

ACCULTURATION AND EATING ATTITUDES AND BEHAVIOURS IN FEMALE
CHINESE AND CAUCASIAN UNIVERSITY STUDENTS:
A CORRELATIONAL AND COMPARATIVE STUDY

By

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Abstract

The purpose of this study was to examine the role of sociocultural factors in the occurrence of pathological eating attitudes and behaviours by determining the relationship between acculturation to Canada, as a Western culture, and eating attitudes and behaviours in a nonclinical sample of female Chinese and Caucasian university students. In addition, as an exploratory goal any possible relationship between acculturative stress and eating attitudes and behaviours was also explored.

One hundred female Caucasian and 131 female Chinese undergraduate students were recruited from the University of British Columbia. Each subject was asked to complete a Demographic Questionnaire as well as the 26 item Eating Attitudes Test (EAT; Garner, Olmsted, Bohr, & Garfinkel, 1982). Additionally, the Chinese subjects were asked to complete the Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA; Suinn, Rickard-Figueroa, Lew, & Vigil, 1987) and the 24 item SAFE Acculturative Stress Scale (SAFE; Mean, Padilla, & Maldonado, 1987).

Statistical analyses revealed no difference in EAT scores across the two cultural groups. Correlational analyses indicated negative relationships between level of acculturation and pathological eating attitudes and behaviours for the Chinese subjects, suggesting that the less acculturated Chinese subjects experience more pathological eating attitudes and behaviours. Correlational analyses also found positive relationships between acculturative stress and eating attitudes and behaviours for the Chinese subjects, suggesting the higher acculturative stress, the greater eating pathology. Finally, the results of regressive analyses revealed that, in general, acculturative stress was the best predictor of pathological eating attitudes and behaviours for the Chinese subjects. Implications for these results and suggestions for future research are discussed.

Table of Contents

Abstract.....	ii
Table of Contents.....	iv
List of Tables.....	viii
Acknowledgments.....	x
Chapter I: Introduction.....	1
Overview.....	1
Purpose of this Study.....	4
Significance and Implications.....	6
Definition of Terms.....	7
Chapter II: Literature Review.....	10
The Diagnosis of Eating Disorders in Research.....	10
The Role of Sociocultural Factors in the Occurrence of Eating Disorders.....	14
Acculturation, Body Image, & the Occurrence of Eating Disorders.....	24
Summary.....	34
Chapter III: Method.....	37
Design.....	37
Sample.....	37
Procedure.....	40
Instrumentation.....	41
Demographic Questionnaire.....	42

Eating Attitudes Test.....	43
Suinn-Lew Asian Self-Identity	
Acculturation Scale.....	44
SAFE Acculturative Stress Scales.....	47
Hypothesis.....	51
Statistical Analysis.....	52
Chapter IV: Results.....	54
Demographic Description of the Sample.....	54
Hypothesis 1: Eating Attitudes and	
Behaviours across Cultural Groups.....	62
Hypothesis 2 & 3: Correlational Analysis.....	65
Intercorrelational analysis of	
of the EAT and SL-ASIA.....	67
Level of acculturation and eating	
attitudes and behaviours for the	
Chinese subjects.....	68
Acculturative stress and eating	
attitudes and behaviours for the	
Chinese subjects.....	71
Hypothesis 4: Regression Analysis.....	73
Chapter V: Discussion.....	84
Review of the Research Findings.....	84
Cultural group differences.....	84

Level of acculturation and eating attitudes and behaviours.....	88
Acculturative stress and eating attitudes and behaviours.....	91
Regression analysis.....	93
Cross-Cultural Validity of the EAT.....	94
Limitations.....	97
Suggestions for Future Research.....	99
Implications for Counselling.....	101
Conclusions.....	104
References.....	106
Appendices.....	117
Appendix A. Demographic Questionnaire.....	117
Appendix B. EAT Questionnaire.....	119
Appendix C. SL-ASIA Questionnaire.....	121
Appendix D. SAFE Questionnaire.....	126
Appendix E. Introductory Letter to Professors.....	129
Appendix F. Introductory Letter to Subjects and Letter of Consent.....	131
Appendix G. Follow-up Letter.....	133
Appendix H. Intercorrelations of the Eating Attitudes Test (EAT).....	135

Appendix I. Intercorrelations of Level of	
Acculturation (SL-ASIA).....	137

List of Tables

Table 1.	Break Down of Subjects in each Sample.....	56
Table 2.	Means and Standard Deviations for Age, Years Living in North America, EAT, & SL-ASIA between Samples.....	57
Table 3.	Demographic Data for all Subjects including Sibling Order, Department, Program, Place of Birth and Generation Level.....	59
Table 4.	Means and Standard Deviations for Demographic Data including Age, Years Living in North America, and Years in School in North America.....	61
Table 5.	Means and Standard Deviations for full Scale and Subscale EAT Scores across Cultural Groups.....	64
Table 6.	Contingency Table of Chinese and Caucasian Subjects who Display Eating Pathology (EAT > 20) or no Eating Pathology (EAT < 21).....	66
Table 7.	Correlation Matrix of Full Scale and Subscale EAT and SL-ASIA Scores for the Chinese Subjects.....	69

Table 8.	One-way Analysis of Variance for Full EAT Scale Scores across Level of Acculturation.....	72
Table 9.	Correlation Matrix of Full Scale and Subscale EAT Scores with SAFE.....	74
Table 10.	Correlation Matrix of Full Scale and Subscale SL-ASIA Scores with SAFE.....	75
Table 11.	Multiple Regression Analysis of Predictors of Pathological Eating Attitudes and Behaviours.....	77
Table 12.	Stepwise Regression of the Full Scale EAT on all of the Predictor Variables.....	79
Table 13.	Stepwise Regression of the Diet Subscale on all of the Predictor Variables.....	80
Table 14.	Stepwise Regression of the Bulimia Subscale on all of the Predictor Variables.....	81
Table 15.	Stepwise Regression of the Oral Control Subscale on all of the Predictor Variables.....	82

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Chapter I

Introduction

Overview

Preoccupation with body weight and the chase presentation of eating disorders such as anorexia nervosa and bulimia nervosa are commonly recognized phenomena for women living in Western cultures. Some researchers have hypothesized that the occurrence of eating disorders may be linked to Western values in relation to the emphasis on thinness as the desired female shape (Garner & Garfinkel, 1980; Nasser, 1988a, 1988b). For instance, research into certain subcultures, where the demand for thinness is heightened, gives support to the cultural determination of eating disorders and pathological eating attitudes (Garner & Garfinkel, 1980). In their investigation of eating attitudes and behaviours, Garner and Garfinkel found that female models and dancers had an overrepresentation of eating disorders and excessive dieting concerns.

Additionally, two lines of epidemiological research have examined the occurrence of eating disorders and pathological eating attitudes in

nontraditional populations such as non-Western cultures and ethnic minorities living in Western cultures.

First, cross-cultural research has suggested that eating disorders are most common amongst Western cultures, or amongst those cultures, like Japan, who have recently introduced Western values and ideals into their society (Kamata, Nogami, & Momma, 1987; Nasser, 1988a, 1988b; Suematsu, 1985). Similarly, non-Western cultures that do not idealize thinness, such as China, rarely report cases of eating disorders (Lee, 1991; Lee, 1993; Lee, Ho, & Hsu, 1993; Lee, Chui, & Chen, 1989; McCarthy, 1990).

The results of epidemiological cross-cultural studies should, however, be interpreted with caution as some cultures do not recognize eating disorders as distinct entities. Therefore, it is possible that behaviour which may be diagnosed as anorexia or bulimia in Western cultures is diagnosed as hysteria or anxiety in other cultures.

The second area of epidemiological research has explored the occurrence of eating disorders and pathological eating attitudes in non-white individuals living in Western cultures (ie. Crisp, Palmer, Kalllucy, 1976; Gray, Ford, Kelly, 1987; Gross & Rosen,

1988; Hsu, 1987; Lacey & Dolan, 1988; Lucero, Hicks, Bramlette, Brassington, & Welter, 1992; Nevo, 1985). The results of these studies appear to indicate that eating disorders and pathological eating attitudes and behaviours occur less frequently in non-white individuals. These studies, however, simply address racial differences, rather than differences in cultural orientation. Thus, as Dolan (1991) discussed, inferences as to the role of sociocultural factors must be made tentatively.

In an attempt to address some of the methodological limitations of the above cited research while continuing to investigate the role of sociocultural factors in the occurrence of eating disorders, researchers have begun exploring the relationship between level of acculturation to Western cultures and the occurrence of eating disorders and pathological eating attitudes in non-white women. These research studies are based on the premise that Western cultures' values, such as the idealization of thinness for women, is related to reports of anorexia and bulimia. Thus, the occurrence of eating disorders and pathological eating attitudes should vary according

to the degree to which individuals ascribe to and internalize Western values and ideals.

Work in this area however is still in its infancy. To date, only four studies have attempted to determine the relationship between level of acculturation to a Western culture and occurrence of eating disorders and pathological eating attitudes (Abrams, Allen, Gray, 1993; Furnham & Patel, 1994; Mumford, Whitehouse, & Platts, 1991; Pumariega, 1986). Unfortunately, the results of these studies are somewhat contradictory, leaving many questions unanswered. It is hoped that this study may help address some of these questions.

Purpose of this Study

The purpose of this study is to investigate the role of sociocultural factors in the occurrence of pathological eating attitudes by determining the relationship between level of acculturation to a Western culture and eating attitudes in a nonclinical sample of female Chinese and Caucasian university students from the University of British Columbia.

Specifically, this study will attempt to address the following research questions:

1. Is there a significant difference in the eating attitudes of Chinese female university

students and Caucasian female university students?

2. Is there a relationship between level of acculturation to a Canada, as a Western culture, and eating attitudes in Chinese female university students?

In addition, because it has been suggested that a relationship between acculturative stress and eating attitudes may exist which could function to obstruct a true understanding of the relationship between level of acculturation and the occurrence of pathological eating attitudes (DiNicola, 1990a, 1990b; Mumford, Whitehouse, & Choudry, 1992; Mumford et al., 1991), this study will also explore the possibility of a relationship between acculturative stress and eating attitudes. Thus, the following exploratory research questions will be addressed:

3. Is there a relationship between personal and familial acculturative stress and eating attitudes in Chinese female university students?
4. Is there a relationship between level of acculturation to Canada, as a Western Culture, and eating attitudes in Chinese

female university students independent of the effects of acculturative stress?

Significance and Implications of this Study

Eating disorders disrupt the lives of many individuals, most of whom are women. They create chronic fatigue, depression and social withdrawal, leading to severe personal unhappiness (Crisp, Hsu, Harding, Hartshorn, 1980). As well, many physiological complications result from eating disorders, including alterations to cardiovascular functions, lowered blood pressure and heart rates, gastrointestinal complications, and even death (Cuellar, Van Thiel, 1986 Hsu, 1990; Isner, Roberts, Heymsfield, 1985). The severity of these disorders as well as their prevalence in Western cultures has stimulated a lot of research into the areas of both etiology and treatment. Currently, however, many questions remain unanswered.

Sociocultural theorists have emphasized the importance of socioculturally driven factors, for example the idealization of thinness, in the development of eating disorders and pathological eating attitudes. Although recognizing and acknowledging the role of sociocultural factors in the occurrence of eating disorders provides no simple answers, it is a

first and necessary step. However, beyond recognition, more research is needed to better understand the role of culture in the development of eating disorders and pathological eating attitudes. Only then can change begin. It is hoped this research study will make an important contribution to the scant research available in this area.

Additionally, it is hoped that this study will shed some light on the specific populations at risk for developing pathological eating attitudes and behaviours. Once it is known which populations are at greatest risk, education, prevention, and treatment programs can be modified accordingly.

Definitions of the Terms

There are several terms which are utilized throughout this study. Because there is often controversy as to what definitions are appropriate for many of these terms, it is necessary to define the following terms in the ways that are relevant for the current study.

Acculturation or

Level of Acculturation: the degree to which an
immigrant adopts or shares the
same values, attitudes, and

behaviours of the receiving society; culture change which results from continuous contact between two distinct cultural groups.

Acculturative Stress: refers to one kind of stress, that in which the stressors are identified as having their source in the process of acculturation.

Race: a biological term referring to the genetic differences between groups within a species (Dolan, 1991).

Culture: an anthropological term, defining a complex whole that includes the knowledge, behavior, morals, customs, and often religion. Referring to something arbitrary and variable which is acquired by being and/or growing up as a member of a society (Dolan, 1991).

- Eating Disorders: refers to clinical case of anorexia nervosa and bulimia nervosa as defined by the Diagnostic and Statistical Manual of Mental Disorders, Fourth Revised (DSM-IV, 1994).
- Pathological eating attitudes & behaviours or eating pathology: a broad range of attitudes and behaviours characteristic of anorexia nervosa and bulimia nervosa. Attitudes and behaviours which may indicate someone is at risk of developing an eating disorder.
- Caucasian: an individual of Western European background who was born in North America.
- Chinese: an individual who is self-referred as Chinese.

Chapter II

Literature Review

The last several decades have witnessed an upsurge of research investigating the etiology of eating disorders such as anorexia nervosa and bulimia nervosa. In this chapter, I will review some of this literature beginning with an outline of some general diagnostic information concerning eating disorders. Next, I will review the literature exploring the role of sociocultural factors in the development of eating disorders and pathological eating attitudes. Finally, I will explore the current research utilizing the concept of level of acculturation as a measure to tap into the role played by sociocultural factors.

The Diagnosis of Eating Disorders in Research

The two most commonly recognized eating disorders are anorexia nervosa and bulimia nervosa. Anorexia nervosa was first described as a distinct entity in the 1860's by physicians in England, France and Russia (Prince, 1985). In 1874 Sir William Withey Gull published a full paper on an illness he called anorexia nervosa. Gull's general description holds up incredibly well in its clinical detail; over one hundred years later all that has been added is a

differentiation of subtypes (in 1979, Russell distinguished bulimia nervosa from anorexia nervosa), and more details, which, in general, served only to confirm Gull's initial description. Gull's early descriptions included body image disturbance, an intense desire for thinness to the point of emaciation (in anorexics), and periods of abstinence from food followed by consumption of enormous quantities of food and subsequent self-induced vomiting and/or laxative abuse (in bulimics). It is interesting to compare these early descriptions with that provided in DSM IV (1994), the current diagnostic manual of the American Psychiatric Association.

The Diagnostic and Statical Manual of Mental Disorders, Fourth Revised (DSM-IV, 1994) recognizes both anorexia nervosa and bulimia nervosa as distinct disorders. Accordingly, the DSM-IV diagnostic criteria for anorexia nervosa are: (a) maintenance of body weight 15% below that expected; (b) intense fear of gaining weight even though underweight; (c) disturbance in the way in which one's body weight, size, or shape is experienced; and (d) absence of at least three consecutive menstrual cycles in females when otherwise expected to occur. Similarly, the diagnostic criteria

for bulimia nervosa are: (a) recurrent episodes of binge eating in which large amounts of food are consumed in a discrete period of time (e.g. within any 2 hour period); (b) a sense of lack of control during the binges; (c) recurrent inappropriate compensatory behaviour such as vomiting, use of laxatives or diuretics, strict dieting or fasting, or vigorous exercise; (d) binge eating and inappropriate compensatory behaviour which occurs, on average, at least twice a week for 3 months; (e) self-evaluation unduly influenced by body shape and weight; and (f) when such disturbances which do not occur exclusively during episodes of anorexia nervosa (DSM-IV, 1994).

Currently, most researchers, theorists, and clinicians working in the area of eating disorders agree that the only way to accurately identify a case of anorexia nervosa or bulimia nervosa is by personal interview using clinical assessment measures such as the DSM-IV criteria. Clinical interviews are required for two reasons. First, a wide spectrum of pathological eating behaviours and attitudes occur in the population, ranging from culturally accepted dieting to acute cases of eating disorders, and as it stands no objective measure is sensitive enough to

differentiate the rigidity in beliefs, attitudes, and behaviours that represent a clinical eating disorder. Second, despite the increasing prevalence of eating disorders, they are still a relatively uncommon phenomenon. Accordingly, Williams, Hand, and Tarnaplosky (1982) suggest that because the prevalence of eating disorders remains relatively low, the positive predictive value of any self-report instrument is likely to be quite low regardless of the sensitivity or specificity of the instrument utilized. In other words, it is likely that many individuals who score pathologically on a questionnaire may in fact not have a clinical eating disorder.

