Bicultural Stress and Disordered Eating in Arab-Canadian Women: Clarifying the Roles of Acculturation, Ethnic identity, Acculturative Distress and Cultural Value Conflicts.

by

Dina Buttu

A thesis submitted in conformity with the requirements for the degree of Doctor of Philosophy

Adult Education and Counselling Psychology
University of Toronto

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Abstract

In this study, relationships between disordered eating and body shape challenges in relation to three culturally related variables of acculturation, ethnic identity, and bicultural stress and conflict were examined in a sample of 196 Arab-Canadian women. A series of correlational analyses and hierarchical regressions were performed. Results showed that bicultural stress and conflict predicted a significant amount of variability in disordered eating and body shape concerns, including internalization of the thinness ideal, over and above both ethnic identity and acculturation. Furthermore, significant three way-interactions revealed that bicultural stress and conflict moderated the relationships among Arab-Orientiation and Anglo-Orientation as predictors of disordered eating symptoms. Bicultural stress and conflict also moderated the relationships among ethnic identity and acculturation as predictors of eating disorder symptoms. Theoretical and practical implications of these findings are discussed.
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CHAPTER ONE

Introduction

Despite the fact that Canadians of Arab origin represent one of the largest non-European ethnic groups in Canada (Lindsay, 2007) and despite recent finding showing that Arab-Canadian women exhibit significantly higher levels of eating disorder symptoms than their Euro-Canadian counterparts (Piran & Gadalla, 2007a), no studies have explicitly examined disordered eating in Arab-Canadian women. Significant cultural differences exist between the Arab culture and the dominant Canadian culture which can predispose Arab individuals to bicultural stress and conflict (Al-Krenali & Graham, 2000; Khouri, 2003; Majaj, 1994; Meleis, 1991). However, acculturation, ethnic identity, and bicultural stress and conflict remain relatively unstudied in Arab-Canadians. Disconnection, transition, difficulty mediating between two cultural worlds, and related bicultural stress and conflict have been implicated as etiological contributors to disordered eating (e.g., Gordon, 2000; Katzman & Lee, 1997; McCourt & Waller, 1996; Mumford, Whitehouse, & Platts, 1991a; Nasser, 1997; Schupak-Neuberg & Nemeroff, 1993; Stice, 1994); however, the majority of the work in this area has been theoretical. Bicultural stress and conflict resulting from difficulties mediating between two different cultural environments (Arab and Canadian) will be directly examined in this study as it relates to disordered eating.

Sociocultural Model of Eating Disorders

The most popular and widely endorsed sociocultural account of disordered eating identifies three sociocultural factors as core to the development of eating difficulties: the thin-ideal body image held for women; the centrality of appearance in the female gender role; and the importance of appearance for women’s success in society (Striegel-Moore, Silberstein, & Rodin, 1986). According to this model, eating disorders result from the increased pressure
placed on women in North American society to achieve a very slim body (Striegel-Moore, Silberstein, & Rodin, 1986). Ample evidence in support of this model exists (see Stice, 2002, for a review); however, much of this evidence is based on studies of predominantly Caucasian participants.

**Eating Disorders in Ethnic Minority Groups**

The typical profile of a person diagnosed with an eating disorder has long been depicted as young, female, of North-European Caucasian background, well educated, and from the upper-socioeconomic class. However, it is now becoming evident that women of diverse racial, ethnic, age, and socioeconomic backgrounds experience problems with eating (Crago, Shisslak, & Estes, 1996; Shaw, Ramirez, Trost, Randall, & Stice, 2004; Thompson, 1994; Wildes, Emery, & Simons, 2001).

The term ‘Western’ culture-bound syndrome has been used to describe eating disorders because they were thought to occur only in Western societies which espouse stringent cultural attitudes towards body shape and weight (culture-of-thinness) (e.g., Prince, 1983; Crago et al., 1996; Nasser, 1997; Wildes et al., 2001). The prevailing idea was that ‘non-Western’ societies and individuals from non-Caucasian ethnic backgrounds were protected from the development of eating disorders and body image disturbances because they experienced less cultural pressure for thinness (i.e., thinness was not valued in their original ethnic culture and/or a more plump physique was considered more attractive for females) (Afifi-Soweid, Najem Kteily, & Shediac-Rizkallah, 2002; Nasser, 1997). However, evidence is mounting that demonstrates the presence of disordered eating in females of various ethnic backgrounds (Crago et al., 1996; Shaw et al., 2004; Wildes et al., 2001).

Historically, in the Arab culture, thinness was socially undesirable and a degree of plumpness in women was considered attractive (Hamadi, 1960; El-Sarrag, 1968). As such,
Arabs were thought to be protected against the development of disordered eating. Indeed, prior to the 1980’s, psychiatric literature revealed that eating disorders were very rarely found among Arabs (El-Sarrag, 1968; Okasha, Kamel, Sadek, Lotaif, & Bishry, 1977). However, since this time, evidence has been mounting that shows that the Arab population is not protected from these difficulties. In the early eighties, Nasser (1986) first investigated the prevalence of disordered eating in Arab women living in Cairo and in London and found that eating disorders did exist in both these groups of women. This sparked a line of research in the Middle East investigating the presence and presentation of disordered eating behaviours in Arabs. These studies have been conducted in Egypt (Ford, Dolan & Evans, 1990), Saudi Arabia (Al-Subaie, 2000), Lebanon (Afifi-Soweid et al., 2002), Israel (Latzer, Azaiza, & Tzischinsky, 2009), Oman (Al-Adawi et al., 2002), and the United Arab Emirates (Abou-Saleh, Younis, & Karim, 1998) and have showed that rates of eating disorder symptomatology in the Middle East are almost equivalent to those seen in the West (e.g. Eapen, Mabrouk, Bin-Othman, 2006; Nasser 1986, 1994, 1997). Interestingly, only two studies of Arab women living in western countries have been conducted (Nasser, 1986; Piran & Gadalla, 2007a). Thus, one goal of the current study is to examine disordered eating in Arab women living in a Western country.

Researchers have theorized that increased exposure to mainstream ‘Western’ norms and values (especially, Western emphasis on thinness) has led to increased rates of disordered eating in ethnic minority individuals. In non-Western countries this has been proposed to occur via increased globalization and the presence of media outlets which disseminate Western values of thinness. In Western countries, this has been proposed to occur via living in a Western country and learning the value of thinness through an acculturation or bicultural socialization process.

A challenge to etiological theories of disordered eating that place a central role on the culture-of-thinness, is the presence of eating disorder cases in non-Western countries where the
pressure for thinness appears to be unrelated to their symptoms. These cases challenge the notion that an obsession with thinness and fear of fatness is a required and compulsory contributor to disordered eating. For example, Lee’s (1991) discussion of eating disorders in Chinese participants in Hong Kong indicated that intense fear of fatness and distorted body image are not prominent in Chinese patients with eating disorders. These findings challenge the idea that eating disorders occur only in western cultures. They also challenge the idea that the sociocultural pressure for thinness and dieting is a necessary etiological factor. Although cultural pressures for thinness are important contributors and risk factors for the development of disordered eating, these studies show that they are not absolutely necessary. It appears that such sociocultural pressures “may well increase the risk of anorexia nervosa or bulimia nervosa, and shape some of their clinical features, but these cultural pressures do not seem to be a necessary condition for developing an eating disorder” (Mumford, 1993, p. 112).

**Theoretical Basis of the Current Study**

There are different pathways leading to disordered eating and cultural pressure for thinness is only one such pathway. As such, it is important to explore other pathways to disordered eating. A set of four related pathways will provide the basis for this study: all four of which speak to the function of eating disorders as means for individuals to exert personal control while living under societal conditions that promote powerlessness. The first speaks to disordered eating as indicative of disconnection, transition, and oppression (Katzman, 1993). They are problems of disconnection when women lose their community groups and reference groups with which to identify themselves (e.g., when faced with changes such as immigration, social class changes, and/or changes in gender-role expectations). They are problems of transition when “women attempt to move between two worlds” (Katzman & Lee, 1997, p. 392) (e.g., two generations, two cultures) and are problems of oppression when isolation and
prejudice are experienced while adapting (e.g., to a different country, socioeconomic group, or cultural group).

The second pathway describes eating disorders as culture-reactive syndromes (DiNicola, 1990a, 1990b). They occur in reaction to culture, such that they are either culture-bound or in response to culture change. They are culture bound when they occur within a stable sociocultural environment where ideals of thinness prevail and are thought to be central to the problem. They are culture change syndromes when they occur within a quickly changing society or as a result of migration from one culture to another.

The third, ‘two-world hypothesis’ of eating disorders (Katzman & Lee, 1997) was already mentioned above and is central to this study. This hypothesis maintains that “attempts to straddle two worlds give rise to disordered eating” (Katzman & Lee, 1997, p.387). There are variations in the possible combinations of ‘two worlds’ that may come into conflict (e.g., as a result of immigration, childhood-adolescence transitions, and/or generational conflicts). The form of ‘two conflicting worlds’ that will be the focus of this study is that of a “conflict or culture clash between the home environment and the prevailing social norms” experienced by individuals brought up in a home culture (e.g., Arab) that is very different from the dominant societal culture (‘Western/Canadian’) (McCourt & Waller, 1996, p.80). In response to such difficulties, women attempt to “perfect their physical selves as a method of coping” (Katzman & Lee, p. 392).

The last interconnected pathway speaks to eating disorders as forms of self-definition in relation to identity confusion (Gilbert & Thompson, 1996; Gordon, 2000; Nasser & Di Nicola, 2001; Schupak-Neuberg & Nemeroff, 1993). Gordon hypothesized that anorexia nervosa and bulimia nervosa are “both disorders of development that revolve around the core issue of shape and body weight, and in which the person, most typically female, obsessively focuses on the
achievement of thinness in order to solve problems of personal identity.” (p.55) Similarly, Gilbert and Thompson (1996) theorized that “the body is one entity that offers women a sense of identity and self-definition” (p.193). They stated, “women who possess an underdeveloped sense of self may be more vulnerable to society’s dictates of how they should look and act and thus are at greater risk for developing an eating disorder” (p.193).

Given that the above four pathways have been linked to disordered eating, bicultural stress and its consequences on personal identity may be particularly relevant to the understanding of eating disorders in minority women. If a woman experiences conflicting value and behavioural expectations as a result of living in two cultures simultaneously, she may suffer from “fragmentation, confusion, and self-doubt” (p. 96, Gordon, 2000) in relation to her ethnic self. She may also feel disconnected from one or both cultures and find herself lost between two cultural worlds. If the body is “an entity that offers women a sense of identity and self-definition,” (p.193, Gilbert & Thompson, 1996) then difficulties integrating two cultural worlds could very well be expressed via eating- and body- related disturbances. Eating disorder symptoms may develop as coping mechanisms in line with Nasser (1997)’s theory that:

Eating disorders are extreme forms of behaviour that are symptomatic of an underlying human distress. The distress is caused by the loss of the relation of the self to the other, and the loss of one’s ability to understand the prevailing system and be part of it. This distress is reactive to the sense of confusion, disorganization and disharmony felt by many who need to be on the inside of the system and yet are always outside it (p. 106).

Eating Disorders in Relation to Bicultural Stress and Conflict, Acculturation and Ethnic Identity

The focus of the current study was to empirically test the relationship between bicultural stress and conflict and eating- and body- related disturbances. Individuals living simultaneously
in two cultural worlds are likely to experience some level of bicultural stress and conflict as a result of the tasks they must negotiate. They are confronted with four major tasks: First, they must find their place in relation to the dominant culture; Second, they must decide if they want to retain their ethnic or cultural heritage and how they will do so; Third, they will cope with experiences of racism and discrimination due to their immigrant and/or minority status; and Fourth, they will experience acculturative stress that results from the previous three tasks (Roysircar-Sodowsky & Maestas, 2000). Roysircar-Sodowsky and Maestas (2000) defined acculturative stress as “a push-and-pull psychological phenomenon: One feels both the push to acculturate to the dominant society and the pull toward one’s ethnic group” (p. 134).

Acculturation stress is a common experience for both immigrants and Canadian-born second- and later-generation ethnic minorities. Immigrants experience acculturative stress as they cope with the task of adjusting to a new cultural environment after having already been socialized in a different culture. Later generation ethnic minority individuals experience acculturative stress as a result of their bicultural socialization that requires them to negotiate between two different cultures: the home ethnic culture and the dominant White culture (Roysicar-Sodowsky & Maestas, 2000). This process can be experienced on a continuum from an easy and relatively problem free experience on one end to a very difficult and conflict ridden experience on the other. Logically, higher levels of acculturative/bicultural stress result when the acculturative process is more difficult and conflict ridden (Roysicar-Sodowsky & Maestas).

In this study, the term bicultural stress and conflict refers to acculturative stress and cultural value conflicts experienced by later generation ethnic minority individuals undergoing bicultural socialization.

Cultural alienation, cultural confusion, and cultural conflict are all forms of bicultural conflict originally identified by Kiefer (1974) that can occur in the context of bicultural
socialization (Kiefer, 1974; Kwan & Sodowsky, 1997; Sodowsky & Lai, 1997). Personal
difficulties that may result from such conflict includes the development an identity crisis; a
personal sense of inferiority attributed to membership in one’s cultural group; lack of ethnic ego
differentiation due to feelings of marginalization from one’s cultural group and the dominant
group; and feelings of anger and guilt toward one or both cultural groups (Sodowsky & Lai,
1997). Experiences of confusion with regards to conflicting cultural values of one’s culture of
origin and the dominant culture represent a core aspect of ethnic identity conflict which can
contribute to significant internal conflict and identity confusion. Inman, Ladany, Constantine,
and Morano (2001) defined cultural value conflict as:

An experience of negative affect (e.g., guilt, anxiety) and cognitive contradictions that
result from contending simultaneously with the values and behavioural expectations that
are internalized from the culture of origin and the values and behavioural expectations
that are imposed on the person from the new culture. (p. 18)

Significant differences in cultural values exist between the Arab culture and the
dominant Canadian culture. For instance, in the Arab culture, family ties are extremely
important, the social structure is hierarchical, there are significant gender-role differences, and
respect and deference to individuals who are older and have higher social status is expected
(Abu Laban, 1980; Al-Krenawi & Graham, 2000; Barakat, 1993, Hattar-Pollara & Meleis,
1995). In contrast, Western cultural values include an emphasis on individualism and autonomy;
personal rights, freedom, and privileges; equal relationships, assertiveness, and self-expression
(Sodowsky, Maguire, Johnson, Ngumba, & Kohles, 1994). Given these significant cultural
differences, bicultural stress and conflict is a relevant issue for Arab Canadians negotiating two
different cultural ‘worlds.’ Issues of disconnection, transition, and oppression are undoubtedly
part of the experience for those who have difficulty mediating and integrating these two worlds.
Bicultural stress and conflict is also a common experience for those struggling to find their place in one or both cultures. It is hypothesized that bicultural stress and conflict will be an important contributor to disordered eating symptoms in this population.

In order to study bicultural stress and conflict, it was differentiated from ethnic identity and acculturation. Both acculturation and ethnic identity are two dimensional constructs that assess: (1) retention or identification with the ethnic, or original, culture; and (2) adaptation to or identification with a dominant, host, or “new” culture. Acculturation and ethnic identity differ, however, in that “issues of ethnic identity tend to be affectively and cathectically related, whereas issues of acculturation tend to be behaviourally related” (Roysicar-Sodowsky & Maesta, 2000, p.146). Phinney and Ong (2007) noted that “ethnic identity is an internal structure than can exist without behaviour” (p. 272). Roysircar-Sodowsky and Maestas (2000) indicated that acculturation measures should assess the adaptations to mainstream culture in terms of behaviours such as language usage, cultural exposure, social behaviours, and relational acts; whereas ethnic identity measures should address the “affective/cathectic attachment that values connecting with one’s ethnic group members, beliefs in the importance of one’s ethnicity, and seeks to retain aspects of an ethnic cultural heritage that are relevant and functional in a given context” (p. 134).

Examination of the items of widely used measures of acculturation (e.g., Mexican American Rating Scale for Mexican Americans-II (ARSM-A-II; Cuellar, Arnold, & Maldonado, 1995)) and ethnic identity (e.g., The Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992)) reveal that items are generally separated in this manner with some overlap (e.g., few behavioural items are present in the ethnic identity measure and few identity items are present in the acculturation measure). This overlap is difficult to avoid as it is reflective of the inherent relatedness of the two constructs.
Three major components of ethnic identity as outlined by Phinney (2003) are: (1) ethnic self-identification (the label used to identify one’s self ethnically); (2) the subjective sense of belonging to an ethnic group and feelings about ethnic group membership; and (3) level of ethnic identity development (i.e., “the extent to which their feelings and understandings about their group have been consciously examined and issues surrounding ethnicity have been resolved, leading to an achieved ethnic identity” (p. 65)). These are different from acculturation measures which have a focus on behaviours such as language usage, friendship choice, music choice, etc. All three cultural variables of acculturation, ethnic identity, and bicultural stress and conflict were examined in this study as they related to disordered eating.

**Purpose of the Study**

To date, very few studies have examined disordered eating and body shape concerns in Arab-Canadian women. Similarly, very few studies have examined acculturation, ethnic identity, and experiences of bicultural stress and conflict in Arab-Canadian women. Previous research has examined the relationship between disordered eating and cultural variables such as ethnic identity, acculturation, and bicultural stress and conflict in ethnic minority groups including Hispanic Americans, East Asians, South Asians, and African Americans; however, no such studies have been conducted with Arabs. The current study will begin to address these limitations in past research. The purpose of the study is two-fold: First, it aims to examine the range and relationships among disordered eating and body shape-related concerns in young, Arab-Canadian women. The second, and main, aim of the study is to examine the relationships between disordered eating patterns and body shape measures and three cultural variables: acculturation, ethnic identity, and bicultural stress and conflict. The theory that difficulties in mediating two cultural worlds and the resultant bicultural stress and conflict are important contributors to disordered eating symptoms will be empirically examined.
CHAPTER TWO

Literature Review

Introduction to the Literature Review

The following literature review is comprised of three parts. In part one, theoretical and empirical data relevant to cross-cultural presentations of eating disorders will be presented. In part two, the theoretical and empirical data relevant to the concepts of ethnic identity, acculturation, and bicultural stress and conflict will be presented. In part three, the history and demographics of Arabs in Canada will be discussed in addition to the core values that make up the Arab culture. The rationale for this study and the guiding hypotheses are presented at the end of this chapter.

Part I: Eating Disorders


The main features of Anorexia Nervosa, according to the DSM-IV-TR, include extreme weight-loss, fear of fat, self-esteem that is unduly influenced by body weight and shape, and loss of menstruation. Bulimia Nervosa is characterized by recurrent episodes of binge eating, recurrent episodes of inappropriate compensatory behaviours to avoid weight gain (e.g., self-induced vomiting, fasting, use of laxatives and diuretics), and self-esteem that is unduly influenced by body weight and shape.
Eating Disorder NOS is a residual diagnostic category reserved for individuals who exhibit clinically significant eating disorder symptoms, but do not meet criteria for either Anorexia Nervosa or Bulimia Nervosa. Eating Disorder NOS has similar clinical features to Anorexia Nervosa and Bulimia Nervosa, but with different symptom combinations and intensities (Fairburn & Bohn, 2005). For instance, a female who meets all other criteria for Anorexia Nervosa, but has regular menstrual cycles would receive an Eating Disorder NOS diagnosis. Also, Binge Eating Disorder (BED) characterized by repeated episodes of binge eating without any compensatory behaviour is considered an Eating Disorder (NOS).

Although, the Eating Disorder NOS category is a residual category, “it is the most common category of eating disorder seen in outpatient settings” (Fairburn & Bohn, 2005, p. 691-692). Many more people are diagnosed with this residual diagnosis than either anorexia or bulimia nervosa (Fairburn & Walsh, 2002). For instance, in a large and representative outpatient sample of patients seeking treatment for eating disorder symptoms, the prevalence of Eating Disorder NOS was 60% (Fairburn et al., 2007). Similarly, eating disorder treatment centers have reported that between 25% and 60% of all cases of eating disorders treated actually fall into the Eating Disorder NOS category (Carlat, Camargo, & Herzog, 1997; Mizes & Sloan, 1998; Williamson, Gleaves, & Savin, 1992). Studies have shown continuity between eating disorder NOS presentations and those of full anorexia and bulimia nervosa. For instance, no differences were found in the nature, duration, and severity of psychopathology between these groups in Fairburn et al.’s (2007) study.

The term ‘sub-clinical’ eating disorder is used to describe individuals with problematic eating patterns that do not meet criteria for a clinical eating disorder (as outlined in the DSM-IV-TR). Continuity between such sub-clinical syndromes and their clinical counterparts has also been noted. For instance, Herzog, Hopkins, and Burns (1993) noted that many individuals
reporting sub-clinical eating disorder symptoms eventually met full diagnostic criteria for either anorexia or bulimia nervosa.

The continuity between clinical and sub-clinical syndromes speaks to the importance of studying these sub-clinical syndromes, especially considering their higher prevalence rates as compared to full clinical syndromes. Since the current study is a non-clinical, community study, the focus will be on symptoms of eating and body image disturbances rather than full clinical eating disorders.

**Sociocultural model of eating disorders.** Eating disorders are complex, multifaceted difficulties that result from the interaction of multiple causal factors. Generally speaking, theoretical accounts of the etiological basis of disordered eating may be classified into three levels: Individual, family, and socio-cultural (DiNicola, 1990a). Each of these broad categories encompasses a range of theories and hypotheses about the etiology of disordered eating. For example, at the level of the individual, biomedical hypotheses; mood disorder hypotheses; developmental psychobiological hypotheses; and psychodynamic hypotheses have been proposed. At the family level, family systems hypothesis have been put forth. At the socio-cultural level, feminist (social) hypotheses; culture-bound syndrome (cultural) hypotheses; and culture-change (transcultural) hypotheses have been presented. Each of these theories provides a piece of the puzzle that aids in the understanding of the origins of eating difficulties. While acknowledging that these theoretical accounts interact with one another, the present study will be based on a socio-cultural theoretical account of disordered eating.

