UNIVERSITY OF CALGARY

Cross-cultural Variants of Body Image and Eating Behaviour among Women living in Canada and India

by

Philip Jai Johnson

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE

DEGREE OF MASTER OF SCIENCE

GRADUATE PROGRAM IN CLINICAL PSYCHOLOGY

CALGARY, ALBERTA

SEPTEMBER, 2007

UNIVERSITY OF CALGARY

FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled "Cross-cultural Variants of Body Image and Eating Behaviour among Women living in Canada and India" submitted by Philip Jai Johnson, in partial fulfillment of the requirements for the degree of Degree of Master of Science, Program in Clinical Psychology.

Valerie Pruegger, Ph.D., Department of Psychology

David Hodgins, Ph.D., Department of Psychology

Teresita José, Ph.D., Department of Psychology

Kim Vaughan, Ph.D., Department of Psychology

Nancy Arthur, Ph.D., Division of Applied Psychology

August 10, 2007
Date

ABSTRACT

The present study examined cross-cultural variants of body image and eating disturbances among women living in Canada and India. The sample consisted of European-Canadian (n = 95), Canadian-born Indo-Canadian (n = 64), immigrant Indo-Canadian (n = 39), and Indian (n = 90) women. The measures included sociocultural attitudes toward appearance, body dissatisfaction, eating pathology, ethnic identification, perceived discrimination, and racial teasing. As hypothesized, sociocultural attitudes toward appearance positively correlated with body image and eating disturbances across all four participant groups. Contrary to expectations, however, discrimination positively correlated with body image and eating disturbances only for immigrant Indo-Canadian women, and not for those born in Canada. The findings indicate that endorsing Western beauty ideals can place women at risk for the development of body image and eating disturbances. These findings also suggests that discrimination may be a potent, but under-studied, source of body image and eating disturbances among ethnic minority women.

Acknowledgements

I am deeply indebted to my supervisor, Dr. Valerie Pruegger, for her constant guidance, support, and enthusiasm, throughout the course of my education here at the University of Calgary. This project would not have been possible without her insight and editorial assistance. I would also like to thank my co-supervisor, Dr. David Hodgins, for his helpful comments, patience, and statistical direction when working with the data and analyses. I was especially fortunate to have my former practicum supervisor, Dr. Amy Siegenthaler, my stats guru, Dr. Bob Uttl, and my undergraduate thesis supervisor, Dr. Don McCreary, help me as professional mentors and friends during this process, and I would have been lost without them.

My sincere thanks to Dr. Tita José, Dr. Kim Vaughan, and my external examiner, Dr. Nancy Arthur, for lending their invaluable expertise and time to participate at the oral examination. I could not have asked for a more accomplished defence committee.

This thesis, slowly but surely, transpired amid the many friendships that made my experiences at U of C simply unforgettable. A very special thank you goes out to Jessica McLachlan and Sheila Garland, for getting me through the tough times, and for always believing in me. Without question, I am immensely grateful to my wonderful parents, Johnson and Annie, my siblings John, Joanne, and Mathew, and my impossibly adorable nieces, Hannah and Emma, for their endless love and support.

Last, but certainly not the least, I wish to thank Dr. Geetha Appachu, Head of the Department of Psychology at Christ College in Bangalore, India. Without her assistance, the "trans-national" aspect of this project would never have materialized.

Dedication

This thesis is dedicated to all the participants, both in Canada and India, who volunteered to participate in this study. It is my earnest hope that this project will do some justice to the diversity of their experiences and struggles.

TABLE OF CONTENTS

Approval Page ii
Abstract iii
Acknowledgements iv
Dedication v
Table of Contents vi
List of Tables ix
CHAPTER ONE: INTRODUCTION 1
Body image ideals in North America 1
Influences of acculturation 3
Acculturation orientations 4
Canadian studies 5
Body image: A cross-cultural perspective 7
The effects of racial discrimination 8
Rationale for the current study 9
Hypotheses 11
CHAPTER TWO: METHOD 12
Study Design 12
Participants 12
Procedure 13
Measures 14
Supplemental Questionnaire 14
Rosenberg Self-Esteem Inventory 14
Racial Teasing Scale 15
Sociocultural Attitudes Toward Appearance 15
Perceived Discrimination Scale 15
Body Dissatisfaction subscale of the Eating Disorders Inventory 15
Multigroup Ethnic Identity Measure 16
Eating Attitudes Test 16
Body Mass Index 16
Statistical Analyses 17
CHAPTER THREE: RESULTS 17
The relationship between discrimination and body dissatisfaction 17
Exploratory analyses 18

Self-esteem..... 19
The relationship between ethnic identification and body dissatisfaction..... 19
Societal norms around appearance..... 20
Group differences in body image attitudes and eating behaviour..... 21
The relationship between discrimination and eating pathology.. 22
The relationship between ethnic identification and eating pathology..... 23
CHAPTER FOUR: DISCUSSION..... 23
Perceived discrimination, body dissatisfaction, and eating pathology among Indo-Canadian women..... 23
Racial teasing and body dissatisfaction among Indo-Canadian women..... 25
Racial teasing and eating pathology among Indo-Canadian women..... 26
Ethnic identification, body dissatisfaction, and eating pathology among Indo-Canadian women..... 26
The relationship between ethnic background and endorsement of Western beauty ideals..... 28
Ethnic background and eating pathology 29
Strengths and Limitations..... 30
Conclusions and Recommendations for Future Research..... 32
REFERENCES..... 34
APPENDIX A: Summary of Study Hypotheses..... 41
APPENDIX B: Descriptive Information on Study Measures..... 43
APPENDIX C: Internal Consistency Reliability of Measures across all Study Groups..... 49
APPENDIX D: Power Analysis..... 51
APPENDIX E: Pearson Correlation Matrix for the European-Canadian Group..... 54
APPENDIX F: Pearson Correlation Matrix for the Canadian-Born Indo-Canadian Group..... 56
APPENDIX G: Pearson Correlation Matrix for the Immigrant Indo-Canadian Group..... 58

APPENDIX H: Pearson Correlation Matrix for the Indian Group..... 60
APPENDIX I: Comparison of study groups on sociocultural attitudes, body dissatisfaction, and eating pathology..... 62
APPENDIX J: Certifications of Institutional Ethics Review..... 64

LIST OF TABLES

TABLE 1 Comparison of Study Groups: Participant Characteristics.... 40

CHAPTER ONE: INTRODUCTION

While research in acculturation and prejudice is not new, it is only in recent years that the media is increasingly focusing on the experiences of visible minority women, who must often contend with the "double whammy" of experiencing discrimination on the grounds of both gender and race. For instance, although ethnic minority women are well represented in the Canadian work force and health care system, a "glass ceiling" effect significantly limits their presence within the management sector (Cullen, 2005).

According to a recent article in TIME magazine, even when ethnic minority women attain management positions or successfully establish their own business enterprises, they continue to experience marginalization (Cullen, 2005). That these women continue to feel marginalized in spite of their success as corporate leaders is best understood in the context of Vygotzky's (1986) *sociocultural theory*, where individual development must be studied in the context of the sociocultural environment. That is, the way in which people relate to their social groups of reference, as well as other relevant social groups in society, holds important repercussions for their psychological well-being (Castro, 2003). Thus, sociocultural theory purports that the *interpersonal* (social interaction) precedes the *intrapersonal* (internalization). Surprisingly, although discrimination is widely acknowledged to negatively affect one's psychological well-being, very few studies have examined the relationship between discrimination and body dissatisfaction (BD) in ethnic minority individuals.

1.1 Body image ideals in North America

Adapting the sociocultural approach to the context of body dissatisfaction (BD), cultures with a "thin ideal" of beauty provide a setting for the development of body image dissatisfaction (Tsai, Curbow, & Heinberg, 2003). The importance of physical attractiveness in Western culture

is undeniable. Physical appearance is all too often, an important factor in the way that women are judged by others in society (Cash & Pruzinsky, 1990). The media is unquestionably an important medium through which cultural norms are transmitted, and thinness, as an aesthetic ideal, has been the norm for much of the 21st century. Almost three decades ago, Garner, Garfunkel, Schwartz, and Thompson (1980) compared the height and weight of Playboy centerfolds and Miss America contestants to that of the national average, and found that in the 1960's, the Playboy centerfold weighed 91% of the average American woman. The weight of the centerfolds further decreased in the 1970's, when they weighed just 81% of the national average. Garner et al. (1980) also examined Miss America contestants' weights, which revealed similar differences, where in the 1960's, the weight of a Miss America contestant was only 91% of her expected weight for her age. A decade later, the weight of the Miss America contestant dropped to approximately 84% of her expected weight. The ensuing message is that the thinner, the better, and the internalization of such norms can act as a significant predictor for BD and disordered eating behaviour (Stormer & Thompson, 1996).

There are, however, more perturbing implications of a thin ideal. Research suggests that, in general, those deemed thin and "attractive" are often viewed as more successful and competent. Hence, they may be ascribed greater societal acceptance (Wilfley & Rodin, 1995). It is therefore not surprising that research has consistently demonstrated that such disorders predominate in Western industrialized countries, where a culturally distinctive ideal is readily embraced (Wilfley & Rodin, 1995).

But with the effects of rampant globalization, body dissatisfaction is increasingly becoming recognized as a phenomenon that affects individuals worldwide, rather than being peculiar to European-Canadian women in Western industrial societies. Recent research reveals

that there is, in fact, a developmental gradient of BD and eating disorders (EDs) across cultures, with steadily increasing rates among women living in non-Western societies including China, Hong Kong, Japan, and Taiwan, Belize, Israel, India, South Africa, Curacao, and Eastern European countries such as Bulgaria and the former Soviet Union (Tsai, Curbow, & Heinberg, 2003; Keel & Klump, 2003). As the longstanding perception of BD as a Western "culture-bound" syndrome quickly erodes in psychology (Keel & Klump, 2003), Tsai, Curbow, and Heinberg (2003), suggest that cross-cultural comparisons (such as comparing women in non-Western and Asian societies with those in the West) allow us to further examine the hypotheses posited by sociocultural theory.

1.2 Influences of acculturation

Despite the advantages of international cross-cultural comparisons, comparing different cultural groups within the *same* geographic boundary would also allow us to critically examine sociocultural hypotheses, as it allows researchers to better understand the effects of acculturation. Acculturation can be defined as the phenomenon that occurs as a result of first-hand, continuous contact between two or more cultural groups, with subsequent changes in the original culture patterns of either or both groups (Berry, 2005). Thus, acculturation is a dynamic, cognitive, and emotional process in which individuals aim to access, understand, and adopt various characteristics of a culture that is different from their own (Miller et al., 2006). Acculturation is measured across a vast variety of domains such as language, identity, behaviour, norms, and values (Miller et al., 2006). As such, it is a highly complex construct for researchers to study, since the process by which individuals either selectively or unconsciously balance, adopt, maintain, or selectively express aspects of their new or native cultures depends greatly upon the context (Berry, 2005).

1.2.1 Acculturation orientations

Acculturation can occur both at the group, and at the individual level. At the group level, changes take place in social structures and institutions, as well as in cultural practices such as language, food preferences, forms of dress, and the nature of social customs and interactions (Berry, 2005). At the individual level, also known as *psychological acculturation* (Graves, 1967; Castro, 2003), changes occur in a person's behavioural repertoire (Berry, 2005) where the individual's behaviours, identities, attitudes, and personal values change as his or her cultural group experiences acculturation.

