged as a significant predictor of stress and despair in multivariate regression analyses. Contrary to our expectations, ethnic identity and school connectedness were not consistently related to better mental health in this population; while family connectedness proved to be the strongest protective factor for stress and despair among Southeast youth.

Gender Does Matter

As hypothesized, we found numerous differences between Southeast Asian boys and girls in their mental health status, as well as in the factors that significantly reduced or heightened the likelihood of experiencing extreme levels of stress and despair. The gender-related differences in the prevalence of mental health indicators in our study are consistent with other research, which have found greater rates of emotional distress and depression among adolescent girls (Afifi, Enns, Cox, & Martens, 2005; Marcotte, Fortin, Potvin, P., & Papillon, M., 2002). Similarly, findings based on data from the Longitudinal Survey of Immigrants to Canada (LSIC) demonstrate that immigrant women report higher rates of emotional problems compared to immigrant men (Robert & Gilkinson, 2010). This suggests that gender differences in mental health are salient even in adolescence and may often persist into adulthood.

Results from multivariate regression reveal additional gender-related patterns between mental health and the factors associated with stress and despair among Southeast Asian youth. For instance, family connectedness and cultural connectedness emerged as protective factors against extreme despair for boys, while family connectedness and school connectedness proved significant for girls. In exploring predictors of extreme stress, family connectedness was the only significant protective factor for boys while for girls a sense of belonging and connectedness to families as well as to schools predicted lower odds of reporting extreme stress. Interestingly, there was no significant gender difference in level of school connectedness between boys and girls ($p = .97$). Although school connectedness was not significantly protective against stress in the final regression model for boys, it is important to note that a significant relationship did exist between stress and school connectedness at the bivariate level.

Gender does matter. The socialization of young people into distinct gender roles shapes not only health behaviors but also the ways in which boys and girls learn to recognize and thus report mental health issues. Moreover, the gendered question is particularly relevant in the translation of research findings into tailored public health interventions, which consider potential similarities and dissimilarities between boys and girls in their response to therapies and in the factors in their social contexts that can make the most difference for improving their mental health. Findings from this study contribute further support for gender considerations in nursing research and underscore the importance of examining the potential effect of gender on mental health across ethnicities and across the life course.

Migration-Related Differences in Stress and Despair

Among Southeast Asian boys and girls, level of acculturation as measured by Canadian-born status, time lived in Canada, and speaking a language other than English at home, proved to be unrelated to mental health status at the bivariate level. This initially suggested lack of evidence of a healthy immigrant effect or acculturative stress phenomenon. Yet in multivariate modeling, length of time lived in Canada emerged a significant predictor of despair among Southeast Asian youth. While length of stay was not a significant predictor of stress among boys, a surprising finding shows that long-term rather than recent immigrant status was linked to greater likelihood of reporting extreme stress among girls.

The role of gender was also observed in the relationship between length of time lived in Canada and experiencing despair. Among all Southeast Asian youth, being a recent immigrant was related to higher odds of reporting extreme despair. However, among girls, long-term immigrant status was also associated with significantly greater chances of experiencing extreme despair. This not only suggests that the process of acculturation may be unique between Southeast Asian girls and boys but also that gender differences may exist in the way immigrant youth experience and cope with despair.

A recent review suggests that recent immigrants to Canada experience fewer mental health problems compared to the Canadian-born population despite the stressful period of migration and resettlement, a finding reflective of the phenomenon understood as the ‘healthy immigrant effect’ (Hyman & Jackson, 2010). However, studies based on population data, such as the 2007–2008 Canadian Community Health Survey, warn of the temporal nature of this effect and draw attention to the subsequent decline of this health advantage with length of stay and

generational status (Hyman & Jackson, 2010; Betancourt & Roberts, 2010). Public health researchers also emphasize the importance of examining complex and interacting effects on mental health with the intersections of gender, age, ethnicity, length of residence, immigrant class and other migration-related factors (Hyman & Jackson, 2010; Robert & Gilkinson, 2010). That our findings do not reflect such a healthy immigrant effect on stress may speak to the lack of research on this phenomenon among immigrant youth or other age groups other than the adult population. Accordingly, the present study advances a life course perspective in immigrant health research, especially in examining the factors that promote positive mental health across the life span.