The basic tenet of any sociocultural model of disordered eating is that sociocultural factors play a paramount role in the development of eating and body image difficulties. The most popular and widely endorsed account of disordered eating identifies three sociocultural factors as core to the development of eating difficulties: the thin-ideal body image held for
women; the centrality of appearance in the female gender role; and the importance of appearance for women’s success in society (Striegel-Moore et al., 1986). According to this model, eating disorders result from increased pressure placed on women in North American society to achieve a very slim body (Striegel-Moore et al., 1986). Stice (1994) proposed that such pressure for thinness promotes internalization of the thin ideal which then leads to body dissatisfaction. Indeed, Rodin, Silberstein, & Striegel-Moore (1985) noted that it has become ‘normative’ for a woman in North America to experience some sense of body dissatisfaction as a result of these pressures for thinness. Internalized beliefs about societal ideals of physical attractiveness and body shape lead individuals to define themselves by these ideals and contribute to increased risk for disordered eating (Striegel-Moore et al., 1986; Stice 1994). In his model, Stice predicted that body dissatisfaction places an individual at risk for developing disordered eating via increased dieting behaviours and/or increased negative affect.

Stice (1994) conducted a review of the evidence for the importance of the three appearance-based sociocultural factors in the development of eating disorders outlined by Striegel-Moore et al.’s (1986) (i.e., the thin-ideal body image held for women; the centrality of appearance in the female gender role; and the importance of appearance for women’s success in society). Evidence supporting the presence of a thin-body ideal for women included decreased ideal body size in media outlets such as Playboy magazines and the Miss America pageant between 1959 and 1978; and increased numbers of dieting articles and dieting advertisements in women’s magazines between 1959 and 1988. Logically, an etiological link between the thin-ideal and eating disorders emerged. Stice presented further evidence showing increased rates of eating disorders in subcultures that emphasize thinness (e.g., dancers, models, and athletes) and evidence showing that the majority of people suffering with these difficulties were female.
Support for the centrality of appearance in the female gender role was presented in the form of studies which showed that attractive women were perceived as more feminine; that perceived femininity was related to thinner body silhouettes and smaller meals eaten; and that higher levels of self-reported femininity were associated with higher self-reported ratings of the importance of appearance (Stice, 1994). Support for the importance of appearance for women’s societal success was found in studies that showed that attractive females were perceived as more sociable, dominant, mentally healthy, and socially skilled than less attractive ones. Thus, ample evidence in support of the three basic tenets implicating appearance-based societal factors in the etiology of disordered eating was presented.

The mechanisms by which these sociocultural pressures work to produce eating disorder symptoms were outlined by Stice (1994) in his exploratory model. Multiple moderating and mediating pathways were proposed, many of which have been subsequently empirically validated (albeit with samples of predominantly Caucasian women). This model proposes that sociocultural pressures (i.e., thin body ideal for women, centrality of appearance to the female gender, and importance of appearance for success) are transmitted by family, peers, and the media and promote an internalization of these ideals. However, not all women were thought to internalize this ideal to the same extent. This model proposed that low self-esteem and identity confusion are two ways to increase the likelihood of internalization of these sociocultural pressures. According to Stice’s model, internalization of unrealistically thin body ideals results in body dissatisfaction. Body weight was hypothesized to moderate the link between internalized ideals and body dissatisfaction such that the relationship would be stronger in women of heavier body weight. From here, body dissatisfaction was thought to lead to disordered eating either via restricted eating or via negative affect with moderators proposed for each of these pathways.
In summary, this sociocultural model of disordered eating proposes that sociocultural pressure to be thin promotes internalization of the thin ideal followed by body dissatisfaction, which in turn places individuals at risk for dieting, negative affect and disordered eating. Many of the components of Stice’s (1994) model outlined above have been subsequently empirically validated through rigorous prospective and experimental research studies (see Stice, 2002 for a review). Stice’s (2002) meta-analytic review of these prospective and experimental studies showed that perceived pressure to be thin, modeling of eating disturbances, thin-ideal internalization, body dissatisfaction, dieting, and negative affect are all empirically established risk factors for eating disorders. Again, these empirical tests of his hypotheses were conducted with samples of predominantly Caucasian women. It is important to note here that the role of identity confusion initially outlined in Stice’s (1994) model has not received as much empirical support as many of the other components. The theoretical and empirical data linking identity confusion with disordered eating will be presented in a later section of this literature review. Other socio-cultural accounts of disordered eating that examine additional factors not included Striegel-Moore et al. (1986) and Stice’s (1994) frameworks will be presented later in this chapter.

**Eating disorders in ethnic minority groups.** The typical profile of a person diagnosed with an eating disorder has long been depicted as young, female, of North-European Caucasian background, well educated, and from the upper-socioeconomic class. However, it is now becoming evident that women of diverse racial, ethnic, age, and socioeconomic backgrounds experience problems with eating. The term ‘Western’ culture-bound syndrome has been used to describe these disorders because they were thought to occur only in Western societies which espouse stringent cultural attitudes towards body shape and weight (culture-of-thinness) (e.g., Prince, 1983; Crago et al., 1996; Nasser, 1997; Wildes et al., 2001). Western culture with an
emphasis on thinness was thought to play a central role in their development. The prevailing idea was that ‘non-Western’ societies and individuals from non-Caucasian ethnic backgrounds were protected from the development of eating disorders and body image disturbances because they experienced less cultural pressure for thinness (i.e., thinness was not valued in their original ethnic culture and/or a more plump physique was considered more attractive for females) (Afifi-Soweid et al., 2002; Nasser, 1997). However, evidence is mounting that demonstrates the presence of disordered eating in females of various ethnic backgrounds. To account for these findings, researches have theorized that increased exposure to mainstream ‘Western’ norms and values (especially, Western emphasis on thinness) can account for the increased rates of disordered eating in ethnic minority individuals.

In his review, Stice (1994) noted that if eating disorders were indeed ‘Western’ culture-bound syndromes, the following would be true: First, low rates of eating disorders would be found among ethnic minority individuals (who presumably subscribe to a different culture); Second, rates of eating disorders should be very low or even non-existent in non-Western countries; and Third, increased Westernization (for example in the form of immigration to a Western country or acculturation to a Western culture) should be associated with increased eating disorder symptomatology. Stice’s review of the data in 1994 showed only partial support for eating disorders as ‘Western’ culture-bound syndromes. In what follows, a more recent review of research examining eating disorders in ethnic minority individuals and in non-western countries will be presented. This section describes the results of two large scale reviews (Crago & Shisslak, 2003; Wildes et al., 2001) and one large primary study (Shaw et al., 2004), which in combination provides a summary of over 80 studies comparing eating disorder symptoms across ethnic groups.
Crago and Shisslak (2003) conducted a large scale qualitative review of studies that investigated disordered eating (i.e., dieting, binge eating, and purging) in girls and women from five different ethnic groups: White, Black, Hispanic, American Indian and Asian American, published between 1980 and 2002. Fifty studies comparing dieting behaviour (e.g., dieting, restrictive eating, dietary restraint, fasting) across ethnic groups were included. Of these 50 studies, thirty studies (60%) found higher prevalence of self-reported dieting in White females in comparison to females from the other four ethnic groups while sixteen studies (32%) found no significant differences between the groups. Asian Americans were included in 18 studies (36%) and none of these studies found dieting to be significantly more frequent in Asian Americans. Black Americans were included in 42 (84%) of the studies and two studies found dieting to be significantly more frequent in this group. Hispanic Americans were included in 21 studies (42%) and six of these found dieting to be significantly more frequent in this group. Indian Americans were included in five studies (10%) and one of these showed significantly more frequent dieting in this group. What can be taken from this data is that the majority (60%) of the studies showed significantly higher rates of dieting behaviour in White women in comparison to the other four ethnic groups. It should be noted, however, that the remaining 40% of these studies showed no differences in dieting behaviour among ethnic groups or showed that one of the ethnic groups reported higher frequency of dieting behaviour.

Studies of binge eating behaviour were also examined in Crago and Shisslak’s (2003) review. Of the 28 studies that compared binge eating across White, Black, Hispanic, Asian American, and Indian American females, 15 studies (54%) showed no significant ethnic differences in binge eating. Significantly higher rates of binge eating were found in White females in seven studies (25%), in Black females in three studies (11%), in Hispanic females in two studies (7%), and in Asian American females in one study (4%). Overall, 75% of the
studies reviewed revealed equal or high rates of binge eating behaviours among ethnic minority women in comparison to their White counterparts.

Nineteen studies of purging behaviour (i.e., self-induced vomiting, laxative use, and diuretic use) were included in Crago and Shisslak’s (2003) review. Eighteen of these included a measure of self-induced vomiting of which seven (18%) showed no ethnic differences in rates of self-induced vomiting and seven (18%) showed significantly higher rates in White females. Higher rates of self-induced vomiting were found in Black Americans in two studies (11%) and in Hispanics in two studies (11%). Sixteen of the 19 studies of purging behaviour included a measure of laxative use as a weight control method of which 7 (44%) showed no ethnic differences. Higher rates of laxative use in White females were found in 5 (31%), in Black females in three studies (19%), and in Hispanic women in one study (1%). Nine of the 19 studies of purging behaviour included a measure of diuretic use as a weight control method, of which three (33%) showed no significant ethnic differences. Higher rates of laxative use in Black females were found in two studies (22%), in Hispanic females in two studies (22%), and in White females in two studies (22%). Overall, the majority of these studies measuring purging behaviour found that ethnic minority females showed equal or greater frequency of purging behaviours in comparison to their White counterparts.

Wildes et al. (2001) conducted another meta-analytic review of 35 studies examining disordered eating and body dissatisfaction in White and non-White participants. Four ethnic groups were represented across studies and included White; African American; Asian (e.g., Chinese, Japanese, Vietnamese, Korean, Filipino, Indian, Pakistani, Bangladeshi); and “other” non-white (e.g., Arab, Hispanic, Russian). Effect sizes comparing Whites with each of the minority groups (Blacks, Asians, Other) were calculated across studies. Effect sizes comparing measures of eating disturbance and body dissatisfaction between Black and White samples were
all positive and significant indicating that white samples reported more symptoms of body dissatisfaction and disordered eating than black samples. Comparisons between Whites and Asians showed negative effect sizes indicating that Asians reported more eating disturbance and body dissatisfaction as compared with their white counterparts. The results comparing ‘other non-whites’ to whites were difficult to interpret due to missing values, but suggested that Whites showed higher levels of eating and body image difficulties.

Shaw et al. (2004) conducted a large scale study with a sample of 785 participants where they compared eating disorder symptoms across four different ethnic groups: 564 (72%) Whites, 108 (14%) Hispanics, 49 (6%) Blacks, and 64 Asians (8%). Tests for differences among the groups in terms of eating disorder symptoms (i.e., fear of fat, weight and shape concerns, amenorrhea and compensatory behaviours) and risk factors for eating pathology (e.g., perceived pressure to be thin, modeling of eating disturbances, thin-ideal internalization, body dissatisfaction, dieting, negative affect and self-esteem) were conducted. Out of 63 tests performed, only one was found significant after correcting for alpha inflation: Less internalization of the thin ideal was noted for Black and Hispanic participants in comparison to their White and Asian counterparts. No ethnic differences in mean levels of any of the eating disorder symptoms measured were found. No differences among ethnic groups in perceived pressure to be thin; modeling of eating disordered behaviours of parents, peers, family, and friends; body dissatisfaction; dieting; negative affect; or self esteem were found. Shaw et al. concluded, “Ethnic groups may have reached parity in terms of eating disturbances because sociocultural pressures for thinness are so widespread that they are now reaching all ethnic groups” (p. 16).

The results of the study conducted by Shaw et al. (2004) and of the reviews conducted by Crago and Shisslak (2003) and Wildes et al. (2001) represent conclusions of over 80 studies
conducted cross-culturally in the area of eating disorders. Results revealed large proportions of ethnic minority samples who presented with equal or higher rates of disordered eating behaviours (e.g., dieting, binge eating, purging) and body image dissatisfaction in comparison to their Caucasian counterparts. The presence of disordered eating behaviours in ethnic minority groups that presumably should be protected from these difficulties (due to the supposed de-emphasis on thinness in their culture of origin) is evidence that the culture-of-thinness and its associated pressures equally impacts ethnic minority groups as it does majority groups. Ethnic minority groups, by virtue of their ethnic minority status, are not protected from eating and body-image difficulties.

**Eating disorders in non-Western countries.** If eating disorders are ‘Western’ culture-bound syndromes and are a result of the culture-of-thinness, then the prevalence of disordered eating should be very low or non-existent in non-Western countries. A brief review of studies conducted outside North America and Europe will be presented next in order to examine this hypothesis.

In Mumford’s (1993) review of data on eating disorders in non-Western cultures, he presented evidence from case reports and epidemiological studies which showed that eating disorders did exist in non-Western countries citing evidence of these difficulties in Asia, Africa, and the Middle East (albeit in much lower rates than they exist in Western countries). Nasser (1997) also reviewed data which showed that eating disorders exist in Egypt, Israel, Greece, Turkey, Japan, the Indian Subcontinent, China, Africa, and South America (again, with lower prevalence rates than in the West). DíNicola (1990b) also reviewed data showing the presence of eating disorders in various parts of the world as did Miller and Pumariega (2001) who provided a more recent review showing the presence of eating disorders in various countries in Europe, Asia, Middle East, Africa, Australia, and South America. The focus of the current study
is on disordered eating of a particular ethnic group (Arab-Canadians) living in a Western country (Canada); and therefore, a detailed review of the contents of these reviews was not deemed essential. What is essential to note is the presence of disordered eating in countries thought to be protected from the culture-of-thinness that has been implicated as a core factor in their etiology. The major finding consistent across these reviews was that eating disorders, as defined by Western diagnostic criteria, are significantly less prevalent in non-Western countries than they are in the Western countries. Nonetheless, these studies reveal ample evidence that they do exist in these countries.

Nasser (1997) hypothesized that one reason for the increased presence of eating disorders in non-Western societies is increased ‘Westernization’ of these societies. That is, due to increased globalization and the presence of media outlets which disseminate Western values of thinness, individuals in non-Western countries are increasingly identifying with Western cultural norms in relation to weight and shape preferences for women. This, in turn, has been hypothesized to lead to increased risk of developing disordered eating.

Current studies implicating the concept of ‘Westernization’ as an explanatory factor in disordered eating behaviour in ethnic minority women continue to suffer from the same problems Stice (1994) noted in his review (i.e., lack of inferential tests and scarcity of studies directly examining the hypothesis). Often, post-study theorizing implicates ‘Westernization’ influences to explain findings of eating disorders in non-Western countries, but direct empirical examinations of the hypothesis are lacking. Examples of this type of reasoning will be presented in a later section of this review where empirical studies of disordered eating conducted with Arabs living in the Middle East will be presented.

A challenge to etiological theories of disordered eating that place a central role on the culture-of-thinness, is the presence of eating disorder cases in non-Western countries where the
pressure for thinness appears to be unrelated to their symptoms. These cases challenge the
notion that an obsession with thinness and fear of fatness is a required and compulsory
contributor to disordered eating. For example, Lee’s (1991) discussion of eating disorders in
Chinese participants in Honk Kong indicated that intense fear of fatness and distorted body
image are not prominent in Chinese patients with eating disorders. Similarly, surveys in
Singapore showed that respondents with Anorexia Nervosa rarely reported fat phobia in
association with their eating difficulties (Kok & Tian, 1994). Also, in the Caribbean island of
Curacao, where it is socially acceptable to be overweight, rates of anorexia nervosa have been
found to be similar to rates found in Western societies (Hoek, van Harten, van Hoeken, &
Susser, 1998). Lee, Ho and Hsu (1993) reported that almost 60% of their sample of 70 patients
with Anorexia Nervosa in Hong Kong displayed no fear of becoming fat. Reasons for food
refusal presented by these patients included epigastric bloating, no hunger, and some had no
reason at all indicating that they did not know why they refused to eat. These findings challenge
the idea that eating disorders occur only in western cultures. They also challenge the idea that
the sociocultural pressure for thinness and dieting is a necessary etiological factor.

A historical fact that further challenges the notion that the cultural pressure for thinness
is a necessary factor for the development of eating disorders is that the first two recognized
cases of Anorexia Nervosa made in London and Paris by William Gull (1873) and E.C. Lasègue
(1873) were made in a time period before the culture-of-thinness came to be (Mumford, 1993).
At this time, there was no emphasis on slimness and dieting; and as such, etiological
formulations of eating disorders at that time were based on intrafamilial conflicts and
personality configurations of the affected individual.

Katzman and Lee (1997) strongly criticized the ‘Westernization’ hypothesis in relation
to disordered eating stating that:
Simply viewing eating disorders as a Western culture-bound syndrome “rooted in Western cultural values and conflicts” (Prince, 1985, p.300) has three obvious problems. First, it begs the question of which cultural values and conflicts are evoked in western contexts and leaves intact the assumption that cultural preoccupation with thinness and dieting is the primary cultural value “ingested” in this syndrome. Second, culture is often simply used to reflect geographical boundaries without any effort to dismantle societal constraints on behaviours and their constructed meaning regardless of their local. Last, the meaning of self-starvation in Eastern and Western countries who report no fat phobia is left unaccounted for (Steiger, 1995). (p.387-388)

In summary, eating disorders have been found in non-Western countries. However, they often present themselves differently than they do in the West and for this reason may not fit Western diagnostic criteria (e.g., absence of fear of fat). Although cultural pressures for thinness are important contributors and risk factors for the development of disordered eating, these studies show that they are not absolutely necessary. It appears that these pressures “may well increase the risk of anorexia nervosa or bulimia nervosa, and shape some of their clinical features, but these cultural pressures do not seem to be a necessary condition for developing an eating disorder” (Mumford, 1993, p. 112).

This cross-cultural examination of disordered eating revealed that rates of disordered eating have increased globally. Exposure to the thin ideal and pressure for thinness occurs even in non-western countries via globalized media influences. At the same time, evidence exists which shows that eating disorders can develop without the emphasis on appearance and fear of fat. This evidence reveals a limitation of Stice’s model which emphasizes the central role of cultural pressures for thinness on the development of disordered eating. There are different
pathways leading to disordered eating and cultural pressure for thinness is only one such pathway. As such, it is important to explore other pathways to disordered eating.

A set of four related pathways will provide the basis for this study: all four of which speak to the function of eating disorders as means for individuals to exert personal control while living under societal conditions that promote powerlessness. Broadly speaking, these interrelated pathways speak to disordered eating as (1) indicative of disconnection, transition, and oppression; (2) indicative of a culture-reactive syndrome; (3) evidence for the ‘two-world hypothesis’ of eating disorders; and (4) evidence for the function of disordered eating as a form of self-definition in relation to identity confusion. Each of these will be discussed in more detail below.

**Eating disorders: Disconnection, transition, and oppression.** Rather than conceptualizing eating disorders as problems of dieting, weight, and fat phobia, Katzman and Lee (1993) suggested that they be conceptualized as problems of disconnection, transition, and oppression. They are problems of disconnection when women lose their community groups and reference groups with which to identify themselves when faced with changes such as immigration, social class changes, and/or changes in gender-role expectations. Personal life changes, social transformations and political changes may also lead to disconnection; and eating is proposed as a method to cope with this disconnection. Katzman and Lee indicated that “societal-identity confusion” (p. 392) results from feelings of disconnection and psychological displacement which in turn may lead to “individual efforts at bodily control in an attempt to conform to changes in physical as well as role prescriptions” (p. 392).

Katzman and Lee (1993) also conceptualized eating disorders as problems of transition when “women attempt to move between two worlds” (p. 392) and as problems of oppression resulting from adapting to a different country, socioeconomic group, or cultural group where
isolation and prejudice are experienced. In response to these oppressive forces they indicated that women attempt to “perfect their physical selves as a method of coping” (p. 392).

The following quote by Nasser (1997) eloquently expresses similar ideas of eating disorders in relation to disconnection and oppression:

Eating disorders are extreme forms of behaviour that are symptomatic of an underlying human distress. The distress is caused by the loss of the relation of the self to the other, and the loss of one’s ability to understand the prevailing system and be part of it. This distress is reactive to the sense of confusion, disorganization and disharmony felt by many who need to be on the inside of the system and yet are always outside it (p. 106).

Two qualitative studies based on life-history interviews conducted with women of diverse backgrounds confirmed that disconnection, transition, and oppression are indeed central themes that emerge in the lives of women who have struggled with disordered eating (Piran, Carter, Thompson, & Pajouhandeh, 2002; Thompson, 1994). These studies will be presented next.

Thompson (1994) conducted a qualitative study in which she interviewed 18 women of diverse racial, ethnic, socio-economic, and sexual backgrounds about their relationships with food and their own bodies. She was interested in examining the intersection of ethnicity, gender, race, social-class, and sexuality in relation to eating pathology. The women she interviewed were between the ages of 19-46, five of them were African-Americans, five were Latina’s, and eight were White. Twelve of them were lesbians and all were of diverse socioeconomic backgrounds. Thompson conducted life history interviews with the intention of understanding the meaning and reasons behind eating problems in women of color and lesbians. The majority of the women in her sample had experienced eating problems in the form of bulimia, compulsive eating, anorexia, and/or extensive dieting. Thompson’s life history analysis
revealed linkages between eating problems and trauma in the form of sexual abuse, racism, heterosexism, poverty, acculturation, and emotional and physical abuse. She showed that eating disorder symptomatology appeared during times of difficulty in these women’s lives and that they were used as coping mechanisms to numb the pain of their trauma. Thompson emphasized that her study revealed that eating disorders are not disorders of vanity caused by an appearance and self-obsessed woman; rather they are complex coping mechanisms used to deal with very difficult psychosocial stressors.

Piran et al. (2002) also conducted a qualitative study using the life history approach with a group of 11 women between the ages of 20-27 of diverse ethno-cultural, racial, and socioeconomic backgrounds. Piran et al.’s inquiry was focused on understanding the social and relational context of women’s lived experiences in relation to how they feel about their bodies. They found that women’s ways of living in their bodies ranged on a continuum between connection and disconnection. Women who were more connected with their bodies experienced physical freedom to act and take up space, were comfortable and agentic in relation to their sexual desires; took care of and protected their bodies, and had the ability to identify, voice, and act on bodily needs. Women who were disconnected from their bodies experienced feeling physically constrained, were disconnected from the power and functionality of their bodies, were unaware and/or uncomfortable with their sexual desires, had negative feelings about their bodies, and were not able to identify, voice, and act on bodily needs. Disconnection from the body was associated with eating disorder symptomatology. Supporting Katzman and Lee’s conceptualization of eating disorder symptoms as coping mechanisms that emerge in response to problems with disconnection, transition, and oppression, Piran et al. found that during difficult times in these women’s lives (e.g., inequity in relation to their gender, race, ethno-cultural
group, socioeconomic status, health and physical disability, and sexual orientation), they
experienced greater disconnection from their bodies.