Based on the individual level of acculturation, four widely studied acculturation processes arise which distinguish a relative preference for (1) maintaining one's heritage, culture, and identity (ethnic identification), and (2) having contact with other ethnocultural groups (interethnic attitudes; Berry, 2005). These four processes, better known as acculturation strategies, include: integration, assimilation, separation, and marginalization (Berry, 2005; Castro, 2003). Those who endorse an *integration* strategy aim to both maintain their ethnic identity, and maintain relationships with members of other ethnic groups. When individuals do not wish to maintain their cultural identity, and seek frequent, daily interaction with other cultures, the *assimilation* or "melting pot" (often implicitly enforced by the politically dominant majority) strategy is defined. When individuals value their own cultural distinctiveness, and wish to avoid interethnic relationships, the *separation* strategy comes into effect. It should be noted that separation often occurs as resistance to assimilation, rather than as an individual choice (Berry, 2005). Separation can also be enforced by the politically dominant majority (e.g., apartheid in South Africa, reservations for Aboriginal peoples in Canada), in which case, it is known as "segregation" (Berry, 2005). Last, when there is an inability to maintain cultural

identity (particularly when it is explicitly enforced by the politically dominant majority), and when there is little interest in or ability to maintain interethnic relations (often due to discrimination), then *marginalization* occurs. Marginalization is never a choice. Of the four, an integrationist approach tends to afford the most favourable outcomes for adaptation with marginalization being the least favourable, while assimilation and separation are related to intermediate levels of psychological adjustment (Castro, 2003).

In the U.S., for example, research suggests that as immigrant families attempt to acculturate to their new surroundings, they combine their traditionalism with newer, "more" American values (Pumariega, Rogers, & Rothe, 2005). As a result, the process of acculturatation frequently develops into a "culture clash," with a combination of cultural and family influences, along with issues of autonomy, becoming particularly relevant for immigrant women and adolescents (Tsai, Curbow, & Heinberg, 2003). Thus, in the U.S., the general finding is that the higher the level of assimilation, the greater the psychological well-being (lower depressed mood) – particularly in the case of Eastern European -, Mexican-, and Asian-American minority groups such as Koreans and Taiwanese (Miller, Sorokin, Wang, Feetham, Choi, & Wilbur, 2006; Tsai, Curbow, & Heinberg, 2003). In the context of the present study, what needs to be examined is how other acculturation strategies play a role in psychological well-being (especially in the Canadian context of multiculturalism), and in particular, notions of body image ideals.

1.3 Canadian studies

In the Canadian context, numerous studies suggest that, on the whole, there may be an altogether different pattern of acculturation than in the U.S. (Crane, Ngai, Larson, & Hafen, 2005). The Canadian context is especially important to examine, given the legislation of multiculturalism in the country, which was designed to gain equity for ethnic minority groups

that have consistently been excluded from the dominant spheres of society (Jiwani, 2006). In the case of immigrant parents for instance, the incorporation of the majority culture's norms does not necessarily result in a loss of ethnic identity or values. For children (particularly adolescents), however, acculturation can either foster ethnic identity (Gaudet & Clement, 2005), or it can lead to depression and delinquency (Crane, Ngai, Larson, & Hafen, 2005). In one study on Francophone adolescents residing in Western Canada, the increased level of contact with the dominant outgroup, nature of social support within the ingroup, and confidence in learning and speaking a second language, were all essential to maintaining ethnic identity and psychological well-being (Gaudet & Clement, 2005), although it should be noted that Francophones are not a racialized group, and their integration in a "different" cultural setting is in stark contrast compared to ethnic minority groups.

In the case of ethnic minorities, Naidoo (2003) reported that increased assimilation is also related to increased psychological distress in younger South Asian (i.e., with origins from the Indian subcontinent, including countries such as India, Sri Lanka, Pakistan, and Bangladesh) women due to greater family conflict over traditions such as arranged marriage, where the women preferred romantic relationships. In one of the most recent studies on the effects of acculturation on Asian immigrants in Canada (Kaplan, Chang, Newsom, & McFarland, 2002), it was found that the greater the length of stay, the greater the risk for hypertension as a result of increased smoking and alcohol use, decreased physical activity, and psychological distress. In sum, like the U.S. studies, what these findings suggest is that the pattern and benefits of acculturation vary according to the cultural norms of the ethnic minority group. Perhaps, as mentioned earlier, the problems with these studies is that acculturation is too often defined as developing proficiency in an official language (usually English), or as length of residence in the

host country. It is far more important to use measures that adequately assess the construct of acculturation, so that the nature and effect of a particular acculturation strategy on psychological well-being can be examined more efficiently.

1.4 Body image: A cross-cultural perspective

Research in the area of body dissatisfaction is increasingly reflecting the need to examine the effects of beauty ideals from a cross-cultural perspective. As early as 1983, Furnham and Alibhai demonstrated that Kenyan immigrants living in Britain rated thinner figures more favourably than respondents living in their country of origin. Moreover, research among immigrant women of different ethnic backgrounds in Australia, suggests that the longer the time spent in the host country of residence (Australia in this instance), the more similar were their weight-related behaviours (such as dieting or exercising) to those of Australian-born women, and as such, the greater their risk for BD and eating disorders (Ball & Kenardy, 2002). What this suggests is that assimilation tends to detrimentally affect the body image of ethnic minority women, who in immigrating, soon come to face the same pressures that their White European counterparts encounter on a daily basis.

However, this also depends on the nature of the ethnic group, as it has also been argued that those who identify more with their culture of origin are "protected" against the unrealistic standards of beauty in the dominant culture (Root, 2001; Iyer & Haslam, 2003). Studies with African Americans have generally supported this protective hypothesis (Pumariega, Gustavson, Gustavson, Motes, & Ayres, 1994). In the African-American culture, there is greater acceptance of larger body sizes, and considerably less emphasis on the thin ideal. The result is that, in general, African-American women are significantly less likely than White European women to fear weight gain (44% versus 55%), and to develop BD or disordered eating attitudes (Gray,

Ford, & Kelly, 1987). That is, African-American women are consequently "protected" by the norms of their own cultural background. Recent research however, suggests that African-American women may be increasingly developing body dissatisfaction, although not to the same extent as White women in the U.S. (Grabe & Hyde, 2006).

Clearly, the relationship between ethnic group and BD can be quite complex and, accordingly, may warrant research approaches that go beyond comparisons of prevalence rates alone (Shaw, et al., 2004). What many studies of BD should also consider is how acculturation, or the process of negotiation of the roles between ethnic ingroups and outgroups, defines the self.

In the context of body image, studies of acculturation in the U.S. are inconclusive. While Tsai, Curbow, and Heinberg (2003) found that a greater length of stay in the host country serves as a protective factor in the development of BD and EDs in Taiwanese-American women, other studies on Asian American women (Yoshimura, 1995), adolescent Japanese females (Furukawa, 1994), and adolescent Mexican-American females have found little or no effect of acculturation (Joiner & Kashubeck, 1996) on BD or eating disorder symptomatology.

1.5 The effects of racial discrimination

In addition to acculturation, research suggests that discrimination is negatively correlated with economic and psychological well-being in visible minority groups and immigrants. For example, in the city of Toronto, research suggests that non-European and visible minority immigrants are much more likely than European-Canadians to experience housing discrimination, unemployment and low skill employment, low education, as well as family poverty, (Dion, 2001; Ornstein, 2000). Regarding psychological well-being, in a study of Canadian women who emigrated from India, it was found that reluctance to forthrightly deal with racial discrimination resulted in increased blood pressure levels, and increased

psychological symptoms scores such as anger (Moghadham, 2002). While the research examining the association between discrimination and psychological well-being is extensive in Canada, there are no known Canadian studies that examine the link between discrimination and BD.

In the U.S., a study on South Asian-American women found that a reported history of racial teasing, and not ethnic identification or acculturation, was the only predictor variable that was associated with BD and disordered eating behaviour (Iyer & Haslam, 2003). This is in addition to other established predictors of BD such as weight-, shape-, and appearance-related teasing (Cattarin & Thompson, 1994; Thompson, Coovert, Richards, Johnson, & Cattarin, 1995). Racial teasing, in general, due to its focus on aspects that are different or "unappealing" to the dominant majority, can have lasting detrimental effects on a minority individual's psychosocial development (Iyer & Haslam, 2003). Qualitative studies with South Asian women indicate that racial teasing is different from other predictor variables in that it might contribute to BD and eating disorders (EDs) by leading visible minority women to evaluate themselves and their ethnicity negatively, thereby, impairing bicultural identity development (Iyer & Haslam, 2003). Thus, the psychological impact of racial teasing may be a potent but neglected source of eating and body image disturbance among minority women.

1.6 Rationale for the current study

Psychological studies of acculturation are especially relevant today in a wide variety of cultural contexts and countries. In addition to the staples of tourism and telecommunications, international migration, refugee upheavals, and the devastating consequences of colonization, have all increased the level of intercultural contact among various ethnic groups (Berry, 2005). This increase in intercultural contact involves processes of physical, cultural, and psychological

modes of adaptation that researchers must consider in order to obtain a more comprehensive picture of human behaviour.

As mentioned earlier, while there are many studies on acculturation in Canada, there are currently no studies that have examined both acculturation and discrimination as potential predictors of BD and eating pathology in the Canadian context of multiculturalism. A wide variety of ethnic groups are currently represented in Canada, with visible minority groups constituting approximately ten per cent of the adult population (Tran, Kaddatz, & Allard, 2005).

It is also important for Canadian researchers to examine the prevalence of BD and eating pathology in immigrant populations if we are to gain a deeper understanding of the role of acculturation and discrimination in the development of such disorders, and more importantly, in devising culturally sensitive modes of treatment. Devising treatment options is crucial for ethnic minority women, especially South Asian-Canadian women, for whom it is often considered taboo to defy cultural strictures in order to seek help for psychosocial concerns (Vittala & Poole, 2006). Women of South Asian origin, in particular, have been relatively under-researched, compared to women of African and East Asian backgrounds (Iyer & Haslam, 2003). This is disconcerting, given that the South Asian-Canadians are not only more likely than other ethnic minorities to maintain strong cultural connections with their country of origin, they are also more likely than any other ethnic minority group to report a sense of belonging to Canada (Tran, Kaddatz, and Allard, 2005). A recent survey showed that 88% (i.e., 9 in 10) of South Asians indicated a very strong sense of belonging to Canada, compared to 83% of Blacks, 77% of Chinese, and 80% of individuals not in a visible minority group (Tran, Kaddatz, and Allard, 2005). Therefore, in this community, it would be interesting to investigate whether ethnic identity somehow serves as a protective factor for perceived discrimination. As the current study

involves a trans-national comparison of body dissatisfaction and eating pathology among women residing in Canada and India, only South Asian participants of Indian origin (i.e., Indo-Canadian) were selected.

1.7 Hypotheses

The purpose of the present study is to systematically investigate whether a history of racial teasing and current level of perceived discrimination serve as risk factors in the development of BD and eating pathology in ethnic minority women. This study also examines the relationship between ethnic identity and BD in Indo-Canadian women.

The current study has eight hypotheses (see Appendix A for a tabular summary):

In the Indo-Canadian group alone,

a) Lower levels of perceived discrimination will be associated with lower levels of body dissatisfaction.
b) A history of hurtful racial teasing will also be associated with higher BD, independent of other previously established predictor variables (e.g. BMI, weight, self-esteem).
c) Higher levels of ethnic identification will be associated with a lower level of body dissatisfaction.