For both of these reasons the most widely accepted strategy of identifying clinical cases of eating disorders in research studies has become the two-stage screening survey (Williams et al., 1982) in which a questionnaire is used in conjunction with, rather than as a substitute for, clinical judgment. Thus, in situations where objective measures are used alone, without further validation of clinical assessments, researchers are only able to identify pathological eating attitudes and behaviours commonly associated with eating disorders, and not eating disorders per se.

The Role of Sociocultural Factors in the Occurrence of Eating Disorders

Eating disorders such as anorexia nervosa and bulimia nervosa are most frequently conceptualized as multidetermined disorders (Anderson, 1985; Garfinkel & Garner, 1982). Garfinkel and Garner (1982) state that an eating disorder such as anorexia or bulimia is a "syndrome that is the product of an interplay of a number of forces" (p. 188). These forces include: (a) personal forces; (b) familial forces; (c) biological forces; and (d) sociocultural forces. Although all of these forces are complexly interwoven, the purpose of this study to better understand the effects of sociocultural factors.

Since the earliest descriptions of eating disorders made over a century ago by Gull and Lasague, the sociocultural importance of factors such as gender, age, and social status have been investigated (Anderson & Hay, 1985; Bruch, 1973; Crisp & Toms, 1972; Gibbs, 1985; Rastam, Gillberg, & Garton, 1989). Despite the abundance of research addressing the possible sociocultural importance of these issues, fewer studies have attempted to address specific cultural

determinants of eating disorders in the form of cultural values, beliefs, and ideals.

One cultural ideal which has been associated with the higher prevalence of eating disorders in Western cultures is the idealization of thinness advocated in the West (Garner & Garfinkel, 1980; Garner, Garfinkel, Schwartz, & Thompson, 1980; Nasser, 1988a, 1988b). The research team of Garner and Garfinkel (1980) was one of the first to address this cultural ideal in their investigation of the relationship between attention to Western culture's thinness ideal and the occurrence of eating disorders and pathological eating attitudes. Accordingly, they investigated the eating attitudes and behaviours of female dancers and models. It was their assumption that because of their career choice these women would be more focused on their appearance and body shape and thus be more attentive to the thinness ideal than a normative sample of women. Their results indicated that anorexia nervosa and excessive dieting concerns were overrepresented in the dance and modelling students, leaving the authors to conclude that those individuals under societal pressures to be slim are at greater risk of developing eating disorder. The authors went on to suggest that their "observations

underscore the possible importance of our society's current value of thinness in women as a determinant of the purported increase in the prevalence of anorexia nervosa" (Garner & Garfinkel, 1980, p. 655).

In light of the reports suggesting that the idealization of thinness may contribute to the prevalence of eating disorders and pathological eating attitudes (Garner & Garfinkel, 1980), Garner, Garfinkel, Schwartz, and Thompson (1980) attempted to gauge Western culture's expectations regarding body image and shape for women. They found that, during the 20-year period from 1959-1978, Miss America Contestants and Playboy centerfolds had become progressively thinner. Garner and his associates also discovered a significant increase in the number of diet articles in six popular women's magazines during this same 20 year period.

More recently, Wiseman, Gray, Mosimann, and Ahrens (1992) have attempted to replicate Garner et al.'s study (1980) for the period of 1979-1988. Once again the ideal body shape in Western society, as represented by Miss America Contestants and Playboy centerfolds, has continued to decrease in size. Wiseman et al., also noted an increase in diet articles, as well as

exercise advertisements, for their historical period. In a similar study of magazine advertisements, Anderson and DiDomenico (1992) found that women's magazines contain 10.5 times the number of diet promotions as do men's magazines.

This trend has not been noted only in the print media. In their historical look at TV commercials, Wiseman, Gunning, and Grey (1993) found a significant increase in the amount of TV commercials for diet foods and diet products shown on the three major American networks over the years 1973-1991.

Thus, these studies appear to indicate that while eating disorders continue to pervade Western cultures, so does Western culture's idealization of the ultra thin body shape for females. Whereas this trend appears to be quite prevalent in Western cultures, it is in no way universal. In fact, obesity is often admired as a sign of wealth, success and beauty in non-Western cultures (Furnham & Alibhai, 1983; Nasser, 1986).

The Chinese, for example, associate fatness with prosperity and longevity, and their Gods are often depicted as being fat (Lee, 1991; Lee, Chiu, & Chen, 1989; Nasser, 1988a; 1988b). Similarly, China does not

stigmatize the obese as having physical, mental or moral impairments as is frequently done in Western cultures (Lee, Chiu & Chen, 1989). Additionally, the Chinese often associate thinness with ill-health and bad luck and not, as in the West, with self-discipline, attractiveness or economic well-being (Lee, 1992).

Popular Chinese beliefs are that "being able to eat is to have luck", "gaining weight means good fortune". Similarly, to greet somebody with "You have put on weight" is viewed as a complement, especially amongst the older generation of Chinese (Lee, 1991; Lee et al., 1989). It appears, however, that these beliefs are not limited simply to traditional values and customs, as the media in Hong Kong has recently conveyed the message that a number of current female singing stars should be gaining weight (Lee, 1991).

Given the different value placed on thinness in China, one might predict that the prevalence of eating disorders and pathological eating attitudes and behaviours in that country may be lower than in Western cultures. Unfortunately, very little has been noted about the prevalence of eating disorders and pathological eating attitudes in China. In their 1989 article, Lee, Chui, & Chen detailed an unpublished

survey conducted by the Psychiatric Epidemiology Unit of the Department of Psychiatry at the University of China in Hong Kong. This survey, using the Diagnostic Interview Schedule, revealed only one possible case of anorexia nervosa out of a community sample population of 7229 subjects during the period from 1984-1986.

More recently, a study exploring the prevalence of anorexia and bulimia in China was conducted by Chun and his team of colleagues (1992). This study employed self-report measures, as well as selective follow up interviews, to examine the prevalence of eating disorders among 509 (108 males, 401 females) freshman medical students in two universities in China. The results indicated 1.1% of the sample (all female) met the domestic and DSM-III-R criterion for bulimia; however, none were binge eating and purging on a regular basis and none met the purposed DSM-IV criteria for bulimia nervosa. None of the subjects met the diagnostic criteria for anorexia nervosa.

Finally, in his 1993 study Lee employed the 40 item Eating Attitudes Test in a two-stage screening of 1020 (646 female and 374 male) Chinese bilingual university students in China. Lee found that although the female students were cognitively inclined to diet

and weigh less, few were driven to actual weight control behaviours. Specifically, the mean EAT scores for the female students was report as 11.33 (SD=6.71) for the 40 item EAT. This score is lower than the figure of 15.60 (SD=9.30) reported by Garner & Garfinkel (1979) for their control sample of female Western university students. Additionally, following personal interviews with the subjects scoring over the cut-off point on the EAT, Lee found no cases of anorexia nervosa or bulimia nervosa and only three cases (all female) of partial syndrome bulimia nervosa, yielding a low prevalence of 0.46% for the spectrum of eating disorders.

The prevalence rates noted by Chen et al. (1992) and Lee (1993) are lower than the rates commonly reported in Western cultures. Earlier research, conducted in the mid-1980s, reported the point prevalence of anorexia nervosa amongst females ranged from 0.7%-2.1% (Morgan & Sylvester, 1977; Pope, Hudson, Jonas, & Yurgelum-Todd, 1983) while the prevalence of bulimia nervosa ranged from 2%-4.5% (i.e., Cooper & Fairburn, 1983; Johnson, Lewis, Love, Lewis, & Studkey, 1983; Katzman, Wolchik, & Braver, 1984; Pope, Hudson, Jonas, & Yurgelum-Todd, 1983; Pyle, Halvorson, Neuman,

& Mitchell, 1986). More recent studies, using more sensitive instruments and methodology, have reported point prevalence rates ranging from 1%-2% for bulimia nervosa (Goldbloom & Garfinkel; 1993, Hoek, 1993; King, 1989; Pyle, Neuman, Halvorson, & Mitchell, 1991) and 0.5%-1.3% for anorexia nervosa (Goldbloom & Garfinkel, 1993; Rathner & Messner, 1993).

While these studies appear to indicate that pathological eating attitudes and behaviours as well as cases of eating disorders such as anorexia nervosa and bulimia nervosa are less common in China than in Western cultures or those cultures, such as Japan, who have recently introduced Western values and ideals into their society (Kamata et al., 1987; Nasser, 1988a, 1988b; Suematsu, Ishikawa, Kuboke, & Ito, 1985) such conclusions must be made with caution. It is possible that behaviours which may be diagnosed as anorexia or bulimia in Western cultures are diagnosed as hysteria or anxiety in other cultures (Dolan, 1991; Nasser, 1986; Pate, Pumariega, Hester, & Garner, 1992). Additionally, even if eating disorders do occur less frequently in China compared to other more Westernized cultures, it would be premature to attribute such findings to differences in sociocultural values, such

as the idealization of thinness, without further investigation.

In an effort to better understand the role of sociocultural factors such as the thinness ideal, McCarthy (1990) compared the absence or presence of eating disorders with the absence or presence of the thinness ideal in several cultures. She reported that of the seven cultures for which information on both eating disorders and body image were available, all cultures reporting eating disorders also reported advocating the thinness ideal. Additionally, no culture that did not advocate the thinness ideal reported cases of eating disorders. Thus, McCarthy concluded that her results suggest that "exposure to middle-class values in the west, which include the idealization of thinness in women, increases the risk of eating disorders" (p. 210).

Another body of research that has explored the occurrence of eating disorders and pathological eating attitudes in nontraditional populations has focused on non-white individuals living in Western cultures (ie. Crisp, Palmer, Kalllucy, 1976; Gray, Ford, Kelly, 1987; Gross & Rosen, 1988; Hsu, 1987; Lacey & Dolan, 1988; Lucero et al., 1992, Nevo, 1985). The results of these

studies appear to indicate that the occurrence of eating disorders and pathological eating attitudes are more prevalent amongst white or Caucasian individuals. These studies, however, simply use race as their differentiating factor, and include no measure of cultural orientation. Accordingly, the role of sociocultural factors in the etiology of eating disorders is limited.

In a review of cross-cultural research on eating disorders Dolan (1991) encouraged researchers to carefully delineate which variable they are addressing, race or culture, and urged that conclusions be limited accordingly. Thus, Dolan defined **race** as a "biological term referring to the genetic differences between groups within a species" (p.74), and **culture** as an "anthropological term, defining a complex whole of knowledge, behavior, morals, customs, and often religion" (p.75). Dolan continued that one's cultural orientation is arbitrary and variable, and is acquired by being and/or growing up as a member of social group. Thus, if the goal is to identify the role of sociocultural factors, such as the idealization of thinness, in the occurrence of eating disorder and pathological eating attitudes (as is the goal of this

paper), it may be more appropriate to address and investigate one's cultural orientation rather than simply their race.

Recently, a new line of research has attempted to explore the relationship between sociocultural factors and the occurrence of eating disorders and pathological eating attitudes in more detail by investigating the eating attitudes and behaviours of non-Western women at different stages of acculturation to Western cultures. Acculturation, Body Image, and the Occurrence Eating Disorders and Pathological Eating Attitudes

Acculturation is defined as cultural change which results from continuous first hand contact between two distinct cultural groups (Berry, Kim, Powers, Young, & Bujaki, 1989). Acculturation occurs at both the group level and the individual or psychological level. The kind of changes that individuals within an acculturating group may undergo can be categorized into five different types: physical, biological, cultural, social and psychological (Berry, Kim, Minde, Mok, 1987). In their 1986 article, Kim and Berry detailed these five changes:

Firstly, physical changes may occur, such as a new place to live, new housing, and a new climate.

Secondly, biological changes may occur, such as new nutrition status and new diseases. Thirdly, a new set of social relationships may be formed including a reclassification of ingroup and outgroup. Fourthly, cultural changes may occur, with the original political, economic, religious and social institutions becoming altered or replaced. Finally, psychological changes may occur, including shifts in attitudes, values, beliefs and mental health status. (p.159)

Theoretically, acculturative changes can occur in either of the two groups in contact; however, in practice one group comes to dominate another and exerts greater cultural influence (Berry et al., 1987). The dominant group provides a context of acculturation by creating a norm of what is to be accepted, tolerated and encouraged. Thus, the dominant group sets up limitations, boundaries, goals and the end-point of acculturation. Accordingly, the members of the acculturating group must choose to adjust, adapt, reject or change the given context. Acculturative attitudes result when individuals differ in the way that they choose to become involved with other persons

and groups in society (Berry et al., 1987; Berry et al., 1989; Kim & Berry, 1986).

Acculturation is by no means an easy process for those members of the acculturating group. In fact, researchers have found that acculturating individuals suffer from several forms of psychological distress and dysfunction such as, "lowered mental health status (particularly confusion, anxiety, depression), feelings of marginality and alienation, a heightened psychosomatic symptom level, and identity confusion" (Berry et al., 1987, p. 492).

The quantitative measurement of acculturation has been hindered by the complexity of the phenomena that have cognitive, behavioural, and attitudinal components, each of which is composed of multiple constructs and factors (Cuellar, Harris, Jasso, 1980). Thus, the challenge has become developing self report measures which, while brief and practical, are also comprehensive in their scope. Accordingly, research and instrument development in the area of acculturation has progressed from the use of single item indexes, such as generational level, to multiple sociocultural characteristics such as nationality, language, occupational status. Finally, behavioural,

psychological and attitudinal measures have also been incorporated in efforts to measure acculturation.

Recently, researchers have begun to utilize the concept of acculturation to investigate the role of sociocultural factors in the occurrence of eating disorders and pathological eating attitudes. If one accepts that Western cultures' idealization of thinness for women is related to reports of anorexia and bulimia, then the occurrence of eating disorders and pathological eating attitudes should vary according to the degree to which individuals ascribe to and internalize Western values and ideals.

Furnham and Alibhai (1983) were one of the first research teams to investigate the effects of acculturation to a Western culture by investigating how Kenyan Asians in Britain and Kenya, as well as Caucasian Britains, perceive female body shapes. Their results seemed to suggest that when non-Western women are placed in a Western culture they soon lose the ideal of feminine beauty held in their home cultures and begin to internalize the thinness ideal held in the West.

In his 1986 study, Pumariega developed his own 15 item acculturation scale to survey the acculturation

level, as well as the eating attitudes, of Hispanic schoolgirls living in the US. His results detected a significant correlation between level of acculturation to a Western culture and eating attitudes as measured by the Eating Attitudes Test (Garner & Garfinkel, 1979). Pumariega concluded "that eating attitudes varied directly in the anorexic direction with increasing acculturation to American culture" (p. 278).

A more recent study, examining the eating attitudes and behaviours of black and white female college students living the United States, helped to substantiate Pumariega's results. Abrams, Allen and Gray (1993) surveyed the acculturation level and eating attitudes of 100 black female and 100 white female college students. For the purpose of their study the authors utilized the Racial Identity Attitude Scale for Blacks (RIAS-B; Helms, 1990) to measure level of acculturation. In an effort to measure eating attitudes and behaviours, the following scales were utilized: Hawkins' and Clement's Binge Scale (1980); The Restraint Scale (Herman & Mack, 1975); the Drive of Thinness and the Body Dissatisfaction subscales from the Eating Disorder Inventory (EDI; Garner, Olmsted, & Polivy, 1983); the Goldfarb Fear of Fat Scale (GFFS;

Goldfarb, Dykens, & Gerard, 1985); as well as five items taken from Johnson's (1984) Diagnostic Survey of Eating Disorders.

Analysis of covariance and correlational tests revealed that the white females demonstrated significantly greater disordered eating attitudes and behaviours than the black female. Additionally, the researcher found that among the black subjects, higher levels of assimilation to Western culture were significantly positively related to dietary Restraint, Fear of Fat, and Drive for Thinness.

The third study to utilize level of acculturation as a variable in an attempt to address the role of sociocultural factors in the prevalence of eating disorders and pathological eating attitudes was conducted in Britain by Mumford, Whitehouse, and Platts (1991). The results of this study, however, are mixed and fail to unequivocally support Pumariega's & Abrams et al.'s findings.