**Eating disorders: Culture-reactive syndromes.** Katzman and Lee (1997) urged
researchers to acknowledge societal factors the contribute to food refusal and disordered eating
that go “beyond caricatured cosmetic compliance – the latter being the socially sanctioned
coloring of distress and not the cause” (p.390). DiNola’s transcultural theory of eating
disorders as culture-reactive syndromes does exactly that. Based on Bordo’s (1990) notion that
women’s bodies serve as a template on which cultural and political conflicts are projected,
DiNola proposes that culture change (which may be manifested in many ways) is stressful and
this stress is expressed through the body.

DiNola (1990a) summarized the widely accepted viewpoint of eating disorders as
clinical syndromes that are only found under a very specific set of circumstances: among
pubertal girls and young women; in privileged socioeconomic groups of ‘Western’ or
‘Westernizing’ affluent societies; and among racial groups of European descent. From this
viewpoint, eating disorders are “*culture-bound syndromes* of technologically-developed affluent
Western societies – what Brumberg (1988) has characterized as an illness with “a highly
specific social address” (p.13)” (DiNola, 1990a, p.166). However, DiNola went on to present
evidence that did not fit with the idea of eating disorders as culture-bound, including historical
accounts of fasting women; accounts of eating disorders in pre-pubertal children and in males;
accounts of eating disorders occurring in a wider socioeconomic status range than previously
thought; and reports of eating disorders occurring outside the Western world and among non-
Europeans. DiNola also noted cases of eating disorders that were triggered by culture change
(e.g., anorexia nervosa in an adolescent from an immigrant family living in a highly
industrialized Western society).
These “orphan cases” that do not fit into the culture-bound hypothesis were accounted for by putting forth a transcultural hypothesis of disordered eating which hypotheses that eating disorders occur during conditions of rapid change – for example, in developing countries characterized by rapidly changing economic and socio-cultural conditions (see DiNicola, 1990b for a review). DiNicola indicated that when eating disorders develop under such circumstances, they can be viewed as culture-change syndromes rather than culture-bound syndromes. Since there is support for both eating disorders as culture-bound syndromes and culture-change syndromes, DiNicola acknowledged the validity of both theoretical accounts and unified them under one umbrella term viewing eating disorders as culture-reactive syndromes. Culturally ‘reactive’ because ultimately, in both cases, eating disorders occur in reaction to culture where when they are culture-bound, they occur within a relatively stable sociocultural environment (where sociocultural ideals of thinness prevail and are thought to be central to the problem); and when they are in response to culture-change, they occur within a quickly changing society or as a result of migration from one culture to another.

**Eating disorders: Two-world hypothesis.** Katzman and Lee (1997) combined feminist and transcultural theories of eating disorders and presented an analysis of disordered eating that went beyond a discussion of thin media ideals and “bodily obsessed analyses” to include an analysis of the broader context in which these difficulties develop. Again, in line with Bordo’s notion that cultural and political conflicts are expressed in the body, Katzman and Lee hypothesized that eating disorders develop as individual attempts to exert personal control while living under societal conditions that promote powerlessness. They summarized a theoretical account of disordered eating central to the current study which they labelled “The Two World Hypothesis” (p. 387).
The two world hypothesis of disordered eating proposes that “attempts to straddle two worlds give rise to disordered eating” (Katzman & Lee, 1997, p.387). There are variations in the possible combinations of ‘two worlds’ that may come into conflict which include: “women juggling two cultural worlds exposed to “Western ideals” in their home countries or emigrating to new lands” (Katzman & Lee, 1997, p.387); generational conflicts (Perlick & Silverstein, 1994); conflicts based on changes in gender expectations (Katzman, 1993), and conflicts resulting from the childhood to adolescence transition (Steiner-Adair, 1991). Another way in which two worlds come into conflict is in the form of a “conflict or culture clash between the home environment and the prevailing social norms” experienced by individuals brought up in a home culture (e.g., South Asian) that is very different from the dominant societal culture (‘Western’) (McCourt & Waller, 1996, p.80). This type of conflict is central to children of immigrants growing up in North America. Examples of studies supporting this latter idea of culture clash in relation to eating disorders will be presented next.

Mumford et al.’s (1991) study with a group of South Asian women (majority first generation) and 335 Caucasian women in Britain found that the factor structure of the EAT and Body Shape Questionnaire (BSQ) was similar in both groups of participants, but that the group of South Asian women scored significantly higher on the EAT. ‘Traditionalism’ and ‘westernization’ were measured in this study through items assessing language use, dress, and type of food eaten. Results showed that South Asian women who were more ‘traditional’ scored highest on both the EAT and BSQ. No relationship between ‘westernization’ and the EAT or BSQ were found. The authors noted the South Asian women in this study scored similarly on the BSQ as their Caucasian counterparts; and thus, theorized that the higher prevalence of eating disorder symptomatology in these women “has to do with factors other than their dissatisfaction with body shape” (p.226). Mumford et al. hypothesized that “the most traditional girls may be
experiencing greatest internal conflict, for example around issues of identity as they grow up with two sets of cultural values.” They predicted that higher levels of internal conflict and anxiety will arise as the difference between the two cultures increases. Another hypothesis put forth to explain these findings was intergenerational conflict such that this conflict increases in more traditional families who more rigidly adhere to traditional values. One participant in Mumford et al.’s study diagnosed with Anorexia Nervosa expressed her struggles with cultural conflict as follows:

“I am facing what is called ‘culture clash’. Because I have been educated in England I have been taught to be independent, original, to think for myself and to be successful in my life by achieving what I aim for. In school I was prepared how to handle my life and how to stand up for myself, while when I went home I was expected to be quiet, submissive, obedient and totally dependent on my parents” (p.227)

Two studies conducted in Kuwait supported the hypothesis connecting general psychiatric symptoms with cultural conflict (El-Islam, Abu-Dagga, Malasi, & Moussa, 1986; El-Islam, Malasi, & Abu-Dagga, 1988). For example, larger differences in cultural attitudes between parents and children were associated with more psychiatric symptoms. It is the conflict of attitudes that were associated with psychiatric symptoms, rather than adoption of traditional versus liberal attitudes per se. Bryant-Waugh and Lask (1991) more specifically presented cases of adolescents diagnosed with Anorexia Nervosa that implicated cultural conflicts in the aetiology of the eating difficulties. For instance, cultural conflict between father and daughter existed in one case as he insisted that she participate in activities in the local Bangladeshi cultural center while she preferred to participate non-Bangladeshi activities with her school friends. Another example of this cultural conflict was in the form of one adolescent’s superior knowledge of English than her parents and a clash of values between those espoused at home
and those at school. Bryant-Waugh and Lask argued that the more ‘traditional’ the family, the more likely cultural conflict will occur around issues such as arranged marriage, norms around dress and contact with the opposite sex, and female gender roles (e.g., cooking and household responsibilities). These authors stated,

“Given that norms and social rules regarding such issues [autonomy, control and sexuality] are largely culturally determined, it is not difficult to envisage that young people growing up in a situation involving juxtaposition of two very different cultures may experience confusion. This in turn may make them more susceptible to the development of eating disorders, a process which has often been linked to confusion regarding the individual’s sense of self (e.g., Bruch, 1973)” (p. 232)

Another study compared immigrant Greek girls living in Germany with Greek girls living Greece showed higher self-reported endorsement of items reflecting an ideology of slimness in the Greece sample, but higher rates of anorexia nervosa (as diagnosed with a clinical interview) in the Germany sample (Fichter, Weyerer, Soursi, & Soursi, 1983). This study showed that the ideology of thinness is important, but that “there may not necessarily be a linear relationship between the ideology of slimness and anorexia nervosa” (Fichter et al., 1983, p. 104). This finding suggests the existence of other pathways to disordered eating (in addition to or separate from the culturally induced drive for thinness). Katzman and Lee (1997) cited writings by psychiatrist and anthropologist Littlewood (1995) which asserted that “South and East Asian women, in the absence of fear of fatness, engage in self-starvation to instrumentally achieve self-determination when confronted with ambivalent cultural demands” (p.388).

Another study by Hill and Bhatti (1995) compared South Asian and Caucasian girls in Britain and found that both groups valued thinness equally, but showed that the South Asian girls displayed significantly higher levels of dietary restraint. Similar to Mumford et al. (1991),
cultural orientation was assessed by examining language, dress, and type of food eaten. Findings showed that dietary restraint was positively correlated with a more ‘traditional’ cultural orientation, but was unrelated to ‘Western Orientation.’ The authors speculated that intrafamilial conflict between the girls and parents from traditional backgrounds as well intercultural conflicts may lead to internal conflicts that may result in an increased risk for disordered eating. Nasser (1997) also noted in her review of eating disorders in non-Western ethnicities that family pathology in the form of intergenerational conflicts and confusion over racial identity played a central role in their development.

Silber (1986) presented four cases of anorexia nervosa in Hispanic and Black adolescent females and followed this presentation with a discussion of the hypothesized etiological origins of eating disorders in five cases of eating disorders based on clinical experience with these patients. Silber noted that all the young women were born in a time when western society was in the midst of re-examining values and rejecting beliefs of the past (e.g., women’s rights). Silber stated, “Many issues and conflicts, however, remained unresolved and in many traditional minority families significant ambivalence remained in relationship to feminism and racial integration” (p. 126). He further indicated, “Their girls, caught in the middle of contradictory expectations, were thwarted in seeking their own identities ... They were left anxious, searching an all encompassing solution” (p. 126). Silber theorized that the eating disorder symptoms represent

“... A desperate attempt to cope with the pressure of growing up in their stressed environment ... They desperately wanted to be “normal” and to assimilate. They encountered early our society’s conviction that thinness and trimness are the essential ingredients that lead to success. Thus, these girls, who were already feeling different and suffering from low self-esteem and a powerful need to be accepted sought integration
with society through rigid dieting an extremist adoption of the current societal standard of slimness” (p.126-127).

In their review of research on ethnocultural identity and eating disorders in women of colour, Harris and Kuba (1997) reviewed results of studies that showed positive correlations between eating disorder symptoms and separation from one’s original ethnic culture. They hypothesized that “this relationship may represent an identity confusion resulting from a clash in values between the culture of origin and the host culture” (p.342). However, in line with widely accepted etiological theories of eating disorders that are focused on culturally based standards of attractiveness that emphasize extreme thinness, Harris and Kuba identified the source of ‘identity confusion’ in women of colour as directly linked to appearance stating that “eating disorders may be symptomatic of conflicting cultural demands for beauty and acceptance. The suppression of these conflicting demands through internalized oppression may result in specific disordered eating symptoms (p.341).”

**Eating disorders: Identity confusion and self-definition.** The previous review of various sociocultural models of disordered eating began with an appearance-focused theory and moved into broader theories taking into account contextual issues of disconnection, transition, conflict, and oppression. In many of these accounts authors argued for the role of “identity confusion” or conflicts in identity in the development of disordered eating. Even in Stice’s (1994) account, he predicted that identity confusion would mediate between sociocultural pressures for thinness and subsequent internalization of those pressures. The issue of identity conflict and identity confusion was especially salient in accounts of disordered eating resulting from clashes of “two worlds” in the form of culture clashes. These ideas have not been empirically supported. Identity confusion and the related concept of culture clash were often introduced after empirical studies were completed to account for their results. The present study
will empirically assess the relationships between culture clash and identity confusion in relation to disordered eating; as such, a review of the literature linking disturbed identity (in general and not ethnic identity specific) to the development of disordered eating will be presented next.

The concept of identity has been thoroughly written about by Erik Erikson (e.g., Erikson, 1968, 1975) who described identity as an individual’s experience of a sense of continuity, or alternatively stated, a sense of self-cohesion which requires the individual to bring together and synthesize diverging and conflicting aspects of his or her social experience. An in-depth discussion of the concepts of identity (general), ethnic identity, identity confusion and psychopathology will be presented in part two of this review. Erikson’s definition of identity was presented at this point to provide a base from which to build the current discussion. Erikson indicated that identity development is a dynamic process that continues throughout the lifespan, and that is influenced by historical, social, familial, and biological factors.

In the following review, the focus will be on the theoretical links between identity confusion in general (not ethnic identity specific) and disordered eating. References to ethnic identity confusion will be clearly labelled as such. In Gordon’s (2000) account of disordered eating, he indicated that the cultural pressure for thinness is only one contributor to the development of disordered eating. He criticised theories of disordered eating that implicate the culture-of-thinness as the sole sociocultural contributor because such theories do not account for the nearly universal but more subtle features of eating disorders such as concerns around autonomy, self-esteem, achievement, and control. Gordon stated that “this spectrum of psychological issues can be broadly understood as relating to the larger problem of the development of psychosocial identity” (p.95, Gordon, 2000).
Gordon hypothesized that Anorexia Nervosa and Bulimia Nervosa are “both disorders of development that revolve around the core issue of shape and body weight, and in which the person, most typically female, obsessively focuses on the achievement of thinness in order to solve problems of personal identity.” (p.55) Chernin (1986) also pointed to the importance of identity indicating that “Eating disorders express our uncertainties, our buried anguish, our unconfessed confusion of identity” (as cited in Nasser & Di Nicola, 2001, p.172). Similarly, Nasser spoke to the importance of identity in relation to studies of disordered eating when she urged investigators to “break away from the notion of body pathology and focus on issues of identity and the need to belong!” (p. 183, Nasser & Di Nicola, 2001).

Schupak-Neuberg and Nemeroff (1993) also theorized that disordered eating was “based on identity disturbance and the subsequent use of the body as a means of self-definition and/or regulation” (p.335). They stated their belief that a weak or disturbed sense of self-identity underlies bulimic symptomatology and stated that, “In the absence of a strong sense of identity, we propose that bulimics concretize the abstract notion of self and utilize their physical bodies to represent the inner identity structure; that is, the body serves as a metaphor for self” (p.336). Schupak-Neuberg and Nemeroff also connected the idea of body-as-self to the food domain stating that “food, fasting, and even purging should be seen as particularly good means of self-regulation for those who equate self with body” (p.336). They hypothesized that “an implication of regulating food intake as a means of regulating self is that the collapse of such regulation might be experienced as a collapse of self-definition” (p.336). These authors empirically tested their hypothesized connection between identity disturbance and bulimic symptomatology by administering The Identity Disturbance Scale, which measures identity confusion, defined as “a sense of confusion and inconsistency in one’s idea of who one is” (p. 339) as well as the Trait Scale, which assesses instability in who one views oneself from time to time. They found that
among individuals diagnosed with bulimia nervosa reported the greatest amount of identity confusion as compared to binge eaters with normal controls showing the lowest levels of identity confusion.

Similarly, Gilbert and Thompson (1996) theorized that “the body is one entity that offers women a sense of identity and self-definition” (p.193). They stated, “women who possess an underdeveloped sense of self may be more vulnerable to society’s dictates of how they should look and act and thus are at greater risk for developing an eating disorder” (p.193).

Varied theorized sources of this identity confusion have been presented. For instance, Schupak-Neuberg and Nemeroff (1993) hypothesized that enmeshment within the family of origin impedes the development of a coherent sense of identity. This family enmeshment consequently leads to confusion, unstable self-view, and enmeshment with others; which then leaves a person vulnerable to the development of disordered eating. Another theory suggests that an emphasis on attuning oneself to the subjective experiences of others learned in the family of origin leads to reliance on an external source of self-worth and a subsequently poorly developed sense of self (de Groot & Rodin, 1994).

Changing gender roles have also been implicated as sources of identity confusion (Gordon, 2000; Johnson & Conners, 1987). Gordon (2000) has written extensively on this topic and noted that since the 1960’s, women have been faced with new pressures for achievement, competitiveness, and independence which are in direct conflict with traditional Western expectations for women that emphasize the importance of compliance, self-sacrifice and deference. At the same time, he noted that many women also feel the pressure to achieve and perform while simultaneously feeling the pressure to be traditionally feminine (i.e., attractive, pleasing, unassertive). According to Gordon, these conflicting social expectations for women that have resulted during a time of cultural transition of the female gender-role has put women
in a difficult position because their ideal role has become unclear and ambiguous. In this context of cultural change, Gordon asserted that “some young women are vulnerable to becoming caught in the uncertainties and ambiguities of a drastically altered set of expectations;” And, in turn, he theorized that these conflicting expectations have made it difficult for women to “synthesize a viable or workable identity” and has in turn led them to “suffer inwardly from a sense of fragmentation, confusion, and self-doubt” (p. 96, Gordon, 2000). Eating disorders, according to Gordon are “a critical expression of dilemmas of female identity in our own time, in a period of significant cultural transition for women” (p.6, Gordon, 2000).

Similarly, in the cross-cultural, eating disorder literature, this identity confusion results from the difficulties encountered in mediating between two cultural worlds that conflict due to endorsement of very different values systems (e.g., Katzman & Lee, 1997; McCourt & Waller, 1996; Mumford et al., 1991). The previously presented review of studies relating culture clash to disordered eating provides numerous accounts of authors implicating a connection between identity confusion resulting from conflicting values systems between two cultures (original ethnic culture and dominant Western culture) and disordered eating. However, this was not empirically examined.

Ethnic identity is integral to one’s sense of self and this is particularly true for minorities (Phinney, 1990). Given that identity confusion in general has been proposed as an important etiological link to disordered eating, ethnic identity difficulties and confusion may be particularly relevant to the understanding of eating disorders. If a woman experiences conflicting value and behavioural expectations as a result of living in two cultures simultaneously, she may suffer from “fragmentation, confusion, and self-doubt” (Gordon, 2000, p. 96) in relation to her ethnic self. If the body is “an entity that offers women a sense of identity and self-definition,” (Gilbert & Thompson, 1996, p.193) then difficulties forming an integrated
ethnic identity could very well be expressed via disturbances in eating and body image. The focus of the current study is to empirically test this possibility. The relationship between bicultural stress and conflict (including ethnic identity confusion) and eating- and body- related disturbances will be explicitly examined. A review of the literature examining disordered eating in relation to acculturation, ethnic identity and bicultural stress and conflict will be presented next.

**Eating disorders in relation to acculturation, ethnic identity, and bicultural stress and conflict.** The term acculturation has evolved from an initially one-dimensional definition to a two-dimensional definition. The first definition of acculturation provided by Redfield, Linton, and Herskovits (1936) stated that acculturation is a “phenomena, which results when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original cultural patterns of either or both groups” (p.149). Traditionally, acculturation was viewed as a one-dimensional process that starts with strong identification with the culture of origin in the beginning and ends with assimilation to the new or host culture on the other. It was once thought that in order to acculturate, individuals needed to let go of their original culture’s values, beliefs, and behaviours in order to take on the new culture’s values, beliefs, and behaviours. This one-dimensional view of acculturation held that it is not possible to hold the values, beliefs, and behaviours of two different cultures at the same time; and, for this reason, individuals needed to let go of their original culture and assimilate into the new one in order to adjust to a new cultural environment (Rivera, 2008).

This one-dimensional view of acculturation has been widely criticised which gave rise to the now widely accepted view of acculturation as a process that occurs along two dimensions: the culture of origin and the host culture (Berry, 1980, 1993, 2003, 2005). According to this two-dimensional perspective, individuals’ preferences for both maintaining their culture of
origin and participating in the dominant culture vary independently (e.g., individuals can adhere strongly to both cultures, neither culture, or a combination of the two; Berry, 2003). Moreover, this change varies across different domains (e.g., language, values, behaviours) (Berry, 2003).

According to Berry’s model, the essence of the acculturation task involves negotiating between: (a) how much one prefers to maintain one’s own heritage, culture, and identity and (b) how much one prefers to be in contact with and participate in the larger society made up of one or more different ethnocultural groups (Berry, 2005). These tasks make up the two dimensions of acculturation and can be assessed by asking two questions “Is my cultural identity of value and to be retained?” and “Are positive relations with the larger (dominant) society to be sought?” (p.13, Berry, 1980). Four acculturation strategies result from the different combinations of answers to these questions: Integration (yes, yes); assimilation (no, yes); separation (yes, no); and marginalization (no, no). Individuals adopting the integration strategy maintain their own cultural identity and heritage and while also engaging and identifying with the larger dominant society. Those adopting the assimilation strategy identify and engage primarily with the dominant society while shedding their cultural heritage. In contrast, individuals who use the separation strategy exclusively hold on to their original culture and avoid interacting and identifying with the dominant society. Those who utilize the marginalization strategy do not maintain their own cultural heritage nor do they seek to be a part of the larger dominant society.

Upon reviewing the literature examining the relationship between acculturation and disordered eating, a number of problematic issues became evident. First, the definition of acculturation was not consistent across studies; second, this meant that the measures used to measure acculturation were also inconsistent; and third, and likely most problematic, was that terms such as Westernization and ethnic identity were often considered synonymous and
interchangeable with acculturation. Acculturation, Westernization, ethnic identity, and bicultural stress are all related, but definitely not synonymous. Part two of this literature review will provide an in-depth differentiation of these concepts.

Acculturation is often equated with Westernization when its one-dimensional definition is utilized. The most widely cited connection between disordered eating and acculturation indicates that increased ‘acculturation’ or ‘Westernization’ implies increased exposure to Western society’s culture-of-thinness; which, in turn, is considered the most important etiological factor in the development of disordered eating. As noted earlier in this review, the focus on the obsession with thinness as the cause rather than a symptom of distress is problematic and leaves out what may be more core contributors to eating difficulties (i.e., identity confusion, disconnection, conflict, transition, oppression, etc.).

This next section reviewing eating disorders and acculturation will demonstrate the above mentioned methodological problems quite clearly. The different definitions of acculturation which have been used as well as post-study theorizing to explain findings will be highlighted to both show the current thinking in the area and to demonstrate the extent of the confusion among concepts such as ethnic identity, acculturation, ‘Westernization’/‘traditionalism’ in this body of literature.