As exploratory hypotheses, it is predicted that:

d) Of the three groups, participants in the EC (European-Canadian) group will demonstrate the highest levels of BD compared to the IC (Indo-Canadian) and I (Indian) groups, such that: EC > IC > I
e) Based on the sociocultural attitudes towards appearance questionnaire, Of the three groups, participants in the EC group will also demonstrate the greatest investment and awareness of Western cultural norms of beauty, such that: EC > IC > I

Three exploratory hypotheses around eating pathology that will be investigated in the Indo-Canadian group alone:

f) Lower levels of perceived discrimination will be associated with lower levels of eating pathology

g) A history of racial teasing will be associated with higher eating pathology, independent of other previously established predictor variables

h) Higher levels of ethnic identification will be associated with a lower level of eating pathology

CHAPTER TWO: METHOD

2.1 Study Design

The present study was a cross-sectional and transnational comparison of sociocultural beliefs around physical appearance, body image, and eating behaviour among university and community-based women (i.e., only for the IC group) residing in Calgary, Canada, and in Bangalore, India.

2.2 Participants

The study sample was composed of: European-Canadian female students at the University of Calgary (EC; n = 95; 33%), Indo-Canadian women recruited from the university subject pool and the community (IC; n = 103; 36%), and Indian women studying at Christ College in Bangalore, India (I; n = 90; 31%). Inclusion criteria required all participants to be female, between the ages of 18 and 25 years, and fluent in English (spoken and written). The age range of 18 to 25 years was selected based on previous research indicating that in Western societies, young adult women are at greater risk of developing body dissatisfaction and disordered eating behaviours than the general population (Heatherton et al., 1995).

Participants across all three groups were also required to have both parents of the same ethnic origin. As such, women of mixed ethnic origin, as well as those of South Asian ancestry outside India (e.g., Pakistan, Sri Lanka, or Bangladesh) were excluded from the analysis. Of the 311 women who completed the study, a total of 288 participants met the aforementioned inclusion criteria.

2.3 Procedure

For the IC and EC groups, participants were recruited from University of Calgary subject pool through the bonus credit system for students enrolled in Introductory Psychology. Those participants who met the inclusion criteria were then provided with an external link to access and complete the study online.

Of note, a significant methodological challenge arose in this study in terms of participant recruitment within the IC group. In order to maintain adequate statistical power, and given the limited IC sample within the university subject pool, some of the IC participants were subsequently recruited from the community. Moreover, given the minimum sample size requirement, the age requirement for this particular participant group was slightly extended to the age range of 18 to 33 years.

Whenever possible, a "snowball sampling" technique was also employed with the IC group, where students were asked if they knew of other eligible participants. If they did, they were asked to forward the study link and the researcher's contact information to these women.

For the Indian group, participants from Christ College were administered the various measures in English by collaborators in India, consisting of a psychology faculty member and an undergraduate research assistant. The collaborators were provided with written instructions from the researcher regarding: (a) informed consent, (b) confidentiality, (c) the contact information of

the researcher and supervisors in case of issues that could arise during data collection, and (d) a debriefing form that included information on local treatment centres (provided by the collaborators) if participants were to experience any distress as a result of the study.

2.4 Measures

Questionnaires assessing self-esteem, endorsement of Western beauty ideals, body dissatisfaction, and eating pathology were administered across all study groups. Demographic information and body mass index were included to control for these constructs. For both the immigrant and Canadian-born Indo-Canadian participants, additional questionnaires assessing acculturation, perceived discrimination, and a history of racial teasing were also administered (see Appendix B for a detailed description, and Appendix C for a summary, of all measures). As will be discussed in detail in the results section, within-group differences in the Indo-Canadian sample were analyzed, in terms of Canadian-born versus foreign-born, based on past research indicating nativity status as a determinant of health-related behaviour. Hence, the alpha coefficients for the measures outlined below are provided for four, rather than three, participant groups: European-Canadian, Canadian-born Indo-Canadian, immigrant Indo-Canadian, and Indian women.

Supplemental Questionnaire. Participants' were asked about ethnic background, age, weight, height, length of residence in Canada (if applicable, IC group only), education level, socioeconomic status (SES), occupation (if applicable), religion, and marital status.

Rosenberg Self – Esteem Inventory (RSE; Rosenberg, 1965) (Appendix 2). Feelings of self-regard are frequently measured using the RSE. The RSE is a 10-item Likert measure that taps into feelings of global self-worth, indicated by the sum of the ten items, and resulting in a scale range of 10 to 40, with higher scores indicating higher self-esteem. Cronbach's alpha

coefficients for the European Canadian, Canadian-born Indo-Canadian, Indo-Canadian immigrant, and Indian women, respectively, are as follows: .91, .89, .88, and .73.

Racial Teasing Scale (RTS; Iyer & Haslam, 2003). This scale contains 8 items rated on 5-point scales assessing perceived frequency and impact of teasing on the basis of one's race or ethnicity, with higher scores reflecting a greater incidence of racial teasing of ethnicity-related features. This measure was modified in the current study, where explicit examples of slurs were removed in accordance with ethical requirements. For the Canadian-born Indo-Canadian women, the internal consistency was .90, and it was .94 for the Indo-Canadian immigrant women.

Sociocultural attitudes towards appearance questionnaire (SATAQ; Heinberg, Thompson, & Stormer, 1995). This measure comprises statements that assess the extent of internalization of sociocultural pressures to be thin. Higher scores indicate a greater awareness or internalization of socially presented views regarding the importance of attractiveness in Western society. Cronbach's alpha coefficients for the SATAQ overall scale for the European Canadian, Canadian-born Indo-Canadian, Indo-Canadian immigrant, and Indian women, respectively, are as follows: .67, .62, .84, and .59.

Perceived Discrimination Scale (PDS; Hocoy, 1993). This scale contains 18-items measuring perceived discrimination, which are rated on a 7-point Likert scale ranging from 1 (Strongly Disagree) to 7 (Strongly Agree), with higher scores indicating a higher level of perceived discrimination. In this study, the PDS was found to have adequate internal consistency, with .73 for the Canadian-born Indo-Canadian women, and .80 for the immigrant Indo-Canadian women.

Body Dissatisfaction (BD) subscale of the Eating Disorders Inventory. The Eating Disorders Inventory (EDI; Garner et al., 1983) is a 64-item self-report that is designed to assess

psychological and behavioural traits common to patients with anorexia nervosa (AN) and bulimia nervosa (BN). Cronbach's alpha coefficients for the European Canadian, Canadian-born Indo-Canadian, Indo-Canadian immigrant, and Indian women, respectively, are as follows: .89, .88, .87, and .83.

Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992; Castro, 2003). This scale which is a combination of two scales, the Multigroup Ethnic Identity Measure and the Other Group Orientation Measure per Phinney's original 1992 study, consists of 18 items, which are rated on a 4-point Likert scale ranging from strongly agree to strongly disagree. Items assess four aspects of ethnic identity: ethnic-identity achievement, feelings of attachment and pride to one's own ethnic group, ethnic behaviours, and attitudes and orientations towards other groups. In this study, Cronbach's alpha was.60 for Canadian-born Indo-Canadian women, and .57 for the immigrant Indo-Canadian sample.

Eating Attitudes Test. (EAT-26; Garner et al., 1982): The EAT-26 is a 26 item self-report Likert-style rating scale, which assesses the presence and degree of psychopathology associated with disordered eating over the past 28 days. Cronbach's alpha coefficients for the European Canadian, Canadian-born Indo-Canadian, Indo-Canadian immigrant, and Indian women, respectively, are as follows: .79, .84, .95, and .71.

Body Mass Index (BMI=Kg/M^2). The BMI is a rough measure of adiposity (excess body fat), and is highly correlated with more complex methods of measuring body mass such as skinfold thickness and body density measurements (NIH, 2007).

2.5 Statistical Analyses

An *a priori* power analysis was performed to determine the number of participants to be sought (see Appendix D). For hypotheses (a) through (c), and exploratory hypotheses (f) through (h), Pearson's correlations were calculated to examine the relationships among perceived discrimination, racial teasing, ethnic identification, body image, and eating behaviours. Although not part of the hypothesis, Pearson's correlations were also calculated to assess the relationships among BMI, body image, and eating behaviours independently for each of the three groups (EC, IC, and I), and for the entire sample.

CHAPTER THREE: RESULTS

Demographic characteristics were measured using items that assessed participants' age, weight, height, and BMI. Table 1 highlights the demographic data for each ethnic group and the total sample. Based on the results presented in the table, the European-Canadian, both Indo-Canadian, and Indian groups differed significantly in age, weight, and height, but not BMI. Post-hoc analyses revealed that the Indian sample was significantly younger, weighed less, and were shorter than either the European-Canadian or Indo-Canadian groups. Please see Appendix E for the correlation matrix for the European-Canadian group, Appendix F for the Canadian-born Indo-Canadian group, Appendix G for the immigrant Indo-Canadian group, and Appendix H for the Indian group.

3.1 The relationship between discrimination and body dissatisfaction

Consistent with hypothesis (a), these findings indicate that an increased level of perceived discrimination is positively correlated with both body dissatisfaction, $r\,(97) = .24, p = .02$. However, the data failed to support hypothesis (b), that a greater incidence of racial teasing in childhood would be associated with body dissatisfaction, $r\,(91) = .13, p = .22$. This suggests

that for Indo-Canadian women, increases in body dissatisfaction are associated only with increases in perceived discrimination, and not with a history of racial teasing.

3.1.1 Exploratory analyses: Within-group differences in the Indo-Canadian sample.

On an exploratory level, within-group differences in the Indo-Canadian sample were analyzed, in terms of Canadian-born versus foreign-born. In this sample, 64 of the Indo-Canadian participants were born in Canada, and the remaining 39 were born elsewhere – countries include India, the United States, England, Singapore, Middle Eastern countries such as Kuwait, Bahrain, and the United Arab Emirates (UAE), and African nations such as South Africa, Kenya, and Tanzania. Although the Iyer and Haslam (2003) study did not explore similar within-group differences, the rationale for splitting the Indo-Canadian sample in terms of those who are Canadian-born and those who immigrated lies in past research on acculturation demonstrating significant associations between nativity, acculturation, and health behaviour (Lopez-Gonzalez, Aravena, & Hummer, 2005). Specifically, Lopez-Gonzalez et al. (2005) found that immigrant-ethnic minority individuals were significantly less likely to consume alcohol or engage in smoking than their American-born counterparts. Overall, the research literature on acculturation suggests that, in general, immigrant ethnic minority individuals display far healthier lifestyle behaviours than American-born adults (Lopez-Gonzalez, Aravena, & Hummer, 2005).

In the current study, the data indeed supported differences in health behaviour among the immigrant Indo-Canadian women, and those born in Canada. Perceived discrimination was associated with body dissatisfaction, $r(37) = .38$, $p = .02$ and eating pathology, $r(37) = .51$, $p = .001$, only for the immigrant Indo-Canadian group, but was not associated with body

dissatisfaction, $r(60) = .15$, $p = .24$, and eating pathology, $r(60) = -.26$, $p = .84$, among women born in Canada.

Racial teasing was not significantly correlated with body dissatisfaction for either the immigrant Indo-Canadian group, $r(33) = .19$, $p = .29$, or Canadian-born Indo-Canadian women $r(58) = .08$, $p = .53$. Racial teasing was however, significantly associated with eating pathology for the immigrant group, $r(33) = .47$, $p = .01$, but not with Canadian-born Indo-Canadian women, $r(58) = -.03$, p =.82. As indicated earlier, group differences are shown in Appendices F & G.