Mumford et al. (1991) addressed the role of sociocultural factors in the prevalence of eating disorders by investigating the acculturation level and the eating attitudes of Asian (Indian subcontinent) and Caucasian school girls living in Bradford, London.

Although the authors hypothesized that the prevalence of eating disorders would be lower amongst the Asian schoolgirls and that eating disorders would only be found amongst the most 'Westernized' of the Asian students, their results indicated that the Asian schoolgirls' eating attitudes were more pathological than those of the Caucasian schoolgirls. Similarly, the Asian girls diagnosed with an eating disorder had significantly higher 'traditional' scores than the rest of the Asian girls; however their 'Western' scores were not significantly different.

In an attempt to make meaning of their unexpected results the researcher purposed several possible explanations. One possible methodological explanation is that the measure of level of acculturation employed by Mumford and his associates was not valid. The authors noted that because no available acculturation scale was appropriate for use with Asians, they attempted to measure the Western and Asian cultural orientation of each Asian student with four questions, two targeting a Western orientation and two targeting an Asian orientation. Thus, it is possible that the means in which Mumford et al. chose to operationalize level of acculturation failed to adequately address the

complex, multifaceted nature of acculturation. In their conclusion, the authors themselves stated that acculturation is a complex phenomenon and agreed that "there is a need to develop a more sophisticated measure of these cultural dimensions" (Mumford et al., 1991, p. 227). Additionally, the authors encouraged further research into the relationship between acculturation to Western culture and the occurrence of eating disorders in an attempt to help clarify the role of sociocultural factors in the occurrence of eating disorders and pathological eating attitudes.

In their further attempt to address their unexpected findings Mumford and his associates explored the role of acculturative stress in the occurrence of pathological eating attitudes and behaviours (Mumford et al., 1991; Mumford, Whitehouse & Choudry, 1992). Correspondingly, Gil, Vega and Dimas (1994) have stressed the importance of recognizing acculturative stress as an important concept in research; one distinct from level of acculturation.

Acculturative stress is defined as, "one kind of stress, that in which the stressors are identified as having their source in the process of acculturation" (Berry, Kim, Minde, & Mok, 1987, p. 492). According to

social-stress models of acculturative stress, negative outcomes occur when stressors exceed the individual's coping resources, or mediators (Gil et al., 1994). Several types of acculturative stressors exist including language problems, perceived discrimination, perceived cultural incompatibilities, commitment or lack of commitment to culturally prescribed protective values and behaviours as well as acculturation gaps in which differences in acculturation levels between children and their parents produce or exacerbate family communication problems and child-parent conflicts (Gil et al., 1994).

Thus, Mumford and his associates speculated that the higher EAT scores found amongst the Asian girls with the higher 'traditional' scores (and similar 'Western' scores) may reflect the fact that they were experiencing the greatest internal and familial conflict and identity confusion as they grew up with two sets of conflicting cultural values. The authors went on to suggest that their results may indicate that these same Asian girls, because of their exposure to Western values and ideals, adopted Western patterns of reacting to their personal and familial conflict and

stress, thus resulting in their more pathological eating attitudes and behaviours.

A recent study conducted by Furnham and Patel (1994) supports Mumford et al.'s findings. Furnham and Patel (1994) utilized a similar methodology as Mumford et al. (1991) to investigate the eating attitudes and behaviours of Asian (Indian subcontinent) schoolgirls living in London. Accordingly, they utilized the EAT-26, BSQ, as well as their own questionnaire devised to investigate the level of integration of Asian schoolgirls into British society and their level of resentment towards their families for maintaining their traditional values and customs. Like Mumford et al. (1991), the questionnaire addressing level of integration was developed specifically for their study and had not been previously validated.

Although Furnham and Patel hypothesized that their results would support Pumariega (1986) and Abrams et al.'s (1993) findings, their results instead supported Mumford et al.'s (1991) findings. Accordingly, the less integrated Asian schoolgirls displayed higher EAT scores. Furnham and Patel also noted that there was some support for their hypothesis that Asian schoolgirls experiencing greater resentment towards

their families, display greater eating pathology, however the results did not reach significance.

In conclusion, it appears that any attempt to further investigate the role of level of acculturation to a Western culture in the occurrence of pathological eating attitudes must not only take care to appropriately operationalize level of acculturation, but also recognize the role of possible confounding or mitigating factors such as acculturative stress.

Summary

A review of the literature indicates that researchers have just begun to address the role of sociocultural factors, such as cultural ideals and values, in the occurrence of eating disorders and pathological eating attitudes by investigating the relationship between level of acculturation to a Western culture and eating attitudes and behaviours of non-Western women. Such research, however, is still in its infancy and requires much more attention.

One issue the literature has identified as requiring additional attention is improving the means in which important constructs, such as level of acculturation, are operationalized and differentiated from possible confounding or mitigating factors such as

acculturative stress. This study will attempt to address this concern in two ways. First, a more psychometrically sound measure of level of acculturation will be utilized. Second, as an exploratory goal, any possible relationship between acculturative stress and eating attitudes will be addressed in an effort to better understand the relationship between level of acculturation and pathological eating attitudes.

Additionally, all of the previous literature investigating the eating attitudes and behaviours of Asians has employed a very select Asian population of Indian subcontinent schoolgirls living in the UK. Thus, it would seem beneficial to investigate the eating attitudes and behaviours of other Asian groups.

Thus, the purpose of this study is to investigate the role of sociocultural factors in the occurrence of eating disorders by determining the relationship between level of acculturation to Canada and eating attitudes in a nonclinical sample of Chinese university students. In addition, in light of previous research (Furnham & Patel, 1994; Mumford et al., 1991; Mumford et al., 1992) an additional exploratory goal is to

examine the relationship between acculturative stress and eating attitudes and behaviours.

Chapter III

Methodology

In this chapter I will attempt to detail the methodology employed to conduct this study and answer the relevant research questions.

Design

A correlational design was employed to investigate the relationships between level of acculturation and acculturative stress, and eating attitudes. This design was chosen because there was no desire to manipulate subjects or variables, rather the purpose of this study was simply to document the nature and frequency of these particular variables and determine if any relationship exists. All subjects were administered a questionnaire package including a demographic questionnaire as well as various psychological questionnaires (refer to the section on instrumentation).

Sample

One hundred and thirty-one female Chinese and 100 female Caucasian university students from the University of British Columbia were recruited for the purpose of this study. The rather specific population

was selected for several reasons. First, it was decided to target only one gender because gender, itself, has long been recognized as a possible sociocultural factor contributing to the disproportionate distribution of eating disorders and pathological eating attitudes. Additionally, a female population was chosen because the majority of Western sociocultural pressures for thinness are directed towards women (Anderson & DiDomenico, 1992). Similarly, approximately 90% of those individuals with eating disorders are women. Thus, because the purpose of this study was not to investigate gender differences, but to examine any possible relationships between acculturation to a Western culture and the occurrence of pathological eating attitudes, a female population was chosen as it appears to be the population most at risk of eating pathology.

A Chinese population was chosen because the Chinese culture traditionally does not advocate the idealization of thinness, nor are eating disorders frequently reported in China (Chun et al., 1992; Lee et al., 1989; Nasser, 1988a; Zheng, 1982). Thus, it was hoped that this population will provide a wide spectrum of eating attitudes as well as acculturation levels.

Additionally, a Chinese population was chosen because all of the previous literature investigating the relationship between eating pathology and level of acculturation amongst Asians has employed a population of Indian subcontinent schoolgirls living in the UK (Furnham & Patel, 1994; Mumford et al. 1991; Mumford et al. 1992). Thus, it was hoped that utilizing a Chinese population would help extend the knowledge regarding eating attitudes and behaviours in Asian populations.

In an effort to access Chinese students with a wide range of acculturation levels subjects were solicited from a variety of different departments and faculties including Science, Arts and Asian Studies. Additionally, no external parameters were placed on the definition of Chinese. Thus, all female student who self-referred as Chinese were welcome to participate.

Finally, a university population was chosen because it is considered a high risk setting for the occurrence of eating disorders and pathological eating attitudes (Halmi, Jones, & Schwertz, 1981). As well, all of the measures employed in this study were developed and validated on university populations, therefore the measures are considered most appropriate for this population.

Procedure

Subjects were recruited from various intact classes throughout the campus. This researcher approached several professors, first by letter and then by phone requesting their participation. All professors teaching 100-level Anthropology and Sociology, Family and Nutritional Science and Asian Studies course were sent a letter explaining this study and requesting the use of 15 minutes of class time to invite their students to participate. During follow-up calls, their interest and availability was confirmed, and, if necessary, a time to attend their class and conduct my research was arranged.

Additional subjects were recruited as part of a larger study investigating help seeking behaviours of Asian university students carried out by Dr. Ishu Ishiyama. Accordingly, if time permitted, the EAT and the Suinn-Lew Asian Self-Identity Acculturation Scale were include in Dr. Ishiyama's test packages. Accordingly, additional subjects were recruited from 100-level Chemistry, Biochemistry, Fine Arts, History, and Psychology classes.

In all cases, this researcher was present during the actual data collection. Additionally, all

potential subjects were reminded that all materials would be kept confidential, that their participation was voluntary, and that they could choose to discontinue participation at any point. If time permitted the questionnaires were completed during class time and returned to me immediately. However, in some instances professors could not allocate enough class time for students to complete the questionnaire packages; in these instances, participating subjects were asked to complete the questionnaires at their earliest convenience and mail them back via campus mail in provided self addressed envelopes.

The final page of the questionnaire package contained a tear off page so that interested subjects could contact this author for further information regarding the goals and outcomes of this study. Additionally, because examining one's eating attitudes and behaviours may bring up issues for some subjects, especially those with eating disorders, phone numbers of local resources were also be made available on the tear off page.

Intrumentation

The instruments used in this research study included: a demographic questionnaire entitled

"Background Questionnaire", the Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA), the short form of the Eating Attitudes Test (EAT-26), as well as the short form of the SAFE Acculturative Stress Scale (SAFE-24). All of the subjects received the demographic questionnaire and the EAT-26; in addition, the Chinese subjects were asked to complete the SL-ASIA and the SAFE-24.

Demographic Questionnaire. The first section of the questionnaire was developed by the current investigator and includes questions about generation level, ethnic origin, age, familial background, as well as other descriptive details. Other question topics include those which previous researchers, for instance Berry et al. (1987, 1989) and Suinn, Rickard-Figueroa, Lew, & Vigil (1987), have shown to be relevant to level of acculturation and acculturative stress. As stated earlier, some subjects were recruited as part of a larger research study conducted by Dr. Ishiyama. While these subjects were also asked to complete a Demographic Questionnaire, they received a briefer version of the questionnaire designed by this researcher and thus some of the questions were omitted.

Eating Attitudes Test (EAT-26). The short form of the Eating Attitudes Test (EAT-26) consists of 26 items designed to evaluate a broad range of behaviours and attitudes characteristic of anorexia nervosa and bulimia nervosa (Garner, Olmsted, Bohr, & Garfinkel, 1982). The EAT-26 was developed after factor analysis of the original EAT (Garner & Garfinkel, 1979) indicated 14 of the original 40 items could be deleted and still maintain a high correlation ($r=.98$) between the two measures (Garner et al., 1982).

The EAT-26, like its predecessor, asks subjects to respond to items on a 6-point Likert scale ranging from 'always' to 'never'. The items are summed for a total score which can then be compared to the cut-off score of 20, which Garner and his coworker found to maximally differentiate anorexic subjects from female control subjects (Garner et al., 1982). Factor analysis of the original 40 item EAT also identified three sub-scales currently recognized by the EAT-26. These subscale are: (a) dieting (13 items), (b) bulimia and food preoccupation (6 items), and (c) oral control (7 items). The standardized reliability coefficients for the three subscales range from 0.83 to 0.90 for the

eating disordered group and from 0.46 to 0.86 for their female comparison group (Garner et al., 1982).

The EAT-26 was first developed and validated on a Canadian university population, similar to the one to be used in this study. Additionally, Mumford et al. (1991) employed factor analysis to investigate the validity of the EAT-26 with an Asian population. Their results indicated that the factor structure of the EAT-26 for their sample of Asian students closely resembled that from a previous study of Caucasian schoolgirls. Thus, Mumford and his coworkers concluded that the EAT-26 is a valid measure of eating attitudes and behaviours for Asian women living in Western cultures.

Suinn-Lew Asian Self-Identity Acculturation Scale.

The Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA) is an instrument specifically designed to measure level of acculturation in Asians (Suinn et al., 1987). Despite its relative newness, the measure has already been adopted by researchers (e.g., Atkinson & Gim, 1989; Atkinson, Whitely, & Gim, 1990). It was modeled after the successful Acculturation Rating Scale for Mexican Americans (Cuellar, Harris, & Jasso, 1980) after a review of the literature revealed no objective measure of acculturation for this population. The SL-

ASIA is based on the theoretical assumption that acculturation is a multifaceted phenomenon.

Accordingly, the scale attempts to address numerous, albeit not exhaustive, dimensions relevant to acculturation ranging from cognitive and attitudinal beliefs to behavioural characteristics. Specific items assessed fall into four factor analyzed content areas:

- (a) language familiarity, usage and preference;
- (b) ethnic identity; (c) cultural behaviours; and
- (d) ethnic interaction.

The SL-ASIA consists of 21 multiple choice items that assess language preference (4 questions), identity (4 questions), friendship choice (4 questions), behaviours (5 questions), generation and geography history (3 questions), and attitudes (1 question). Each response is recorded on a 5-point scale where "1" indicates low acculturation and "5" indicates high acculturation. The total score is obtained by summing across all 21 items and dividing the total by 21; thus a total score can range from 1.00 (low acculturation or Asian identified) to 5.00 (high acculturation or Western identified). The scale also recognizes a third interpretation, bicultural (with an SL-ASIA score of "3"), which the authors suggest represents the ability

to integrate the best of both worlds without denial to either. As such, the SL-ASIA addresses only three of the four acculturation options suggested by Berry (1989). The option of marginalization, in which neither one's home culture nor the host culture is embraced, is not recognized by the SL-ASIA. Although this is a limitation of the SL-ASIA, the lack of an appropriate instrument based on Berry's model necessitates its use. In addition, given that one of the goals of this study is to operationally define level of acculturation, the SL-ASIA, while not addressing all acculturation options, does appear to address the degree to which one internalizes Western values.

Although Suinn, Rickard-Figueroa, Lew, and Vigil (1987) provided initial psychometric values for the SL-ASIA, the instrument has recently undergone more extensive scrutiny. Suinn, Ahuna, and Khoo (1992) indicated that the reliability coefficient (Cronbach's alpha) for the SL-ASAI is .91. This estimate is comparable to the alpha coefficient of .88 reported in the original study (Suinn et al., 1987) and to the estimate of .89 reported by Atkinson and Gim (1989). Correlational analysis and analysis of variance were

also carried out on the SL-ASIA (Suinn et al., 1992). Higher SL-ASIA scores were found to have significant positive correlation with: (a) total years attending school in the US; (b) age upon attending school in the US; (c) years living in the US; (d) age upon arriving in the US; (e) years lived in a non-Asian neighborhood; and (f) self-rating of acculturation. In addition, the results of the factor analysis indicate that the SL-ASIA has a structure similar to that of the scale it was modelled after.

Even though the SL-ASIA is still a relatively new measure, and would most likely benefit from further analysis, the lack of a more reliable objective measure of level of acculturation for a Chinese population necessitates its use.

SAFE Acculturative Stress Scale (SAFE-24). A.M. Padilla and his associates developed the original SAFE as a means of "assessing the sources of stress that (immigrant) university students frequently encounter and the cumulative degree of stressfulness that these difficulties induce" (Padilla, Alvarez, & Lindholm, 1986, p. 280). The original scale included 66 items derived from a review of the literature as well as from a series of preliminary semi-structured interviews in

which immigrant university students were asked to relate difficulties they experienced as immigrants or had been aware of as offspring of immigrants. Accordingly, the original scale consisted of 66 items measuring stressors in the **S**ocial, **A**ttitudinal, **F**amilial, and **E**nvironmental domains (**SAFE**).