**Eating disorders in relation to Acculturation.** This section starts with a review article that addresses the question of eating disorders and acculturation and continues with specific studies which investigated the relationship between acculturation and disordered eating. Body mass index was not controlled for in most of the studies reviewed in the next few sections. As such, measurement and control for body mass index will only be noted in studies that controlled for this variable.
To begin, a meta-analytic study conducted by Wildes et al. (2001) examined the relationship between eating disorder symptoms and acculturation in Black, Asian, and ‘other’ ethnic groups. No relationship between acculturation and disordered eating was found. In this study acculturation was considered “the best measure of the effect of Western and White culture on the development of eating disturbance in women not born into Western or White cultural groups” (p.524). These researchers viewed acculturation one-dimensionally and hypothesized that women who were ‘more acculturated’ into Western and White culture would be more influenced by Western and White norms regarding thinness and weight and would in turn report greater levels of disordered eating than their ‘non-acculturated’ counterparts. Of the 11 studies included in Wildes et al.’s meta-analytic review, all utilized quantitative measures of acculturation; however, these measures varied widely: two used level of integration into the dominant culture felt by participants; five studies used participants’ levels of identification with non-dominant cultural groups; three studies used ‘cultural orientation’ (e.g., ‘traditional’ vs. ‘Western’); and one study used group comparisons of ethnic minority women living in their countries of origin with their counterparts living in a Western country. Considering the varied methods used to assess acculturation, it is not surprising that the meta-analytic results based on this set of studies were not particularly meaningful and showed that ‘acculturated women’ and ‘non-acculturated women’ did not significantly differ on levels of reported eating disorder symptoms. The most significant methodological problem in this study is that a meta-analytic analysis was conducted on a series of studies that purportedly measured acculturation, but used very different definitions and measures of the concept. As indicated earlier, this problem reflects a more general problem in the cross-cultural eating disorder literature which reveals inconsistencies in the use of terms such as westernization, acculturation, and ethnic identity.
The following review of individual studies examining the relationship between acculturation and disordered eating further highlights the inconsistencies in measurement of the acculturation construct in the eating disorder literature. To begin, Lester and Petrie (1995) measured acculturation in a sample of Mexican American females using the 20-item Acculturation Rating Scale for Mexican Americans (ARMSA: Scale developed by Cuellar, Harris, & Jasso, 1980 as cited in Lester & Petrie, 1995), a measure that “differentiates personal affiliation with Mexican or U.S. societal values and roles in areas such as language familiarity and usage, and ethnic identity and generation” (p. 200). Acculturation was defined one-dimensionally as a score that ranges between 1 (very Mexican-oriented) to 5 (very Anglo-oriented). No relationship between bulimic symptomatology and acculturation was found in this study. Body mass index was measured and controlled for in Lester and Petrie’s (1995) study.

Joiner and Kashubeck (1996) also administered the Acculturation Rating Scale for Mexican Americans (ARMSA) to a group of Mexican American university students along with measures of body dissatisfaction, self-esteem, and eating disorder symptoms. Acculturation was conceptualized as a continuous, one-dimensional variable where participants obtained scores placing them somewhere between 1 (very Mexican oriented) and 5 (very Anglo oriented). Findings showed relationships between eating disorder symptoms and both low self-esteem and body dissatisfaction. However, acculturation as measured by the ARMSA was not related to the presence of eating disorder symptomatology in this study. An explanation put forth for this finding was that the “Anglo American culture with which the sample in this study has come in contact and incorporated does not place the same emphasis on the female body size and shape,” Alternatively, these authors hypothesized that Mexican American females in south central Texas “emphasized thinness and attractiveness to the same degree as the Anglo American culture, and therefore one’s degree of acculturation may be somewhat irrelevant to one’s risk for eating
disorders” (p.431). Body mass index was measured and controlled for in Joiner and Kashubeck’s (1996) study.

Kuba and Harris (2001) also investigated the relationship between eating disturbance and acculturation in Mexican American women. They defined acculturation as “a greater acceptance of European American values” (p. 284). They hypothesized that “a woman of color is less likely to report a distorted attitude about eating patterns when she is less accepting of European American values” (p. 284). Acculturation was measured using the Minority Majority Relations Scale that included questions about language usage, acculturation, and perceptions of prejudice. No relationship between acculturation and disordered eating as measured by the Structured Interview for Anorexia and Bulimia (SIAB: Scale developed by Fichter et al., 1991 as cited in Kuba & Harris, 2001) was found.

Stark-Wroblewski, Yanico and Lupe (2005) conceptualized awareness and internalization of Western appearance norms as only “one very specific aspect of the general acculturation process” (p. 39). They examined both awareness and internalization of Western appearance norms along with acculturation in relation to eating disorder symptomatology in a group of Japanese and Chinese international students living in the United States. Acculturation was measured using The American-International Relations Survey (AIRS: Scale developed by Sodowsky & Plake, 1991 as cited in Stark-Wroblewski et al., 2005) which contains an Acculturation subscale that measures acculturation in a one-dimensional fashion (higher scores indicated higher acculturation to Western society). Awareness and internalization of Western socially sanctioned standards of appearance (in particular, the thin ideal) were measured by the Awareness subscale and Internalization Subscale of The Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ: Scale developed by Heinberg, Thompson, & Stormer, 1995 as cited in Stark-Wroblewski et al., 2005). In order to control for general distress, a
measure of general distress was also administered (The Symptoms Checklist: Scale developed by Bartone, Ursano, Wright, & Ingraham, 1989 as cited in Stark-Wroblewski et al., 2005). Internalization scores were significantly positively related to EAT scores. Internalization scores were not related to acculturation. Acculturation was not related to EAT Total scores. After controlling for any relationship with general distress and acculturation, awareness and internalization of Western appearance norms predicted a significant amount of variance of EAT Total scores. Moreover, when entered separately in a regression model, internalization of appearance standards accounted for more of the variance of EAT Total scores than did awareness of these standards after controlling for general distress and acculturation. The authors concluded that their results supported the sociocultural model of eating disorders that states that internalization of Western appearance norms (particularly the thin ideal) is positively associated with eating pathology. A possible reason put forth to explain the lack of a relationship between acculturation and eating pathology in this study was the possibility that “a thin ideal as well as restrictive dieting is already well embedded within the female gender role of some East Asian cultures” (p.44).

Sussman, Nhan, and Lim (2007) measured acculturation in four different ways: First, they administered Ward’s Acculturation Index (WAI: Scale developed by Ward & Kennedy, 1994 as cited in Sussman et al., 2007) which was said to measure first generation immigrants’ identification with the US culture and home country culture. Two scores result after scoring responses on this measure: American Identity and Birth Identity. Second, a language scale was created to measure proficiency in English and language spoken at home as a proxy measure for acculturation (i.e., better English was equated with increased acculturation). Third, neighbourhood diversity was measured. Increased residential diversity was assumed to indicate increased acculturation. Fourth, generation status was used as a measure of acculturation
whereby later generation individuals were assumed to be more acculturated. EAT scores were not associated with scores on the Ward’s Acculturation Index for any of the three immigrant groups assessed (Eastern-European, Chinese, and Afro-Carribean). How EAT scores related to the other measures of acculturation in this study were not clear.

Chamorro and Flores-Oritz (2000) administered the Acculturation Rating Scale for Mexican Americans (ARMSA) as a measure of acculturation and calculated acculturation scores in a one-dimensional manner where scores ranged from one (Very Mexican) to five (Very Anglicized). Total acculturation scores were found to correlate positively with EAT-26 scores. Chamarro and Flores-Oritz also found that second-generation Mexican American women (i.e., born in the United States to parents born in Mexico) as compared to first and later generation individuals showed the highest acculturation scores and highest scores on the EAT-26. They concluded that this group is at a particularly high risk for disordered eating. They stated, “It is not surprising that they would represent a worrisome profile when one ponders the strains inherent in being the “first born” to an immigrant family. This position may create special demands as the individual attempts to bridge two worlds” (p.127). The culture clash in this study was conceptualized as a clash in cultural standards of attractiveness. They stated,

If such women have adopted U.S. societal values about a thin body ideal, this is likely to clash and create perceived pressure from others, for example, older family members who are less acculturated and still espouse a measure of health that upholds heavier weight and a less restrictive appetite (p. 127-128).

Cachelin, Veisel, Barzegarnazari, and Striegel-Moore (2000) examined disordered eating behaviours in groups of Hispanic, Asian, Black, and White women and measured acculturation based on the following: English as a primary language, bilingualism and birth place. Based on responses to questions from the Eating Disorder Examination, participants were grouped into
‘probable eating disorder’ and ‘control’ groups. Body mass index was measured and controlled for. Acculturation was conceptualized one-dimensionally and findings showed that the probable eating disorder group was more acculturated than the control group. The authors of this study interpreted this finding to show that “perfecting one’s body to meet Western ideals may be a means of acculturating to societal values” (p.250). This study also showed similar levels of reported behavioural symptoms of bulimia nervosa, anorexia nervosa, and binge eating disorder across Hispanic, Asian, Black, and White participants.

In Ball and Kenardy’s (2002) study of acculturation and eating disorders in Australian women of various ethnic and minority backgrounds, number of years living in Australia was used a measure of acculturation status (with increased number of years living in Australia taken to signify greater acculturation levels). Findings showed significant positive correlations between number of years living in Australia and eating disorder symptoms (e.g., body weight dissatisfaction, dieting, and ‘disordered eating’). Body mass index was measured and controlled for in this study. Ball & Kenardy hypothesized that their “results may reflect increasing adherence to values of Australian society, concerning views that a slim body is desirable. The length of exposure to these values and practices may be directly related to degree of adherence to them” (p.213).

In summary, the majority of the studies in this section did not find a significant relationship between acculturation and disordered eating. The most commonly cited reason for this was that the sociocultural pressures for thinness have generalized cross-culturally putting individuals from various ethnic groups at equal risk of developing disordered eating. Only three of the previously reviewed studies in this section found that higher levels of acculturation were associated with higher levels of disordered eating. The most commonly cited reason for this positive association was that increased exposure to the thinness ideal via increased acculturation
to mainstream society increases risk of developing disordered eating. It is difficult to tell what these conflicting results indicate since the measures of acculturation used across these studies differed greatly. Another problem noted throughout this review was that although acculturation is a bi-dimensional process, many studies defined the concept in a one-dimensional manner.

**Eating disorders in relation to ethnic identity.** Cachelin, Phinney, Schug and Striegel-Moore (2006) defined ethnic identity as “the strength and security of one’s sense of self as an ethnic group member” (p. 343). Rogers Wood and Petrie (2010) investigated the relationships among body dissatisfaction, ethnic identity, and disordered eating in African American women. Ethnic identity was measured via the Multigroup Ethnic Identity Measure (Phinney, 1992), a measure of ethnic identity strength (higher scores signify stronger ethnic identity). The Beliefs About Attractiveness Scale –Revised (BAAR; Petrie, Rogers, Johnson, & Diehl, 1996 as cited in Rogers Wood & Petrie, 2010) was used to measure internalization of societal beauty ideals. The Body Shape Questionnaire, EAT-26, and BULIT-R were used to measure body- and eating-related concerns. Structural equation modeling was used to test the sociocultural model of eating disorders. Results showed that higher levels of ethnic identity were related to lower levels of internalization of U.S. societal ideals regarding attractiveness and beauty. Internalization of societal beauty ideals and body image concerns were related to higher levels of disordered eating. Rogers Wood and Petrie argued that these results show that ethnic identity indirectly influences disordered eating via internalization of societal beauty ideals where higher levels of ethnic identity have protective effects by decreasing internalization of thinness ideals and subsequent disordered eating. They hypothesized that higher ethnic identity may lead individuals to “pay less attention to the majority culture media and thus have little exposure to its messages about women and their bodies (Striegel-Moore & Cachelin, 2001)” (p. 148). They also hypothesized that African American who “identify more with African American culture
would be likely to hold values about themselves and their bodies that would serve to lessen the likelihood of adopting the general cultural value that a thin body is considered the beauty ideal” (p. 149). They stated that these women are likely to “appreciate and value a larger body size as the ideal” (p. 149).

Phan and Tylka (2006) also tested components of the sociocultural model for eating disorders in a group of East Asian Americans. They investigated the relationships among ethnic identity, internalization of thinness ideals and eating- and body-related concerns using structural equation modeling. The Multigroup Ethnic Identity Measure (MEIM) was used to assess ethnic identity, The internalization subscale of the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-I; Heinberg, Thompson, & Stormer, 1995 as cited in Phan & Tylka, 2006) was used to measure women’s internalization of society’s emphasis on appearance in general and thinness in particular. Eating- and body-related concerns were measured via the Body Shape Questionnaire-Revised-10 (BSQ-R-10; Mazzeao, 1999 as cited in Phan & Tylka, 2006) and the EAT-26. In their model, Ethnic identity did not predict internalization of the thin ideal, body preoccupation, or disordered eating. They reported that ethnic identity only influences internalization of the thin ideal and body preoccupation through its association with self-esteem. However, since this latter association was weak, they concluded that ethnic identity does not have a significant impact, directly or indirectly, on Asian American women’s body preoccupation and eating disorder symptoms. Regression analyses showed that ethnic identity moderated the relationship between pressure for thinness and body preoccupation. For women high on ethnic identity, pressure for thinness and body preoccupation were strongly related; whereas for women low on ethnic identity, there was only a moderate relationship between these variables. This contradicts the notion that higher levels of ethnic identity are protective because they buffer against the internalization of Western cultural pressures for thinness. Higher
levels of ethnic identity in this study strengthened the relationship between internalization of thinness and body preoccupation.

In an attempt to make sense of the conflicting findings linking ethnic identity to disordered eating, Henrickson, Crowther and Harrington (2010) examined the moderating role of expectancies about eating and thinness in a group of African American women. This work was based on the theory that women with higher levels of ethnic identity have accepted their culture’s concept of beauty; and therefore, accept their own body as attractive. However, “women who are experiencing identity conflict may struggle between a desire to accept their own body and attempts to achieve the Eurocentric thinness ideal” (p. 88). Henrickson et al. hypothesized that in order to accept the Eurocentric thinness ideal, women must reject their own culture’s beauty ideal, which in turn leads to body dissatisfaction and maladaptive eating attitudes. These authors hypothesized that African American women experiencing a conflicted ethnic identity would be conflicted around issues of attractiveness and beauty. They further hypothesized that these women would be more likely to experience disordered eating if they strongly endorsed expectancies about the reinforcing functions of eating and thinness particularly with respect to managing negative affect.

Henrickson et al. (2010) administered the Multigroup Ethnic Identity Measure (MEIM) to measure ethnic identity. Instead of computing a total score on the MEIM, these researchers utilized three of the subscales that make up the measure: First, Ethnic Identity Search, which assess the developmental process of exploring the meaning of one’s ethnicity and sense of self as a group member. Higher scores on Ethnic identity Search indicate an achieved ethnic identity whereas lower scores indicate that the identity search process is still in progress. Second, Affirmation, Belonging, and Commitment, which assess degree of ethnic pride, positive feelings about one’s group, contentment with group membership, and attachment to that group. Third,
Other-Group Orientation, which assesses attitudes about and orientation towards other ethnic groups (often implying identification with the dominant culture). The EAT was used to measure disordered eating and two additional measures were used to assess expectancies about the reinforcing functions of eating and thinness: the Thinness and Restricting Expectancy Inventory (TREI, Hohlstein et al., 1998 as cited in Henrickson et al., 2010), which assess expectancies that thinness and dieting lead to overgeneralized life-improvement; and the Eating Expectancy Inventory (EEI, Holstein et al., 1998 as cited in Henrickson et al., 2010), which measures reinforcing effects of eating as a way to manage negative affect, as pleasure/reward, as leading to feelings of loss of control, as enhancing cognitive competence, and as alleviating boredom.

Results of Henrickson et al.’s (2010) study revealed that expectations that eating will manage affect and that thinness and restricting will lead to overgeneralized life-improvement significantly moderated the Ethnic Identity Search – disordered eating relationship and the Affirmation, Belonging, and Commitment – disordered eating relationship. In both these cases, higher levels of ethnic identity (less conflict, more positive affect) attenuated the relationship between reinforcing functions of eating/thinness and disordered eating. This was viewed as evidence supporting the idea that high ethnic identity is protective. In addition, this finding supported the idea that “during periods of conflict and confusion in identity development, women may struggle to fit their conceptualizations of beauty into a Eurocentric ideal” (p. 91).

Expectations about the reinforcing functions of eating/thinness also moderated the relationship between Other-Group Orientation and disordered eating, but in the opposite direction. At higher levels of Other-Group Orientation, the relationship between reinforcing expectations of eating/thinness and disordered eating was strengthened. This was viewed as evidence supporting the idea that identification with the dominant culture is a risk factor for the development of
eating pathology. Body mass index was measured and controlled for in Henrickson et al.’s study.

In summary, two of the above reviewed studies found that high ethnic identity (strength and security of oneself as an ethnic group member) levels are protective against the development of disordered eating and body preoccupation. The protective role of strong ethnic identity was hypothesized to operate via decreased susceptibility to the thinness ideal. One study revealed an opposite finding – that higher levels of ethnic identity were related to increased risk of eating and body related difficulties. In terms of internalization of the thinness ideal, one study found that increased ethnic identity is protective against internalization of the thin ideal, whereas another study showed that it is related to increased risk of internalization. Thus, although the same measure of ethnic identity was used across these studies, their results are inconsistent with one another and do not adequately clarify the relationship between ethnic identity and disordered eating.

*Eating disorders in relation to both acculturation and ethnic identity.* Cachelin et al., (2006) administered a two dimensional acculturation scale, the Acculturation Scale for Mexican Americans-II (ARSMA-II; Cuellar, Arnold, & Maldonado, 1995), along with the Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992) to groups of Mexican American women with and without eating disorder diagnoses. These authors conceptualized acculturation bidimensionally in that orientation to Anglo culture could be measured separately from orientation to Mexican culture. The ARSMA-II measures aspects of acculturation that include language use and preference, ethnic identity and classification, cultural heritage, ethnic behaviours, and ethnic interaction in relation to both Mexican culture and Anglo culture. Two subscales make up this questionnaire: the Mexican Orientation Subscale (MOS) and the Anglo Orientation Subscale (AOS). In this study, The MEIM was used to measure ethnic identity. Findings showed that
among the Mexican Orientation Scale, Anglo Orientation Scale, and Multigroup Ethnic Identity Measure, only the AOS significantly differentiated between the groups of participants diagnosed with eating disorders and the control group. Higher levels of Anglo orientation increased the probability of having an eating disorder above and beyond the other variables by a multiplicative factor of 2.02. That is, Mexican orientation and ethnic identity did not differentiate between Mexican American women with and without eating disorders; but for every one-point increase in Anglo-orientation, the chances of having an eating disorder doubled. Also, a correlational analysis among all eating disorders and the Anglo orientation, Mexican orientation, and ethnic identity showed very few significant correlations. Specifically, ethnic identity scores were negatively associated with vomiting frequency and positively associated with degree of distress regarding binge eating and Mexican orientation scores were positively associated with degree of distress regarding binge eating. The authors interpreted their findings to indicate that eating disorder status is not associated with the degree of attachment to one’s culture of origin; rather, it is associated with attachment to the dominant Western culture. They explained that “Mexican culture does not have the same emphasis on body image as American Culture” (p. 344) and further stated that “Mexican American women who are Anglo oriented may experience heightened sociocultural pressures toward thinness because of their increased exposure to and adoption of European American beauty ideals” (p. 344) They concluded that “the attitudinal and behavioural changes in acculturation may be influenced more by what one adopts in a new culture rather than by what one holds from the original culture” (p. 344).

Lake, Staiger, and Glowinski (2000) compared a group of Australian born students with a group of Hong Kong born students living in Australia on a series of eating disorder and ethnic identity measures. The Chinese group was split into two groups: ‘Chinese ethnic identity’ and ‘Western acculturized’ based on their responses to items on the Ethnic Identity Scale (EIS;
Rosenthal & Feldman, 1992 as cited in Lake et al. 2000) where weak ethnic identity was equated with assimilation with the host society (i.e., Western acculturized) and strong ethnic identity was equated with rejection of the dominant society (i.e., Chinese ethnic identity). In this study no differences in eating pathology between the Chinese and Australian students was found. However, scores on the Eating Attitude Test (EAT) were significantly higher for the ‘traditional Hong Kong-born’ participants than the ‘acculturized Hong Kong-born’ participants. In comparison to the Australian born participants, ‘acculturized Hong Kong-born’ participants scored significantly lower on the EAT and ‘traditional Hong Kong-born’ participants showed no differences in EAT scores. These authors indicated that their findings support the “culture clash argument” of disordered eating in that females of Asian origin experience intrafamilial conflict presumably due to cultural conflicts in female gender-role expectations; which in turn, lead to greater influence of western cultural values related to thinness and disordered eating. They also stated that “Hong Kong born subjects who are influenced by Western values have been less affected by Western attitudes toward eating and body image than those who were more traditional with respect to their Chinese identity” (p.87)

In an attempt to differentiate among the effects of Anglo orientation, Mexican orientation, and ethnic identity on disordered eating, Bettendorf and Fischer (2009) conducted a series of regression analyses to examine potential moderating effects of Mexican orientation and ethnic identity on the relationship between acculturation to mainstream society and disordered eating. Acculturation was measured via the Acculturation Rating Scale for Mexican Americans –II (ARMSA-II) which assessed acculturation along two dimensions: Mexican orientation and Anglo Orientation (using two separate subscales). Ethnic identity was measured using the Multigroup Ethnic Identity Measure-Revised (Phinney, 1992) which is a 12-item scale that measures three aspects of ethnic identity: positive ethnic attitudes and a sense of belonging,
ethnic identity achievement, and ethnic behaviours and practices. Higher scores on this measure indicate stronger ethnic identity. The Body Dissatisfaction subscale of the Eating Disorder Inventory (EDI-BD; Garner, Olmsted, & Polivy, 1983 as cited in Bettendorf and Fischer, 2009), the EAT-26 (Garner, Olmsted, Bohr, & Garfinkel, 1982) and the Bulimia Test-Revised (BULIT-R; Thelen, Farmer, Wonderlich, & Smith, 1991) were administered to measure eating and body-related concerns.

Bettendorf and Fischer (2009) conducted a principal components analysis of the items comprising the EDI-BD, EAT-26, and BULIT-R in order to examine underlying dimensions of Mexican American women’s concerns in this area (rather than assume similarity to the Caucasian groups on which these measures were developed). Three factors were extracted: First, Control Concerns reflected behaviours and concerns about losing control and the need to control one’s body size and shape with items originating from both the EAT-26 and the BULIT-R. Second, Restricted Eating reflected restricting the kind and amount of food consumed with items originating from both the EAT-26 and the BULIT-R. Third, Body Dissatisfaction reflecting dissatisfaction with the size and shape of one’s body with most items originating from the EDI-BD. These factor scores were used in subsequent analyses.