3.2 Self-esteem

Of note, although self-esteem was not included as part of the hypotheses in this study, it was negatively correlated with perceived discrimination, $r(97) = -.48$, $p < .001$), body dissatisfaction $r(97) = .52$, $p < .001$, and eating pathology $r(97) = .30$, $p < .001$, but not with a history of racial teasing $r(91) = .19$, $p = .08$.

In particular for the immigrant Indo-Canadian women, decreases in self-esteem were significantly related to increases in perceived discrimination, $r(37) = -.54$, $p = .001$, body dissatisfaction, $r(39) = -.58$, $p < .000$, and eating pathology, $r(39) = -.63$, $p < .000$. Likewise, for the Canadian-born Indo-Canadian women, self-esteem was negatively correlated with perceived discrimination, $r(60) = -.45$, $p < .000$, body dissatisfaction, $r(64) = -.51$, $p < .000$, and eating pathology, $r(64) = -.28$, $p = .02$.

3.3 The relationship between ethnic identification and body dissatisfaction

Contrary to hypothesis (c), ethnic identification was not associated with body dissatisfaction, $r(101) = .07$, $p = .50$. In particular, for the Indo-Canadian immigrant women, ethnic identification was not significantly associated with body dissatisfaction, $r(37) = -.23$, $p =$

.17. Similarly, for the Canadian-born Indo-Canadian women, there were no significant correlations between ethnic identification and body dissatisfaction, $r(64) = .18$, $p = .15$.

3.4 Societal norms around appearance

According to exploratory hypothesis (d), EC participants would demonstrate the greatest internalization of Western societal norms around appearance, followed by the IC group, and finally, the I sample. A one-way analysis of variance showed the effect of ethnic background on sociocultural attitudes was significant with a large effect size, $F(3, 284) = 20.97$, $p = .000$, $\eta^2 = .18$. Study group differences, including means and standard deviations, appear in Appendix I. Follow-up t-tests were conducted using the Bonferroni adjustment to determine which groups significantly differed from each other in terms of their endorsement of Western physical appearance norms. A Bonferroni correction was applied to control for Type 1 error in these follow-up tests, where the critical alpha was divided by the number of comparisons (i.e., 4 groups = European Canadian, Indo-Canadian – immigrant and Canadian-born, and Indian), where $\alpha = .05/4 = .0125$.

There was a significant difference between the European-Canadian group and the Canadian-born Indo-Canadian group, $t(157) = 3.20$, $p = .002$. There was also a significant group difference between the European-Canadian and the Indo-Canadian immigrant group, $t(132) = 3.46$, $p = .001$. There were however, no significant differences between the immigrant and Canadian-born Indo-Canadian women, $t(101) = -.99$, $p = .32$.

The Indian group did not significantly differ from the Indo-Canadian immigrant group, $t(127) = 2.22$, $p = .028$. The Indian group however, differed significantly from the Canadian-born Indo-Canadian group, $t(152) = 4.38$, $p = .000$, and the European Canadian group, $t(183) = 8.27$, $p = .000$. Based on the group means , the data supported hypothesis (d) that of the three groups,

the European Canadian sample demonstrated the greatest endorsement of Western beauty ideals, followed by the Indo-Canadian group (with the Canadian-born women demonstrating greater endorsement than the immigrant group), and finally, women in India.

Across all ethnic groups, there was a significant correlation between sociocultural attitudes around appearance with body and eating disturbances. For European Canadian women, there was a significant correlation between sociocultural attitudes around physical appearance with both body dissatisfaction, $r(94) = .47$, $p = .000$, and eating pathology, $r(94) = .44$, $p = .000$. This was also the case for the Canadian-born Indo-Canadian sample, where there was a significant association between sociocultural attitudes around physical appearance with both body dissatisfaction, $r(64) = .43$, $p = .000$, and eating pathology, $r(64) = .55$, $p = .000$. For the immigrant Indo-Canadian women, the results also supported a relationship between sociocultural attitudes around physical appearance with both body dissatisfaction, $r(39) = .66$, $p = .000$, and eating pathology, $r(39) = .46$, $p = .000$. Finally, for the Indian women, sociocultural attitudes were significantly correlated with body dissatisfaction, $r(90) = .25$, $p = .02$, and eating pathology, $r(88) = .34$, $p = .001$.

3.5 Group differences in body image attitudes and eating behaviour

Exploratory hypothesis (e) suggested that EC participants would demonstrate the highest level of body dissatisfaction, followed by the IC group, and finally, the I sample. Contrary to expectations, a one-way analysis of variance found no main effect of ethnic background on body dissatisfaction, $F(3, 283) = 0.47$, $p = .70$.

Exploratory hypothesis (e) also suggests that EC participants would demonstrate the highest level of eating pathology, followed by the IC group, and finally, the I sample. As

hypothesized, there was a main effect of ethnic background on eating pathology, F (3, 281) = 4.24, p = .007, η^2 = .04.

Follow-up t-tests were conducted using the Bonferroni adjustment to determine whether there were significant differences in reported eating disturbance between the three groups. The European Canadian group did not differ significantly from the Canadian-born Indo-Canadian sample, t (156) = -1.18, p = .241. The difference between the European Canadian and the immigrant Indo-Canadian groups however, approached significance, t (131) = -2.46, p = .015. Moreover, there was no significant difference between the immigrant and Canadian-born Indo-Canadian women, t (101) = 1.38, p = .17.

Women in India did not differ from European Canadian women, t (180) = 1.02, p = .308, or from Canadian-born Indo-Canadian women, t (150) = 2.02, p = .05. In contrast, the Indian women differed significantly from immigrant Indo-Canadian women, t (125) = 2.97, p = .004. Based on group means, our hypothesis that the European Canadian group would demonstrate the greatest level of eating pathology was not supported. Instead, the immigrant Indo-Canadian women demonstrated the highest level of eating pathology, followed by the Canadian-born Indian women, then by the European Canadian women, and finally, by the Indian women.

3.6 The relationship between discrimination and eating pathology

Consistent with our expectations, an increased level of perceived discrimination is positively correlated with disordered eating behaviour (r = .27, p = .005). The data also supported hypothesis (g), that a greater incidence of racial teasing in childhood was positively correlated with disordered eating behaviour (r = .23, p = .03). This suggests that for Indo-Canadian women, increases in eating pathology are associated only with increases in racial teasing, and not with perceived discrimination.

3.7 The relationship between ethnic identification and eating pathology

Contrary to our hypotheses, ethnic identification was not associated with eating pathology ($r = .04$, $p = .72$). In particular, for the Indo-Canadian immigrant women, ethnic identification was not significantly associated with eating pathology ($r = -.11$, $p = .51$). Similarly, for the Canadian-born Indo-Canadian women, there were no significant correlations between ethnic identification and eating pathology ($r = .15$, $p = .23$).

CHAPTER FOUR: DISCUSSION

4.1 Perceived discrimination, body dissatisfaction, and eating pathology among Indo-Canadian women

As hypothesized, there was a significant relationship between perceived discrimination, body dissatisfaction, and eating pathology in the Indo-Canadian sample. That is, perceived discrimination was associated with an increased level of body dissatisfaction, and an increased level of eating disturbance. Although perceived discrimination is a relatively understudied variable in the psychological research literature, its association with body and eating disturbances should not be considered an altogether unexpected finding. Future research should explore the relationship between discrimination and body and eating disturbances in other ethnic minority groups, while also acknowledging that sociodemographic factors and immigration status can act as determinants of discrimination.

With respect to immigration status, an interesting finding in the current study is that the relationship between perceived discrimination and body image and eating disturbances pertained only to the Indo-Canadian immigrant sample, and not to the Canadian-born Indo-Canadian group. In the Iyer and Haslam (2003) study on Indo-American women, no distinction was made between those who were American-born, and those who immigrated to the U.S. Indeed,

psychological research on discrimination tends to focus on race and ethnicity, and less on the impact of nativity as a key determinant of perceived discrimination. In a study on perceived discrimination within the American health care system, Lauderdale, Wen, Jacobs, and Kandula (2006) found that American-born Asian-Americans were less likely than both their immigrant counterparts and White Americans to report discrimination. The researchers noted that for Asian- and Latino-Americans, race/ethnicity itself was less likely to be the reason for discrimination, compared to nativity status. Future research should investigate what issues specific to the immigrant experience can increase the perceptions and experiences of discrimination. For example, Lauderdale et al. (2006) found that perceived discrimination was in part, attributable to speaking English as a second language, and socioeconomic status. From a theoretical perspective, Aujla (2000) argues that despite the "promises of multiculturalism," South Asian Canadian are often marginalized as, "visible minorities, ethnics, immigrants, and foreigners," all of which are incongruent with the notion of who constitutes a "real" Canadian (p.41). Hence, even if the discrimination may not be explicit in terms of racist dialogue or behaviour, the implicit pressure for immigrant Indo-Canadian women to assimilate to a dominant ideal may increase the perception or experience of discrimination, and hold deleterious consequences for their psychological well-being.

In Western nations, the dominant ideal with respect to women's physical appearance is one of thinness, and as a result, women are increasingly becoming dissatisfied with their body size and shape (Grabe & Hyde, 2006). In the United States for instance, at least half of all women report global negative evaluations of their bodies (Thompson, Heinberg, Altabe, and Tantleff-Dunn, 1999). Hence, if immigrant Indo-Canadian women aspire to be viewed as "real" Canadians and subsequently, to be less discriminated against, they may also attempt to conform

to Western ideals of beauty which can lead to dissatisfaction with their own bodies. Qualitative studies with Indo-Canadian women indicate that the thinner and "prettier" an ethnic minority woman becomes, the more accepted she feels by the mainstream culture (Iyer & Haslam, 2003; Tee, 1997). Hence, focusing on body size and shape may be one way for Indo-Canadian women to minimize the psychological ill-effects that are associated with perceived discrimination.

4.2 Racial teasing and body dissatisfaction among Indo-Canadian women

Surprisingly, the data failed to support the hypothesis, based upon the findings of Iyer and Halsam (2003), that a greater incidence of racial teasing in childhood would be associated with body dissatisfaction among Indo-Canadian women, regardless of place of birth. A possible explanation as to why this effect was not found in our study may have to do with the experimental procedure itself – that is, due to a few adaptations that were made to the racial teasing measure. In the Iyer and Haslam (2003) study, a question in the racial teasing measure was often followed by explicit examples of various derogatory name-calling labels specific to the South Asian community such as "Hindu," "Paki," or "dot head". In the present study, however, these commonly used slurs were removed from the racial teasing measure in order to avoid causing undue distress to the participants. While these terms were removed in accordance with ethical requirements that the study be of minimal risk to the participants, such a removal may have inadvertently affected the strength of the racial teasing measure to elicit the expected effects.

Another reason for the lack of association between racial teasing and body dissatisfaction may have to do with the act of racial teasing itself. Conceptually, unlike perceived discrimination, racial teasing exclusively focuses on the physical characteristics of an individual's race and ethnicity, such as skin colour or mode of dress. Hence, it is plausible that

women may readily understand that such slur terms do not target their body size and shape per se, rather their race or ethnicity. Future research should investigate the relationship that racial teasing bears with other correlates of psychological well-being aside from body dissatisfaction, such as depression and anxiety.