Ethnic Identity Connectedness: Not Always a Good Thing?

The most puzzling results of this study concern the complex relationships between cultural or ethnic identity connectedness (MEIM), emotional distress, and gender. In bivariate analyses of factors associated with extreme despair, we found significant relationships between MEIM scores and despair among both Southeast Asian girls and boys. However, in multivariate modeling, ethnic identity connectedness demonstrated independent predictive power only in the model for boys but not among girls. Even more perplexing is our finding that greater levels of cultural connectedness were actually associated with significantly higher odds of extreme stress among Southeast Asian girls. This was surprising not only because this was the exact opposite effect we had expected but also because cultural connectedness was not significantly related to stress at the bivariate level.

Our findings are not consistent with extant literature on ethnic identity and its cited protective effects on self-esteem and depressive symptoms, especially among ethnic minority groups (Yoo & Lee, 2008; Phinney, 1992; Mossakowski, 2003). However, there are several

potential explanations for these findings. First, the mental health indicators used in our study, stress and despair, differ from other more frequently used measures in the literature around ethnic identity such as self-esteem and depressive symptoms. Secondly, we must consider the effects of other factors that may be related to stress among Southeast Asian girls but were not included in our model. That ethnic identity emerged as a significant predictor of stress among girls in our final analyses brings to question potential interaction effects between the variables in the model as well as other factors that may not have been accounted for in our study, such as physical and sexual abuse. For instance, current research has demonstrated strong links between history of sexual abuse and experiencing depression during adolescence (Buzi, Weinman, & Smith, 2007).

Although one of the assumptions of this study was that cultural or ethnic identity connectedness would have a direct effect on mental health, there remains the possibility of other indirect pathways or mechanisms linking ethnic identity connectedness to other factors, which in turn affect stress or despair. To illustrate, findings from a study conducted among Southeast Asian refugees in Canada suggest that ethnic identity may actually contribute to poorer mental health by exacerbating the negative effects of perceived racial discrimination on depression (Noh et al., 1999). This phenomenon may also be explained in terms of social identity theory, which proposes that the positive and negative aspects of belonging to a particular social group are dependent on how those individuals view themselves in comparison to other groups (Tajfel & Turner, 1979). Therefore, if some Southeast Asian youth do not perceive their social identity as favorable, then a sense of belonging to their cultural or ethnic community may in fact create greater stress or conflict for these adolescents as they attempt to remove themselves from their social group or cultural community.

Finally, there is the potential for some variables to augment or suppress the effects of ethnic identity connectedness on mental health, as in our observations of relationships that are significant at the bivariate level and then lose predictive power when controlling for other variables. A closer examination of the actual mechanisms related to experiencing stress and despair might provide further clues to understanding the association between connectedness to ethnic identity and the mental health of Southeast Asian youth.

Participation of the Community Advisory Group

The participation of the community advisory group served as an integral component of this research project and helped to shape the interpretation of the results. Several individuals called attention to the way we think about and measure the concept of stress, while one teacher advised us to consider how much stress in adolescence is pathological and how much is part of normal development or even healthy. We also discussed what the concept of despair signifies in adolescence and its relationship to mental illness such as depression or other mood disorders.

Moreover, the group emphasized the need to explore the extent to which consistent gender-based differences in reporting mental health indicators are related to the construction and socialization of gender roles both within and between cultural groups living in diverse societies. These individuals shared their perspectives on how cultural understandings of mental illness may influence the ways in which youth learn to recognize symptoms of stress and despair or understand mental health as a whole. The community advisory group helped to ensure that the findings were interpreted through a meaningful and culturally safe lens. Most importantly, they provided practical advice for translating the findings of this research study into tangible steps for improving the mental health of Southeast Asian youth living in BC.

Strengths and Limitations

The cross-sectional design of the BC AHS does pose several limitations in making inferences from the data. While the survey provides meaningful information about the relationships that exist within the population, it cannot provide evidence of causal mechanisms or changes over time. Since the survey was administered at school, the BC AHS cannot provide information on youth in alternative education programs, street-involved and marginalized youth, and youth in custody. The administration of the survey in English may have also affected the responses of youth who were new immigrants or lacked the language or literacy skills to complete the questionnaire. Lastly, there is the potential for the aggregation of data on ethnic or cultural background into the larger Southeast Asian category to mask possible differences between the individual ethnic groups in terms of mental health status and factors associated with stress and despair.