Findings of Bettendorf and Fischer’s (2009) study showed that ethnic identity moderated the relationship between acculturation and Restricted Eating. At lower levels of ethnic identity, acculturation to mainstream U.S. society significantly predicted higher Restricted Eating; whereas, at higher levels of ethnic identity, acculturation to mainstream U.S. society significantly predicted lower Restricted Eating. This moderating relationship between ethnic identity and acculturation was not found for Control Concerns or Body Dissatisfaction. The authors indicated that this provides mixed evidence for their “speculation that ethnic identity may be protective in that group membership is emphasized more than one’s physical
appearance” (p. 438). Mexican orientation did not moderate the relationship between Anglo Orientation (i.e., acculturation in this study) and any of the measures of eating and body concerns. The authors speculated that the reason for the lack of moderating effects for Mexican cultural orientation may be that “simply living in a society in which messages and images of thinness are profoundly pervasive may be sufficient to produce body concerns, regardless of Mexican cultural orientation” (p. 438).

Stein, Corte and Ronis (2010) examined eating and body-concerns in a group of Mexican American females. They administered the Multigroup Ethnic Identity Measure (Phinney, 1992) as a measure of ethnic identity and used generation as a proxy measure for acculturation (with later generation individuals assumed to be more acculturated). They found that generational distance was significantly related to increased body dissatisfaction and found that increased ethnic identity was significantly related to decreased binge eating. Body mass index was measured and controlled for in Stein et al.’s (2010) study.

In summary, these studies which included both measures of ethnic identity and acculturation (or equated these concepts as in the case of Lake et al. (2000)) were not consistent in their findings. In one study ethnic identity was unrelated to eating disorder symptoms, in another it was related to increased eating disorder symptoms and in two others it was related to decreased eating disorder symptoms (directly and as a moderator). Thus, the role of strong ethnic identity as protective factor or as a contributor to increased risk of disordered eating remains unclear. In terms of acculturation, increased acculturation to the mainstream culture was related to disordered eating and body dissatisfaction in two studies. In the third study, ethnic identity moderated the relationship between acculturation and eating disorder symptoms (Bettendorf & Fischer, 2009).
Note that throughout this paper, the term bicultural stress and conflict will be used to refer to experiences of acculturative stress and cultural conflict that result from living simultaneously in two different cultural environments. This will be expanded upon in later sections.

Gordon, Sitnikov, Castro and Holm-Denoma (2010) examined the relationships among eating disorder symptoms and acculturation in groups of White, Latina, and Black women in the United States. Acculturation was measured using the Stephenson Multigroup Acculturation Scale (SMAS; Stephenson, 2000 as cited in Gordon et al., 2010) which is comprised of two subscales: Ethnic Society Immersion and Dominant Society Immersion. In an attempt to understand the conflicting findings relating acculturation to eating disorders, Gordon et al. (2010) investigated the possibility that the difficulties associated with the acculturation process (‘acculturative stress’) may be more relevant to disordered eating than the broader construct of acculturation. Acculturative stress was said to occur “when an individual tries to fit in with a culture that is different than their culture of origin” (p. 136) which the authors indicated could “lead to maladaptive coping behaviours such as unhealthy weight regulation” (p.136). Thus, in this study, the Societal, Attitudinal, Familial, and Environmental acculturative stress scale (SAFE; Padilla, Wagatsuma, & Lindholm, 1985 as cited in Gordon et al., 2010) was used to measure acculturative stress in social, attitudinal, familial, and environmental contexts as well as perceived discrimination toward one’s ethnic group. When reviewing the very few other studies that exist in this area, the concept of ‘cultural conflict’ was equated with acculturative stress. Results showed no relationship between acculturation and disordered eating as measured by various subscales of the Eating Disorder Inventory. Higher levels of acculturative stress, however, were significantly positively related to higher levels of drive for thinness among Hispanic women and to higher levels of bulimic symptoms in Black women. The authors
speculated that “acculturative stress, rather than acculturation, may be most related to eating disorder symptoms” (p.141). They further hypothesized that drive for thinness and bulimic behaviours may “serve as maladaptive coping strategies that are used in an attempt to fit into the mainstream through attainment of the thin ideal” (p. 141).

Perez, Voelz, Pettit and Joiner (2002) also examined the role of acculturative stress in predicting bulimic symptoms in Caucasian, Hispanic and Black women in the United States. The Societal, Attitudinal, Familial, and Environmental acculturative stress scale was used to measure acculturative stress. Eating disorder symptoms were measured using the Eating Disorder Inventory (EDI; Garner, Olmsted, & Polivy, 1983 as cited in Perez et al., 2002). Results showed that acculturative stress significantly moderated the relationship between body dissatisfaction and bulimic symptoms in Hispanic and Black women (which were grouped together in a ‘non-White’ group in this study). At higher levels of acculturative stress, body dissatisfaction significantly predicated bulimic symptoms; whereas at lower levels of acculturative stress the relationship between body dissatisfaction and bulimic symptoms was not significant. The explanation put forth for this significant finding was based on a “diathesis-stress prediction that, for minority women, body dissatisfaction may serve as a risk for bulimic symptoms only or particularly when combined with acculturative stress” (Perez et al., 2002, p. 445).

Reddy and Crowther (2007) investigated the relationships among acculturation, cultural conflict and body image and eating attitudes of a group of South Asian women living in the United States. The Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA; Suinn, Rickard-Figueroa, Lew, & Vigil, 1987 as cited in Reddy & Crowther, 2007) was used to measure acculturation one-dimensionally that yields scores between 1 (Asian-identified) and 5 (Western-identified). The Cultural Values Conflict Scale (CVCA; Inman, Ladany, Constantine,
& Morano, 2001) was used to assess “cultural clash” in the form of conflicts experienced by women mediating between South Asian and Western cultures. The EAT, Body Esteem Scale (BES: developed by Franzoi & Shield, 1984 as cited in Reddy & Crowther, 2007), and Ideal-Body Internalization Scale – Revised (IBIS-R: developed by Stice, 2001 as cited in Reddy & Crowther, 2007) were used to measure eating- and body-related concerns. Interestingly, thin-ideal internalization was not significantly related to any of the body- and eating-concern measures. Acculturation was also unrelated to any of the eating- and body-related concern measures. However, cultural conflict was related to decreased body esteem, increased maladaptive eating attitudes, increased acculturation and decreased thin-idealization. The authors noted that “conflict about their roles as women in both Eastern and Western ties appears to have implications in the development of body dissatisfaction and maladaptive eating attitudes” (p. 51). Body mass index was measured and controlled for in Reddy and Crowther’s (2007) study.

In summary, these studies that examined the relationships between bicultural stress and conflict and disordered eating revealed consistent results. Higher levels of acculturative stress and cultural conflict are both related to increased eating disorder symptoms. Acculturation alone was unrelated to eating disorder symptoms in these studies.

Overall, this review of the literature revealed inconsistent findings among eating disorder symptoms and acculturation and ethnic identity. Inconsistent theoretical links among these variables were also revealed. For instance some studies indicated that acculturation into a Western value system that values thinness is a risk factor for disordered eating and others indicated that lower levels of acculturation increased the risk for eating disorder symptoms via a culture clash hypothesis. Strong ethnic identity was at times said to be protective as it was thought to decrease the influence of the thinness ideal, whereas other times strong ethnic
identity was said to cause increased eating disorder symptoms via a culture clash hypothesis. Bicultural stress and conflict variables (i.e., acculturative stress and cultural conflict) were the only variables that were consistently positively related to disordered eating. Ethnic identity may play an important moderating role between acculturation and eating disorder symptomatology. Hispanics, African Americans, East Asians, South Asians, and Caucasian women were included in the above reviewed studies. No studies of acculturation, ethnic identity, or bicultural stress and conflict in relation to disordered eating were found using samples of Arab women. The currently study will fill this gap in the literature. What follows is a review of studies conducted more generally in the area of disordered eating in the Arab population.

**Eating disorders in Arab women.** Prior to the 1980’s, psychiatric literature revealed that eating disorders were very rarely found among Arabs (El-Sarrag, 1968; Okasha et al., 1977). Arabic culture was thought to be protective against the development of eating disorders because: a degree of plumpness in women was considered attractive; thinness was generally considered socially undesirable; and because food was noted to play a central role in Arabic culture, (Hamadi, 1960; El-Sarrag, 1968). However, in the early eighties, Nasser (1986) investigated the prevalence of disordered eating in Arab women living in Cairo and in London and found that eating disorders did exist in both these groups of women. A review of this study as well as other studies conducted with Arab women around the world will be presented next.

Nasser (1986) recruited matched samples of Arab university students in Cairo and Arab university students in London and administered the EAT, a survey measure of eating disorder symptoms. She also administered the Eating Interview to establish eating disorder diagnosis (the entire London sample was interviewed, but only high scores on the EAT were interviewed in Cairo). Nasser found that 12% of the Egyptian group and 22% of the Arab group in London exceeded the EAT cut-off indicating serious concerns regarding food and body weight. She
found six cases of Bulimia Nervosa in the London-Arab group, but did not find any cases of
Bulimia Nervosa in the Egyptian group. These findings reveal that eating disorders do occur in
non-Western Arab societies. Nasser’s study implicitly examined the effects of exposure to
Western culture on eating disorder symptoms and it was hypothesized that the results
demonstrated the side effects of rapid socioeconomic changes that had occurred in Egypt at that
time. Nasser indicated that the influx of Western clothes in small sizes along with new concepts
of beauty and femininity increasingly transmitted via the television were possible contributors.
However, at the same time, Nasser noted that a contradictory wave of religious fundamentalism
was in operation in Egypt which she indicated could lead to conflict which may have also been a
contributor. Regarding the group differences noted between the Egypt and London group,
Nasser noted that the major difference between the two groups was their level of Westernization
where “London Arab students were similar to European students in dress and social behaviour”
where the Cairo group was “more traditional in their dress.” She also put forth another
hypothesis that the London students may have become more achievement-oriented and
competitive due to their increased Westernization which may have influenced their development
of disordered eating.

To expand on these findings study, Nasser (1994) conducted another study with a group
of 15-year-old Egyptian girls in Egypt in which the Arabic version of the EAT along with The
Eating Interview were used to examine eating disorder symptoms and establish diagnoses. She
found that 11.4% her sample exceeded EAT cut-offs. This percentage is similar to what she
found in her earlier study and Nasser reported that at that time, this percentage was higher than
what was found in similar studies conducted in Britain with the White British population. All
the girls who met EAT cut-offs engaged in repeated dieting and were well aware of dieting and
slimming products on the market. They stated that they desired to be thinner and more
attractive, and engaged in dieting behaviours to meet these goals. Out of this sample, 1.2% exhibited sufficient symptoms to warrant a diagnosis of Bulimia Nervosa; while 3.4% exhibited symptoms that warranted a diagnosis of Eating Disorder Not Otherwise Specified (e.g. concern about weight, dieting, use of laxatives/slimming pills). Again this study confirmed that disordered eating was indeed present in Egyptian society with similar rates to those in Western cultures. Nasser hypothesized that this Egyptians may be increasingly susceptible to developing these difficulties based on “the easy accessibility of western values to the Egyptian public through the media and the readiness to assimilate them” (p. 28) Nasser stated,

More important, however, is the dilemma that confronts women in Egyptian society. They are torn between values of autonomy and a desire for achievement promoted by long-established feminism (Marsot 1978; Sullivan 1987) and the old values that are coming back into the society with the revival of Islamic fundamentalism (Williams 1980). (p. 28)

Ford et al., (1990) examined body shape preferences of Arab women attending the American University of Cairo in Egypt and showed that Arab female students experienced a significant discrepancy between their ideal body shape and their current body shape, perceiving their own bodies to be significantly larger than their ideal. They also reported a significant discrepancy between what body shape they thought men found most attractive and their own body shape, again perceiving their own bodies as significantly larger than what men would like. This study showed “a clear preference for thinness in the Arabic culture” (p. 501). Ford et al. noted that the participants in their study were exposed to Western influences by means of enrolment in an American school in Egypt which they believed might explain these findings. They also implicated changing socio-cultural pressures as possible contributors to internalization of the thinness ideal. They hypothesized that this culture change occurred in their
participants via exposure to a new culture through the Westernizing influence of their academic institution which differs from the socio-cultural norms of the country in general.

Dolan and Ford (1991) examined rates of binge eating and restrictive eating in a group of Arab women attending the American University in Cairo and showed that episodes of binge eating were “extremely common amongst Egyptian students at an English-speaking University” (p.351) and showed that binge eating was positively correlated with dietary restraint in these students. In an attempt to explain why these results were found in a group of females who come from a culture that traditionally does not emphasise weight, shape, and thinness, Dolan and Ford hypothesized that “influences from both the educational setting and from students having lived in Western countries may contribute to the concern with dieting and weight shown by this group” (p. 352).

Abou-Saleh et al. (1998) presented five case studies of Anorexia Nervosa found in the Arab world – three female and two male patients. Two of these patients were United Arab Emirate (UEA) nationals, two were Omanis, and one was Sudanese. Four of these five cases presented with fear of fatness and one did not. Reports of the case of ABF, a 23-year-old Omani woman, indicated that she experienced anxiety around weight gain and wanted to avoid looking like her mother who “looked like a barrel” (Abou-Saleh, Younis, & Karim, 1998, p.208). On the other hand, GM, an 18-year-old female UAE national who lived in the desert did not express a fear of fatness even though she was severely underweight and refused to eat. In the hospital GM continued to refuse to eat, pulled out her nasogastric tube, and vomited after forced feeding. GM lived in the desert with very little, if any, Western influences.

Abou-Saleh et al. (1998) noted that ‘the cult of thinness” may have contributed to the illness in four of these cases, but the fifth case in which fear of fatness was absent was noted to indicate that eating disorders are not strictly culture-bound syndromes. In line with DiNicola’s
(1990b) theory of eating disorders as culture-reactive syndromes that occur in response to culture change, Abou-Saleh et al. noted that, due to increased oil revenues, the Gulf region had undergone rapid and extensive economic and sociocultural modernization which may have increased the risk for eating pathology. Moreover, intergenerational conflicts, which were implicated as important contributors to disordered eating, were noted in two of the cases reported. For instance, ABF reported experiencing problems with her family because they were pressuring her to get married.

Eating behaviours have also been studied in Saudi Arabia (Al-Subaie, 2000). The Arabic version of the Eating Disorder Inventory (EDI) was administered to 1179 schoolgirls in Saudi Arabia who were between grades 7-12. Al-Subaie found that 15.9% of this population scored higher than 14 on the Drive for Thinness subscale of the EDI, a score that that suggests high drive for thinness. Al-Subaie analyzed the individual Drive for Thinness items and found that 52.1% of the sample agreed to the statement “I’m terrified of gaining weight”; 43.3% agreed to the statement “I feel extremely guilty after overeating”; and 41% agreed to the statement “I am preoccupied with the desire to be thinner”. In addition to assessing eating behaviours and attitudes, Al-Subaie gathered information about the girls’ contact with the West, their ability to speak a Western language, their social habits, and their family structure. He found that the ability to speak a Western language or having lived in a Western country were significant factors that differentiated high and low scorers on the Drive for Thinness (higher rates of Drive for Thinness in groups those that spoke a Western language and/or lived in a Western country). Higher parental education, better parental occupations, and smaller family size were also positively associated with Drive for Thinness scores. Al-Subaie stated that these results can be explained by “westernization” (p. 245). He stated that the results “reflect some effects of the
culture change and the recent increase in affluence on the perception of body shape and eating attitudes among Saudi schoolgirls” (p. 246).

A case study of an Arab woman in Israel with disordered eating was presented by Jaworowski, Drabkin, and Rozenman (2002). Ms. A was an affluent 24-year old married Arab woman who was admitted to the hospital with ocular complaints and an undiagnosed eating disorder. She had a 13-year history of progressive dietary restriction that was initiated after her sister commented on her body and said she was fat and should lose some weight. Ms. A also reported frustration with her husband because he forbade her to continue her education. When admitted to the hospital, Ms. A was on a fluid diet drinking only almond drinks. She had experienced significant weight loss; however, she was not considered underweight. The authors discovered that Ms. A’s ocular problems were caused by a vitamin A deficiency caused by malnutrition and they diagnosed her with an Eating Disorder Not Otherwise Specified. Authors of this study implicated the “impact of Western body shape ideals and simultaneous role conflict between traditional and modern images of the female role” (p. 507).

Another study was conducted in Oman with a sample of Omani and non-Omani teenagers (both male and female) living in Oman (Al-Adawi et al., 2002). The researchers administered Arabic versions of the EAT-40 and the Bulimic Investigatory Test (BITE) to these teens and found that 33% of Omani teenagers (29.9% of the females and 36.4% of the males) scored higher than 30 on the EAT-40 indicating the presence of disordered eating patterns. When compared to their foreign counterparts (non-Omani teens of American, British and Western European descent residing with their parents who were working in Oman), Omani teens scored significantly higher on the EAT-40 and were 4.9 times more likely than their foreign counterparts to show disordered eating patterns as measured by the EAT-40. Omani teenagers also scored higher on the BITE than their foreign counterparts, but this difference was not
significant. Al-Adawi et al. found that 12.3% of Omani teens (13.7% of the females and 10.9% of the males) scored above 25 on the BITE indicating the presence of bulimic eating pathology. Al-Adawi et al. also administered the EAT-40 and the BITE to a sample of Omani adults and found that 2% scored above 30 on the EAT-40 and 1% scored above 25 on the BITE. Cultural transition was implicated as a possible reason for increased eating pathology in Omani teenagers. Due to increased oil revenues, Al-Adawi et al. noted that Omani society developed and modernized at a very rapid pace. These changes brought with them disruption of interpersonal relationships, a class system based on wealth (which replaced tribal identification), emergence of individualism, and a replacement of the value of the family with the value of education. As such, Oman was described as a “rapidly acculturating country where individuals are thought to juggle between two opposing cultural influences precipitated by economic and sociocultural transition (El-Islam, 1983)” (p. 1128). This theoretical reasoning is in line with DiNicola’s theory of eating disorders as culture-change syndromes.

Similarly high rates of food and weight preoccupation were found in group of university students in Lebanon (Afifi-Soweid et al., 2002). Out of a group of 954 students aged 16-20 entering university, 37.7% were trying to lose weight (24.5% of the males and 52.8% of the females); 12.3% agreed to the item “I feel extremely guilty after eating” (4.7% of the males and 20.9% of the females); 21.4% agreed with the item “I am preoccupied with a desire to be thinner” (10.5% of the males and 34% of the females); and 3.7% agreed with the item “I have gone on eating binges where I felt that I could not stop” (3% of the males and 7% of the females). There were significant gender differences on almost all of the items measuring disordered thoughts and behaviours with females exhibiting higher levels of pathology. The authors hypothesized that the emergence of eating pathology in Lebanon “may be reflecting the trend in the Middle East towards westernization” (p.55).
An additional study was conducted with 495 adolescent girls in the United Arab Emirates (Eapen et al., 2006). The Arabic version of the EAT-40 was administered to this group of adolescent girls between the ages of 13 and 18 attending government schools. They also answered questions related to their socioeconomic status, parental education and occupation, exposure to Western lifestyle (e.g., contact with Western countries and exposure to Western television), family history of mental health problems including weight-related problems, and knowledge of another person who was dieting. The researchers found that 23.4% of this group of UAE girls scored above the cut-off of 30 on the EAT-40, an indication of abnormal eating attitudes and behaviours. They also found that 66% of the total sample and 78% of those who scored above 30 on the EAT-40 reported that their ideal weight was less than their current weight. Among the high scorers on the EAT-40, 68% reported having a family member with weight-related problems (obesity) and reported that they wanted to avoid becoming like this family member. High scores on the EAT-40 were significantly associated with a drive for thinness, knowledge of someone who is trying to lose weight, having a family member with weight-related and/or mental health problems, and watching Western television programs. Thus, the role of mass media and other western influences were more directly assessed in this study and showed positive relations to disordered eating. Moreover, similar to their Western counterparts, Arab girls reported that modelling, internalization of the thin ideal, and having an ideal weight that is less than one’s current weight were all factors that were related to disordered eating.

Eapen et al. (2006) had a second part to their study where they clinically interviewed 100 girls including 50 from the girls in the first part of the study who scored above 30 on the EAT-40. Out of this sample, 5% engaged in stress-related overeating and 45% dieted. Among the high scorers (N=50), 78% expressed body dissatisfaction and were attempting to lose weight via
food restriction, avoidance of certain foods, excessive exercise, and/or use of manual self-induced vomiting. None of these participants used drugs to induce vomiting. Among the high scorers, 32% reported binging two or more times per week and 50% reported less frequent binging. Twenty-four of the high scorers showed subclinical symptoms of an eating disorder and only two people met full DSM-IV criteria for an eating disorder (one met Anorexia Nervosa criteria and one met Bulimia Nervosa criteria). Eapen et al. noted that the UAE was a rapidly developing and acculturating country due to the discovery of oil and the arrival expatriates from around the world. In line with DiNicola’s theory of eating disorders as culture reactive syndromes, they implicated cultural transition, social change, and globalization as important contributors to the development of eating pathology in UAE population. More specifically, Eapen et al. stated,

Similar to other rapidly developing and rapidly acculturating countries, the population of the UAE, especially the younger generation seems to be caught between the opposing cultural influences of traditionality vs. liberalisation. The resulting psychosocial stress coupled with the effects of modernization and westernization is increasing the risk of adjustment difficulties in general and eating disorders in particular, where disordered eating can be viewed as a coping mechanism (p. 54).