4.3 Racial teasing and eating pathology among Indo-Canadian women

The data supported the exploratory hypothesis that a history of racial teasing would be associated with eating pathology among Indo-Canadian women. Similar to the finding on perceived discrimination and body dissatisfaction, the relationship between racial teasing and eating pathology applied only to the immigrant Indo-Canadian sample, and not to the Canadian-born Indo-Canadian group. One plausible explanation is that racial teasing with immigrant Indo-Canadian women may have more to do with aspects of their identity besides racial features such as accent, language, mode of attire, or level of acculturation. Future research should explore potential causes, as well as possible moderators and mediators, of the positive correlation between racial teasing and eating pathology. For instance, racial teasing may lead to clinical anxiety, which is a known precursor of disordered eating behaviour (Marano, 2004).

4.4 Ethnic identification, body dissatisfaction, and eating pathology among Indo-Canadian women

Contrary to our hypothes, there was no significant correlation between ethnic identification and body and eating disturbances among Indo-Canadian women, regardless of place of birth. This supports past research (Iyer & Haslam, 2003; Lawrence, 1998) that acculturation and ethnic identification are unrelated to eating disorders in South Asian women. Nonetheless, this hypothesis was made due to past findings that there is a greater acceptance of larger body weight within the South Asian community (Furnham & Alibhai, 1983). For instance,

Tareen et al. (2005) demonstrated that British South Asian adolescent females diagnosed with anorexia nervosa exhibited significantly less fat-phobia, than did White British adolescent females with the same disorder. They proposed that the result was attributable to more positive attitudes toward body weight and shape among South Asians. In another study on South Asian women in Britain, Hodes, Jones, and Davies (1996) found that British Asian mothers expressed more positive attitudes about the need for children to gain weight. What the aforementioned studies did not examine, however, is the extent to which these women identified with their ethnic heritage.

In the current study, ethnic identification was hypothesized to act as a protective factor in the development of body and eating disturbances among Indo-Canadian women. The fact that ethnic identification was not associated with either body dissatisfaction or eating pathology in this study, perhaps speaks to the socialization process of Indo-Canadians, irrespective of nativity status, in Canada. Although there are no studies that directly examining the ethnic socialization process of South Asian men and women, past research in the U.S. suggests Asian American parents exhibit very little teaching about Asian culture and traditions with their children (Chae, 2000). In contrast to African American parents who tend to emphasize commitment to the community and ethnic pride, Asian American parents often encourage their children to be academically successful, and to ascribe to the dominant culture's ideals (Phinney & Chavira, 1995). Consequently, Asian American children are often highly assimilated into mainstream American society, and as a result of their assimilation, are considered the "model minority" (Chae, 2002). Given that there is no data on parenting practices among ethnic minority immigrant groups in Canada, future research should explore the relationship among

enculturation, socialization practices, and ethnic identification among ethnic minority individuals in the Canadian context.

4.5 The relationship between ethnic background and endorsement of Western beauty ideals

As hypothesized, there was a main effect of ethnic background on sociocultural attitudes around physical appearance, such that European Canadian women demonstrated the greatest endorsement of Western beauty ideals, followed by Canadian-born Indo-Canadian women, then immigrant Indo-Canadian women, and finally, women in India. In the West, where the cultural beauty ideal for women is one of thinness, it is unsurprising that European Canadian women demonstrated the greatest endorsement of this cultural ideal. The fact that Canadian-born Indo-Canadian women directly followed the European Canadian group in their endorsement of Western beauty ideals, and differed significantly from women living in India, suggests that the greater the length of stay in the West, the more susceptible a woman will become to Western ideals of beauty. Immigrant Indo-Canadian women did not differ significantly from Indian women in terms of endorsement of Western beauty ideals, but their higher scores on a measure of sociocultural attitudes suggests that with greater length of residence in Canada, the more at risk they may be for developing body and eating disturbances.

Interestingly, the current study demonstrated that regardless of ethnic background, there was a significant association between sociocultural attitudes toward physical appearance and body and eating disturbances. This lends support to a sociocultural model of eating disorders, where social and cultural factors such as beauty ideals, expectations of gender roles, and norms around eating behaviour can play a role in the development of body and eating disturbances (Tsai, Curbow, & Heinberg, 2003). This trans-national cross-ethnic relationship between

sociocultural attitudes with body and eating disturbances points to the predominance and pervasiveness of Western ideals of female physical beauty.

Past research with African American and East Asian-American women suggests that these populations are "protected" from Western beauty ideals, due to their ethnic cultures which emphasize greater body weight and shape, or lesser investment in physical appearance (Gray, Ford, & Kelly, 1987; Pumariega, Gustavson, Gustavson, Motes, & Ayres, 1994; Pan, 2001). In contrast, the absence of a main effect of ethnic background on body dissatisfaction in the current study indicates that ethnic minority women in North America (i.e., Indo-Canadian), and women in increasingly globalized societies (i.e., Indian women), are also susceptible to Western beauty ideals.

4.6 Ethnic background and eating pathology

Due to their endorsement of Western beauty norms and investment in physical appearance, it was hypothesized that the European-Canadian participants would demonstrate the greatest level of eating pathology. Contrary to this hypothesis, immigrant Indo-Canadian women were most likely to exhibit disordered eating behaviour, with no significant differences amongst the other three groups. As noted earlier, perceived discrimination and racial teasing were both significantly correlated with eating disturbances within this population. What this finding indicates, as did the Iyer and Haslam (2003) study, is that racial teasing may be a crucial, yet understudied, factor in the development of eating disturbances among immigrant ethnic minority women. Researchers must examine factors other than acculturation and ethnic identification, which were notably unrelated to eating pathology in the present study, which may affect ethnic minority women's adaptation to the dominant culture. As Iyer and Haslam (2003) argue, if a history of being taunted about one's ethnic features is associated with disordered eating

behaviour, then it is the majority culture's response to the ethnic minority women that must be implicated, and not solely her relation to it or her culture of origin. On a broader level, these results underscore, yet again, the extent to which Canadians in general tend to deny the existence of discrimination; and more research is necessary to emphasize how such a denial manifests itself at the "macro and micro levels of social reality" (Jiwani, 2006, p. xv). In fact, according to a recent article in the Calgary Herald, fifty eight per cent of Canadians believe in a cultural melting pot, and that ethnic minority individuals should, "change their cultural ways to be like the rest of Canadians" (Tibbetts, 2007). At the same time, the article noted that eighty two per cent of Canadians took pride in the national ideal of multiculturalism. Clearly, this finding supports past research that attitudes do not predict behaviours (Gomes, 2000), and that discrimination is a very real social problem for immigrant and ethnic minority Canadians.

4.7 Strengths and limitations

This study boasts several theoretical and methodological strengths over previous research in the area. In terms of theory, the current study included Indo-Canadian participants' immigration status in investigating the hitherto under-explored relationship between discrimination and body and eating disturbances. In doing so, we were able to ascertain that nativity can act as a key determinant of discrimination experiences for Indo-Canadian women. In establishing that discrimination is related to both body and eating disturbances among immigrant Indo-Canadian women, and not among those women born in Canada, this study underscores the disconnect between legislated multiculturalism and cultural awareness and sensitivity at the street level.

A methodological strength is the trans-national approach that was employed to examine the sociocultural theory of eating disorders. This study lends credence to the sociocultural theory

of eating disorders that cultures, irrespective of geographical location, which value a thin ideal can place women at risk for the development of body dissatisfaction and eating pathology.

There are, however, a few limitations to the present study. A primary limitation lay in sampling the population. While the vast majority of Canadian participants were university women, many of the Indo-Canadian participants were recruited through the snowball sampling technique. Hence, a sampling bias may exist, and these results may not be generalizable to the Indo-Canadian population at large.

These results may also not be generalizable to the Indian population, given that the Indian participants were all university-educated, upper SES, English-speaking women. Still, it should be noted that given India's history of colonialism by the British, English is the official national language (along with Hindi), and constitutes the medium of instruction at a vast majority of post-secondary institutions across the country. Moreover, the affluent, college-educated population represents the highest risk group for body image and eating disturbances (Iyer & Haslam, 2003).

Another major limitation is the absence of qualitative measures to assess attitudes towards body image, eating behaviour, and Western beauty ideals, in order to gain a greater understanding of the influence of cultural differences and protective factors on body dissatisfaction and eating pathology. Qualitative data, would possibly allow the nuances of cultural differences and similarities to emerge in ways that quantitative instruments cannot gauge. Qualitative measures would allow researchers to examine the various constitutional, sociodemographic, behavioural, and psychological variables that influence the perception of an environmental stimulus as discriminatory (Clark, Anderson, Clark, & Williams, 1999). More importantly, qualitative measures would also help us understand the various coping mechanisms

that ethnic minority women may employ in combating their varied experiences with, as well as the psychological and physiological consequences of, racism.

Furthermore, this study did not examine other correlates of psychological well-being that are common in eating disordered populations, such as depression and anxiety. Particularly in the context of perceived discrimination and racial teasing, studying these variables would allow us to assess whether the perception and experience of discrimination are causally linked to body and eating disturbances, as well as identify potential moderators and mediators of this relationship.

4.8 Conclusions and recommendations for future research

Overall, it is hoped that the findings of the current study will lay the groundwork for future research investigating cross-cultural aspects of body dissatisfaction and eating pathology. With respect to body image, the results of this study indicate that regardless of geographical location, cultural affiliation, nativity status, or ethnic background, women who endorse Western beauty ideals may be at an increased risk for developing body dissatisfaction and disordered eating behaviour. That this finding applied to women living in both Canada and India implies a cross-cultural *commonality* of body image and eating disturbance, rather than a *variant* per se.

With respect to the relationship between discrimination and body and eating disturbances among immigrant Indo-Canadian women, this study holds important implications for counsellors working with ethnic minority populations. Not only will counsellors need to be culturally sensitive, but they may also need to explore issues of social oppression, in the form of racism and sexism, in contextualizing the concerns of their clients. Future research must explore the confluence of racism and sexism, and its resulting influence on body image and eating behaviour among other immigrant populations in Canada. This is a necessary step, because the roots of body and eating disturbance may not lie entirely in cultural factors such as acculturation and

ethnic idenitification alone, but also in the perceptions and experiences of discrimination that ethnic minority women must often face.

References

Arthur, N., & Collins, S. (2005). Introduction to culture-infused counselling. In N. Arthur & S. Collins (Eds.), *Culture-infused counselling: Celebrating the Canadian mosaic* (pp. 3 – 41). Calgary, AB: Counselling Concepts.

Aujla, A. (2000). Others in their own land: Second generation South Asian women, racism, and the persistence of colonial discourse (national identity and gender politics). *Canadian Women Studies, 20,* 41 – 47.

Ball, K., & Kenardy, J. (2002). Body weight, body image, and eating behaviours: Relationships with ethnicity and acculturation in a community sample of young Australian women. *Eating Behaviors. 3(3),* 205-216.

Berry, J. W. (2005). Acculturation: Living successfully in two different cultures. *International Journal of Intercultural Relations, 29,* 697 – 712.

Cash, T.F. & Pruzinsky, T. (1990). Body images : Development, deviance, and change. New York : Guilford Press. In J. Thompson (Eds.), *Body Image, Eating Disorders, and Obesity: An Intergrative Guide for Assessment and Treatment* (pp.21-47). Washington, DC: American Psychological Association.

Castro, V. S. (2003). *Acculturation and psychological adaptation.* Westport, CN: Greenwood Press.