Despite these limitations, a major strength of this research study is the use of data from a large-scale population-based survey, such as the BC Adolescent Health Survey. The cluster-stratified probability sampling technique makes the survey a representative sample of adolescents in British Columbia and also increases the generalizability of the findings beyond the province. The participation of the community advisory group also helped to ensure that the research questions and study design were relevant and appropriate to the needs of the Southeast Asian communities in the Greater Vancouver region.

Implications for Practice

Several implications to practice can be gleaned from the results of this study. First, it is important that public health practitioners and adolescent health clinicians working with Southeast Asian groups incorporate an understanding of migration-related factors in their practice, particularly length of stay or recent immigrant status. Secondly, the role of protective factors in promoting positive mental health among youth cannot be overstated. Among Southeast Asian youth, family connectedness and school connectedness were the most consistent protective factors against stress and despair among boys and girls. Health professionals must encourage adolescents and their parents to develop and maintain caring parent-child relationships and help foster adolescents' sense of belonging and connectedness to their families.

Indeed, a recent study provides empirical support for the effectiveness of restoring protective factors even among youth who experience significant risk factors of negative health outcomes (Saewyc & Edinburgh, 2010). Additionally, a recent study by Beiser et al. (2011) found an inverse association between positive perception of schools and emotional problems among children living large diverse cities in Canada, highlighting the need for schools to reach out to families, especially immigrant parents, in building healthy environments for child and adolescent development. Finally, gender differences in patterns and prevalence of mental health lend further support for the development of distinct interventions tailored specifically for Southeast Asian girls and boys.

Directions for Future Research

Much more research is needed to understand the complex mechanisms that contribute to positive mental health in ethnically diverse populations. Although cross-sectional surveys provide useful information on potential relationships between mental health and other factors in the lives of youth, longitudinal designs may offer deeper insight into the actual causal processes that lead to healthy family relationships and social connectedness. Longitudinal studies are also useful for examining how factors related to acculturation or ethnic identity connectedness may change over time, especially among visible minority immigrant groups.

An ongoing challenge for nursing and public health researchers is ensuring that concepts such as family connectedness and school connectedness maintain relevance across different cultures. For this work, methods of qualitative inquiry are particularly helpful for exploring cross-cultural beliefs around these constructs and how they can be best measured at the population level. In addition, qualitative study designs such as ethnography and grounded theory may provide valuable insight into how specific groups such as Southeast Asian youth actually understand the roles of family relationships, school connectedness, migration, and ethnic identity connectedness in their lives and how these factors may affect their mental health. Finally, future research in this area must also focus on ways to test these observed relationships and to develop actual nursing interventions based on the current body of evidence. For instance, quasi-experimental or cohort studies enable nursing researchers to examine the effect of interventions tailored to foster protective factors such as family connectedness, school connectedness, and ethnic identity connectedness. Most importantly, findings from intervention studies help to shift the conversation from describing health issues to testing possible interventions and contribute to the translation of knowledge from research evidence into real-life nursing practice.

In their publication *Changing Directions, Changing Lives: the Mental Health Strategy for Canada* released earlier this year, the Mental Health Commission of Canada (2012) outlines key priorities for promoting mental health and well-being. This new ‘blueprint for change’ demands an improvement of mental health data collection, knowledge exchange, and greater funding for mental health research in Canada. One of many questions put forth by this commission is to examine potential lessons from the traditional knowledge of diverse cultures. Understanding how as a society we can learn from cultural understandings of mental health, although only one piece of this complex phenomenon, in itself is already an enormous undertaking. Yet without this piece, we may never fully comprehend the entire picture of positive mental health for all Canadians.