Three additional studies were conducted with Arab schoolgirls living in Israel (Latzer, Tzischinsky, & Azaiza, 2007; Latzer, Tzischinsky, & Geraisy, 2007; Latzer, Azaiza, & Tzischinsky, 2009). Latzer, Tzischinsky, and Geraisy described Israel as “a modern and Western-oriented society” (p. 628), but indicated that “Arab culture in Israel still maintains more traditional social norms and customs” (p.628). They stated, “Significant differences are evident in their basic values and attitudes towards femininity and sex roles, marriage and divorce, family relations, and child rearing (Cnaan, 1987 in Barak & Golan, 2000; Barakat,
Latzer, Tzischinsky, and Geraisy administered the Arabic version of the EDI-2 to a group of 663 Arab adolescents in Israel between the ages of 12-18 and found that 20.4% of them scored higher than 14 on the EDI-DT indicating the presence of a high drive for thinness. In this study, the researchers compared the Arab girls to a sample of Jewish girls living in Israel and found that the Arab group scored significantly higher than the Jewish girls on EDI-2 Drive for Thinness subscale. However, both groups had similar scores on the Bulimia and Body Dissatisfaction subscales. All EDI sub-scale scores were in the normal range. Latzer et al. hypothesized that their findings may reflect “a conflicting value system” such that “the Arabs in Israel are confronted with a fundamental conflict between two very different systems of values and perspectives: Western and traditional (Haj-Yahia, 1997)” (p. 634).

In the second study conducted in Israel, Latzer, Tzischinsky, and Azaiza (2007) administered the Arabic version of the EDI-2 to another group of Arab schoolgirls between the ages of 12 and 18. They found that 13% of this sample scored above 14 on the Arabic version of the EDI-DT. The increased drive for thinness noted in Arabs in Israel was attributed a “phenomenon of the culture clash occurring in Arab communities in Israel between the traditional-oriented Arab culture and its modern industrial surroundings” (p. 267) (referring to Israel as a “Western-oriented and modern industrialized country” (p.267).

In the third study conducted in Israel by Latzer et al. (2009), the Arabic version of the EAT-26 was administered to 1141 Arab schoolgirls between the ages of 12 and 18 of Muslim, Christian, and Druze religious backgrounds. Results showed that 25% of this sample scored above 20 on the EAT-26 indicated high levels of disordered eating thoughts and behaviours. No differences among the religious subgroups were found. Again, the socio-cultural changes that are taking place in Israel were proposed to play a role in increased disordered eating in Arab girls. In all three studies by Latzer and colleagues, the way in which these socio-cultural
changes and the resultant culture clash may have led to increased drive for thinness and disordered eating was not outlined or tested.

Thomas, Khan, and Abdulrahman (2010) investigated that prevalence and correlates of disordered eating in a sample of 228 females recruited from a Zayed University in the United Arab Emirates, a university that required students to be proficient in the English language as a pre-requisite for entry. Each participant completed the English version of the EAT-26 as a measure of disordered eating and the Figure Rating Scale (FRS: Scale developed by Sunkard, Sorensen, & Schulsinger, 1983 as cited in Thomas et al., 2010) as a measure of body image dissatisfaction. Findings indicated that 24.6 % of participants score above the cut-off of 20 on the EAT-26 and 74.8 % reported body image dissatisfaction via significant discrepancies in their reported ideal and current body size. Increased body dissatisfaction was significantly associated with increased disordered eating in this sample. The positive relationship between disordered eating and thinner ideal preferences and body dissatisfaction are consistent with previous North American and European findings. Thomas et al. (2010) stated that their findings support Gordon’s (2001) theory implicating rapid economic change, development of a consumer culture, conflicted female gender roles, and lifestyle changes associated with obesity as four main socio-demographic factors that characterize societies where eating disorders are emerging. Thomas et al. described the ways in which the UAE society fits these socio-demographic characteristics and hypothesized that these may have been contributors to the development of disordered eating in this population.

In a recent nationally representative study of the Canadian population, Arab-Canadian women showed significantly higher levels of eating disorder symptoms than Euro-Canadian women (Piran & Gadalla, 2007a). No other studies of eating disorders in the Arab population conducted in Canada, United States, or Europe were found.
In summary, disordered eating attitudes and behaviours are present in diverse groups of Arab females. It is interesting to note that all but two studies reviewed were conducted in the Middle East; and as such, the ‘Westernization’ hypothesis was often used to explain the presence of disordered eating in this population. In other cases, in line with DiNicola’s theory of eating disorders as culture change syndromes, rapidly shifting economic and social conditions were also hypothesized to play a role. Moreover, conflicts resulting from mediating two different cultures (liberal vs. traditional) were proposed as potential contributors to the development of eating difficulties in this population. However, similar to other studies presented earlier, these hypotheses were not empirically tested but were presented as theoretical possibilities to explain results after studies were completed. Another interesting finding revealed from this review is that Arab females, even though many lived in the Middle East, displayed disordered eating behaviours and attitudes that are similar to Western presentations of these disorders.

Studies of disordered eating in Arab women in North America are almost non-existent. In addition, as noted earlier, no studies directly examined the relationships among experiences of bicultural stress/conflict in relation to eating disturbances in this population. Taking these facts into consideration in combination with evidence of higher rates of disordered eating symptoms in Arab-Canadians (Piran & Gadalla, 2007a), it becomes obvious that a large gap exists in the literature which needs to be addressed. This is the main goal of the current study: to examine eating- and body-related disturbances in Arab-Canadian women as they relate to acculturation, ethnic identity, and experiences of bicultural stress/conflict. In order to do so, these terms need to be adequately differentiated from one another. A review of ethnic identity, acculturation, and bicultural stress/conflict will be presented next in part two of this literature review.
Part 2: Ethnic Identity, Acculturation and Bicultural Stress and Conflict

**Ethnic identity.**

*Smith ethnic identity development model.* According to Smith (1989) and Maslow (1962), sound mental health necessitates a sense of belonging. Smith stated, “A person without a sense of peoplehood, without a sense of belonging, is a candidate for mental breakdown” (Smith, 1989, p. 278). For both racial and ethnic minority and majority individuals, race and ethnicity play important roles in facilitating and/or impeding this sense of belonging.

Smith (1989) defined race as “differential concentrations of gene frequencies responsible for traits that are usually confined to physical manifestations, such as skin color or hair form” (p. 277). She indicated that although race has little intrinsic relationship with cultural patterns and institutions, it creates a common ground for peoplehood through a shared historical context. Smith noted that race plays an important role in self-definition via identification as a member of a particular group of people rather than through the physical features themselves that differentiate racial groups. She emphasized that it is not race per se that is psychologically central, but “it is the sense of ethnic belonging that is psychologically important for people” (Smith, 1989, p.277). Ethnic group membership includes race, but is certainly not limited to this factor. Smith defined an ethnic group as

“a reference group called upon by people who share a common history and culture, who may be identifiable because they share similar physical features and values and who, through the process of interacting with each other and establishing boundaries with others, identify themselves as being a member of that group” (Smith, 1991, p. 181).

Ethnic groups may be differentiated by their family structures; gender roles; beliefs and value systems; language use; ethnic signs and symbols; and shared reference group perspectives. Individuals are born into ethnic groups, and thus, ethnic group membership is not chosen. The
Development of emotional and symbolic ties to the group is not predetermined by birth, but is dependent on life experience. The concept of ethnic identity captures this subjective psychological relationship one develops with his/her ethnic group. Smith (1991) defined ethnic identity as “the sum total of group members’ feelings about those values, symbols, and common histories that identify them as a distinct group” (p.182). Development of ethnic identity is an essential human process that provides a sense of belonging and historical continuity to an individual. Erikson (1950) referred to the importance of ethnic identity while discussing his final stage of human development and stated, “For only an identity safely anchored in the ‘patrimony’ of a cultural identity can produce a workable psychosocial equilibrium” (p.412 as sited by Smith 1991).

The Smith Ethnic Identity Development Model presents a theory of ethnic identity development in the context of majority/minority status relationships (Smith, 1989, 1991). Majority status was defined as membership in the dominant social group in a society, while minority status was defined as lack of membership in that dominant group. Minority status was defined as statistical (the smaller group in a society), political (the group who holds less power), social, and psychological (individual perceptions of being part of a minority that is outside of the dominant social structure).

The development of an ethnic identity is part of the broader process of personality development and refers to “a process of coming to terms with one’s ethnic-racial membership group as a salient reference group” (Smith, 1991, p. 182). The concept of a reference group is a social psychological concept referring to an individual’s psychological relatedness to a group (whether or not it is based on ethnicity). A reference group impacts the viewpoints, thoughts, and behaviours of the individuals who participate or wish to participate in it. Viewpoints, thoughts, feelings, and behaviours are adjusted to be in-line with group norms. The definition of
a reference group is three pronged: First, it can refer to the group to which an individual compares his/her status or self-image; second, it can refer to the group whose acceptance is sought; and third, it can refer to the group that anchors an individual’s perceptual field (Shibutani, 1955 as cited in Smith 1991).

Whether or not an ethnic group is used as a reference group varies across individuals born into that ethnic group. Identification with an ethnic group is influenced by: one’s position in the social structure; one’s abilities; one’s personal interactions with various groups and individuals; the valence (positive or negative) of these personal interactions and the resultant attraction (or repulsion) from those individuals or groups; and one’s willingness to structure behaviour according to group norms (Smith, 1991). Birth into an ethnic identity heritage provides a person with a basic membership to that ethnic reference group. Through socialization, the ethnic identification process changes across individuals. Smith (1991) stated that “The ethnic identity process can be measured by observing the degree to which an individual’s ethnic membership group is a salient reference group and by observing the extent to which the individual uses the signs, symbols, and language of the culture associated with the ethnic membership group” (Smith, 1991, p. 182). “The range of identification may vary from little or no ethnic identification with one’s ethnic membership group to high identification with the group in question, depending on one’s degree of acculturation or assimilation into the broad society” (Smith, 1991).

One of the core tenets of this model states that ethnic identity development is influenced by one’s majority or minority status in society. According to Smith’s theory, individuals who are in the numerical majority and are in powerful positions are likely to develop a positive ethnic identity because this identity is continually validated and reinforced positively by both the individual’s membership group and the larger structure of society in which this group is
embedded. In contrast, individuals who are in powerless positions and are part of numerical minorities are at increased risk for developing negative ethnic identity because such validation and positive reinforcement is lacking for many ethnic minority groups.

A sense of ethnic belonging is said to be associated with healthier psychological outcomes because it anchors an individual’s relatedness to other human beings in society. To follow from this point, Smith proposed that acceptance of one’s ethnic membership group as a positive reference group leads to positive self-esteem, whereas rejection of one’s ethnic membership group leads to self-estrangement and maladaptive psychological behaviour. Smith indicated that negative ethnic identity is characterised by the use of ethnic majority standards to judge oneself.

Minority group members interact with both minority and majority groups and as such they must personally negotiate the meaning of membership in each group. Descriptions of one’s ethnic identity by either the minority or the majority groups can be experienced as ego syntonic or ego dystonic. When such descriptions resonate with the individual’s experiences and beliefs, they are experienced as ego syntonic, but when they do not fit with one’s experiences and beliefs and are thus perceived as inaccurate they are experienced as ego dystonic. Smith (1991) indicated that “ego dystonic ethnic identity situations tend to lead to identity conflict and if left untreated (for example by the lack of social support or counter-conditioning by one’s ethnic group), to eventual maladaptive behaviour” (p. 183) Smith further indicated that individuals who are rooted in their ethnic culture tend to be more “ethnically hardy” and resilient in their ethnic identity development than those who are more marginal with respect to their ethnic culture. Smith proposed that such rootedness in one’s ethnic culture can protect an individual from developing a vulnerable identity in the first place and can assist in stabilizing the individual if and when his or her identity becomes vulnerable.
For ethnic minorities living in societies where a number of ethnic groups co-exist, ethnic minority status is often a source of stress due to inner and outer group boundaries that are developed (Smith, 1991). Smith indicated that in such societies the majority group develops a social distance scale for interacting with each minority group. In the United States, Smith indicated that race is the primary factor that determines social distance of majority group members with minority group members (darker skin is associated with more social distance). Smith further indicated that in a pluralistic society, members of both majority and minority groups tend to experience conflicts in identification with each other. These conflicts were said to be experienced differently based on minority/majority status as well as social and economic positions held in society.

Common types of conflicts experienced in pluralistic societies by majority and minority groups were summarized by Smith (1991) as follows: ethnic awareness versus ethnic unawareness; ethnic self-identification versus non-ethnic self-identification; self-hatred versus self-acceptance; self-acceptance versus other-group acceptance; self-rejection versus other group acceptance; other group rejection versus self-rejection; ethnic identity integration versus ethnic identity fragmentation or diffusion; and ethnocentricism versus allocentricism.

Smith (1991) indicated that in response to ethnic identity conflicts an individual tends to go through four phases: Phase 1 – Preoccupation With Self or Preservation of Ethnic Self Identity: the minority individual is faced with a situation in which his or her inferior status is highlighted. In an attempt to preserve the ethnic self, defence mechanisms such as denial, projection, or displacement are utilized. Alternatively, the individual may identify with the aggressor; Phase 2 - Preoccupation With the Ethnic Conflict and With the Salient Ethnic Outer Boundary Group: the minority individual seeks refuge in his or her community and experiences strong feelings of anger; Phase 3 – Resolution of Conflict: the individual attempts to resolve the
ethnic identity conflict by assimilating, integrating, segregating, accommodating, or becoming a marginal person; Phase 4 – Integration: the person integrates the ethnic contact experience with other ethnic contact experiences. If the most recent experience was negative, an individual will attempt to balance this experience with the totality of his or her other ethnic experiences.

Healthy resolutions of ethnic identity conflicts allow an individual to move forward, face various ethnic contact experiences, and integrate them into an ethnic identity. On the other hand, unhealthy resolutions of ethnic identity conflicts (e.g., getting ‘stuck’ in a conflict situation by endlessly ruminating about it) will lead to a vulnerable ethnic identity and may predispose a person to ethnic identity confusion and diffusion (Smith, 1991).

Race and ethnicity both play important roles in ethnic identity development. Smith (1991) indicated that which of these two takes precedence depends on (a) racial homogeneity or heterogeneity of the society of interest and (b) the context of the ethnic contact situation. Specifically, in racially heterogeneous societies ethnicity tends to be the primary determiner of status and as such plays a primary role in ethnic identity development. However, in ethnically pluralistic societies (e.g., United States of America), “race is the major determiner of one’s status and ethnic identity development proceeds first along racial lines and second along ethnic lines” (Smith, 1991, p.187). Smith stated that even though ethnicity may take on a superordinate identity for an individual, depending on the context of the ethnic contact situation, it may be considered secondary to race. For example, in the United States of America where race is the major determinant of one’s status, an Italian American first identifies as a White American and second as an Italian American. Smith (1991) stated, “Race interacts with ethnicity, so that at any given point, either factor may assume pre-potency. The factor of race becomes submerged when ethnicity is the more salient factor and vice versa” (p. 187). For example, in an ethnic contact situation between a White individual and Black individual, race tends to take precedence;
whereas contact between two White individuals or two Black individuals, ethnic group membership becomes primary.

**Isajiw’s ethnic identity retention model.** Isajiw (1990) conceptualized ethnic identity as a social-psychological phenomenon that forms as a result of membership in an ethnic group. Isajiw stated,

“[An] ethnic group is a phenomenon that gives rise to (1) social organization, an objective phenomenon that provides the structure for the ethnic community, and (2) identity, a subjective phenomenon that gives to individuals a sense of belonging and to the community a sense of oneness and historical meaning.” (p. 35)

Isajiw (1990) defined ethnic identity as “a manner in which persons, on account of their ethnic origin, locate themselves psychologically in relation to one or more social systems, and in which they perceive others as locating them in relation to those systems” (p.35). Ethnic origin, according to Isajiw (1990), is determined by either being socialized into an ethnic group and/or having ancestors, real or symbolic, that have been members of that group.

Finding one’s place in a community and society is not only a psychological phenomenon, but also a social phenomenon in that internal psychological states can be expressed as external behaviours that may be shared by others. Isajiw (1990) stated that “individuals locate themselves in one or another community internally by states of mind and feelings, such as self-definitions or feelings of closeness, and externally by behaviour appropriate to these states of mind and feelings.” Thus, two dimensions of ethnic identity were developed: the internal and external.

Internal aspects of ethnic identity refer to the subjective aspects of ethnic identity and include images, ideas, attitudes, and feelings. Three dimensions of internal ethnic identity were identified by Isajiw (1990): the cognitive, moral, and affective. The cognitive dimension
includes self-images and images of one’s group; knowledge of one’s group’s heritage and its historical past; and knowledge of the group’s values. The moral dimension refers to feelings of group obligation, that is, the importance the individual attaches to his or her ethnic group and the implications this group has for the individual’s behaviour. The affective dimension refers to feelings of attachment to the group which include: feelings of security, sympathy, and associative preference for ethnic group members; and feelings of security and comfort with the cultural patterns of one’s ethnic group. External aspects of ethnic identity refer to observable behaviour such as practicing ethnic rituals and traditions; speaking the ethnic language; having friends from the same ethnic background; and participating in ethnic activities.

Isajiw (1990) indicated that although there is a connection between the internal, subjective aspects of ethnic identity and the external, objective behaviours, they should not be assumed to be dependent on each other. Instead, these two dimensions of ethnic identity vary independently in that one may show higher levels of external ethnic identity than internal ethnic identity and vice versa.

Isajiw (1990) proposed that one way that ethnic minority groups incorporate themselves into the broader Canadian society is by developing a new Canadian identity. He outlined the relationship between developing a new Canadian identity and retaining one’s ethnic identity as follows:

“Many members of ethnic groups, while becoming ‘Canadian’ in their identity in some respects, also remain ‘ethnic’ in some other respects. They do not necessarily define the latter to be contradictory to the former. Because identity is multi-sided, it is not a zero-sum phenomenon; Canadian identity is not necessarily gained to the extent that ethnic identity is lost, and vice versa, ethnic identity is not necessarily retained to the extent that Canadian identity is not acquired” (p.34)
Isajiw’s (1990) concept of ethnic identity retention refers to the extent to which ethnic group characteristics (e.g., beliefs, behaviours, feelings, etc.) are present among second or later generation ethnic group members. A basic assumption of his theory is that retention of ethnic identity from one generation to the next is not uniform in that some components may be retained while others may be lost. For example, a second generation individual may have working knowledge of the ethnic language, but may not have feelings of attachment to the ethnic group. Alternatively, this person may experience a strong attachment to his or her ethnic group and endorse its belief and value systems, but not speak the language or participate in any ethnic activities and traditions. Based on different variations of internal and external aspects of ethnic identity, Isajiw presented four types of ethnic identity that were in no way empirically tested or validated: (a) ritualistic ethnic identity (e.g., high participation in traditional activities combined with low feelings of group obligation); (b) ideological ethnic identity (e.g., low levels of participation in traditional activities combined with high feelings of group obligation); (c) rebelling ethnic identity (e.g., negative images of one’s ethnic group combined with high awareness of one’s ancestry); and (d) ethnic rediscovery identity (e.g., positive images of one’s ethnic group combined with the practice of only some traditional activities that are carefully selected).

Isajiw (1990) cited evidence in support of the Hansen Hypothesis that states that second generation ethnic group members remove themselves or rebel against their ethnic groups, while the third generation returns to it. Significant differences in ethnic identity based on generation were found in Isajiw’s study and in his review of previous studies.

**Sodowsky’s multidimensional ethnic identity retention model.** In Sodowsky, Kwann, and Pannu’s (1995) ethnic identity retention model, they first proposed three main assumptions about ethnic identity: First, in a multicultural society where various racial and ethnic groups co-
exist, an individual is likely to be aware of his or her ethnic identity; Second, one’s ethnic identity is likely to be heightened when one is simultaneously confronted with two cultural groups that espouse different values (the dominant group and one’s ethnic group). Sodowsky et al. stated that in this conflicting situation, “one needs to locate one’s position, both socially and psychologically, with reference to the two social systems” (p. 135). Third, while the ethnic person is attempting to locate him- or her-self socially and psychologically with respect to the dominant group, he or she is simultaneously attempting to locate him or herself socially and psychologically with respect to an ethnic group. In addition, while negotiating this process, the ethnic person notes how members of the dominant group and members of his or her own ethnic group and members of other ethnic groups are locating him or her with respect to their groups.

Thus, the process of ethnic identity development is complex and moderated by numerous factors (Sodowsky et al., 1995): the ethnic person’s acceptance or rejection of the dominant culture; the dominant group members acceptance or rejection of the ethnic person; the ethnic group members acceptance or rejection of the ethnic person; and the ethnic person’s experience of acceptance and belonging to his or her ethnic group. This process of ethnic identity development was described as a continuous process of assessing “fit” between the self and various social groups in one’s environment (Spencer & Markstrom-Adams, 1990, p.292 as cited in Sodowsky et al.).

Sodowsky et al. (1995) noted that ethnic individuals in a pluralistic society receive conflicting messages about their ethnic identification from both the dominant group and their ethnic reference group, reinforcing their identification at times and rejecting it at others. They stated that often ethnic minority group members prefer to identify with the majority group, but that such identification can be invalidated by the dominant group (for example due to discrimination or prejudice) and/or by one’s ethnic group who may interpret such identification
as having “sold out” (p. 136). As noted earlier, Smith (1991) considers identification with one’s ethnic group as a crucial prerequisite for good mental health. Sodowsky et al. do not agree with this perspective and indicated that a sense of belonging to one’s ethnic group is not necessarily crucial; rather, a clear sense of belonging to any ethnic group is what is imperative and contributes to good mental health. They indicated that later generation ethnic individuals (e.g., third- or fourth-generation immigrants) may have a White identity or an ethnic identity different from their original ethnic group that grounds them in a society that is different from their own (e.g., Canadian White society). Sodowsky et al. indicated that such individuals could be psychologically healthy because they experience a sense of belonging and are not marginalized. Thus, according to Sodowsky et al., having an ethnic sense of belonging and fitting in somewhere is the key to preventing social alienation, self-estrangement, and the psychological problems that accompany such isolation.

Sodowsky et al. (1995) proposed a multidimensional model of ethnic identity development that was adopted from Berry’s (1980) bi-dimensional model of acculturation. They outlined two dimensions that could be used to measure ethnic identity: the degree of adoption of “Whiteness” and the degree of adaptation of one’s “Asianness.” Sodowsky et al. were particularly interested in studying ethnic identity in Asians, but the term Asian may be replaced by any other ethnic group of interest. According to this model, the combination of answers to two questions results in four different forms of ethnic identity. These two basic ethnic identity questions in which ethnic minority persons are confronted with are: “Is my ethnic identity of value and to be retained?” and “Is the White identity of U.S. dominant identity to be sought?” (p.143). The “yes” and “no” response combinations to these two questions results in one of four ethnic identity orientations: (1) bicultural identity, where the individual identifies with both groups; (2) strong ethnic identity, where the individual values retaining one’s ethnic identity
over White identity; (3) strong U.S. White identity, which suggests that the individual is not
ethnically identified; and (4) identity of cultural marginalization, which characterizes
individuals who do not identify with either cultural group (Sodowsky et al., 1995).