Cattarin, J.A., & Thompson, J.K. (1994). A three-year longitudinal study of body image and eating disturbance and general functioning in adolescent females. *Eating Disorders: The Journal of Prevention and Treatment, 2,* 114–125.

Chae, M. H. (2002). Gender and ethnicity in identity formation. *The New Jersey Journal of Professional Counseling, 56,* 17 – 23.

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,* 243–251.

Cohen, J. (1992). Quantitative methods in psychology: A power primer. *Psychological Bulletin, 112,* 155-159.

Clark, R., Anderson, N. B., Clark, V. R., & Williams, D. R. (1999). Racism as a stressor for African Americans: A biopsychosocial model. *American Psychologist, 10,* 805 – 816.

Crane, D. R., Ngai, S. W., Larson, J. H., Hafen, M., Jr.. (2005). The influence of family functioning and parent-adolescent acculturation on North American Chinese adolescent outcomes. *Family Relations: Interdisciplinary Journal of Applied Family Studies*, 54(3), 400-410.

Cullen, L. T. (2005). Minority women who make a differences in the workplace. In *TIME: Business & Technology*. Retrieved March 16, 2006, from < http://www.time.com/time/business/article/0,8599,1128562,00.html>

Cummins, L.H., Simmons, A.M., & Zane, N.W.S. (2005). Eating disorders in Asian populations: A critique of current approaches to the study of culture, ethnicity, and eating disorders. *American Journal of Orthopsychiatry, 75(4)*, 553 – 574.

Dion, K. L. (2001). Immigrants' perceptions of housing discrimination in Toronto: The Housing New Canadians Project. *Journal of Social Issues, 57* (3), 523 – 539.

Edman, J. L., Yates, A. (2005). A cross-cultural study of disordered eating attitudes among Filipino and Caucasian Americans. (2005). Eating Disorders: *The Journal of Treatment & Prevention, 13(3)*, 279-289.

Erdfelder E, Faul F, Buchner A. (1996). GPOWER; a general power analysis program. *Behavior Research Methods, Instruments & Computers, 28,* 1–11.

Esses, V. M. & Gardner, R.C. (1996). Multiculturalism in Canada: Context and current status. *Canadian Journal of Behavioural Science, 28,* 145 – 152.

Fairburn, C. G., & Beglin, S. J. (1994). Assessment of eating disorders: Interview or self-report questionnaire? *International Journal of Eating Disorders, 16*, 363-370.

Furnham, A., & Alibhai, N. (1983). Cross-cultural differences in the perception of female body shapes. *Psychological Medicine, 13*, 829-837.

Furukawa, T. (1994). Weight changes and eating attitudes of Japanese adolescents under acculturative stresses: A prospective study. *International Journal of Eating Disorders, 15*, 71 – 79.

Garner, D.M., Garfunkel, P.E., Schwartz, D., and Thompson, M. (1980). Cultural expectations of thinness in women. *Psychology Report, 47*, 483-491.

Garner, D., Olmsted, M., Bohr, Y., & Garfinkel, P. (1982). The Eating Attitudes Test: Psychometric features and clinical correlates. *Psychological Medicine, 12*, 871 – 878.

Garner, D. M., Olmsted, M., & Polivy,J. (1983). Development and validation of a multidimensional eating disorder inventory for anorexia nervosa and bulimia. *International Journal of Eating Disorders, 2*, 15 – 34.

Gaudet, S., & Clement, R. (2005). Identity maintenance and loss: Concurrent processes among the Fransaskois. *Canadian Journal of Behavioural Science, 37(2),* 110-122.

Gomes, S. L. (2000). *Factors affecting Asian Indian selection of psychotherapy: Therapist ethnicity and therapy modality*. Ph.D. dissertation, California School of Professional Psychology - San Diego, United States -- California. Retrieved November 25, 2005, from ProQuest Digital Dissertations database.

Grabe, S., & Hyde, J. S. (2006). Ethnicity and body dissatisfaction among women in the United States: A meta-analysis. *Psychological Bulletin, 132*, 622 – 640.

Graves, T. (1967). Psychological acculturation in a tri-ethnic community. *South-Western Journal of Anthropology*, 23, 337 – 350.

Gray, J., Ford, K. & Kelly, L. (1987). The prevalence of bulimia in a Black college population. *International Journal of Eating Disorders, 6* (6), 733 – 740.

Hall, C. C. I. (1995). Asian eyes: Body image and eating disorders among Asian and Asian American women. *Eating Disorders: The Journal of Treatment and Prevention, 3*, 8 – 19.

Heatherton, T., Nichols, P., Mahamedi, F., and Keel, P. (1995). Body weight, dieting, and eating disorder symptoms among college students, 1982 to 1992. *American Journal of Psychiatry, 152*, 1623 – 629.

Heinberg, L., Thompson, J., & Stormer, S. (1995). Development and validation of the Sociocultural Attitudes Towards Appearance Questionnaire. *International Journal of Eating Disorders, 17*, 81 – 89.

Hocoy, D. (1993). *Perceived discrimination.* Unpublished master's thesis, Queens University, 1993.

Hodes, M., Jones, C., & Davies, H. (1996). Cross-cultural differences in maternal evaluation of children's body shapes. *International Journal of Eating Disorders, 19*, 257 – 263.

Iyer, D.S., & Haslam, N. (2003). Body image and eating disturbance among South Asian-

American women: The role of racial teasing. *International Journal of Eating Disorders, 34*, 142 – 147.

Jiwani, Y. (2006). Discourses of denial: Mediations of race, gender, and violence. Vancouver: UBC Press.

Joiner, G., & Kashubeck, S. (1996). Acculturation, body image, self-esteem, and eating disorder symptomatology in adolescent Mexican American women. *Psychology of Women Quarterly, 20*, 419 – 435.

Kaplan, M.S., Chang, C., Newsom, J. T., & McFarland, B. H. (2002). Acculturation status and hypertension among Asian immigrants in Canada. *Journal of epidemiology and community health*, 56 (6), 455-456.

Keel, P. K., & Klump, K. L. (2003). Are eating disorders culture-bound syndromes? Implications for conceptualizing their etiology. *Psychological Bulletin, 129*, 747-769.

Kumar, R., & Johnston, G. (1999). Raising the "glass ceiling" for ethnic minority women in health care management. *Journal of Health Administration Education, 2*, 97 – 109.

Lauderdale, D. S. Wen, M., Jacobs, E. A., & Kandula, N. R. (2006). Immigrant perceptions of discrimination in health care: The California Health Interview Survey 2003. *Medical Care, 44*, 914 – 920.

Lawrence, S. A. (1998). *The relationship between eating-related problems and acculturation in women of East Indian descent.* Ph.D. dissertation, Indiana University of Pennsylvania – Indiana, United States – Pennsylvania. Retrieved April 10, 2007, from ProQuest Digital Dissertations database.

Lopez-Gonzalez, L., Aravena, V. C., & Hummer, R. (2005). Immigrant acculturation, gender and health behaviour: A research note. *Social Forces, 84*, 581 – 593.

Lorenzo-Hernandez, J., & Ouellette, S. C. (1998). Ethnic identity, self-esteem, and values in Dominicans, Puerto Ricans, and African Americans. *Journal of Applied Social Psychology, 28*, 2007 –2024.

Marano, H. E. (2004). *Body image: Before the obsession.* Retrieved June 14, 2007, from <http://psychologytoday.com/articles/pto-20041210-000014.html>

Miller, A. M., Sorokin, O., Wang, E., Feetham, S., Choi, M., & Wilbur, J. (2006). Acculturation, social alienation, and depressed mood in midlife women from the former Soviet Union.

Research in Nursing & Health, 29, 134 – 146.

Moghaddam, F. M. (2002). Psychological distress and perceived discrimination: A study of women from India. *International Journal of Intercultural Relations, 26*(4), 381-390.

Naidoo, J. C. (2003). South Asian Canadian women: A contemporary portrait. *Psychology and Developing Societies, 15(1),* 51-67.

National Institutes of Health. (2007). Calculate your body mass index. Retrieved January 16, 2007, from <http://www.nhlbisupport.com/bmi/>

Ornstein, M. (2000). Ethno-racial inequality in the city of Toronto: An analysis of the 1996 census. Toronto, ON: Institute for Social Research, York University.

Pan, A. S. (2001). *Body image, eating attitudes, and eating behaviors among Chinese, Chinese-American, and Non-Hispanic White women.* Ph.D. dissertation, George Mason University - Fairfax, United States -- Virginia. Retrieved April 10, 2007, from ProQuest Digital Dissertations database.

Phinney, J. S. (1992). The multigroup ethnic identity measure: A new scale for diverse groups. *Journal of Adolescent Research*, 7, 156-176.

Phinney, J. S., & Chavira, V. (1992). Ethnic identity and self-esteem: An exploratory longitudinal study. *Journal of Adolescence, 15*, 271 – 281.

Pumariega, A. J., Gustavson, J. R., Gustavson, J. C., Motes, P. S., & Ayres, S. (1994). Eating attitudes in African-American women: The Essence Eating Disorders Survey. *Eating Disorders: The Journal of Treatment and Prevention, 2*, 5 – 16.

Pumariega, A.J., Rogers, K., Rothe, E. (2005). Culturally Competent Systems of Care for Children's Mental Health: Advances and Challenges. *Community Mental Health Journal*, 41(5), 539-555.

Robinson, L. (2005). South Asians in Britain: Acculturation, identity and perceived discrimination. *Psychology Developing Societies, 17*, 181 – 194.

Root, M.P.P. (2001). Future Considerations in Eating Disorders. *The Counseling* Psychologist, *29*, 754-762.

Shaw, H., Ramirez, L., Trost, A., Randall, P., & Stice, E. (2004). Body image and eating disturbances across ethnic groups: More similarities than differences. *Psychology of Addictive Behaviors, 18 (1),* 12-18.

Stormer, S., & Thompson, J. K. (1996). Explanations of body image disturbance: A test of maturational status, negative verbal commentary, social comparison, and sociocultural hypotheses. *International Journal of Eating Disorders, 19* (2), 193 – 202.

Tareen, A., Hodes, M., & Rangel, L. (2005). Non-fat-phobic anorexia nervosa in British South Asian adolescents. *International Journal of Eating Disorders, 37*, 161 – 165.

Tee, K. A. (1997). *Between two cultures: Exploring the voices of first and second generation South Asian women.* Ph.D. dissertation, Simon Fraser University – Victoria, Canada – British Columbia. Retrieved November 25, 2005, from ProQuest Digital Dissertations database.

Thompson, J.K., Coovert, M.D., Richards, K.J., Johnson, S., & Cattarin, J. (1995). Development of body image, eating disturbance, and general psychological functioning in female adolescents: Covariance structure modeling and longitudinal investigations. *International Journal of Eating Disorders, 18*, 221–236.

Tibbetts, J. (2007, June 17). Poll backs Canadian melting pot. *Calgary Herald*, pp. A1, A6.

Tran, K., Kaddatz, J., & Allard, P. (2005). South Asians in Canada: Unity through diversity. *Canadian Social Trends, 78*, 20 -25.

Tsai, G., Curbow, B., & Heinberg, L. (2003). Sociocultural and developmental influences on body dissatisfaction and disordered eating attitudes and behaviours of Asian women. *The Journal of Nervous and Mental Disease, 191*, 309-318.