The scale was initially used with a sample of 247 university students (Padilla, 1985; Padilla et al., 1986). Subjects included 99 first-generation immigrants, 47 second-generation individuals, and 101 third or later-generation students. Within the immigrant group, 60 were of Asian origin, 20 were of diverse European background, and the remainder were from Latin America or Africa. All subjects were asked to rate each item on a 5 point Likert scale ranging from "NOT STRESSFUL" (rated as 1) to "EXTREMELY STRESSFUL" (rated as 5).

Discriminant analysis of the SAFE confirmed the authors' original preconceptions of the categories of stressors experienced by immigrants. Accordingly, Padilla and his associates found that the best discriminates of generational status was a Cultural/Familial function (accounting for 63% of the predicted variance) and a Social/Environmental function

(accounting for another 26% of the predicted variance). Together both functions correctly classified 91% of late immigrants and 82% of the total subjects into four generational groups (Padilla et al., 1986).

Following this initial trial, modifications were made to the SAFE to improve wording problems and eliminate questions which failed to discriminate between the generational status of the subjects. Accordingly, 6 items were deleted from the questionnaire. The modified 60 item SAFE has since been utilized with a sample of 114 Japanese and Japanese American, and 114 Mexican and Mexican American university students (Padilla, Wagatsuma, & Lindholm, 1985a; 1985b). Once again, discriminant analysis confirmed that 90% of the subjects were correctly grouped into generational levels on the basis of their responses on the SAFE (Padilla et al., 1985b).

More recently Mena, Padilla, & Maldonado (1987) utilized a modified 24 item version of the SAFE (SAFE-24). Seventeen of the items were taken from the 60 item SAFE. These items were found in an earlier study (Padilla et al., 1985b) to discriminate between generations for both Japanese and Mexican American students. An additional 7 new statements were added

which pertained to perceived discrimination or majority group stereotypes towards immigrant populations. Like in the original SAFE, all items were rated on a 5 point Likert scale ranging from "NOT STRESSFUL" (1) to "EXTREMELY STRESSFUL" (5). If an item was not applicable to a subject it was assigned a score of 0. Thus the possible scores for the 24 item SAFE range from 0 to 120.

Although there is limited psychometric information concerning the SAFE-24, the initial information is promising. First, a reliability check on the scale with a subject population of 214 multicultural university students resulted in a Cronbach Alpha Coefficient of .89 (Mena et al., 1987). Thus the scale appears to be highly reliable. Additionally, levels of acculturative stress as measured by the SAFE-24 differed significantly among the four generational groups.

While the SAFE-24 is still a relatively new measure and lacks intensive psychometric analysis, the lack of a more reliable brief measure of acculturative stress necessitates its use. Additionally, the original SAFE, as well as the SAFE-24, was developed and validated on a university population, similar to

the population to be used in this study. Furthermore, a significant proportion of the more recent research utilizing the SAFE-24 has utilized various Asian populations, yet another characteristic of the population this study attempts to access.

Hypothesis

The following relationships are hypothesized in this study:

- 1) an ethnic difference in eating attitudes and behaviours as follows: the mean EAT score for the Caucasian subjects will be higher (more pathological) than the mean EAT score for the Chinese subjects;
- 2) a direct relationship between level of acculturation and eating attitudes as follows: As the Chinese subjects' SL-ASIA scores increase (indicating a higher degree of Westernization or assimilation) so will their EAT scores (indicating more pathological eating attitudes and behaviours).

Additionally, the following tentative hypothesis will be address:

- 3) a direct relationship between acculturative stress and eating attitudes as follows: As

the Chinese subjects' SAFE score increase (indicating more personal and familial stress) so will their EAT scores (indicating more pathological eating attitudes and behaviours).

- 4) a direct relationship between level of acculturation and eating attitudes, independent of the effects of acculturative stress, as follows: Amongst the Chinese subjects, level of acculturation as measured by the SL-ASIA, will be found to be the best predictor of pathological eating attitudes and behaviours.

Statistical Analysis

First, t-tests were conducted to determine any significant differences across the two cultural groups survey in this study. A significance level of $p < .05$ level was used unless otherwise specified. Next, pearson product moment correlational analysis was used to determine the nature of the relationship between level of acculturation and eating attitudes as well as the nature of the relationship between acculturative stress and eating attitudes.

Finally, multiple regression analysis was performed to test the hypothesis that level of acculturation influences eating pathology and behaviour independently of acculturative stress. A stepwise multiple-regression equation was then constructed with EAT scores as the dependent variable and level of acculturation, acculturative stress and age as the predictor variables.

Chapter IV

Results

Earlier in this paper, four hypotheses were proposed. Briefly, they stated (a) that female Caucasian subjects would exhibit more pathological eating attitudes and behaviours than the Chinese subjects; and (b) that highly acculturated female Chinese subjects would exhibit more pathological eating attitudes and behaviours than less acculturated female Chinese subjects. Two exploratory hypotheses were also stated, predicting (a) that Chinese subjects experiencing a high amount of acculturative stress would show more pathological eating attitudes and behaviours; and (b) that level of acculturation would be the strongest predictor of the Chinese subjects' eating attitudes and behaviours. These hypotheses were tested statistically and the results of those analyses are presented in this chapter. To begin, however, a detailed description of the sample is presented.

Demographic Description of the Sample

As outlined in the Chapter Three, subjects for this study were recruited by two primary researchers. Approximately half of the subjects were recruited by this researcher (Sample 1) , while the remaining

subjects were recruited with the assistance of Dr. Ishiyama in conjunction with a larger research study (Sample 2). In all cases, this researcher was present during the actual data collection. Table 1 outlines the number of subjects recruited in each sample as well as the questionnaire items completed by each subject. As Table 1 indicates, Sample 1 consisted of 115 subjects (48 Caucasian and 67 Chinese subjects), while Sample 2 consisted of an additional 116 subjects (52 Caucasian and 64 Chinese subjects). In total, 231 subjects were recruited for this study. All of the subjects in Sample 1 completed the entire questionnaire package outlined in Chapter 3. Forty-nine of the 64 Chinese subjects in Sample 2 received and completed the Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA), and none received the SAFE Acculturative Stress Scale (SAFE).

To ensure that there were no significant differences between the two samples, the means and standard deviations of key variables were compared. As Table 2 indicates, no significant differences were found across the two samples. Accordingly, the data was collapsed across samples for all subsequent analysis.

Table 1

Break Down of Subjects in each Sample

Ethnicity	Sample 1	Sample 2		Total
	(all scales)	(EAT only)	(EAT+SL-ASIA)	
Caucasian	48	52	0	100
Chinese	67	15	49	131
Total	115	67	49	231

Table 2

Means and Standard Deviations for Age, Years Living in North America, Eating Attitudes and Behaviours (EAT) and Level of Acculturation (SL-ASIA) between Samples

Category	Sample1 ^a Mean (SD)	Sample2 ^b Mean (SD)	t	level of significance
AGE (yr) ^c	19.97 (2.24)	20.13 (2.51)	0.51	ns
LIFE (yr) ^d	16.06 (6.71)	17.12 (6.68)	-1.13	ns
EAT ^e	8.82 (8.96)	9.39 (10.21)	-0.46	ns
SL-ASIA ^f	2.74 (0.59)	2.71 (0.56)	.30	ns

Note: Life= years living in North America; EAT = full scale EAT; SL-ASIA = full scale SL-ASIA

^a_n = 115. ^b_n = 116. ^c_{df} = 222. ^d_{df} = 204.

^ethe higher the score, the greater the eating pathology; _{df} = 229. ^flow scores indicate Chinese identified, high scores indicate Western identified; _{df} = 114.

Table 3 presents some of the demographic information obtained in the first section of all the questionnaire packages. Forty-six percent of the Chinese subjects ($n = 131$) indicated that they were the oldest sibling in their family, while 50% of the Caucasian subjects ($n = 100$) indicated that they were the eldest sibling. Another 24% of the Chinese subjects and 28% of the Caucasian subjects indicated that they were the youngest sibling in their families, suggesting that the majority of the subjects came from two sibling families.

Ninety-seven percent of all the subjects were undergraduate students working towards their Bachelor degrees. Of the 131 Chinese students recruited for this study, 47% were Science majors, 24% were from the Faculty of Arts (including History, Psychology and Sociology), and the remaining 29% were Asian Studies students. Of the 100 Caucasian subjects, more than half (64%) were from the Faculty of Arts, while the remaining subjects were majors in either Science (31%) or Asian Studies (5%).

As place of birth was a criterion for inclusion in this study for the Caucasian subjects, it is not

Table 3

Demographic Data for all Subjects including Sibling
Order, Department, Program, Place of Birth, and
Generation Level

Category	Description	Chinese n (%) 131	Caucasian n (%) 100	Total N (%) 231
Sibling Order	Oldest	60 (46%)	50 (50%)	110 (48%)
	Youngest	31 (24%)	28 (28%)	59 (26%)
	Only	5 (4%)	6 (6%)	11 (5%)
	Middle	24 (18%)	11 (11%)	35 (15%)
	Other	1 (1%)	4 (4%)	5 (2%)
	Unknown	10 (8%)	1 (1%)	11 (5%)
Dept.	BioChem/Chem.	62 (47%)	31 (31%)	93 (40%)
	Arts	31 (24%)	64 (64%)	95 (41%)
	Asian Studies	38 (29%)	5 (5%)	43 (19%)
Program	Bachelors	127 (97%)	97 (97%)	224 (97%)
	Diploma	0 (0%)	0 (0%)	0 (0%)
	Masters	0 (0%)	1 (1%)	1 (.4%)
	Doctoral	1 (.8%)	0 (0%)	1 (.4%)
	Unclass.	0 (0%)	2 (2%)	2 (.9%)
	Unknown	3 (2%)	0 (0%)	3 (1%)
Place of Birth	Canada	53 (40%)	96 (96%)	149 (65%)
	North America	1 (.8%)	4 (4%)	5 (2%)
	Other	54 (41%)	0 (0%)	54 (23%)
	No Answered	23 (18%)	0 (0%)	23 (10%)
Generation				
Level ^a	1st.	65 (54%)	N/A	N/A
	2nd.	51 (44%)		
	3rd.	0 (0%)		
	4th.	0 (0%)		
	5th.	0 (0%)		

^a Taken from Question 12 of the SL-ASIA: generation 1st. = I was born in Asia or other; generation 2nd. = I was born in Canada, either parent was born in Asia or other.

surprising that 100% of the Caucasian subjects were born in North America, with 96% if them indicating that they were born in Canada. Alternatively, of the 108 Chinese subjects who indicated their place of birth, 40% were born in Canada while 41% were born abroad. Eighteen percent of the Chinese subjects did not indicate where they were they were born.

Of the 54 Chinese subjects born abroad, 95% indicated that they were born in either Hong Kong, China or Taipai, Taiwan. Five percent of the Chinese subjects born abroad did not indicate where they were born.

According to Question 12 from the Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA), 56% of the Chinese subjects classified themselves as first generation, indicating that they were born in Asia or other. The remaining 44% Chinese students classifying themselves as second generation, indicating that they were born in Canada while at least one of their parents was born in Asia or other. No subjects classified themselves as third, fourth, or fifth generation.

Table 4 presents additional demographic information, including the means and standard deviations for age, number of years living in North

Table 4

Means and Standard Deviations for Demographic Data
including Age, Years Living in North America, and Years
in School in North America

Category	Chinese ^a Mean (SD)	Caucasian ^b Mean (SD)	t
Age	19.61 (1.75)	20.59 (2.86)	3.15*
Life	12.81 (7.12)	20.47 (2.93)	9.98**
Schooling	10.09 (5.71)	N/A	

Note: Life = Number of years living in North America;
 Schooling = Number of years attending school in North
 America.

^a_n = 131. ^b_n = 100.

*p<.05. **p<.001.

America, and number of years attending school in North America across the two cultural groups. The mean age varied significantly between groups $t(222) = 3.14$, $p < .05$, with a mean of 19.61 years ($SD = 1.75$ years) for the Chinese subjects and 20.59 years ($SD = 2.86$ years) for the Caucasian subjects. As anticipated, there was also a significant difference in the number of years each group indicated they had lived in North America $t(204) = 9.96$, $p < .001$, with a mean of 12.81 years ($SD = 7.12$ years) for the Chinese subjects and 20.47 years ($SD = 2.86$ years) for the Caucasian subjects.

Information regarding the number of years the Caucasian subjects attended school in North America was not collected. However, this information was collected for the Chinese subjects. Accordingly, the mean number of years the Chinese subjects attended school in North America was 10.09 years ($SD = 5.71$ years).

Hypothesis One: Eating Attitudes and Behaviours across Cultural Groups

Although it was hypothesized that the Caucasian subjects would display significantly more pathological tendencies in their eating attitudes and behaviours than the Chinese subjects, statistical analyses did not support this prediction. These analyses assessed

whether the two cultural groups under consideration in this study differed from each other on the scores of the full scale EAT, as well as its three subscales. Table 5 presents the means and standard deviations across groups for all the scales. Only the oral control subscale approached a significant level with $p = .058$ [$t(229) = -1.90$].

While there were no significant differences in EAT scores across the Chinese and Caucasian subjects, the Chinese subjects' mean full scale EAT score appears higher on visual examination than the mean EAT score of 5.93 (SD=5.46) reported by Lee (1993) for his sample of 646 female Chinese university students still living in China. Utilizing the information provided by Lee (1993), a t test for independent samples was conducted employing the following formula:

$$t = \frac{X_1 - X_2}{S_{x_1 - x_2}}$$

While the results of this procedure must be viewed with caution as the similarity of sample characteristics and study methodology can not be ensured, the present study's sample of Chinese students appears to have

Table 5

Means and Standard Deviations for the full Scale and
Subscale EAT Scores across Cultural Groups

Category	Chinese ^a Mean (SD)	Caucasian ^b Mean (SD)	t (df=229)	level of significance
EAT	9.51 (8.92)	8.59 (10.43)	-.72	ns
-Diet	5.51 (6.39)	5.45 (7.35)	-.05	ns
-Bulimia	1.22 (2.27)	1.17 (2.38)	-.17	ns
-OralControl	2.79 (3.64)	1.97 (2.61)	-1.90	p=.058

Note: EAT = full scale EAT; Diet = diet subscale;
 Bulimia = bulimia subscale; OralControl = oral control
 subscale.

^a_n = 131.

^b_n = 100.

scored significantly higher on the EAT than Lee's sample of Chinese students $t(773) = 6.05, p < .001$. Accordingly, it appears that the female Chinese subjects surveyed in this study displayed more eating pathology than the female Chinese subjects surveyed in China.

As suggested by Garner, Olmsted, Bohr, & Garfinkel (1982), a total EAT score of 20 was used as the cut-off point between pathological and non-pathological eating attitudes and behaviours. Accordingly, the percentage of students in each cultural group scoring over the cut-off point was compared. As Table 6 presents, 12% of the Chinese students and 10% of the Caucasian students scored over the cut-off point. Chi-squared analysis was conducted and revealed that the difference across groups was insignificant, $\chi^2(1, N=231) = 0.502, p > .50$.

Hypothesis Two and Three: Correlational Analysis

One of the primary objectives of this study was to examine any possible correlations between level of acculturation, acculturative stress, and eating pathology amongst the Chinese subjects. In this section I will present and analyze the correlation

Table 6

Contingency Table of Chinese and Caucasian Subjects
who Displayed Eating Pathology (EAT > 20) or no
Eating Pathology (EAT < 21)

Category	Chinese N (%)	Caucasian N (%)	Total
EAT>20	16 (12.21%)	10 (10.00%)	26
EAT<21	115 (87.79%)	90 (90.00%)	205
Total n =	131	100	231

$$\chi^2 = 0.552, p > .50$$

coefficients obtained for level of acculturation, acculturative stress and eating attitudes and behaviours as well as the intercorrelations for the measures of level of acculturation (SL-ASIA) and eating attitudes and behaviours (EAT).

Intercorrelations of the EAT and SL-ASIA. To explore the validity of the EAT with Chinese subjects, intercorrelational analysis was conducted (see Appendix H). Thus, the intercorrelations between the full scale and subscale EAT scores for all subjects combined, Caucasian subjects, and Chinese subjects were investigated. The intercorrelations of the full scale and subscale EAT scores for the Chinese subjects closely resembled those of the Caucasian subjects, with the exception of the oral control subscale. While the oral control subscale was positively correlated to the diet subscale ($r = .364$) for the Caucasian subjects, it was not significantly correlated to the diet subscale for the Chinese subjects ($r = .037$). This finding echoes Lee's (1993) results which indicated that the oral control subscale failed to be significantly correlated with the diet subscale for his sample of Chinese subjects living in China. Aside from the oral

control subscale, however, the intercorrelations appear similar across both groups.