Sodowsky et al. (1995) further developed this model and proposed that these four ethnic
identity orientations vary over time and across situations and as such are non-linear in nature.
That is, one’s ethnic identity orientation can change over time and across situations. Moreover,
there is no linear progression from a strong ethnic identity to biculturalism and then to a White
orientation, rather an individual moves back and forth among the four orientations.

Sodowsky et al.’s example of a first-generation Asian Indian woman outlines how the
concepts of this theory may apply in ‘real life’. In three different contexts, this woman endorses
three different ethnic identity orientations. First, considering her interpersonal interactions with
her ethnic group (i.e., Asian Indians) and the dominant ethnic group (White Americans), she has
a bicultural identity. She interacts with a social network of Asian Indian families in her city,
feels a commitment to assist new Asian Indian immigrants in adjusting to their new country,
visits her hometown in India every few years, and recently has sponsored her parent’s
immigration from India who are now living in her home. In this way she answers “yes” to the
first question “Is my ethnic identity of value and to be retained?” This same woman also
received her education in the United States, is an academic in an American University, works
closely with her White colleagues, and is a concerned citizen of her White middle-class
neighbourhood. As such, she also answers “yes” to the second question “Is the White identity
of U.S. dominant identity to be sought?” The combination of these two “yes” responses
indicates a bicultural identity with respect to her interpersonal interactions.

Second, considering her reactions to marriage and religion, this woman endorses a strong
ethnic identity orientation. Although, she immigrated to the United States at a young age,
obtained a university education in English and literature, socialized with her American White peers, and obtained professional employment in the United States, she chose to have an arranged marriage. Her parents and family chose a “suitable” bridegroom for her from India whom she had never met prior to her wedding day (Sodowsky et al., 1995, p.143). She subsequently had a traditional Hindu wedding in India. With regard to her religious beliefs, she continues to identify as a Hindu and has not sought conversion to Christianity even though she has lived in the United States for a number of years. She meets regularly with a Hindu relations group, observes Hinduism, and organizes religious ceremonies in her city. As such she answers “yes” to the first ethnic identity question and “no” to the second in the areas of marriage and religion indicating a strong ethnic identity in these areas.

Finally, with respect to gender role, this woman feels culturally marginal and does not feel a sense of belonging to either ethnic group. She does not agree with her Indian values that endorse female subservience to males and to authority figures. She also does not agree with the political agenda of U.S. White feminists and feels that they do not understand and are not sensitive to racial and cultural issues of ethnic women. As such she answers “no” to both ethnic identity questions rendering her culturally marginal in the area of gender role.

The example of this Asian woman was presented to demonstrate the complexity of the ethnic identity process and to show that ethnic identity is multidimensional (i.e., along both “ethnic” and “White” dimensions). Sodowsky et al. (1995) indicated that the non-linear ethnic identity process of the Asian Indian woman detailed earlier does not indicate instability or lability. Instead, it is an adaptive process that ethnic individuals develop through the exposure to two social groups (ethnic and White) which both impact the formation of one’s ethnic identity. Although, Sodowsky et al. normalized the presence of multiple ethnic identity orientations across various cultural and social contexts, they indicated that one ethnic identity orientation
may indeed be dominant (but not exclusive) during a particular period of a person’s life. They further stated that “... having to negotiate two ethnic identity orientations can make an ethnic individual’s life complex and difficult because many options are available for the individual, and these put pressures on him or her to make decisions” (p. 145). Nonetheless, they indicated that such a complex cross-cultural life can be “exciting, rejuvenating, and productive” (p. 145).

Relevant to the process of ethnic identity development is the process of enculturation (Berry, 1993). Enculturation refers to the ethnic socialization process “by which developing individuals acquire (either by generalized learning in a particular cultural milieu, or as a result of specific instruction and training) the host of cultural and psychological qualities necessary to function as a member of one’s group” (p. 272, Berry, 1993). Berry’s (1993) model of cultural transmission distinguishes three ways in which culture is transmitted: First, through the learning and influence of one’s parents (vertical transmission); second, through peer interactions (horizontal transmission); and third, through interactions with adults and institutions in one’s society or community (oblique transmission). Sodowsky and Lai (1997) indicated that one’s ethnic culture is likely to be transmitted vertically by one’s parents whereas the dominant society’s culture is learned horizontally through peer interactions and obliquely through in interactions with White adults (e.g., teachers) and institutions (e.g., public school, mass media, national holidays). Roysircar-Sodowsky and Maestas (2000) conceptualized this simultaneous socialization into the dominant culture and into one’s original ethnic culture as a dual socialization process that can get complicated when the cultural systems significantly differ. They further indicated that minority groups undergoing such dual socialization are often thoroughly acculturated to mainstream dominant culture since the horizontal and oblique transmission forces are widespread and difficult to avoid. However, enculturation into one’s original culture is not as easily accomplished.
Phinney’s ethnic identity development model. Phinney (1993) developed a three-stage model of ethnic identity development based on the ego identity research conducted by Erikson (1964, 1968) and Marcia (1966, 1980). According to Erikson, identity is “a subjective sense of wholeness that is achieved during adolescence through the experience of an identity crisis” (Phinney, 1993, p. 62). Exploration of one’s abilities, interests, and options after facing this identity crisis leads to a commitment of personal identity (i.e., a secure identity) that guides future action. However, “those who fail to achieve a secure identity are faced with identity confusion, a lack of clarity about who they are and what their role is in life” (Phinney, 1993, p. 62).

Extending Erikson’s theoretical work, Marcia (1966, 1980) identified four ego-identity statuses based on the presence or absence of exploration of identity issues and commitment to a personal identity. Individuals who have not experienced an identity crisis nor made a commitment were said to be in identity diffusion; those who have not explored identity issues but have made a premature commitment based on the opinions and attitudes of others were said to be in identity foreclosure; those who are in the process of exploring identity issues but have not made a commitment were said to be in moratorium; and those who have explored in depth and arrived at a secure sense of self to which they are committed were said to be identity-achieved. Phinney noted that diffusion and foreclosure are less mature forms of identity and indicated that an achieved identity is the most mature and optimum outcome of the identity process. In order to reach identity achievement, she noted that a period of exploration (or moratorium) is necessary. As such, she conceptualized Marcia’s stages as progressive from the lower stages of diffusion and foreclosure through moratorium and ending in an achieved identity.
Phinney’s (1993) three-stage model of ethnic identity is theoretically based on Erikson’s writings, is in-line with Marcia’s ego-identity statuses and is applicable across ethnic groups. Stage one of this model, ‘Unexamined Ethnic Identity,’ is characterized by the lack of exploration of ethnicity. Phinney stated that in this stage “minority subjects initially accept the values and attitudes of the majority culture, including often, internalized negative views of their own group” (Phinney, 1993, p. 66). According to Phinney, individuals remain in this first stage until they encounter a situation that initiates an identity search (e.g., an experience of dissonance between one’s cultural values and the cultural values espoused by the dominant society). Once this identity search process has been ignited, Phinney indicated that the individual moves into stage two, ‘Ethnic Identity Search/Moratorium,’ where the individual is immersed in experimentation and inquiry (e.g., via reading, taking course work, talking with friends and relatives, and trying out different lifestyles). The optimum outcome of this search process is entrance into Phinney’s third stage, Ethnic Identity Achievement, “characterized by a clear, confident sense of one’s own ethnicity” (p.71). An individual in this last stage is said to have resolved identity uncertainties and accepted his/her own ethnic identity which involves “a firm commitment to one’s ethnicity based on an exploration that has led to a clear understanding of ethnicity” (Phinney & Ong, 2007, p. 275).

Phinney (2006) noted that the processes of exploration and commitment are at their peak during adolescence and early adulthood, and indicated that by adulthood most people have a developed a secure sense of themselves as ethnic group members. However, Phinney (2006) also emphasised that the processing of ethnic identity related material continues throughout adulthood. In relation to psychological adjustment, Phinney indicated that the last stage, Ethnic Identity Achievement, is the most adaptive stage. She stated that individuals who “have explored ethnicity as a factor in their lives and are clear about the meaning of their ethnicity are
likely to show better overall adjustment than those who have not considered their ethnicity or are unclear about it” (p. 75). Phinney also indicated that “a complete understanding of the role of ethnicity in adjustment requires a consideration, as well, of the orientation of minority-group members toward the majority culture” (p. 75). It is within the acculturation realm that orientations to the majority culture are assessed. Phinney stated that the most adaptive outcome is achieved when the individual “has both a secure ethnic identity and also a positive orientation toward mainstream culture” (p. 75).

Thus, taking into consideration the process of ethnic identity achievement discussed above and after reviewing the ethnic identity literature, Phinney and Ong (2007) indicated that ethnic identity is a multidimensional construct made up of eight main components: (1) ethnic identification, which refers to how an ethnic person chooses to label his or her group membership. Phinney (1992) emphasized the importance of differentiating between the label an individual uses to self-identify and parental ethnic heritage because parental ethnic heritage provides information about objective group membership whereas labels used to self-identify provide information about ethnic identity; (2) a sense of belonging, which refers to the commitment, emotional attachment, and personal investment an individual feels towards his or her ethnic group; (3) exploration, which refers to the seeking of information and experiences in relation to one’s ethnic identity (e.g., reading, learning cultural practices, attending cultural events, etc.); (4) ethnic behavioural involvement, which refers to participation in ethnic activities and cultural practices (ethnic language usage, friendship patterns, religious affiliation, entertainment, media, food preferences, exogamy, and traditional customs); (5) ethnic evaluation and in-group attitudes, which refers to the positive or negative feelings and attitudes associated with one’s ethnic group membership (e.g., ethnic pride versus hatred towards one’s ethnic group); (6) ethnic values and beliefs, which refers to espousing and internalizing beliefs
and values associated with one’s ethnic group; (7) importance and salience of group membership; and (8) ethnic identity in relation to national identity, which captures the idea that minority group ethnic identity needs to be considered in the context of the dominant culture and its associated national identity (e.g. Canadian identity).

The most commonly used measure of ethnic identity in empirical investigations of psychological adjustment is Phinney’s (1992) Multigroup Ethnic Identity Measure (MEIM). This is a fourteen item measure that has three subscales: Affirmation and Belonging; Ethnic Identity Achievement; and Ethnic Behaviours. The Affirmation and Belonging subscale assesses ethnic pride, feeling good about one’s ethnic background, and being happy with one’s ethnic group membership. The Ethnic Identity Achievement subscale assesses the process of ethnic identity achievement which was conceptualized as:

A continuous variable, ranging from the lack of exploration and commitment (low interest and awareness and little clarity concerning one’s ethnicity) to evidence of both exploration and commitment, reflecting efforts to learn more about one’s background a clear understanding of the role of ethnicity for oneself (Phinney, 1992, p. 161).

The Ethnic Behaviours and Practices subscale assesses involvement in social activities with members of one’s group and participation in cultural traditions. Additional questions not included in these subscales that inquire about self-identification, ethnicity, and parental ethnicity are also included in this measure.

A separate subscale, Other-Group Orientation, was included not as a measure of ethnicity, but as an independent adjunct to assess attitudes towards and interactions with ethnic groups other than one’s own ethnic group. Phinney indicated that ethnic identity development occurs in the context of interacting with a dominant cultural group that is different from ones
culture of origin which prompted the development of this scale. As indicated earlier, attitudes and interactions with the dominant group are better addressed in the acculturation realm.

**Ethnic identity versus acculturation.** Definitions of acculturation were provided in part one of this literature review and only relevant information to this discussion will be repeated here. The first definition of acculturation provided by Redfield et al. (1936) stated that acculturation is a “phenomena, which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original cultural patterns of either or both groups” (p.149). Traditionally, acculturation was viewed as a one-dimensional process that starts with strong identification with the culture of origin in the beginning and ends with assimilation to the new or host culture on the other. However, this one-dimensional view of acculturation received much criticism which has given way to the widely accepted view of acculturation as a process that occurs along two dimensions: the culture of origin and the host culture (Berry, 1980, 1993, 2003, 2005).

According to Berry’s model of acculturation, the essence of the acculturation task involve negotiating between: (a) how much one prefers to maintain one’s own heritage, culture, and identity and (b) how much one prefers to be in contact with and participate in the larger society made up of one or more different ethnocultural groups (Berry, 2005). These tasks make up the two dimensions of acculturation and can be assessed by asking two questions “Is my cultural identity of value and to be retained?” and “Are positive relations with the larger (dominant) society to be sought?” (Berry, 1980, p.13). Four acculturation strategies result from the different combinations of answers to these questions: Integration (yes, yes); assimilation (no, yes); separation (yes, no); and marginalization (no, no).

Changes in social networks, language acquisition and loss, and evolving cultural values are part of the acculturative change process. In previous studies, measurement of acculturation...
included assessment of dominant or preferred language (e.g., Abdollahi & Mann, 2001; Bhugra & Bhui, 2003); length of time living in a Western Society (e.g. Abdollahi & Mann, 2001); dress, food, and music preferences (e.g., Bhugra & Bhui, 2003); friendship preferences (e.g., Bhugra & Bhui, 2003), country of birth and parental country of birth (Gunewardene, Huon, & Zheng, 2001), and generational status (Ball & Kenardy, 2002). A content analysis of twenty-one acculturation measures showed that there are ten main areas that tend to be assessed in the acculturation literature: language use and preference, social affiliation, daily living habits, cultural traditions, communication style, cultural identity and pride, perceived prejudice and discrimination, generational status, family socialization, and cultural values (Zane & Mak, 2003). Components included in the acculturation domain that overlap with the ethnic identity domain are those assessing cultural identity and cultural pride.

Phinney (2003) indicated that change is central to the understanding of both ethnic identity and acculturation. She indicated that changes in both acculturation and ethnic identity are best conceptualized in a two-dimensional manner: (1) retention or identification with the ethnic, or original, culture; and (2) adaptation to or identification with a dominant, host, or “new” culture. She indicated that although theoretical conceptualization of change along these two dimensions for both these constructs have been widely written about, empirical studies continue to refer to individuals as “more” or “less” acculturated or as having “more” or “less” of an ethnic identity. Phinney emphasized that “changes in ethnic identity over time are accompanied by changes in identity relative to the dominant or host culture” (Phinney, 2003, p. 64) and stated that “simple linear models of change are just as inappropriate for ethnic identity as they are for acculturation” (Phinney, 2003, p. 64). Phinney (2003) acknowledged the difficulty in differentiating acculturation from ethnic identity stating:
Identifying and studying the relationship among aspects of acculturation and ethnic identity is not a straightforward process because of the differing views on exactly what constitutes each construct. Existing measures of the two reveal the confounding of the constructs, because the same items are often included in measures of each (p. 65).

Phinney (2003) indicated that “ethnic identity can be thought of as one aspect of the acculturation process that can be distinguished from other aspects by virtue of its focus on subjective feelings about one’s ethnicity” (p. 65). Precise components of ethnic identity that are subject to precise measurement that were identified in an earlier section include: (1) ethnic self-identification (the label used to identify one’s self ethnically); (2) the subjective sense of belonging to an ethnic group and feelings about ethnic group membership; and (3) level of ethnic identity development (i.e., “the extent to which their feelings and understandings about their group have been consciously examined and issues surrounding ethnicity have been resolved, leading to an achieved ethnic identity” (p. 65)).

Similarly, Roysircar-Sodowsky and Maestas (2000) suggested that “issues of ethnic identity tend to be affectively and cathectically related, whereas issues of acculturation tend to be behaviourally related” (p.146). Phinney and Ong (2007) also noted that “ethnic identity is an internal structure than can exist without behaviour.” (p. 272) Thus, it may be fruitful to distinguish ethnic identity from acculturation by viewing them along behavioural (acculturation) and affective (ethnic identity) dimensions.

Indeed, upon reviewing the extensive literature review on ethnic identity, Roysircar-Sodowsky and Maestas (2000), indicated that the behavioural manifestations of ethnic identity are independent and should be measured by a different construct. These authors suggested that acculturation measures need to assess the adaptations to mainstream culture in terms of behaviours such as language usage, cultural exposure, social behaviours, and relational acts;
whereas ethnic identity measures need to address the “affective/cathetic attachment that values connecting with one’s ethnic group members, beliefs in the importance of one’s ethnicity, and seeks to retain aspects of an ethnic cultural heritage that are relevant and functional in a given context” (p. 134). Phinney and Ong (2007) also suggested that measures of ethnic identity and ethnic behaviours be separated.

Examination of the items of widely used measures of acculturation (e.g., Mexican American Rating Scale for Mexican Americans-II (ARSMA-II; Cuellar et al., 1995) and ethnic identity (e.g., The Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992) reveal that items are generally separated in this manner with some overlap (e.g., few behavioural items are present in the ethnic identity measure and few identity items are present in the acculturation measure). This overlap is difficult to avoid as it is reflective of the inherent relatedness of the two constructs. In the next section, the concept of bicultural stress and conflict will be introduced and discussed as it relates to acculturation and ethnic identity.

**Bicultural stress and conflict.** Ethnic minority individuals living in a pluralistic society (e.g., multicultural Canadian society) are confronted with four major tasks: First, they must find their place in relation to the dominant culture; Second, they must decide if they want to retain their ethnic or cultural heritage and how they will do so; Third, they will cope with experiences of racism and discrimination due to their immigrant and/or minority status; and Fourth, they will experience acculturative stress that results from the previous three tasks (Roysircar-Sodowsky & Maestas, 2000). Roysircar-Sodowsky and Maestas (2000) defined acculturative stress as “a push-and-pull psychological phenomenon: One feels both the push to acculturate to the dominant society and the pull toward one’s ethnic group” (p. 134).

Acculturation stress is a common experience for both immigrants and Canadian-born second- and later-generation ethnic minorities. Immigrants experience acculturative stress as
they cope with the task of adjusting to a new cultural environment after having already been socialized in a different culture. Later generation ethnic minority individuals experience acculturative stress as a result of their bicultural socialization that requires them to negotiate between two different cultures: the home ethnic culture and the dominant White culture (Roysircar-Sodowsky & Maestas, 2000). In this study, acculturative stress and cultural conflicts (including ethnic identity-related conflicts) experienced as part of the bicultural socialization process will be referred to as bicultural stress and conflict.

The level of acculturation stress experienced by each individual is not constant. The acculturation process can be experienced on a continuum from an easy and relatively problem free experience on one end to a very difficult and conflict ridden experience on the other. Logically, higher levels of acculturative stress result when the acculturative process is more difficult and conflict ridden (Roysircar-Sodowsky & Maestas, 2000).

In part three of this literature review, Arab cultural values will be reviewed in detail. This review will reveal significant differences between Arab and Western cultures. For instance, in the Arab culture, family ties are extremely important, the social structure is hierarchical, there are significant gender-role differences, and respect and deference to individuals who are older and have higher social status is expected (Abu Laban, 1980; Al-Krenawi & Graham, 2000; Barakat, 1993, Hattar-Pollara & Meleis, 1995). In contrast, Western cultural values include an emphasis on individualism and autonomy; personal rights, freedom, and privileges; equal relationships, assertiveness, and self-expression (Sodowsky et al., 1994). Given these significant cultural differences, acculturation stress is a relevant issue for Arab Canadians negotiating two different cultural ‘worlds’.

Cultural alienation, cultural confusion, and cultural conflict are all types of bicultural conflict originally identified by Kiefer (1974) that can occur in the context of bicultural
socialization (Kiefer, 1974; Kwan & Sodowsky, 1997; Sodowsky & Lai, 1997). Roysircar-
Sodowsky and Maestas (2000) reviewed the definitions of these three types of identity conflicts:
Cultural alienation refers to “a sense of personal discontinuity that occurs across time and as a
result of disruption in cultural patterns. It is associated with a weak or poorly developed self-
image.” (p.140) Cultural confusion, “occurs as a result of being confronted with multiple norms
... and the inability to identify and associate with a definite norm within a given context”
(p.140). Cultural conflict, “occurs when one’s values and beliefs are perceived to be
incompatible with a given social interaction” (p.141).

Sodowsky and Lai (1997) classified bicultural conflicts along two-dimensions:
Intrapersonal and interpersonal. The intrapersonal dimension includes experiences of both
cultural stress and general stress. Intrapersonal cultural stresses include: Difficulties within the
self including identity crisis; a personal sense of inferiority attributed to membership in one’s
cultural group; lack of ethnic ego differentiation due to feelings of marginalization from one’s
cultural group and the dominant group; and feelings of anger and guilt toward one or both
cultural groups (Sodowsky & Lai, 1997). Such experiences of intrapersonal bicultural stress are
accompanied by general stress symptoms including affective symptoms (e.g., anxiety, sadness,
guilt, nervousness, and anger); behavioural symptoms (e.g., drinking, procrastination, suicidal
ideation, and violence); and psychosomatic symptoms (e.g., backaches, stomachaches, and
headaches).

The interpersonal dimension includes intercultural competence concerns which include
concern about social competence, academic and career competence, and cultural competence.
Social competence refers to comfort while interacting with a group of people, ability to be
assertive, ability to have close friends, and ability to develop friendships with members of one’s
own culture and the dominant culture. Career and academic competence refers to the ability to
concentrate, perform and make decisions; satisfaction with major, career or job; and certainty regarding the appropriateness of one’s major or career. Cultural competence refers to pride in one’s culture, perception of acceptance by the members of one’s own culture and the dominant culture, perception of worthiness of contributions to both cultures, and perception of adjustment to both cultures.

The Cultural Adjustment Difficulties Checklist (CADC) (Sodowsky & Lai, 1997) was developed as a measure of bicultural conflict and stress and assesses both the interpersonal and intrapersonal aspects discussed above. The Acculturative Distress subscale of the CADC was developed to assess the intrapersonal dimension and includes both cultural stress items and general stress items. The Intercultural Competence subscale of the CADC was developed to assess the interpersonal dimension.