References

- Abraido-Lanza, A. F., Armbrister, A. N., Florez, K. R., & Aguirre, A. N. (2006). Toward a theory-driven model of acculturation in public health research. *American Journal of Public Health, 96*(8), 1342 – 1346.
- Afifi, T., Enns, M., Cox, B., & Martens, P. (2005). Investigating health correlates of adolescent depression in Canada. *Canadian Journal Of Public Health, 96*(6), 427 431.
- Beiser, M., Feng, H., Hyman, I., & Tousignant, M. (2002). Poverty, family process, and the mental health of immigrant children in Canada. *American Journal Of Public Health, 92*(2), 220-227.
- Beiser, M. (2005). The health of immigrants and refugees in Canada. *Canadian Journal of Public Health, 96*(2), 30-44.
- Beiser, M., Zilber, N., Simich, L., Youngmann, R., Zohar, A. H., Taa, B. & Hou, F (2011). Regional effects on the mental health of immigrant children: Results from the New Canadian Children and youth Study (NCCYS). *Health & Place, 17*, 822 - 829.
- Berry, J. W., Phinney, J. S., Sam, D. L., & Vedder, P. (2006¹). *Immigrant youth in cultural transition: Acculturation, identity and adaptation across national contexts*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Berry, J. W., Phinney, J. S., Sam, D. L., & Vedder, P. (2006²). Immigrant youth: acculturation, identity and adaptation. *Applied Psychology: An International Review, 55*(3), 303 – 332.

- Betancourt, M. T. & Roberts, K. C. (2010). Chronic disease patterns for immigrants to Canada: A recent data analysis. *Health Policy Research Bulletin*, 17, 22 – 23. Ottawa, BC: Health Canada Printing Office.
- Bronfenbrenner, U. (1977). Toward an experimental ecology of human development. *American Psychologist*, 32, 513-31.
- Buzi, R., Weinman, M., & Smith, P. (2007). The relationship between adolescent depression and a history of sexual abuse. *Adolescence*, 42(168), 679-688.
- Citizenship and Immigration Canada. *Facts and Figures 2009: Immigration overview*. Retrieved from <http://www.cic.gc.ca/english/resources/statistics/facts2009/>
- Cote, L. R. (2011). Immigration and acculturation in childhood. In R. E. Tremblay, M. Boivin & R. Peters (Eds.), *Encyclopedia on Early Childhood Development* [online] (pp. 1-6). Montreal, Quebec: Centre of Excellence for Early Childhood Development. Available at: <http://www.child-encyclopedia.com/documents/CoteANGxp1.pdf>. Accessed November 7, 2011.
- First Call: BC Child and Youth Advocacy Coalition. (2011). *2011 Child Poverty Report Card*. Vancouver, BC: First Call: BC Child and Youth Advocacy Coalition.
- Georgiades, K., Boyle, M. H., Kimber, M. S., & Rana A. (2011). Childhood immigration and acculturation in Canada. In R. E. Tremblay, M. Boivin & R. Peters (Eds.), *Encyclopedia on Early Childhood Development* [online] (pp. 1-9). Montreal, Quebec: Centre of Excellence for Early Childhood Development. Available at:

- <http://www.child-encyclopedia.com/documents/Georgiades-Boyle-Kimber-RanaANGxp1.pdf>. Accessed November 7, 2011.
- Gungör, D. (2011). Immigration and acculturation in adolescence. In R. E. Tremblay, M. Boivin & R. Peters (Eds.), *Encyclopedia on Early Childhood Development* [online] (pp. 1-9). Montreal, Quebec: Centre of Excellence for Early Childhood Development. Available at: <http://www.child-encyclopedia.com/documents/GungorANGxp1.pdf>. Accessed November 7, 2011.
- Hamilton H., Noh S., & Adlaf, E. M. (2009). Adolescent risk behaviors and psychological distress across immigrant generations. *Canadian Journal of Public Health*, 100(3), 221-225.
- Hyman, I. & Jackson, B. (2010). The healthy immigrant effect: a temporary phenomenon? *Health Policy Research Bulletin*, 17, 17 – 21. Ottawa, BC: Health Canada Printing Office.
- Ma, X. (2002). The first ten years in Canada: a multi-level assessment of behavioural and emotional problems of immigrant children. *Canadian Public Policy*, 28(3), 395-418.
- Marcotte, D., Fortin, L., Potvin, P., & Papillon, M. (2002). Gender differences in depressive symptoms during adolescence: role of gender-typed characteristics, self-esteem, body image, stressful life events, and pubertal status. *Journal of Emotional and Behavioral Disorders*, 10(1), 29-42.
- Mental Health Commission of Canada. (2012). *Changing directions, changing lives: the mental health strategy for Canada*. Calgary, AB: Author.