Similarly, intercorrelational analysis of the level of acculturation measure (SL-ASIA) for the Chinese subjects was conducted (see Appendix I). The results revealed that all of the subscales were highly correlated to each other as well as the full scale score.

Level of Acculturation and Eating Attitudes and Behaviours Amongst the Chinese Subjects. In this section I will present and analyze the correlation coefficients obtained for level of acculturation, as measured by the SL-ASIA, and eating attitudes and behaviours, as measured by EAT.

Although significant positive correlations were hypothesized, no significant relationships were observed on the full scale level (Table 7). On the subscale level, however, the EAT subscale addressing oral control was significantly related to the full SL-ASIA as well as three of the five subscales including, language preference and usage, ethnic interaction, and affinity for ethnic identity and pride in the negative direction. These results appear to indicate that less acculturated Chinese subjects, as measured by the above

Table 7

Correlation Matrix of Full Scale and Subscale EAT and
SL-ASIA Scores for the Chinese Subjects

	EAT	Diet	Bulimia	OralControl
SL-ASIA	-0.15	-0.06	-0.10	-0.20*
-Language	-0.14	-0.02	-0.10	-0.23*
-Friend	-0.16	-0.05	-0.14	-0.22*
-Affinity	-0.21*	-0.10	-0.19*	-0.22*
-Generation	-0.05	-0.06	-0.01	-0.01
-Food	-0.03	-0.001	-0.06	-0.11

Note: SL-ASIA = full scale SL-ASIA; Language = language preference subscale; Friend =ethnic interaction subscale; Affinity = affinity for ethnic identity and pride subscale; Generation = generational identity subscale; Food = food preference subscale.

Negative r indicates a tendency that the less acculturated, the more eating pathology.

$n = 116$.

* $p < .05$, two-tailed.

subscales, display more self-control around food and perceive more pressure from others to gain weight than the more acculturated subjects. Similarly, the SL-ASIA subscale measuring affinity for ethnic identity and pride proved to be significantly related to the full EAT scale as well as the bulimia and oral control subscales, again indicating that those subjects displaying greater affinity for the Chinese culture display more pathological eating attitudes and behaviours. EAT scores were plotted against SL-ASIA scores to investigate a possible curvilinear relationship between these two variables. No significant curvilinear relationship was found.

In a post hoc analysis, Suinn et al.'s (1987) suggested procedure of dividing the full scale SL-ASIA scores into low (1-2), medium (3) and high (4-5) categories was followed. Accordingly, the Chinese subjects' full scale SL-ASIA scores were categorized and their mean full scale EAT scores were compared across the three groups. Utilizing this procedure resulted in only 9 cases in the "high" acculturation category. Therefore, data from two SL-ASIA questions (Questions #3 and #20) that directly asked subjects to indicate their level of acculturation were also divided

into low, medium and high scores and the mean full scale EAT scores were compared across groups. This procedure resulted in a better distribution of cases across the three levels of acculturation.

Table 8 presents the results of the one-way analyses of variance (ANOVAs). These analyses indicated that the differences across the three levels of acculturation were significant regardless of the measure of level of acculturation. Subsequent analysis utilizing the Scheffe method determined that only the differences between the low and medium levels of acculturation were significant. Accordingly, while inspection of the means presented in Table 8 suggest that individuals who indicate a high level of acculturation have a tendency to display greater eating pathology than the those who indicate a medium level of acculturation, the differences were found not to be significant.

Acculturative Stress and Eating Attitudes and Behaviours for the Chinese Subjects. One of the exploratory goals of this study was to address the relationship between acculturative stress, as measured by the SAFE, and eating attitudes and behaviours. As predicted, acculturative stress was significantly

Table 8

One-way Analysis of Variance of Full Scale EAT Scores
across Level of Acculturation

Level of Acculturation	Mean	EAT (SD)	F (df=2,113)
SL-ASIA (total)^a			
Low n=33	12.62	(10.86)	
Medium n=77	7.61	(7.51)	
High n=6	12.67	(10.54)	4.29*
SL-ASIA #3^b			
Low n=47	11.32	(9.83)	
Medium n=50	6.76	(7.67)	
High n=19	11.01	(8.74)	3.69*
SL-ASIA #20^c			
Low n=43	12.49	(10.18)	
Medium n=57	7.21	(8.13)	
High n=16	8.19	(5.83)	4.65*

Note: low SL-ASIA scores indicate Chinese identified,
high scores indicate Western identified.

^aFull scale SL-ASIA

^bHow do you identify yourself?

^cHow would you rate yourself?

* $p < .05$

related to the full scale EAT as well as the diet and bulimia subscales, indicating that subjects experiencing greater acculturative stress display more eating pathology (see Table 9). In a post hoc analysis, the SAFE was also found to be significantly related to the full scale SL-ASIA, as well as all but one of the subscales, indicating that subjects' displaying lower levels of acculturation experience more acculturative stress (see Table 10).

Hypothesis Four: Regression Analysis

In this section, I will examine and analyze the results of the regression analysis. First, a simultaneous multiple regression was conducted. Level of acculturation (SL-ASIA subscales), acculturative stress (SAFE), and age were used as predictor variables. Pathological eating attitudes and behaviours (full scale EAT) was the criterion variable. Next, a model of the regression of the full scale and subscale EAT scores on all the predictor variables was conducted with the use of a stepwise regression. Analyses were performed using SPSS* REGRESSION with an assist from SPSS* FREQUENCIES for evaluation of assumptions.

Table 9

Correlation Matrix of Full Scale and Subscale EAT
Scores with SAFE

	EAT	Diet	Bulimia	OralControl
SAFE	.45**	.37*	.36*	.24

n = 67.

*p<.01, two-tailed. **p<.001, two-tailed.

Table 10

Correlation Matrix of Full Scale and Subscale SL-ASIA
Scores with SAFE

	SAFE
SL-ASIA (Total)	-0.42**
language	-0.35**
-friend	-0.31*
-Affinity	-0.39**
-Generation	-0.23
-Food	-0.29*

n = 67.

*p<.05, two-tailed. **p<.01, two-tailed

Results of evaluation of assumptions led to square root transformation of the EAT variables to reduce a slight skewness in their distribution, reduce the number of outliers, and improve the normality, linearity, and homoscedasticity of residuals. With the use of a $p < .001$ criterion for Mahalanobis distance no outliers among cases were found. No cases had missing data.

Table 11 presents a summary of the findings from the multiple regression analysis predicting eating attitudes and behaviours. The equation predicting eating attitudes and behaviours reached significance, $F(7,59) = 2.285$, $p < .05$. Only one variable, acculturative stress, was significantly related to eating attitudes and behaviours, $t(1,65) = 2.985$, $p < .01$. Contrary to Hypothesis four outlined in Chapter 3, level of acculturation, as measured by the full scale SL-ASIA, was not significantly related to eating attitudes and behaviours. Entering the five predictor variables in the regression equation produced an R-squared of .21, with an adjusted R-squared of .12 (see Table 9). Therefore, a modest amount of variance (12%) in eating attitudes and behaviours is accounted for, almost wholly by acculturative stress.

Table 11

Multiple Regression Analysis of Predictors of
Pathological Eating Attitudes and Behaviours (n=67)

Source	Beta	t	level of significance
Age	-.072	-.585	ns
SL-language	.039	.224	ns
SL-friend	-.111	-.768	ns
SL-generation	-.037	-.267	ns
SL-food	.112	.767	ns
SL-affinity	-.109	-.716	ns
SAFE	.401	2.985	<u>p</u> =.0041

Note: Beta is the standardized regression coefficient.

Percentage of variance in eating attitudes and
 behaviours accounted for by the regression equation
 (R^2 is .21 (Adjusted .12). Overall $F(7,59) = 2.285$,
 $p < .05$.

Second, a model of the regression of the full scale EAT on all of the predictor variables was conducted with the use of a stepwise regression (see Table 12). Again, only acculturative stress, as measured by the SAFE, proved to be significant, accounting for almost all of the variance. Despite the recent controversy regarding the validity of employing stepwise methods (Thompson, 1989; Wampold & Freud, 1987) the similarity of findings across both methods of regression support the validity of the regression pattern noted in the stepwise procedure.

Finally, a model of the regression of the three EAT subscales on all of the predictor variables was conducted with the use of a stepwise regression (see Tables 13-15). Both the diet and bulimia subscales regressed in as similar manner as the full scale EAT, identifying acculturative stress as the best predictor of eating pathology. The oral control subscale, however, indicated that the level of acculturation subscale measuring affinity for ethnic identity and pride was the best predictor of eating pathology.

The residuals of all of the above regressions were plotted against the predicted values. These analyses showed that over 95% of the residuals fell within +/-

Table 12

Stepwise Regression of the Full Scale EAT on all of the
Predictor Variables

Source	Beta Weight	t	R ²
<u>Step One:</u>			
SAFE	.423	3.760**	.18
<u>Step Two:</u>			
SAFE	.401	2.985*	
Age	-.072	-.585	
SL-generation	-.037	-.267	
SL-food	.112	.767	
SL-friend	-.111	-.768	
SL-affinity	-.101	-.716	
SL-language	.039	.224	.21

n = 67.

*p<.05. **p<.001

Table 13

Stepwise Regression of the Diet Subscale on all of the
Predictor Variables

Source	Beta Weight	t	R ²
<u>Step One:</u>			
SAFE	.371	3.218*	.14
<u>Step Two:</u>			
SAFE	.505	3.773**	
Age	-.204	-1.500	
SL-generation	-.068	-.494	
SL-food	.080	.549	
SL-friend	-.057	-.396	
SL-affinity	.194	1.281	
SL-language	.140	.360	.21

n = 67.

*p<.005. **p<.001

Table 14.

Stepwise Regression of the Bulimia Subscale on all of
the Predictor Variables

Source	Beta Weight	t	R ²
<u>Step One:</u>			
SAFE	.288	2.368*	.09
<u>Step Two:</u>			
SAFE	.261	1.950*	
Age	.048	.376	
SL-generation	-.099	-.689	
SL-food	.219	1.439	
SL-friend	-.157	-1.014	
SL-affinity	-.110	-.696	
SL-language	.084	.463	.15

n = 67.

*p<.05. **p<.001.

Table 15

Stepwise Regression of the Oral Control Subscale on all
of the Predictor Variables

Source	Beta Weight	t	R^2
<u>Step One:</u>			
SL-affinity	-.468	-4.265**	.22
<u>Step Two:</u>			
SL-affinity	-.448	-3.039*	
Age	.195	1.626	
SAFE	-.049	-.379	
SL-food	-.018	-.127	
SL-generation	.067	.512	
SL-friend	-.076	-.544	
SL-language	-.048	-.565	.25

n = 67.

*p<.01. ** p<.001.

2.00 SD (all within ± 3.00 SD). Again, analysis of Cook and Mahalanobis distances indicated no significant outliers.

Additionally, entering scores which had been transformed to account for the possibility of a quadratic effect did not contribute significantly to the regression. Thus, it appears that no significant curvilinear relationship exists.

Chapter V

Discussion

The primary purpose of this research study was to compare the eating attitudes and behaviours of Chinese and Caucasian female university students. Additionally, this study investigated whether a relationship exists between level of acculturation, acculturative stress, and pathological eating attitudes and behaviours amongst Chinese female university students. No such studies had previously been carried out with Asian subjects who do not have origins in the Indian subcontinent, nor have any studies included both a measure of level of acculturation and acculturative stress.

In this chapter the results obtained in this study are discussed and compared with existing research findings. The limitations of the study are stated, along with suggestions for further research. Finally, the counselling implications of the current study's results are outlined.

Review of the Research Findings

Cultural group differences. This study found no significant differences between the Chinese and Caucasian subjects in eating attitudes and behaviours.

Both groups scored similarly on the Eating Attitudes Test (EAT) and the percentage of subjects who scored 20 or more points on the EAT (the cut-off score for an eating disorder) was also roughly the same across groups. Such findings were not anticipated or hypothesized. However, they are in keeping with Pumariega's findings of no significant differences between his sample of Hispanic and Caucasian subjects. In addition, although the differences were not significant, the fact that more Chinese than Caucasian subjects scored over the cut-off point on the EAT is consistent with Mumford et al.'s (1991; 1992) findings.

A closer look at the demographic data of the Chinese subjects may help explain the similarity across groups on EAT scores. The demographic data revealed that more than half of the Chinese subjects were born in North America. Additionally, of those subjects born abroad, 95% indicated that they were born in Hong Kong or Taipai, Taiwan.

Lee, Chiu and Chen (1989) stated that people in industrialized urban cities such as Hong Kong and Taiwan have recently begun to feel the effects of Westernization as evidenced by the development of fast food restaurants and aerobic gyms. Thus, the majority

of Chinese subjects who indicated their place of birth were either North America or urban cities currently undergoing Westernization.

Similarly, the mean number of years all of the Chinese subjects indicated they had lived in North America was 12.81 years, and their mean number of years attending school in North America was 10.09 years. Thus, in general, the Chinese subjects surveyed in this study had a high degree of exposure to Western culture at the time of the study. It is therefore possible that the Chinese subjects surveyed in this study already had enough exposure to Western ideals and values to put them at similar risk as their Caucasian counterparts of developing pathological eating attitudes and behaviours.

Such an interpretation of the results is supported by Furnham and Alibhai's (1983) study of Kenyan women's preferred body shape. Their results found that when non-Western women are placed in a Western culture they quickly assimilate Western ideals and values, such as the thinness ideal, and surrender the traditional ideal of feminine beauty held in their home culture.

While no significant differences were found between the two cultural groups surveyed in this study,

the Chinese subjects' mean score on the full scale EAT was significantly higher than that reported by Lee (1993) for his sample of female Chinese university students living in China. While this finding must be interpreted with caution as the similarity of sample characteristics and study methodology can not be ensured, it does appear to mirror Mumford et al.'s (1992) finding that Asian subjects living in Bradford, London displayed higher EAT scores and more cases of anorexia and bulimia compared to Asian subjects living in their home countries of Lahore (Mumford et al., 1992) and Mirpur (Choudry & Mumford, 1992).

Thus, the findings of this study support Mumford and his colleagues' (Choudry & Mumford, 1992; Mumford et al., 1991, 1992) claim that non-white women living in Western countries and exposed to Western values and ideals are at higher risk of developing pathological eating attitudes and behaviours than similar non-white women still living in their country of origin. Additionally, the findings of this study suggest that female Chinese university students living in British Columbia, Canada (as an example of Western culture), display a similar level of eating pathology as their Caucasian counterparts. Without further analysis,

however, it is difficult to determine whether these findings are due simply to level of acculturation and assimilation of Western culture, ideals, and values or the acculturative stress often associated with the relocation process. This query is addressed in the following sections of this chapter.

Level of acculturation and eating attitudes and behaviours. Correlational analysis revealed several negative relationships between level of acculturation and eating attitudes and behaviours amongst the Chinese subjects. Specifically, the EAT subscale addressing oral control was significantly related to the full scale measure of level of acculturation (SL-ASIA) as well as three of its five subscales. This finding suggests that the less acculturated Chinese subjects displayed more pathological control around food and perceive more pressure from others to gain weight than the more acculturated subjects. Similarly, the SL-ASIA subscale measuring affinity for ethnic identity and pride was negatively related to the full scale EAT as well as the bulimia and oral control subscales indicating that those subjects displaying greater affinity and pride for their Chinese culture displayed more pathological eating attitudes and behaviours.

While these findings were not hypothesized, they do support Mumford et al.'s (1991) finding that their more "traditional" Asian subjects living in Britain displayed more eating pathology than the rest of their Asian subjects living in Britain.

While correlational analysis of level of acculturation and eating pathology identified only negative relationships, one-way analysis of variance across low, medium and high levels of acculturation, provided additional insight. Specifically, there was a significant difference in full scale EAT scores across the low and medium levels of acculturation with individuals indicating a low level of acculturation displaying more pathological eating attitudes and behaviours than individuals indicating a medium level of acculturation. Additionally, although the results were not significant, there also seemed to be a tendency for individuals indicating a high level of acculturation to display more eating pathology than individuals indicating a medium level of acculturation.