Vittala, K., & Poole, N. (2006). Substance use and Indo-Canadian women. In *The Women's Addiction Foundation.* Retrieved June 14, 2006, from: <http://www.womenfdn.org/Resources/info/pdfs/indoCanadian.pdf>

Vygotsky, L. (1986). *Thought and language.* Boston: MIT Press

Wilfley, J., & Rodin, J. (1995). Cultural influences on eating disorders. In K. D. Brownell & C. G. Fairburn (Eds.), *Eating disorders and obesity: A comprehensive handbook* (pp. 78 – 82). New York: The Guilford Press.

Yoshimura, K. (1995). Acculturative and sociocultural influences on the development of eating disorders in Asian American females. *Eating Disorders, 3*, 216 – 228.

Table 1

Comparison of Study Groups: Participant Characteristics

	Total sample	EC	IC-born	IC-immig	I		
	M (*SD*)	M (*SD*)	M (*SD*)	M (*SD*)	M (*SD*)	df	*F*
Age	20.51 (2.73)	20.52 (1.56)b	21.27(3.97)a	22.33(3.87)a	19.19 (.56)c	3,284	16.85**
Weight	57.44(11.41)	62.39 (.06)b	57.14 (.06)a	57.77 (.05)a	52.54(9.00)c	3,260	12.53**
Height	1.64 (.07)	1.80(13.04)b	1.62 (10.6)a	1.65 (8.35)a	1.60 (.07)c	3,273	29.93**
BMI	21.44 (3.82)	22.03(4.00)a	21.88(4.18)a	21.35(3.07)a	20.63(3.59)a	3,261	2.37

Note. EC = European-Canadian women; IC-born = Canadian-born Indo-Canadian women; IC-immig = Immigrant Indo-Canadian women; I = Indian women; BMI = Body Mass Index. Means in the same row that do not share subscripts differ at $p < .05$ in the Bonferroni honestly significant comparison.

** $p < .01$

Appendix A

Summary of Study Hypotheses

Summary of study hypotheses

Hypothesis	Analysis	Result
a) In the IC group alone, lower levels of perceived discrimination will be associated with lower levels of body dissatisfaction (BD).	Pearson Correlation	Significant
b) In the IC group alone, a history of hurtful racial teasing will also be associated with higher BD, independent of other previously established predictor variables (i.e., BMI).	Pearson Correlation	Not significant
c) Higher levels of ethnic identification will be associated with lower levels of body dissatisfaction in the IC group.	Pearson Correlation	Not significant
d) Of the three groups, participants in the EC group will also demonstrate the greatest investment and awareness of Western cultural norms of beauty, such that: EC > IC > I.	One-way ANOVA	Significant
e) Of the three groups, participants in the EC group will demonstrate the highest levels of BD and eating pathology compared to the IC and I groups, such that: EC > IC > I.	One-way ANOVA	Significant, but not in the hypothesized direction: i.e., IC> EC>I.
f) In the IC group alone, lower levels of perceived discrimination will be associated with lower levels of eating pathology (ED).	Pearson Correlation	Significant
g) In the IC group alone, a history of hurtful racial teasing will also be associated with higher eating pathology, independent of other previously established predictor variables (i.e., BMI).	Pearson Correlation	Significant
h) Higher levels of ethnic identification will be associated with lower levels of eating pathology in the IC group.	Pearson Correlation	Not significant

Note. EC = European-Canadian women; IC-born = Canadian-born Indo-Canadian women; ICimmig = Immigrant Indo-Canadian women; I = Indian women; BMI = Body Mass Index.

Appendix B

Descriptive Information on Study Measures

Descriptive information on study measures

Supplemental Questionnaire. Participants' were asked about ethnic background, age, weight, height, hours of television watched on a weekly basis, length of residence in Canada if applicable (IC group only), education level, socioeconomic status (SES), occupation if applicable, religion, and marital status. Body Mass Index (BMI) scores, a measure of weight distribution, were calculated for each of the participants using their weight and height data (i.e., BMI = weight in kg/ height in m^2).

Rosenberg Self – Esteem Inventory (RSE; Rosenberg, 1965) (Appendix 2). Feelings of self-regard are frequently measured using the RSE. The RSE is a 10-item Likert measure that taps into feelings of global self-worth (e.g., "I feel that I am a person of worth, at least on an equal basis with others") indicated by the sum of the ten items, and resulting in a scale range of 10 to 40, with higher scores indicating higher self-esteem. The RSE has been demonstrated to yield good internal consistency in previous cross-cultural studies. In a study on acculturation in Costa Rica, reliability analysis of the RSE was reported to be 0.87 (Castro, 2003). The RSE is also shown to possess adequate internal consistency in a study on Dominican-, Puerto Rican-, and African Americans, with a Cronbach's alpha of 0.78 (Lorenzo-Hernandez & Ouellette, 1998). Internal consistency was found to be good in the present study, with a reported Cronbach's alpha of .86. Cronbach's alpha coefficients for the European Canadian, Canadian-born Indo-Canadian, Indo-Canadian immigrant, and Indian women, respectively, are as follows: .91, .89, .88, and .73.

Racial Teasing Scale (RTS; Iyer & Haslam, 2003). This scale contains 8 items rated on 5-point scales assessing perceived frequency and impact of teasing on the basis of one's race or

ethnicity, with higher scores reflecting a greater incidence of racial teasing of ethnicity-related features. Items address factors of name-calling, behaviour-related teasing, appearance-related teasing, and social inclusion (e.g., turned down for social events such as parties due to ethnicity). In the original study, reliability analysis of the RTS yielded a Cronbach's alpha of 0.89 (Iyer & Haslam, 2003). In this study, the RTS demonstrated excellent internal consistency, with a Cronbach's alpha of 0.92. For the Canadian-born Indo-Canadian women, the internal consistency was .90, and it was .94 for the Indo-Canadian immigrant women.

Sociocultural attitudes towards appearance questionnaire (SATAQ; Heinberg, Thompson, & Stormer, 1995). This scale comprises two subscales: Internalisation and Awareness. This measure comprises statements that assess the extent of internalization of sociocultural pressures to be thin (e.g., I wish I looked like a swimsuit model). Respondents register their extent of agreement with each statement on a 5-point Likert scale ranging from completely disagree (1) to completely agree (5). Higher scores indicate a greater awareness or internalization of socially presented views regarding the importance of attractiveness in Western society (Heinberg, Thompson, & Stormer, 1995). The subscales have been shown to possess excellent internal consistency, with 0.88 for the Internalization subscale, and 0.71 for the Awareness subscale (Heinberg, Thompson, & Stormer, 1995). The present study showed adequate internal consistency for the SATAQ total score, with a Cronbach's alpha of .77. Cronbach's alpha coefficients for the SATAQ overall scale for the European Canadian, Canadian-born Indo-Canadian, Indo-Canadian immigrant, and Indian women, respectively, are as follows: .67, .62, .84, and .59.

Perceived Discrimination Scale (PDS; Hocoy, 1993). This scale contains 18-items measuring perceived discrimination, which are rated on a 7-point Likert scale ranging from 1

(Strongly Disagree) to 7 (Strongly Agree), with higher scores indicating a higher level of perceived discrimination. The reliability and the validity of the PRS have been well-established, and it is used in many acculturation studies with various minority groups. Minor wording changes were inserted in order to adapt this measure for the IC group. It has been found to possess a Cronbach's alpha of 0.85 in the original study (Hocoy, 1993). In this study, the PDS was found to have adequate internal consistency of 0.76, with .73 for the Canadian-born Indo-Canadian women, and .80 for the immigrant Indo-Canadian women.

Body Dissatisfaction (BD) subscale of the Eating Disorders Inventory. The Eating Disorders Inventory (EDI; Garner et al., 1983) is a 64-item self-report that is designed to assess psychological and behavioural traits common to patients with anorexia nervosa (AN) and bulimia nervosa (BN). The BD subscale is a 9-item subscale which assesses satisfaction on specific weight-related body sites. Assessments of internal consistency indicate good internal consistency across samples of anorexic (AN) patients and female college students with Cronbach's alpha coefficients above .80 in the AN sample, and above .60 in the college female samples (Garner, Olmstead, and Polivy, 1983). For the BD subscale in particular, Cronbach's alpha coefficients of .90 for the AN sample, and .91 for the college female sample were reported (Garner, Olmstead, and Polivy, 1983). The BD subscale demonstrated good internal consistency in the present study, with a Cronbach's alpha of .87. Cronbach's alpha coefficients for the European Canadian, Canadian-born Indo-Canadian, Indo-Canadian immigrant, and Indian women, respectively, are as follows: .89, .88, .87, and .83.

Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992; Castro, 2003). This scale consists of 18 items, which are rated on a 4-point Likert scale ranging from strongly agree to strongly disagree. Items assess four aspects of ethnic identity: ethnic-identity achievement (e.g.,

"I think a lot about how my life will be affected by my ethnic group membership"), feelings of attachment and pride to one's own ethnic group (e.g., "I feel a strong attachment towards my own ethnic group"), ethnic behaviours (e.g. "I participate in cultural practices of my own group, such as special food, music, or customs"), and attitudes and orientations towards other groups (e.g., "I like meeting and getting to know people from ethnic groups other than my own"). Assessments of internal consistency indicate good internal consistency across samples of American high school and college students, with Cronbach's alpha coefficient of .81 for the high school sample, and .90 for the college sample. In this study however, Cronbach's alpha was considerably lower at .59, with .60 for the Canadian-born Indo-Canadian women, and .57 for the immigrant Indo-Canadian sample.

Eating Attitudes Test. (EAT-26; Garner et al., 1982): This measure was not previously considered for analysis purposes, and is now included here as a measure of eating behaviour strictly for descriptive purposes. There are several reasons why an analysis and measures of eating pathology have been excluded from the present study: for one, there are no empirical studies to date documenting cases of anorexia nervosa (AN) or bulimia nervosa (BN) in India. However, a very low prevalence of diagnosable eating disorders has been found in Pakistan, another South Asian country, with one investigation using a sample of 271 schoolgirls documenting no cases of AN and only one case of BN (0.4%) by *DSM–III–R* criteria (Choudry & Mumford, 1992). There are however, significant cultural differences between India (a Hindu majority) and Pakistan (an overwhelmingly Islamic country), and hence, these results in the latter country cannot be generalized to Indian women. Secondly, another concern is that the EAT-26 may not be a culturally valid measure of eating pathology with the I group, since there is no normative data available for Indian samples (Cummins, Simmons, & Zane, 2005).

However, given the excellent psychometric properties of the scale, its use in the current study can be justified. It is a 26-item, shortened version of the EAT-40 version. It also correlates highly with the original scale (r = .98), and has a high level of internal reliability (Cronbach's alpha = .90; Garner et al., 1982). It was also demonstrated to possess good internal consistency in this study, with Cronbach's alpha = .86. Second, it would be interesting to analyze the results of this measure given the demonstrated relationship between BD and eating disorders in a vast number of countries (Cummins, Simmons, & Zane, 2005; Keel & Klump, 2003). Lastly, unlike Choudry and Mumford (1992) who were required to translate the EAT-26 into Urdu for use with a Pakistani population, the EAT-26 can be used in its original form and language for the I group, making this the first known study to examine the prevalence of disordered eating behaviour among young adult women in India. The scale demonstrated adequate internal consistency in the current study, with Cronbach's alpha coefficient of .79. Cronbach's alpha coefficients for the European Canadian, Canadian-born Indo-Canadian, Indo-Canadian immigrant, and Indian women, respectively, are as follows: .79, .84, .95, and .71.