- Mossakowski, K. N. (2003). Coping with perceived discrimination: does ethnic identity protect mental health? *Journal of Health and Social Behavior*, 44(3), 318-331.
- Noh, S., Beiser, M., Kaspar, V., Hou, F., & Rummens, J. (1999). Perceived racial discrimination, depression, and coping: a study of Southeast Asian refugees in Canada. *Journal of Health and Social Behavior*, 40(3), 193-207.
- Ong, A. D., Fuller-Rowell, T. E., & Phinney, J. S. (2010). Measurement of ethnic identity: recurrent and emergent issues. *Identity*, 10(1), 39-49.
- Phinney, J. S. (1992). The multigroup ethnic identity measure: a new scale for use with diverse groups. *Journal of Adolescent Research*, 7(2), 156-176.
- Polit, D. F., & Beck, C. T. (2008). *Nursing research: generating and assessing evidence for nursing practice* (8th ed.). Philadelphia: Lippincott Williams & Wilkins.
- Rew, L. (2005). *Adolescent health: a multidisciplinary approach to theory, research and intervention*. Thousand Oaks, CA: Sage Publications.
- Robert, A. & Gilkinson, T. (2010). The mental health and well-being of recent immigrants. *Health Policy Research Bulletin*, 17, 24 – 25. Ottawa, BC: Health Canada Printing Office.
- Saewyc, E. M. & Tonkin, R. (2008). Surveying adolescents: Focusing on positive development. *Paediatric Child Health*, 13(1), 43 – 47.
- Saewyc E., & Green R. (2009). *Survey methodology for the 2008 BC Adolescent Health Survey IV*. Vancouver, BC: McCreary Centre Society.

- Saewyc, E. M. & Edinburgh, L. (2010). Restoring healthy developmental trajectories for sexually exploited young runaway girls: fostering protective factors and reducing risk behaviors. *Journal of Adolescent Health, 46*(2), 180-188.
- Saewyc, E. M. & Homma, Y. (2010). *Psychometric properties of scales in the BC Adolescent Health Surveys of McCreary Centre Society*. Vancouver, BC: McCreary Centre Society.
- Salehi, R. (2010). Intersection of health, immigration, and youth: a systematic literature review. *Journal of Immigrant & Minority Health, 12*(5), 788-797.
- Smith, A., Poon, C., Stewart, D., Hoogeveen, C., Saewyc, E., & the McCreary Centre Society (2011). *Making the right connections: promoting positive mental health among BC youth*. Vancouver, BC: McCreary Centre Society.
- Shonkoff, J. P., Boyce, W. T., & McEwen, B. S. (2009). Neuroscience, molecular biology, and the childhood roots of health disparities: building a new framework for health promotion and disease prevention. *Journal of the American Medical Association, 301*(21), 2252-2259.
- Statistics Canada (2010). *Proportion of foreign-born population, by province and territory*. Retrieved from <http://www40.statcan.ca/l01/cst01/demo46a-eng.htm>
- Stevens, G. M., & Vollebergh, W. M. (2008). Mental health in migrant children. *Journal of Child Psychology & Psychiatry, 49*(3), 276-294.
- Tajfel, H. & Turner, J. C. (1979). An integrative theory of intergroup conflict. In H. Tajfel (Ed.), *Differentiation between social groups: Studies in the social psychology of intergroup relations* (pp. 33 – 47). NY, New York: Academic Press.

Vo, D., & Park, M. (2008). Stress and stress management among youth and young men.
American Journal Of Men's Health, 2(4), 353-366.

Yoo, H. C. & Lee, R. M. (2008). Does ethnic identity buffer or exacerbate the effects of frequent racial discrimination on situational well-being of Asian Americans? *Journal of Counselling Psychology*, 55(1), 63-74.