Thus, the results of the one-way ANOVAs not only revealed which of the Chinese subjects may be at greatest risk for developing pathological eating attitudes and behaviours, they also suggest who may be

at least risk for eating pathology. Accordingly, it appears that those Chinese subjects who indicated a medium level of acculturation displayed the healthiest eating attitudes and behaviours. According to Suinn et al. (1987), this "bicultural" status may reflect the ability to successfully integrate the best of both the host and traditional cultures without denial to either.

Although statistical analyses revealed no significant quadratic relationship between level of acculturation and eating pathology in this study, the finding that a bicultural level of acculturation is related to healthier eating attitudes and behaviours offers some support to Gil, Vega, and Dimas' (1994) prediction of a curvilinear relationship between level of acculturation and mental health status. Thus, in accordance with Gil et al.'s predictions, the findings of this study may suggest that bicultural subjects experience better psychological outcomes (i.e., healthier eating attitudes and behaviours) due to their knowledge of and participation in the host culture, while retaining the positive, protective factors of their traditional culture (i.e., less idealization of thinness).

Acculturative stress and eating attitudes and behaviours. Although examining the relationship between acculturative stress and eating attitudes and behaviours was done for an exploratory purpose, the results of this study revealed a much stronger relationship between acculturative stress and eating pathology than the relationship noted between level of acculturation and eating pathology. Correlational analyses revealed that acculturative stress, as measured by the SAFE, was positively related to the full scale EAT as well as the dieting and bulimia subscales. Additionally, post hoc analysis indicated that acculturative stress was negatively related to level of acculturation, indicating that more acculturative stress is associated with lower levels of acculturation. Thus, it appears that those individuals experiencing greater acculturative stress display lower levels of acculturation as well as more eating pathology. One possible interpretation of this finding may be that the elevated eating pathology noted amongst Chinese subjects displaying low level of acculturation may be due to the effects of acculturative stress.

The strong relationship between acculturative stress and eating pathology noted in this study is

consistent with the results of a recent series of articles specifically investigating the relationship between eating pathology and acculturative stress (Ahmad, Waller, & Verduyn, 1994; Hill & Bhatti, 1995; McCourt & Waller, 1995). These studies concluded that interpersonal and intrafamilial cultural conflict was significantly related to the occurrence of pathological eating attitudes and behaviours.

Finally, this relationship is further supported by a series of case reports of girls of Asian origin living in Western cultures who presented with anorexia nervosa (i.e., Bryant-Waugh & Lask, 1991; Bulik, 1987; Bhadrinath, 1990; Ford, 1992; Schmidt, 1993). Bryant-Waugh & Lask (1991), for example, noted clear evidence of cultural conflict in all of their cases, conflict that was central to the onset and progress of the disorder. They made the point that for a traditional family, sociocultural conflict may arise over a range of issues, including arranged marriages, norms regarding dress, contact with the opposite sex, the role of women, mealtimes, and cooking. Thus, given one has some familiarity with Western culture, its norms and ideals, this stress and conflict may in turn increase one's chances of developing an eating disorder

or pathological eating attitudes and behaviours as they struggle to find a way to cope.

Regression analysis. The regressive analysis conducted in this study revealed that acculturative stress was the only variable accounting for any significant variance in the eating attitudes and behaviours amongst the Chinese students. This finding was true for the full scale EAT, as well as the diet and bulimia subscales. Only the oral control subscale resulted in a different regression pattern; one which found level of acculturation as the only variable accounting for any significant variance. One possible explanation may be that these results reflect the fact that, on average, the Chinese subjects surveyed in this study already had a high degree of exposure to Western values and ideals at the time of the study and therefore may have already achieved the minimum level of acculturation necessary to put them at risk of pathological eating attitudes or behaviours. Thus, as Mumford et al. (1991) suggested, those individuals displaying pathological eating attitudes and behaviours may be those who encountered a stress, such as acculturative stress, and responded by turning to a Western coping mechanism such as eating pathology.

Thus, Mumford et al.'s conclusions that "it is probable that these Asian girls [those displaying eating pathology] are increasingly adopting 'Western' patterns of reacting to personal conflicts and stressful life circumstances" (p. 226), may be equally conclusive of this study's findings.

Review of the Cross-Cultural Validity of the Eating Attitudes Test (EAT)

This study did not purport to carry out a full factor analysis of the EAT because previous research found the twenty-six item EAT to be a valid measure of eating attitudes and behaviours for Asian women living in Western cultures (Choudry & Mumford, 1992; Mumford et al., 1991, 1992). Intercorrelational analysis was conducted, however, and revealed that the EAT subscales were correlated to each other and the full scale EAT in a similar manner for both the Chinese and Caucasian subjects. The only inconsistency to this finding was the oral control subscale which proved to be positively correlated to the diet subscale for the Caucasian subjects but not the Chinese subjects. This finding is echoed by the finding that the oral control subscale was the only indicator of eating pathology in this study which came close to being significantly different

across cultural groups with the Chinese subjects displayed slightly more unhealthy attitudes regarding oral control. Additionally, when a model of stepwise regression was conducted for the full scale and subscale EAT scales, the oral control subscale was the only scale found not to be related to acculturative stress.

While these findings have not been previously noted by researchers investigating eating attitudes and behaviours in non-white females living in Western cultures, Lee (1993), in his survey of Chinese university students living in China, noted that both men as well as women scored relatively high on the oral control subscale. Consistent with this study's findings, Lee also reported that the oral control subscale was not significantly related with the diet subscale in his sample of Chinese women. Thus, the results of this study seem to support Lee's speculations that some items on the oral control subscale (i.e., "Other people think that I am too thin", "Feel that others pressure me to eat", and "Feel that others would prefer if I ate more") may simply reflect Chinese women's smaller, thinner build and the

normal cultural pressure on women to eat more and may not necessarily reflect eating pathology.

In their original factor analysis of the 26-item EAT, Garner, Olmsted, Bohr, and Garfinkel (1982) found that the oral control subscale accounted for only 5.0% of the full scale EAT's variance, while the two remaining subscales accounted for substantially more of the variance (diet accounted for 26.4% of the variance and bulimia accounted for 10.8% of the variance). Accordingly, while the findings of this study suggest that some of the items on the oral control subscale may have had different connotations to the Chinese subjects and may not reflect eating pathology for this population, this does not necessarily reflect on the validity of the entire measure. Moreover, the intercorrelational analysis of the EAT conducted in this study appears to support Mumford et al.'s (1991, 1992) and Lee's (1993) findings that the full scale EAT as well as the diet and bulimia subscales appear to be valid measures of eating pathology for Chinese women living in Western cultures. As research in this area is still in its infancy, however, any conclusion must be made with caution. Further investigation of the cross-

cultural validity of the EAT is required before any conclusive statement can be made.

Limitations

First, it is important to remember that the criteria which specify the population and the sample examined in this study restrict to whom the results may be generalized. Thus, the findings of this study may only be generalized to female Chinese and Caucasian university students in British Columbia, Canada. Additionally, as the majority of the Chinese subjects surveyed in this study were from Hong Kong or Taipei, Taiwan, the results of this study are further limited to those female Chinese university students from Hong Kong or Taipei, Taiwan, as opposed to Mainland China.

The fact that participation in this study was voluntary may have added an additional constraint on the results. Denial and shame have long been recognized as common characteristics of individuals with eating disorders and pathological eating attitudes and behaviours (Garfinkel & Garner, 1982). Consequently those individuals with the most extreme eating problems may have chosen not to participate in this study.

Since, this study required that the Chinese subjects be university students and proficient enough

in English in order to complete the questionnaire on their own, the range of the level of acculturation scores may have been restricted, and this may have limited the degree to which the relationships (particularly between level of acculturation and eating attitudes and behaviours) could be tested. A sample with a broader range of acculturation might demonstrate more significant results.

The results of this study are also limited by the correctional design, therefore cause and effect cannot be inferred. Similarly, there may be unknown, unmeasured, variables that account for the relationship between level of acculturation, acculturative stress, and eating attitudes and behaviours.

It should be reiterated that without doing clinical assessments it is not possible to identify clinical cases of eating disorders. Therefore, it is not within the parameters of this study to address the existence of eating disorders per se, but rather those eating attitudes and behaviours found to be characteristic of eating disorders.

Finally, the results of this study reinforce the caution required when employing a measure that was designed and validated in one culture to study related

phenomena in another culture. Thus, notwithstanding the apparent overall validity of the full scale EAT and the diet and bulimia subscales for this study's sample of female Chinese university students, the results of this study also suggest that particular caution must be taken with the interpretation of oral control subscale scores for Chinese subjects. Review of the Chinese subjects' scores as well as previous literature (Lee, 1993) and Chinese culture suggest that some items on this scale may reflect Chinese women's smaller, thinner builds and normal cultural pressure on women to eat, and not eating pathology. Thus, much more investigation and item analysis of the oral control subscale is required if it is to be employed with further Chinese populations.

Suggestions for Future Research

There is much scope for further research. First, more attention needs to be paid to the instruments utilized in studies such as this one. Additional research investigating the cross-cultural validity of the EAT, especially its oral control subscale, is essential to the meaningfulness of future research in this area.

Similarly, as the results of this study revealed a strong relationship between acculturative stress and eating pathology, further research into this area would be prudent. Specifically, the development of a more detailed measure of acculturative stress may help identify which specific components of acculturative stress (i.e., interpersonal conflict or intrafamilial conflict) are most important in the development of eating pathology.

Other promising research directions include the translation of the instruments used in this study into Chinese languages such as Mandarin, Cantonese and Taiwanese. Making these instruments available in other languages may help access a wider range of level of acculturation and may provide additional information regarding the eating attitudes and behaviours of individuals who have less exposure to Western culture.

Similarly, replication of this study with other groups such as an Indo-Canadian or Native Indian population, may help extend the findings of this study and provide greater insight as to the relationship between level of acculturation and eating attitudes and behaviours.

Finally, since the results of this study suggest that eating pathology effects female Chinese university students at approximately a similar rate as female Caucasian university students, it is increasingly important to do research on this topic with this ethnic group. Important studies may include qualitative research which would allow Chinese women struggling with pathological eating attitudes and behaviours to share their stories. Qualitative research addressing the onset and progress of eating pathology as well as the recovery process is essential. Such studies would aid in the education, prevention and detection of eating pathology amongst this populations. In addition, such studies may help identify particular components of treatment (such as individual and family therapy specifically addressing and aiding the acculturation process) which may be unique, yet essential for recovery in this population.

Implications for Counselling

The present study, the existing knowledge base of research studies, and the ones recommended above, are valuable only so far as their practical usefulness in the counselling process are realized and utilized. Therefore, one needs to transform the results of these

studies into the counselling process, in order to help clients deal with the demands of their life. This requires that the results of this study be recognized and acknowledged by those in the helping professions.

First, the prevalence of eating pathology in Chinese females needs to be acknowledged not only by counsellors, but other professionals who may have frequent contact with this population. Thus, individuals such as family doctors, teachers, school nurses and community leaders need to be made aware that pathological eating attitudes and behaviours no longer simply occur in affluent white women, as once thought. Additionally, these individuals need to be aware that ethnic minorities, in general, are less likely to seek out professional assistance (Sue, 1977). Cheng, Leong, and Geist (1993) found that while Asians experience just as many personal and emotional problems as members of the mainstream culture, they are less likely to seek assistance from professionals. These researchers also noted that when Asians do seek out professional help, it is often in the guise of academic or career problems.

Thus, counsellors and other professionals need to be aware of these tendencies when seeing Chinese

clients. Even if the client presented nothing more than academic or career issues, it might be wise for the professional to assess possible personal and emotional areas. Additionally, it may be beneficial to reinforce to the client the appropriateness of addressing personal and emotional issues, such as eating pathology, in the counselling session. Doing so may help break down some of the stigma that is often attached to personal and emotional problems (Cheng et al.).

Beyond identification, there may be a need for culture specific models of counselling and treatment for Chinese women experiencing eating pathology. Accordingly, interpersonal and intrafamilial issues specific to the acculturation process may need to be addressed for the recovery process to be successful.

Finally, education and prevention campaigns specifically targeting female Chinese students need to be developed and presented to the general public throughout the Chinese community. This will not only help educate individuals as to the prevalence and identification of eating pathology, but may also help inform individuals struggling with pathological eating attitudes and behaviours about local counselling

agencies, while reinforcing the appropriateness of utilizing such agencies.

Conclusions

The primary purpose of this research study was to compare the eating attitudes and behaviours of female Chinese and Caucasian university students. Additionally, this study attempted to investigate whether a relationship exists between level of acculturation, acculturative stress and pathological eating attitudes and behaviours amongst female Chinese university students.

This study found no differences in eating attitudes and behaviours between the Chinese and Caucasian subjects. Both groups scored similarly on the EAT and approximately the same number scored over the cut-off point for eating pathology on the EAT. Thus, the results of this study revealed that female Chinese university students living in British Columbia, Canada appear to display similar eating attitudes and behaviours as their fellow female Caucasian university students.

It was hypothesized that the eating attitudes and behaviours of the Chinese subjects would be correlated in a positive direction with level of acculturation,

and that this relationship would be the strongest predictor of eating pathology. The results of this study, however, do not support such predictions. Correlation and regression analysis found that, in general, the eating attitudes and behaviours of the Chinese subjects were more strongly correlated with acculturative stress than level of acculturation.

Examination of the demographic information collected for these subjects suggests that the Chinese students recruited for this study already had extensive exposure to Western culture at the time of the study. Therefore, it may be possible that they had enough exposure to Western ideals and norms to put them at similar risk as the Caucasian subjects of developing pathological eating attitudes and behaviours. Accordingly, one possible explanation for the strong relationship found between acculturative stress and eating attitudes and behaviours may be that it reflects those Chinese subjects who encountered interpersonal and intrafamilial conflicts and stress regarding the acculturative process and responded by adopting a Western coping mechanism, namely eating pathology.

References

- Abrams, K.K., Allen, L.R., Gray, J.J. (1993). Disordered eating attitudes and behaviours, psychological adjustment, and ethnic identity: A comparison of black and white female college students. International Journal of Eating Disorders, 14, 49-57.
- Ahmad, S., Waller, G., & Verduyn, C. (1994). Eating attitudes among Asian schoolgirls: The role of perceived parental control. International Journal of Eating Disorders, 15, 91-91.
- American Psychiatric Association (1994). Diagnostic and statistical manual of mental disorders (4rd ed.). Author: Washington, D.C.
- Anderson, A.E. (1985). Practical comprehensive treatment of anorexia nervosa and bulimia. New York: John Hopkins University Press.
- Anderson, A.E., Hay, A. (1985). Racial and socioeconomic influences in anorexia nervosa and bulimia nervosa. International Journal of Eating Disorders, 4, 479-487.
- Anderson, A.E. & DiDomenico, L. (1992). Diet vs. shape content of popular male and female magazines: A dose-response relationship to the incidence of eating disorders. International Journal of Eating Disorders, 11, 283-287.
- Atkinson, D., & Gim, R. (1989). Asian-American cultural identity and attitudes toward mental health services. Journal of Counselling Psychology, 36, 209-212.
- Atkinson, D., Whitely, S., & Gim, R. (1990). Asian-American acculturation and preferences for help providers. Journal of College Student Development, 31, 155-161.

- Berry, J.W., Kim, U., Minde, T., & Mok, D. (1987). Comparative studies of acculturative stress. International Migration Review, 21, 491-511.
- Berry, J.W., Kim, U., Powers, S., Young, M., & Bujaki, M. (1989). Acculturation attitudes in plural societies. Applied Psychology: An International Review, 38, 185-206.
- Bhadrinath, B.R. (1990). Anorexia nervosa in adolescents of Asian extraction. British Journal of Psychiatry, 156, 565-568.
- Bruch, H. (1973). Eating disorders: Obesity, anorexia nervosa and the person within. New York: Basic Books.
- Bryant-Waugh, R., & Lask, B. (1991). Anorexia nervosa in a group of Asian children living in Britain. British Journal of Psychiatry, 158, 229-233.
- Buhrich, N. (1981). Frequency of presentation of anorexia nervosa in Malaysia. Australian and New Zealand Journal of Psychiatry, 15, 153-155.
- Bulik, C.M. (1987). Eating disorders in Immigrants: Two case reports. International Journal of Eating Disorders, 6, 133-141.
- Chen, Z.F., Mitchell, J.E., Li, K., Yu, W.M., Lan, Y.D., Jun, Z., Rong, Z.Y., Huan, Z.Z., Filice, G.A., Pomeroy, C., & Pyle, R.L. (1992). The prevalence of anorexia nervosa and bulimia nervosa among freshman medical college students in China. International Journal of Eating Disorders, 12, 209-214.
- Cheng, D., Leong, F.T.L., & Geist, R. (1993). Cultural differences in Psychological distress between Asian and Caucasian American college students. Journal of Multicultural Counselling and Development, 21, 182-190.