Body Mass Index ($BMI=Kg/M^2$). The BMI is a rough measure of adiposity (excess body fat), and is highly correlated with more complex methods of measuring body mass such as skinfold thickness and body density measurements. The National Institutes of Health define a normal weight within a BMI range of 20 to 25 (2007). The mean BMIs (with standard deviations in parentheses) for the European Canadian, Canadian-born Indo-Canadian, Indo-Canadian immigrant, and Indian women, respectively, were: 22.03 (4.00), 21.88 (4.18), 21.35 (3.07), and 20.63 (3.59).

Appendix C

Internal consistency reliability of measures across all study groups

Internal consistency reliability of measures across all study groups

	EC (n = 95)	IC – born (n = 64)	IC – immig (n = 39)	I (n = 90)
1.SATAQ	.67	.62	.84	.59
2.RSE	.91	.89	.88	.73
3.EDI	.89	.88	.87	.83
4.EAT	.79	.84	.95	.71
5.MEIM	--	.60	.57	--
6.PDS	--	.73	.80	--
7.RTS	--	.90	.94	--

Note. EC = European-Canadian women; IC-born = Canadian-born Indo-Canadian women; IC-immig = Immigrant Indo-Canadian women; I = Indian women; SATAQ; Sociocultural Attitudes Toward Appearance; RSE = Rosenberg Self-Esteem; EDI = Body Dissatisfaction Subscale of the Eating Disorder Inventory; EAT= Eating Attitudes Test-26; MEIM = Multi-Ethnic Identity Measure; PDS = Perceived Discrimination Scale; RTS = Racial Teasing Scale.

Appendix D

Power Analysis

Power analysis

Sample size was determined both by a priori power analyses conducted with a general power analysis program, G-Power (Erdfelder, Faul, & Buchner, 1996) and by a calculation of effect sizes of previous studies examining BD differences between two groups comparing individuals of the same ethnic origin living in two different countries or two ethnic minority groups in the same cultural context (Tsai, Curbow, & Heinberg, 2003; Ball & Kennardy, 2002; Iyer & Haslam, 2003; Barrette, Bourhis, Personnaz, & Personnaz, 2004; Cummins, Simmons, & Zane, 2005). For instance, in a study examining BD differences between Taiwanese-American and Taiwanese women, it was found that the means and standard deviations of the groups on a measure of BD were 13.47 and 9.94, and 7.96 and 7.60, respectively. Based on these values, a moderate effect size of $f = 0.46$ was obtained. In a study of acculturation in Hawaii, Edman and Yates (2005) found BD differences between White and Filipino-American women with means of 22.97 and 22.04, and standard deviations of 4.51 and 4.09, respectively, also yielding a moderate (but smaller) effect size of $f = 0.22$. Although these BD values vary widely (depending on the ethnic origin and geographic location of the two groups used) they are still helpful in suggesting that a medium effect size can be hypothesized comparing the three groups in the current study.

Using a one-way Analysis of Variance (ANOVA) for which a medium effect size of $f = 0.25$ is hypothesized, and $\alpha = 0.05$, the necessary sample size thus becomes 52 cases per group in a three-group study design (Cohen, 1992).

However, since correlational analyses will be conducted using the IC group, hypothesizing a medium effect size of $f = 0.30$, and $\alpha = 0.05$, the necessary sample size of the IC group is 85. Thus, while a total sample size of $N = 255$ is desirable (i.e., 3 groups of $n = 85$,

which would also increase the power of the test), at minimum, the present study will aim for a minimum total sample size of N = 189, where I = 52, EC = 52, and IC = 85.

Appendix E

Pearson correlation matrix for the European-Canadian group

Correlations for the European-Canadian group

Variable	1	2	3	4	5
1.BMI	--	.071	-.075	.266*	.107
2.SATAQ		--	-.276**	.477**	.441**
3.RSE			--	-.585**	-.273**
4.EDI				--	.401**
5.EAT					--

Note. BMI= Body Mass Index; SATAQ; Sociocultural Attitudes Toward Appearance; RSE = Rosenberg Self-Esteem; EDI = Body Dissatisfaction Subscale of the Eating Disorder Inventory; EAT= Eating Attitudes Test-26.

* $p < .05$, ** Correlation is significant at the 0.01 level (2-tailed).

Appendix F

Pearson correlation matrix for the Canadian-born Indo-Canadian group

Correlations for the Canadian-born Indo-Canadian group

Variable	1	2	3	4	5	6	7	8
1.BMI	--	.25	-.30*	.63**	.09	.09	.19	.11
2.SATAQ		--	-.36**	.43**	.55**	.32**	.23	-.09
3.RSE			--	-.51**	-.28*	-.40**	-.45**	-.09
4.EDI				--	.44**	.18	.15	.08
5.EAT					--	.15	-.03	-.03
6.MEIM						--	.13	.02
7.PDS							--	.31*
8.RTS								--

Note. BMI= Body Mass Index; SATAQ; Sociocultural Attitudes Toward Appearance; RSE = Rosenberg Self-Esteem; EDI = Body Dissatisfaction Subscale of the Eating Disorder Inventory; EAT= Eating Attitudes Test-26; MEIM = Multi-Ethnic Identity Measure; PDS = Perceived Discrimination Scale; RTS = Racial Teasing Scale.

* $p < .05$, ** $p < .01$

Appendix G

Pearson correlation matrix for the immigrant Indo-Canadian group

Correlations for the immigrant Indo-Canadian group

Variable	1	2	3	4	5	6	7	8
1.BMI	--	-.07	-.08	.22	-.01	-.26	-.39*	-.23
2.SATAQ		--	-.48**	.66**	.46**	-.26	.65**	.41*
3.RSE			--	-.58**	-.63**	.05	-.54**	-.34*
4.EDI				--	.59**	-.23	.38*	.19
5.EAT					--	-.11	.51**	.47**
6.MEIM						--	.03	.11
7.PDS							--	.59**
8.RTS								--

Note. BMI= Body Mass Index; SATAQ; Sociocultural Attitudes Toward Appearance; RSE = Rosenberg Self-Esteem; EDI = Body Dissatisfaction Subscale of the Eating Disorder Inventory; EAT= Eating Attitudes Test-26; MEIM = Multi-Ethnic Identity Measure; PDS = Perceived Discrimination Scale; RTS = Racial Teasing Scale.

* $p < .05$, ** $p < .01$

Appendix H

Pearson correlation matrix for the Indian group

Correlations for the Indian group

Variable	1	2	3	4	5
1.BMI	--	.052	-.026	.429**	.069
2.SATAQ		--	-.084	.250*	.335**
3.RSE			--	-.460**	-.085
4.EDI				--	.256*
5.EAT					--

Note. BMI= Body Mass Index; SATAQ; Sociocultural Attitudes Toward Appearance; RSE = Rosenberg Self-Esteem; EDI = Body Dissatisfaction Subscale of the Eating Disorder Inventory; EAT= Eating Attitudes Test-26.

* $p < .05$, ** Correlation is significant at the 0.01 level (2-tailed).

Appendix I

Comparisons of study groups on sociocultural attitudes, body dissatisfaction, and eating pathology

Comparisons of study groups on sociocultural attitudes, body dissatisfaction, and eating pathology

	Total sample	EC	IC-born	IC-immig	I		
	M (*SD*)	M (*SD*)	M (*SD*)	M (*SD*)	M (*SD*)	df	*F*
SATAQ	41.16 (7.56)	44.96 (5.91)b	41.84(6.15)a	40.33 (9.22)a	37.01(7.13)c	2,285	30.86**
EDI	7.69 (6.44)	7.71 (6.57)a	8.44 (6.92)a	7.56 (6.55)a	7.19 (5.95)a	2,284	.486
EAT	9.58 (9.37)	8.87 (7.05)b	10.39(9.14)a	13.89(16.5)a	6.37 (7.13)c	2,282	4.56*

Note. EC = European-Canadian women; IC-born = Canadian-born Indo-Canadian women; IC-immig = Immigrant Indo-Canadian women; I = Indian women; SATAQ = Sociocultural Attitudes Toward Appearance; EDI = Body Dissatisfaction Subscale of the Eating Disorder Inventory; EAT. Means in the same row that do not share subscripts differ at $p < .05$ in the Bonferroni honestly significant comparison.

* $p < .05$, ** $p < .01$

Appendix J

Certification of Institutional Ethics Review

UNIVERSITY OF CALGARY
Celebrate 40 years
2006

CERTIFICATION OF INSTITUTIONAL ETHICS REVIEW

This is to certify that the Conjoint Faculties Research Ethics Board at the University of Calgary has examined the following research proposal and found the proposed research involving human subjects to be in accordance with University of Calgary Guidelines and the Tri-Council Policy Statement on *"Ethical Conduct in Research Using Human Subjects"*. This form and accompanying letter constitute the Certification of Institutional Ethics Review.

File no:	**4997**
Applicant(s):	**Philip J. Johnson**
Department:	**Psychology**
Project Title:	**Cross-Cultural Variations in Body Image Among Women Living in Canada and India**
Sponsor (if applicable):	

Restrictions:

This Certification is subject to the following conditions:

1. Approval is granted only for the project and purposes described in the application.
2. Any modifications to the authorized protocol must be submitted to the Chair, Conjoint Faculties Research Ethics Board for approval.
3. A progress report must be submitted 12 months from the date of this Certification, and should provide the expected completion date for the project.
4. Written notification must be sent to the Board when the project is complete or terminated.

Janice Dickin — 25 October 2006

Janice Dickin, Ph.D, LLB, **Date:**
Chair
Conjoint Faculties Research Ethics Board

Distribution: (1) Applicant, (2) Supervisor (if applicable), (3) Chair, Department/Faculty Research Ethics Committee, (4) Sponsor, (5) Conjoint Faculties Research Ethics Board (6) Research Services.

UNIVERSITY OF CALGARY

MEMO

CONJOINT FACULTIES RESEARCH ETHICS BOARD
c/o Research Services
Main Floor, Energy Resources Research Building
3512 - 33 Street N.W., Calgary, Alberta T2L 1Y7
Telephone: (403) 220-3782
Fax: (403) 289 0693
Email: bonnie.scherrer@ucalgary.ca
Thursday, October 26, 2006

To: **Philip J. Johnson**
Psychology

From: Dr. Janice P. Dickin, Chair
Conjoint Faculties Research Ethics Board (CFREB)

Re: **Certification of Institutional Ethics Review:** Cross-Cultural Variations in Body Image Among Women Living in Canada and India

The above named research protocol has been granted ethical approval by the Conjoint Faculties Research Ethics Board for the University of Calgary.

Enclosed are the original, and one copy, of a signed **Certification of Institutional Ethics Review**. Please make note of the conditions stated on the Certification. A copy has been sent to your supervisor as well as to the Chair of your Department/Faculty Research Ethics Committee. In the event the research is funded, you should notify the sponsor of the research and provide them with a copy for their records. The Conjoint Faculties Research Ethics Board will retain a copy of the clearance on your file.

Please note, an annual/progress/final report must be filed with the CFREB twelve months from the date on your ethics clearance. A form for this purpose has been created, and may be found on the "Ethics" website, http://www.ucalgary.ca/UofC/research/html/ethics/reports.html

In closing let me take this opportunity to wish you the best of luck in your research endeavor.

Sincerely,

Bonnie Scherrer
For:
Janice Dickin, Ph.D., LLB., Faculty of Communication and Culture and
Chair, Conjoint Faculties Research Ethics Board

Enclosures(2)
cc: Chair, Department/Faculty Research Ethics Committee
Supervisor: Valerie Pruegger