- Choudry, I.Y. & Mumford, D.B. (1992). A pilot study of eating disorders in Mirpur (Pakistan) using an Urdu version of the Eating Attitudes Test. International Journal of Eating Disorders, 11(3), 243-251.
- Cooper, P.J. & Fairburn, C.G. (1983). Binge eating and self-induced vomiting in the community: A preliminary survey. British Journal of Psychiatry, 142, 139-144.
- Crisp, A.H., Hsu, L.K.G., Harding, B., Hartshorn, J. (1980). Clinical features of anorexia nervosa. Journal of Psychosomatic Research, 24, 179-191.
- Crisp, A.H., Palmer, R.L., & Kalucy, R.S. (1976). How common is anorexia nervosa? A prevalence study. British Journal of Psychiatry, 128, 549-554.
- Crisp, A.H. & Toms, D.A. (1972). Primary anorexia nervosa or weight phobia in the male: Report on 13 cases. British Medical Journal, 1, 334-338.
- Cuellar, I., Harris, L., & Jasso, R. (1980). An acculturation scale for Mexican American normal and clinical populations. Hispanic Journal of Behavioral Sciences, 2, 199-217.
- Cuellar, R.E., Van Thiel, D.H. (1986). Gastrointestinal complications of the eating disorders anorexia nervosa and bulimia nervosa. American Journal of Gastroenterology, 81, 1113-1124.
- DiNicola, V. F. (1990a). Anorexia multiforme: Self-starvation in historical and cultural context. Part I: Self-starvation as a historical chameleon. Transcultural Psychiatric Research Review, 27, 165-244.
- DiNicola, V.P. (1990b). Anorexia multiforme: Self-starvation in historical and cultural context. Part I: Anorexia nervosa as a culture-reactive syndrome. Transcultural Psychiatric Research Review, 27, 245-286.

- Dolan, B. (1991). Cross-cultural aspects of anorexia nervosa and bulimia: A review. International Journal of Eating Disorders, 10, 67-78.
- Edwards, A.L. (1968). Experimental design in psychological research (3rd ed.). New York: Holt, Rinehart and Winston.
- Furnham, A. & Alibhai, N. (1983). Cross-cultural differences in the perception of female body shape. Psychological Medicine, 13, 829-837.
- Furnham, A., & Patel, R. (1994). The eating attitudes and behaviors of Asian and British schoolgirls: A pilot study. The International Journal of Social Psychiatry, 40, 214-226.
- Garfinkel, P.E. & Garner, D.M. (1982). Anorexia nervosa: A multidimensional perspective. New York: Brunner/Mazel.
- Garner, D.M. & Garfinkel, P.E. (1979). The Eating Attitudes Test: An index of the symptoms of anorexia nervosa. Psychological Medicine, 9, 273-279.
- Garner, D.M. & Garfinkel, P.E. (1980). Socio-cultural factors in the development of anorexia nervosa. Psychological Medicine, 10, 647-656.
- Garner, D.M., Garfinkel, P.E., Schwartz D., & Thompson, M. (1980). Cultural expectations of thinness in women. Psychological Reports, 47, 483-491.
- Garner, D.M., Olmsted, M.P., Bohr, Y., & Garfinkel, P.E. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. Psychological Medicine, 12, 871-878.
- Garner, D.M., Olmsted, M.P., Polivy, J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. International Journal of Eating Disorders, 2, 15-35.

- Gibbs, R.B. (1986). Social factors in exaggerated eating behaviors among high school students. International Journal of Eating Disorders, 5, 1103-1107.
- Gil, G., Vega, W.A., & Dimas, J.M. (1994). Acculturative stress and personal adjustment among Hispanic adolescent boys. Journal of Community Psychology, 22, 43-54.
- Goldbloom, D.S., & Garfinkel, P.E. (1993). Anorexia nervosa and bulimia nervosa: Diagnostic issues and risk factors. In S.H. Kennedy (Ed.), Handbook of eating disorders (pp.1-9). Toronto, Ont.: University of Toronto.
- Goldfarb, L.A., Dykens, E.M., & Gerard, M. (1985). The Goldfarb Fear of Fat Scale. Journal of Personality Assessment, 49, 329-332.
- Gray, J.J., Ford, K., & Kelly, L.M. (1987). The prevalence of bulimia in a black college population. International Journal of Eating Disorders, 6, 733-740.
- Gross, J., & Rosen, J. (1988). Bulimia in adolescents: Prevalence and psychosocial correlates. International Journal of Eating Disorders, 7, 51-61.
- Halmi, K.A., Jones, F.R., & Schwertz, E. (1981). Binge eating and vomiting: A survey of a college population. Psychological Medicine, 11, 697-706.
- Hawkins, R.C., & Clement, P.F. (1980). Development and construct validation of a self-report measure of binge eating tendencies. Addictive Behaviors, 5, 219-226.
- Herman, D., & Mack, D. (1979). Restrained and unrestrained eating. Journal of Personality, 43, 647-660.

- Hill, A.J., Bhatti, R. (1995). Body shape perception and dieting in preadolescent British Asian girls: Links with eating disorders. International Journal of Eating Disorders, 17, 175-183.
- Hoek, H.W. (1993). Review of the epidemiological studies of eating disorders. International Review of Psychiatry, 5, 61-74.
- Hsu, L.K.G. (1987). Are the eating disorders becoming more common in blacks? International Journal of Eating Disorders, 6, 113- 125.
- Hsu, L.K.G. (1990). Eating Disorders. New York: Guilford Press.
- Iancu, I., Spivak, B., Ratzoni, G., Apter, A., & Weizman, A. (1994). The sociocultural theory in the development of anorexia nervosa. Psychopathology, 27, 29-39.
- Isner, J.M., Roberts, W.C., & Heymsfield, B.C. (1985). Anorexia nervosa and sudden death. Annals of Internal Medicine, 102, 49-52.
- Johnson, C. (1984). Initial consultation for patients with bulimia and anorexia nervosa. In D.M. Garner & P.E. Garfinkel (Eds.), Anorexia Nervosa and Bulimia (p. 19-55). New York: Guilford Press.
- Kamata, K., Nogami, Y., & Momma, K. (1987). Binge eating among female students. Journal of Psychiatry and Neurology, 41, 151-152.
- Katzman, M.A., Wolchik, S.A., & Braver, S.L. (1984). The prevalence of frequent binge-eating and bulimia in a non-clinical college sample. International Journal of Eating Disorders, 3, 53-61.
- Kendell, R.E., Hall, D.J. Hailey, A., & Babigan, H.M. (1973). The epidemiology of anorexia nervosa. Psychological Medicine, 3, 200-203.

- Kim, U., & Berry, J.W. (1986). Predictors of acculturative stress: Korean immigrants in Toronto, Canada. In L.H. Ekstrand (Ed.), Ethnic minorities and immigrants in a cross-cultural perspective (p. 159-170). Lisse, Sweden: Swets & Zeitlinger.
- King, M.B. (1989). Eating disorders in a general practice population: Prevalence, characteristics and follow-up at 12 to 18 months. Psychological Medicine Monographs, 14 (34).
- Lacey, J.H. & Dolan, B.M. (1988). Bulimia in British Blacks and Asians: A catchment area study. British Journal of Psychiatry, 152, 73-79.
- Lee, S. (1991). Anorexia nervosa in Hong Kong: A Chinese perspective. Psychological Medicine, 21, 703-311.
- Lee, S. (1993). How abnormal is the desire for slimness? A survey of eating attitudes and behaviours among Chinese undergraduates in Hong Kong. Psychological Medicine, 23, 437-451.
- Lee, S., Chiu, H.F.K., Chen, C. (1989). Anorexia Nervosa in Hong Kong: Why not more in China? British Journal of Psychiatry, 154, 683-688.
- Lee, S., Ho, T.P., & Hsu, L.K.G. (1993). Fat phobic and non-fat phobic anorexia nervosa: A comparative study of 70 Chinese patients in Hong Kong. Psychological Medicine 23, 999-1017.
- Lee, S., & Hsu, L.K.G. (1992). Bulimia nervosa in Hong Kong Chinese patients. British Journal of Psychiatry 161, 545-551.
- Lucero, K., Hicks, R.A., Bramlette, J., Brassington, G.S., & Welter, M.G. (1992). Frequency of eating problems among Asian and Caucasian college women. Psychological Reports, 71, 255-258.

- Mena, F.J., Padilla, A.M., & Maldonado, M. (1987). Acculturative stress and specific coping strategies among immigrant and later generation college students. Hispanic Journal of Behavioral Sciences, 9, 207-225.
- McCarthy, M. (1990). The thin ideal depression and eating disorders in women. Behavioral Research and Theory, 28, 205-215.
- McCourt, J., & Waller, G. (1995). Developmental role of perceived parental control in the eating psychopathology of Asian and Caucasian schoolgirls. International Journal of Eating Disorders, 17, 277-282.
- Morgan, G. & Sylvester, D. (1977). Anorexia nervosa. In O.W. Hill (ed.), Modern trends in psychological medicine (Vol. 3, p. 382-403). London: Butterworths.
- Mumford, D.B. (1993). Eating disorders in different cultures. International Review of Psychiatry, 5, 109-114.
- Mumford, D.B., Whitehouse, A.M., & Platts, M. (1991). Sociocultural correlates of eating disorders among Asian schoolgirls in Bradford. British Journal of Psychiatry, 158, 222-228.
- Mumford, D.B., Whitehouse, A.M., & Choudry, I.Y. (1992). Survey of eating disorders in English-medium schools in Lahore, Pakistan. International Journal of Eating Disorders, 2, 173-184.
- Nasser, M. (1986). Comparative study of the prevalence of abnormal eating attitudes among Arab female students of both London and Cairo universities. Psychological Medicine, 16, 621-625.
- Nasser, M. (1988a). Culture and weight consciousness. Journal of Psychosomatic Research, 32, 573-577.
- Nasser, M. (1988b). Eating disorders: The cultural dimension. Social Psychiatry and Psychiatric Epidemiology, 23, 184-187.

- Neuman, P.A. & Halvorson, P.A. (1983). Anorexia nervosa and bulimia: A handbook for counselors and therapists. New York: Van Nostrand Reinhold.
- Nevo, S. (1985). Bulimic symptoms: Prevalence and ethnic differences among college women. International Journal of Eating Disorders, 4, 151-168.
- Ong, Y.L., Tsoi, W.F. (1982). A clinical and psychological study of seven cases of anorexia nervosa in Singapore. Singapore Medical Journal, 23, 255-261.
- Padilla, A.M. (1985). Acculturation and stress among immigrants and later-generation individuals. Spanish Speaking Mental Health Research Centre, 20, 41-60.
- Padilla, A.M., Alvarez, M., & Lindholm, K.J. (1986). Generational status and personality factors as predictors of stress in students. Hispanic Journal of Behavioral Sciences, 8, 275-288.
- Padilla, A.M., Wagatsuma, Y., Lindholm, K.J. (1985a). Acculturation and personality as predictors of stress in Japanese and Japanese-Americans. Journal of Social Psychology, 125, 295-305.
- Padilla, A.M., Wagatsuma, Y., Lindholm, K.J. (1985b). Generational differences in acculturative stress and personality among Mexican and Japanese Americans. Spanish Speaking Mental Health Research Centre, 20, 15-38.
- Pate, J.E., Pumariega, A.J., Hester, C., & Garner, D.M. (1992). Cross-cultural patterns in eating disorders: A review. Journal of the American Academy of Child & Adolescent Psychiatry, 31, 802-809.
- Pope, H.G., Jr., Hudson, J.I., & Yurgelum-Todd, D. (1984). Anorexia nervosa and bulimia among 300 suburban women shoppers. American Journal of Psychiatry, 141, 292-294.

- Pumariega, A.J. (1986). Acculturation and eating attitudes in adolescent girls: A comparative and correlational study. Journal of the American Academy of Child Psychiatry, 25, 276-279.
- Pyle, R.L., Halvorson, P.A., Neuman, P.A., & Mitchell, J.E. (1986). The increasing prevalence of bulimia in freshman college students. International Journal of Eating Disorders, 5, 631-648.
- Pyle, R.L., Neuman, P.A., Halvorson, P.S., & Mitchell, J.E. (1991). An ongoing cross-sectional study of the prevalence of eating disorders in freshman college students. International Journal of Eating Disorders, 10, 667-677.
- Rastam, M., Gillberg, C., & Garton M. (1989). Anorexia nervosa in a Swedish urban region: A population based study. British Journal of Psychiatry, 155, 642-646.
- Rathner, G., & Messner, K. (1993). Detection of eating disorders in a small rural town: An epidemiological study. Psychological Medicine, 23, 175-184.
- Russell, G.F.M. (1979). Bulimia nervosa: An ominous variant of anorexia nervosa. Psychological Medicine, 9, 429-448.
- Schmidt, U. (1993). Bulimia nervosa in the Chinese. International Journal of Eating Disorders, 4, 505-509.
- Sue, S. (1977). Community mental health services to minority groups: Some optimism, some pessimism. American Psychologist, 32, 616-624.
- Suematsu, H., Ishikawa, H., Kuboke, T., & Ito, T. (1985). Statistical studies on anorexia nervosa in Japan: Detailed clinical data on 1011 patients. Psychotherapy & Psychosomatics, 2, 96-103.

- Suinn, R.M., Rickard-Figueroa, K., Lew, S., & Vigil, P. (1987). The Suinn-Lew Asian Self-Identity Acculturation Scale: An initial report. Educational and Psychological Measurement, 47, 401-407.
- Suinn, R.M., Ahuna, C., & Khoo, G. (1992). The Suinn-Lew Asian Self-Identity Acculturation Scale: Concurrent and factorial validation. Educational and Psychological Measurement, 52, 1041-1047.
- Thompson, B. (1989). Why won't stepwise methods die? Measurements and Evaluation in Counselling and Development, 21, 146-148.
- Wampold B.E., Freud, R.D. (1987). Use of Multiple regression in counseling psychology research: A flexible data-analytic strategy. Journal of Counseling Psychology, 34, 372-382.
- Williams, P., Hand, D., & Tarnoplosky, A. (1982). The problem of screening for uncommon disorders: A comment on the Eating Attitudes Test. Psychological Medicine, 12, 431-434.
- Wiseman, C.L., Gray, J.J., Mosimann, J.E., & Ahrens, A.H. (1992). Cultural expectations of thinness in women: An update. International Journal of Eating Disorders, 11, 85-89.
- Wiseman, C.L., Gunning, F.M., & Gray, J.J. (1993). Increasing pressure to be thin: 19 years of diet products in television commercials. Eating Disorders, 1, 52-61.
- Zheng, Y.M. (1982). The psychotherapy of child anorexia nervosa: A follow-up study of a case for 23 years. Chinese Journal of Neurology and Psychiatry, 15, 46-48.

Appendix A
Demographic Questionnaire

DEMOGRAPHIC INFORMATION

1. Age: _____
2. University year: _____ (degree: _____ Subject: _____)
3. City and Country of birth?: _____
4. Ethnic background: _____
5. How long have you lived in North America?: _____
6. Are you an international student: _____ Yes _____ No.
7. I have _____ brothers, and _____ sisters (how many?)
8. I am () the oldest child
 () the youngest child
 () the only child
 () the middle or one of the middle children
 () other: _____
9. How many times have you moved in this country since birth? (not in the same city) _____ times.
10. How many times have you moved between countries since birth? _____ times.
11. Parents' background (answer as much as you can).

Father

Mother

Age: _____

Occupation: _____

Education: _____

Ethnic background: _____

City of birth: _____

No. of years in Canada: _____

Languages spoken: _____

Appendix B

Eating Attitudes Test

EATING ATTITUDES TEST

Instructions: Please circle the letter which best applies to each of the numbered statements. **Please answer each question carefully.** Thank you.

A=always; **U**=usually; **O**=often; **S**=sometimes; **R**=rarely; **N**=never

- A U O S R N 1. Am terrified about being overweight.
- A U O S R N 2. Avoid eating when I am hungry.
- A U O S R N 3. Find myself preoccupied with food.
- A U O S R N 4. Have gone on eating binges where I feel that I may not be able to stop
- A U O S R N 5. Cut my food into small pieces.
- A U O S R N 6. Aware of the calorie content of the food that I eat.
- A U O S R N 7. Particularly avoid food with high carbohydrates content
- A U O S R N 8. Feel that others would prefer I ate more.
- A U O S R N 9. Vomit after I have eaten.
- A U O S R N 10. Feel extremely guilty after eating.
- A U O S R N 11. Am preoccupied with a desire to become thinner.
- A U O S R N 12. Think about burning up calories when I exercise.
- A U O S R N 13. Other people think that I am too thin
- A U O S R N 14. Am preoccupied with the thought of having fat on my body.
- A U O S R N 15. Take longer than others to eat my meals.
- A U O S R N 16. Avoid foods with sugar in them.
- A U O S R N 17. Eat diet foods.
- A U O S R N 18. Feel that food controls my life.
- A U O S R N 19. Display self-control around food.
- A U O S R N 20. Feel that others pressure me to eat.
- A U O S R N 21. Give too much time and thought to food.
- A U O S R N 22. Feel uncomfortable after eating sweets.
- A U O S R N 23. Engage in diet behavioiurs.
- A U O S R N 24. Like my stomach to be empty.
- A U O S R N 25. Enjoy trying new foods.
- A U O S R N 26. Have the impulse to diet after meals.

Appendix C

Suinn-Lew Asian Self-Identity
Acculturation Scale

SUINN-LEW ASIAN SELF-IDENTITY ACCULTURATION SCALE

INSTRUCTIONS: The question which follow are for the purpose of collecting information about your historical background as well as more recent behaviours which may be related to your cultural identity. Choose the one answer which best describes you.

1. What language can you speak?
 1. Asian only (ie., Chinese, Japanese, Korean, Vietnamese, etc.)
 2. Mostly Asian, some English
 3. Asian and English about equally well (bilingual)
 4. Mostly English, some Asian
 5. Only English
2. What language do you prefer?
 1. Asian only (ie., Chinese, Japanese, Korean, Vietnamese, etc.)
 2. Mostly Asian, some English
 3. Asian and English about equally well (bilingual)
 4. Mostly English, some Asian
 5. Only English
3. How do you identify yourself?
 1. Asian only (ie., Chinese, Japanese, Korean, Vietnamese, etc.)
 2. Mostly Asian, some English
 3. Asian and English about equally well (bilingual)
 4. Mostly English, some Asian
 5. Only English
4. Which identification does (did) your mother use?
 1. Oriental
 2. Asian
 3. Asian-Canadian
 4. Chinese-Canadian, Japanese-Canadian, Korean-Canadian, etc.
 5. Canadian
5. Which identification does (did) your father use?
 1. Oriental
 2. Asian
 3. Asian-Canadian
 4. Chinese-Canadian, Japanese-Canadian, Korean-Canadian, etc.
 5. Canadian

6. What was the ethnic origin of the friends and peers you had, as a child up to age 6?
 1. Almost exclusively Asians, Asian-Canadians, Orientals
 2. Mostly Asians, Asian-Canadians, Orientals
 3. About equal Asian groups and Anglo groups
 4. Mostly Anglos, Blacks, Hispanics, or other non-Asian ethnic groups
 5. Almost exclusively Anglos, Blacks, Hispanics or other non-Asian ethnic groups
7. What was the ethnic origins of the friends and peers you had, as a child from 6 to 18?
 1. Almost exclusively Asians, Asian-Canadians, Orientals
 2. Mostly Asians, Asian-Canadians, Orientals
 3. About equal Asian groups and Anglo groups
 4. Mostly Anglos, Blacks, Hispanics, or other non-Asian ethnic groups
 5. Almost exclusively Anglos, Blacks, Hispanics or other non-Asian ethnic groups
8. Whom do you now associate with in the community?
 1. Almost exclusively Asians, Asian-Canadians, Orientals
 2. Mostly Asians, Asian-Canadians, Orientals
 3. About equal Asian groups and Anglo groups
 4. Mostly Anglos, Blacks, Hispanics, or other non-Asian ethnic groups
 5. Almost exclusively Anglos, Blacks, Hispanics or other non-Asian ethnic groups
9. If you could pick, whom would you prefer to associate with in the community?
 1. Almost exclusively Asians, Asian-Canadians, Orientals
 2. Mostly Asians, Asian-Canadians, Orientals
 3. About equal Asian groups and Anglo groups
 4. Mostly Anglos, Blacks, Hispanics, or other non-Asian ethnic groups
 5. Almost exclusively Anglos, Blacks, Hispanics or other non-Asian ethnic groups
10. What is your music preference?
 1. Only Asian music (ie., Chinese, Japanese, Korean, Vietnamese, ect.)
 2. Mostly Asian
 3. Equally Asian and English
 4. Mostly English
 5. Only English
11. What is your movie preference?
 1. Asian-language movies only
 2. Asian language movies mostly
 3. Equally Asian/English
 4. English-language movies mostly
 5. English-language movies only

12. Where were you born?
 _____ Canada _____ Asia _____ Other - where _____
 Where was your father born?
 _____ Canada _____ Asia _____ Other - where _____
 Where was your mother born?
 _____ Canada _____ Asia _____ Other - where _____
 Where was your father's father born?
 _____ Canada _____ Asia _____ Other - where _____
 Where was your father's mother born?
 _____ Canada _____ Asia _____ Other - where _____
 Where was your mother's father born?
 _____ Canada _____ Asia _____ Other - where _____
 Where was your mother's mother born?
 _____ Canada _____ Asia _____ Other - where _____

On the basis of the above answers, circle the generation that best applies to you:

- | | |
|---|--|
| 1. 1st Generation = | I was born in Asia or other |
| 2. 2nd Generation = | I was born in Canada, either parent was born in Asia or other |
| 3. 3rd Generation = | I was born in Canada, both parents were born in Canada, & all grandparents born in Asia or other |
| 4. 4th Generation = | I was born in Canada, both parents born in Canada, and at least one grandparent born in Asia or other & one g grandparent born in Canada |
| 5. 5th Generation = | I was born in Canada, both parents & all grandparents also born in Canada |
| 6. Don't know what generation best fits since I lack some information | |

13. Where were you raised?
 1. In Asia only
 2. Mostly in Asian, some in Canada
 3. Equally in Asia and Canada
 4. Mostly in Canada
 5. In Canada only
14. What contact have you had with Asia?
 1. Raised one year or more in Asia
 2. Lived for less than one year in Asia
 3. Occasional visits to Asia
 4. Occasional communications (letters, phone calls, ect.) to people in Asia
 5. No exposure or communications with people in Asia

15. What is your food preference at home?
 1. Exclusively Asian food
 2. Mostly Asian food, some Canadian
 3. About equally Asian and Canadian
 4. Mostly Canadian food
 5. Exclusively Canadian food
16. What is your food preference in restaurants?
 1. Exclusively Asian food
 2. Mostly Asian food, some Canadian
 3. About equally Asian and Canadian
 4. Mostly Canadian food
 5. Exclusively Canadian food
17. Do you
 1. read only an Asian language
 2. read an Asian Language better than English
 3. read both Asian and English equally well
 4. read English better than an Asian language
 5. read only English
18. Do you
 1. write only an Asian language
 2. write an Asian Language better than English
 3. write both Asian and English equally well
 4. write English better than an Asian language
 5. write only English
19. If you consider yourself a member of the Asian group (Oriental, Asian, Asian-Canadian, Chinese-Canadian, etc., whatever term you prefer), how much pride do you have in this group?
 1. Extremely proud
 2. Moderately proud
 3. Little proud
 4. No pride but do not feel negative toward group
 5. No pride but do feel negative toward group
20. How would you rate yourself?
 1. Very Asian
 2. Mostly Asian
 3. Bicultural
 4. Mostly Westernized
 5. Very Westernized
21. Do you participate in Asian occasion, holidays, tradition, etc.?
 1. nearly all
 2. Most of them
 3. Some of them
 4. A few of them
 5. None at all

Appendix D

SAFE Acculturative Stress Questionnaire

SAFE ACCULTURATIVE STRESS SCALE

Instructions: Please circle the number which best applies to each of the numbered statements. Please answer each question carefully. There are no right answers. Thank you.

0=not applicable; 1=not stressful; 2=a little stressful;
3=moderately stressful; 4=quite stressful; 5=extremely stressful

- | | | |
|-------------|-----|---|
| 0 1 2 3 4 5 | 1. | I feel uncomfortable when others make jokes about or put down people of my ethnic background. |
| 0 1 2 3 4 5 | 2. | I have more barriers to overcome than most people. |
| 0 1 2 3 4 5 | 3. | It bothers me that family members I am close to do not understand my new values. |
| 0 1 2 3 4 5 | 4. | Close family members & I have conflicting expectations about my future. |
| 0 1 2 3 4 5 | 5. | It is hard to express to my friends how I really feel. |
| 0 1 2 3 4 5 | 6. | My family does not want me to move away but I would like to. |
| 0 1 2 3 4 5 | 7. | It bothers me to think that so many people use drugs. |
| 0 1 2 3 4 5 | 8. | It bothers me that I cannot be with my family. |
| 0 1 2 3 4 5 | 9. | In looking for a good job, I sometimes feel that my ethnicity is a limitation. |
| 0 1 2 3 4 5 | 10. | I don't have any close friends. |
| 0 1 2 3 4 5 | 11. | Many people have stereotypes about my culture or ethnic group & treat me as if they are true. |
| 0 1 2 3 4 5 | 12. | I don't feel at home. |
| 0 1 2 3 4 5 | 13. | People think I am unsocial when in fact I have trouble communicating in English. |
| 0 1 2 3 4 5 | 14. | I often feel that people actively try to stop me from advancing. |

- | | | |
|-------------|-----|--|
| 0 1 2 3 4 5 | 15. | It bothers me when people pressure me to assimilate. |
| 0 1 2 3 4 5 | 16. | I often feel ignored by people who are supposed to assist me. |
| 0 1 2 3 4 5 | 17. | Because I'm different I don't get enough credit for the work I do. |
| 0 1 2 3 4 5 | 18. | It bothers me that I have an accent. |
| 0 1 2 3 4 5 | 19. | Loosening the ties with my country is difficult. |
| 0 1 2 3 4 5 | 20. | I often think about my cultural background. |
| 0 1 2 3 4 5 | 21. | Because of my ethnic background, I feel that others often exclude me from participating in their activities. |
| 0 1 2 3 4 5 | 22. | It is difficult for me to "show off" my family. |
| 0 1 2 3 4 5 | 23. | People look down upon me if I practice customs of my culture. |
| 0 1 2 3 4 5 | 24. | I have trouble understanding other when they speak. |

Appendix E

Introductory Letter to Professors

Dear: Dr.

My name is Colleen Hyland. I am a MA student in the Department of Counselling Psychology working under the supervision of Dr. Ishu Ishiyama. I am contacting you because I am desperately seeking subjects to participate in my study which explores the role of sociocultural factors in the occurrence of pathological eating attitudes and behaviours.

I would greatly appreciate the opportunity to invite all of your female students to complete Part One of my questionnaire; this will take about **10 minutes**. Part Two is applicable to female Chinese students only and will require an additional **5-10 minutes** to complete; this can be completed within class time or on the students' own time.

Your assistance in my endeavour to locate subjects would be greatly appreciated, and will be acknowledged in any ensuing publications. Also, I would be happy to offer presentation of my research to your class later this year.

If you are able to help me or have any questions, please contact me or Dr. Ishiyama at 822-5329, or fax the following form to 822-2328. Thank you!

Colleen Hyland

Dr. Ishu Ishiyama

_____Cutting Line_____

Fax	TO: Colleen Hyland c/o Dr. I. Ishiyama
	FROM: <name> _____ Dept. _____
	TEL: 2-_____ FAX: 2-_____
I am willing to allow Colleen Hyland access to my class to do the following:	
_____	invite female student to participate on their own time.
_____	complete Part One of the questionnaire
_____	complete Part One & Two of the questionnaire
Preferred survey date and time: _____	

Appendix F
Participant Information Sheet
and Consent Form

Colleen Hyland, M.A. Candidate
Supervisor: Dr. Ishu Ishiyama

**Research Study: Acculturation and Eating Attitudes in
Female Chinese and Caucasian University Students**

Dear Participants:

I am writing to request your help with a research study that I am conducting. As a graduate student, this study constitutes the final requirement for a Master of Arts in Counselling Psychology at the University of British Columbia.

The purpose of my study is to examine students' eating attitudes and behaviours. Your participation in this study is entirely voluntary and you may choose to discontinue at any point without penalty. All information is confidential, only myself and my research supervisor, Fr. I. Ishiyama, will see the questionnaires.

Should you choose not to participate in this study, you are free to leave. Should you consent to participate, you will be requested to complete a questionnaire package. Completion of the questionnaire will take Caucasian students approximately 5-7 minutes, and Chinese students approximately 10-15 minutes. Upon completion the questionnaire your commitment to the study is over. It is assumed that consent has been given if this questionnaire has been completed and submitted.

A copy of the thesis will be made available in the Main Library at UBC upon completion. Should you have any questions about the study, please feel free to ask me now or contact me at the address listed above.

Thank you in advance for your consideration. Your cooperation will be invaluable to this research which hoped to add to the body of knowledge concerning eating attitudes and behaviours.

Sincerely,

Colleen Hyland

Appendix G
Follow-up Sheet

THANK YOU!!!! for your participation in this survey as it can not be done without the support of people like you.

If you would like some more information on the goals and outcomes of this survey, please feel free to contact Colleen Hyland at the following address and I will be pleased to provide you with all relevant information:

Colleen Hyland
c/o Department of Counselling Psychology
Faculty of Education
The University of British Columbia
2125 Main Mall
Vancouver, BC
V6T 1Z4

Additionally, examining one's eating attitudes and behaviours can often raise questions for people. Accordingly, I have included the name and telephone number of a local resource that can help answer any questions or concerns that you may have.

Eating Disorder Resource Centre of BC
631-5313

**Please feel free to tear this page off and keep it if
you wish.**

Appendix H

Intercorrelations of the Eating Attitudes Test (EAT)
for all Subject Combined, Chinese Subjects, and
Caucasian Subjects

Appendix H

Intercorrelations of the Eating Attitudes Test (EAT)
for all Subject Combined, Chinese Subjects, and
Caucasian Subjects

Scale	Subjects	EAT	Diet	Bulimia	OralCon.
EAT (total)					
	All				
	Chin				
	Cauc				
Diet Subscale					
	All	.924**			
	Chin	.877**			
	Cauc	.971**			
Bulimia Subscale					
	All	.756**	.668**		
	Chin	.716**	.573**		
	Cauc	.802**	.772**		
OralControl Subscale					
	All	.479**	.157*	.121	
	Chin	.466**	.037	.126	
	Cauc	.532**	.364**	.118	

Note: (All)=all subjects combined (N=231); (Chin)=
Chinese subjects (n=131); (Cauc)=Caucasian subjects
(n=100).

*p < .05, two-tailed. **p < .001, two-tailed.

Appendix I

Intercorrelations of Level of Acculturation (SL-ASIA)
for the Chinese Subjects

Appendix I

Intercorrelations of Level of Acculturation (SL-ASIA)
for the Chinese Subjects

Scale	(Total)	(L)	(Fr)	(A)	(G)	
<hr/>						
SL-ASIA (Total)						
-Language	(L)	.865**				
-Friend	(Fr)	.538**	.482**			
-Affinity	(A)	.622**	.503**	.283*		
-Generation	(G)	.745**	.437**	.292*	.425**	
-Food	(Fd)	.609**	.551**	.289*	.302*	.362**

n = 116.

*p< ,01, two-tailed. **p< .001, two-tailed