Berry (1980) indicated that acculturation is a bidirectional process whereby an individual holds onto certain behaviours, values, and cultural practices of the culture of origin while selectively incorporating behaviours, values, and cultural practice of the dominant culture. Behavioural changes have been shown to occur more rapidly than changes in cultural values (e.g., Kim, Atkinson, & Yang, 1999). As indicated earlier, experiences of confusion with regards to conflicting cultural values of one’s culture of origin and the dominant culture represent a core aspect of ethnic identity conflict which can contribute to significant internal conflict and identity confusion. Inman et al. (2001) defined cultural value conflict as:

An experience of negative affect (e.g., guilt, anxiety) and cognitive contradictions that result from contending simultaneously with the values and behavioural expectations that are internalized from the culture of origin and the values and behavioural expectations that are imposed on the person from the new culture. (p. 18)
Inman et al. (2001) developed the Cultural Values Conflict Scale (CVCS) as a measure of conflictual experiences within the areas of family relationships, dating-premarital sexual relations, marriage, and sex-role expectations. These four areas were found to be central sources of conflict in South Asian American women. Part three of this review will reveal that these four areas similarly represent core areas of value conflict between the Arab culture and ‘Western’ culture. In the current study, bicultural stress and conflict will be measured by both the Cultural Values Conflict Scale and the Cultural Adjustment Difficulties Checklist.

**Ethnic identity and acculturation in Arabs.** The following account of a Palestinian-American Arab woman’s struggle with her identity was provided by Majaj (1994) and demonstrates the essence of the conflict and difficulties that may arise when forming a bicultural identity:

“...I am tired of being afraid to speak who I am: American and Palestinian, not merely half of one thing and half of the other, but both at once – and in that inexplicable melding that occurs when two cultures come together, not quite either, so that neither American nor Arab find themselves fully reflected in me, nor I in them” (Majaj, 1994, p. 67-68).

A review of the acculturation literature revealed very few studies of acculturation in Arabs. Studies that have been conducted with this population were conducted in the United States. From the few available studies, however, it is evident that difficulties mediating two worlds are relevant to this population. For instance, Meleis (1991) indicated that Arab-American women in California “live between two cultures” and are at risk for psychological and physical problems “because of the work and energy they expend in attempting to make sense of two sets of cultural patterns that are often opposites” (p. 337). Similarly, Al-Krenawi and Graham (2000) stated that “Arab immigrants to Western countries are known to experience divided loyalties
between the ways of the new country and those of the old and the dilemma of whether to reject or embrace assimilation, secularism, and Western education” (p.11).

Hattar-Pollara and Meleis (1995) conducted a qualitative study with Jordanian women in California which documented their lived experiences as Arab immigrants to the United States. These authors indicated that participants found “the sharp contrast between the traditional values governing their family life and the patterns of family life in the larger society” (p.531) were particularly challenging to adjust to and were perceived as threatening to their Arab ethnic identity. Participants also reported that the need for conformity in the Arab culture was perceived to be in sharp contrast with mainstream American ways of life. Generational conflicts between mothers and their children were also revealed due to conflicting cultural value systems found in the family home and in the dominant culture. For example one of their participants stated:

“When it comes to the behaviour of my children, I am tough. I have to be tough and make sure they know that we are different because, if I do not, who will? The environment of schools, the parties, and the daily interactions between boys and girls, especially teenagers, may influence our kids in ways that go against our culture. I and my husband always keep an eye on them.” (p. 529)

El-Islam (1983) noted that the types of intergenerational conflicts typically experienced in Arab households center around patterns of family relationships, methods of marriage, and the emancipation of women. Contributors to these conflicts included exposure to Western influences; adoption of more liberal values by the younger generation; parental attempts to direct their children in line with parental wishes rather than those of the children; and conflicts around rigidity/loosening of parental control.
Only two quantitative studies that conceptualized and measured Arab acculturation were found and both used Berry’s framework to do so. Semaan (2007) investigated acculturation patterns of Arabs in the United States (Ohio, Pennsylvania, Michigan, Arizona, California, Florida, Illinois, New York, New Mexico, and Texas) and found that 61% of her sample used the integration strategy; 28% percent used the assimilation strategy; 9% used the separation strategy; and 2% used the marginalization strategy. Azar (2008) also used Berry’s framework to investigate acculturation patterns of Arabs in California, but utilized different labels for the various acculturation strategies. Specifically, Azar found that 42% of his participants were ‘Arab Oriented to Approximately Balanced Bicultural’; 25% were ‘Slightly Anglo Oriented Bicultural’; 24% were ‘Arab Oriented’; and 4% were ‘Strongly Anglo Oriented’.

Some authors have argued that Christian Arabs are more successful in adapting to American society in comparison with Muslim Arabs (Amer & Hovey, 2007). One hypothesized reason for this was that Christians share the same religious beliefs as the dominant American society which decreases the number of differences that they must negotiate.

Findings of Faragallah, Schumm, and Webb’s (1997) study with a group of Arab American males showed that in comparison to Christian Arabs, Muslim Arabs faced more discrimination within American society, experienced less life satisfaction, and continued to retain cultural traditions that were highly linked with religious values. In Faragallah et al.’s study, age of immigration, length of residence in the United States, and time since previous visit to one’s homeland were factors associated with decreased adherence to traditional Arab cultural norms (e.g., gender-role adherence) and increased acculturation to dominant American society.

Meleis, Lipson, and Paul (1992) showed that time since immigration to the United States was positively correlated with perceived ethnic identity and with adoption of dominant
American cultural, social, and family values. In this study, adoption of American values was associated with psychological well being and morale.

The current study will contribute to the very sparse literature on acculturation, ethnic identity, and bicultural stress/conflict in Arabs. The last section of this review will provide information about Arabs in the Canadian context and will outline some of the core values that make up the Arab culture.
Part 3: The Arab Community in Canada

Brief history of Arabs in Canada. The following account of the history of Arab Canadians is based on data from the first in-depth study by Abu Laban in 1980 of the demographic and socio-cultural characteristics of Arab Canadians by the Multiculturalism Directorate of the Canadian government’s Department of the Secretary of State. This study comprehensively covered important themes related to immigration and settlement that included: Historical background, settlement patterns, population trends, religion, values, occupations and social class, the family, and language patterns among others. The results were based on data obtained from several sources including: official Government of Canada statistics, materials from the National Archives, historical documents from private individuals and organizations in the Arab-Canadian community, interviews with about 30 leaders of Arab-Canadian voluntary and religious organizations, informal interviews with Arab-Canadian senior citizens who were among the early immigrants, participant observation in the Arab-Canadian community and organizations, and a sample survey of Arab Canadians living in Toronto and Montreal. Only a brief summary of the findings of this study will be presented here.

Abu Laban (1980) defined Arab-Canadians as “… first generation Christian or Muslim immigrants and their offspring who originated, directly or indirectly, from any of the Arab states and whose roots are in the Arabic language and culture.” The term was applied to second and succeeding generation persons of Arab or mixed Arab and Canadian parentage, regardless of religious affiliation or ancestral country of origin.

The first Arab immigrant to Canada is reported to have arrived in 1882 from Lebanon. There are two significant periods of growth in the history of the Arab-Canadian community: The formative period between 1891 and 1911; and the post-war period starting in 1951. It is reported that the Arab ethnic group had established firm roots in Canada by 1901 when a total of 2000
Arabs from Syria called Canada home. In 1911, there were an estimated 7,000 people of Arab origin in Canada and virtually all came from Syria and what is now known as Lebanon. The rate of growth in the Arab community was slow between 1911 and 1951 due to restrictions in Canadian immigration policies in the early twentieth century, the effects of World War I, the depression of the 1930’s, and World War II which resulted in further restrictions on immigration to Canada from countries other than Britain and the United States. After World War II, the Canadian government liberalized its immigration policy which led to the admission of more immigrants from countries other than the United States and Western Europe. Thus, between 1946 and 1975 a total of 48,619 immigrants from Arab countries immigrated to Canada. In these post-war years, the national origins of Arab immigrants became more diverse and included immigrants from Egypt, Lebanon, Morocco, Syria, Jordan, Tunisia, Algeria, Saudi Arabia, Kuwait, Iraq, Libya, Sudan, Bahrain, Qatar, United Arab Emirates, Somalia, Mauretania, Yemen, and Oman. The size of the Arab community in Canada rose by 57% between 1951 and 1961 and by another 47% between 1961 and 1971. Historically, Arab immigrants first settled in Montreal and later in other large cities such as Toronto and Ottawa. Over time, however, geographical distribution of Arab immigrants became more evenly distributed throughout Canada.

Abu-Laban (1980) defined an ethnic group as a group that is distinguished on the basis of physical and/or cultural characteristics, including factors such as religion, language, and national origin. However, he noted that physical or racial characteristics do not provide a valid basis for determining Arab ethnicity because inhabitants of the Arab world are a group that originated from the intermarriage among migrants from the Arabian peninsula, indigenous residents of the Near East, Persians, Greeks, Romans, Byzantines, European Crusaders, and Turks (Abu-Laban, 1980). More specifically, Abu-Laban noted that Arab immigrants and their
offspring are physically indistinguishable from other Mediterranean or Caucasian immigrants and this makes it difficult to use physical or racial characteristics to determine Arab ethnicity.

Similarly, religion is not an adequate criterion for determining Arab ethnicity because Arabs identify with different religious faiths. A common misperception among Westerners is that Arabs and Muslims are one and the same. However, this is untrue, since a Muslim is not necessarily an Arab, nor is an Arab necessarily a Muslim. An Arab may be a Muslim or a Christian; and a Muslim may be an Arab, a Russian, a Chinese, an Indian, or a national of another country. Nearly all early Arab immigrants to Canada were Christians. After World War II, Muslim Arabs increasingly immigrated to Canada making up 30% of post war Arab immigrants. Arab Canadians identify as Christian (e.g., Maronites, Melkites, Syrian Orthodox, Protestants) or Muslim (Sunni, Shi’i, Druses).

In summary, Arab-Canadians are not distinguishable based on racial origin, religious background, or country of origin. However, they do share the Arabic language, similar myths and folklore, Arabic music, Arabic art forms, Arabic food, and similar customs and cultural ethos (Abu-Laban, 1980). Thus, there exists an ‘Arab cultural mainstream’ and within this mainstream exist subcultural differences in factors such as citizenship, dialect, and sectarian loyalty. This ‘cultural mainstream’ will be the focus of the next section.

**Arab cultural values.** In the Arab culture, the family is the center of all social organizations as clearly outlined in the following quote by Barakat (1993).

“The very concept of family in Arabic (‘aila or usra) reflects such mutual commitments and relationships as interdependence and reciprocity. The root of the words ‘aila and ursa means ‘to support’. Although the father’s role is defined as provider (janna) and the mother’s role as homemaker (banna), children range from being ‘iyal (dependants) to sanad (supporters) once their parents reach old age” (p.98).
An Arab’s strongest loyalty and alliance is to the family ties. Through these ties, the individual within each nuclear family and within the wider context of the extended kin system or *hammulleh*, receives social support during times of crisis and receives his or her sense of identity and belonging (Barakat, 1993). However, individuals must subordinate themselves to the family and the hammulleh in order to gain these privileges. This means that the needs and priorities of the family always must come before one’s personal needs and desires. A hierarchical structure, based on gender and age, characterizes an Arab family and Arab social structures in general. The father is considered the head of the household and younger persons are expected to always respect and obey their elders even if only a very minimal age difference exists. A consequence of this collectivist and interrelated structure of individuals is that a failure of an individual is considered the failure of the family in general (Barakat, 1993).

Gender differences in Arab culture tend to remain strong, and the social structure is male dominant (Al-Krenawi & Graham, 2000). The Arab male is considered the leader and the highest authority both in the home and in the larger society (Morsy, 1993). As such, Arab families are patriarchal in that the father heads the household, is considered very powerful, and has the final say in all family matters (El-Islam, 1983). Furthermore, the father demands respect and unquestioning compliance with his instructions (Hattar-Pollara & Meleis, 1995). Arab women are socialized to be dependent and submissive on male members of the family (Abu Laban, 1980). Arab women have been viewed as “powerless, subservient, and submissive” (p. 103, Al Haj, 1987). The domestic role is stressed for girls/women and boys/men are socialized to take responsibility for matters outside of the home (Abu-Laban, 1980). However, even though family power is given to the father in Arab culture, women exercise power over their children and are entrusted to raise and discipline them (Hattar-Pollara & Meleis, 1995). Moreover, women play the role of advocate for their children while negotiating decisions made by the
father. Furthermore, “women have an advocacy role for males in the family to “save face,” to maintain their respect, and to protect them from direct confrontations with children, other members of the extended family, or both” (p.523, Hattar-Pollara & Meleis, 1995). Women are also entrusted with maintaining close kin ties and in negotiating and promoting their family position in the larger community. The role of negotiator given to women gives them a significant amount of informal power, but can be burdensome and a cause for emotional distress through burnout (Meleis & Rogers, 1987).

In many Arab societies, a woman’s social status is dependent on marriage and childrearing (Al Sadawi, 1995). Arranged marriages are common and women are expected to commit the majority of their time to caring for their families. As such, Al-Krenawi and Graham (2000) noted that it is not common for Arab women to have careers outside the home and even when they do have careers outside the home they tend to defer to spouses of the family when making major decisions. Divorce is highly stigmatized in Arab society, especially for women; and as such, many remain in problematic marriages to avoid this stigma (Al-Krenawi & Graham, 1998). Furthermore, the virginity of the unmarried female is highly valued. Traditionally, there have been extreme consequences for women who engage in pre-marital sexual relations (Abu-Laban, 1980). The concept of family honour is intimately linked to the chastity of its female members and men are given the responsibility to protect this honour. Fathers, brothers, and husbands are expected to closely monitor, restrict, and judge the behaviour of their daughters, sisters, and wives (Abu-Laban, 1980).

The values of “conformity, rather than independent thought and creativity” (p.11, Al-Krenawi & Graham, 2000) are dominant in Arab culture as evidenced by the hierarchical and authoritarian structure of the transmission of wisdom and knowledge. In the Arab school system, the curriculum is based on rote learning and fact memorization and does not encourage
independent thought and critical thinking. In addition, the teacher is considered the ultimate authority in the school system that demands respect. In general, children are socialized to consider adults are as sources of knowledge, wisdom, and authority (Barakat, 1993). Child development occurs in this hierarchical context where the father, mother, teacher, and other persons more senior in age and status give advice and provide guidance. Al-Krenawi and Graham (2000) indicated that this guidance is provided in the form of “‘do’s’ and ‘don’ts’ and assertions that ‘this is right’ and ‘that is wrong’ with little explanation or justification” (p.15). This type of teaching has been thought to inhibit experiential learning and the development of adequate problem solving skills. Confrontation of those more senior in age or status in the Arab culture is considered rude, and thus, interpersonal passivity is characteristic of the lower status individual (children or adults). In general, Al-Krenawi and Graham stated that “the expression of conflict, whether internal or external, and the expression of negative feelings are not well accepted in the Arab culture” (p.16). They further indicated that physical symptoms are considered more legitimate and morally acceptable expressions of pain.

From a traditional Western perspective, children go through a ‘healthy’ separation from their parents as they transition from childhood into adolescence and adulthood with the ultimate goal of developing an autonomous identity (Erikson, 1963). However, in the collectivist Arab culture, separation is not the ultimate goal of development. Instead, the individual remains embedded in the family and collective identity throughout the life span (Hofstede, 1986). Holmes-Eber (1997) noted that in contrast to Euro-American patterns of isolation and withdrawal from extended family, Arab social structures are characterized by daily interactions with immediate family members and extended kin. Barakat (1993) indicated that individuals are perceived as part of the larger group to which they belong (i.e. family) rather than as isolated individuals. Al-Krenawi & Graham (2000) indicated that “the family unit is sacred among Arab
peoples, who are raised to depend on it as a continual source of support” (p. 14). During times of crisis, the family is the highly involved and expected to be consulted for support. Al-Krenawi and Graham stated that from a western perspective, an Arab family might be perceived as over involved, over protective, co-dependent, and/or enmeshed, but that these characteristics are part of the Arab culture where any less involvement would signify neglect. Barakat (1993) indicated that being part of such a group and accepting the norms of the group is advantageous because it provides the individual with a sense of protection and security, a feeling of belonging and identity, as well as practical and emotional support during periods of difficulty. However, a great deal of self-sacrifice is required to maintain group harmony, and as such, Barakat noted that a loss of sense of self is a psychological downside of such an arrangement. Individuals with values, beliefs, desires, and goals that are different from the collective are rejected for straying from the group.

Al-Krenawi and Graham (2000) indicated that due to the collectivist nature of the Arab culture, individual behaviour is often guided externally by the perceptions of others rather than internally by one’s own standards. Thus, shame is more often used to modify inappropriate behaviours rather than guilt (which is more common in individualistic cultures). The maintenance of family honour is of utmost priority in Arab culture which comes with a strong external consciousness and a strong need to “save face” in order to avoid being shamed in the community. The following two quotes from Arab American mothers in Hattar-Pollara and Meleis’s (1995) study exemplify this:

“I spend most of my energy on teaching my kids our customs and norms, and I take every chance to point out to them the right from the wrong. I worry a lot because I see what is going on out there of promiscuity, drugs, and alcohol. I always tell them that their father and I are willing to sacrifice our health and everything we own for their sake
as long as they follow our teachings and raise our heads in the community. We just cannot take any chance, and we have to make sure that our name will not be disfigured; otherwise what is the point of being here? Nothing is worth putting the name of the family in the mud.” (p.532)

The need to conform to Arab tradition in order to “save face” was captured by the following quote:

“The most important and biggest hope for us, which we live for, is to live with honor among our people, and to raise our children in a way that will make us feel proud, and help us keep our heads raised high in the community. People here and in Jordan are watching and waiting for a chance to talk. We also care a lot about our customs, and we just cannot let anything touch or implicate the family’s name because if this happens, god Forbid, we will then blacken our face [“lose face”]. You know, if one’s face is blackened, that is it, one is finished, one cannot receive the respect and regard of others and cannot even look at them in the eyes. One will then forever live with the head bent down and looking to the floor; he forever will be shamed” (p.532)

Religion, whether Islamic or Christian, is considered an important part of an Arab person’s life. Abu-Laban (1980) indicated that religious commitments may be viewed “an extension of loyalty and obligations to the family” (p.49). Indeed, Al-Krenawi and Graham (2000) indicated that religion is an important context in which problems are solved. Hattar-Pollara and Meleis (1995) showed that religiosity was a source of strength for a group of immigrant Jordanian women that brought them together as a group. One participant in their study stated:

“In searching for ways to assist, guide, and teach my children to live their lives as they should, I find myself turning to God and the faith I was raised with. Being an Arab
American Christian is the core of my motherhood. I cannot imagine life any other way. My faith and culture are synonymous. Living a life of faith is inherent to being Arabic” (p.535).

**Current characteristics Arabs in Canada.** The Target Groups Project of Statistics Canada has prepared a report highlighting the basic social and economic characteristics of the Arab Community in Canada as part of the Multicultural program of the department of Canadian Heritage (Lindsay, 2007). This report was based on data collected from the 2001 census of Canada and from the 2002 Ethnic Diversity Survey (Lindsay, 2007).

Individuals were considered of Arab origin if they reported ethnic or cultural heritage in the Middle East or North Africa, including: Arab, Egyptian, Iraqi, Jordanian, Kuwaiti, Lebanese, Libyan, Maghrebi, Algerian, Berber, Moroccan, Tunisian, Palestinian, Saudi Arabian, Syrian, and Yemeni. According to this data, Canadians of Arab origin represent one of the largest non-European ethnic groups in Canada, with almost 350,000 people of Arab origin who lived in Canada, representing over 1.2% of the Canadian population at the time of the survey (Lindsay, 2007).

The majority of the Canadian population of Arab origin either lived in Ontario (150,000; 43% of the overall Arab community in Canada) or Quebec (136,000; 39% of the overall Arab community). Over half of all Canadians of Arab origin lived in either Toronto or Montreal. According to this report, the majority of Canadians of Arab origin were born outside of Canada, and almost all can converse in one of the official languages of Canada (English and French). Only 4% were found to be unable to speak either English or French. The Arab community in Canada is religiously evenly split between those who identify as Muslim and those who identify as Christian (Lindsay, 2007).
According the Ethnic Diversity Survey the majority (88%) of Canadians of Arab origin feel a strong sense of belonging to Canada. Simultaneously, 52% said they had a strong sense of belonging to their ethnic or cultural group. According to the Ethnic Diversity Survey, one in four Canadians of Arab origin stated that they experienced discrimination. Specifically, 26% reported that they had experienced discrimination or unfair treatment based on their ethnicity, race, religion, language, or accent in the past five years or since they arrived in Canada. The majority (53%) of those who had experienced discrimination attributed it to their race or skin colour (Lindsay, 2007).

Khouri (2003) conducted a comprehensive survey study with Canadians of Arab origin to determine the needs and aspirations of Arab communities in Canada. He collected cross-sectional survey data from 253 individuals between November 2001 and February 2002 from a diverse sample of the Arab community in Canada reflecting various generations of immigrants, geographic locations, country of origin, age, sex, education, income, and other demographic variables. His sample was almost evenly divided in terms of males (58.7%) and females (41.3%). He noted that Arabs from Toronto were overrepresented, but that his sample adequately reflected the Arab Canadian community overall. The subset of his results that are relevant to this study include data regarding Arab ethnic identity, racial identity, religious identity, acculturation difficulties (including experiences of value clashes), and experiences of discrimination.

Khouri (2003) found that respondents were equally proud of their Arab, Canadian, and Arab-Canadian identities. When asked to self-identify their ethnicity, 62.6% of his sample identified as Arab-Canadian rather than either ‘Arab’ or ‘Canadian.’ He also found that the majority of his sample reported that they had a mixed group of friends (both ‘Arabs’ and ‘Canadians’). On one question, the majority of his sample noted that they did not experience
conflicts between their Arab and Canadian sides of their identities (64%); however, when worded differently, this did not appear to be true. For instance, when asked about experiences of value clashes, both parents and youth less than 30-years of age living at home reported significant conflicts. For instance 57.7% of the youth sample reported that their parents do not allow them the same freedoms as other Canadians (e.g., dating, going to night clubs, sleepovers). Similarly, 55.8% of the youth sample revealed that at least occasionally they had to hide parts of their lifestyles from their parents because of conflicts with parental values. From the parental perspective, 27.7% said that they wouldn’t allow their daughter the same freedoms as other Canadian girls/women (e.g., dating, going to night clubs, sleepovers, etc.) when she asks for these freedoms. Similarly, 31.5% of the parents reported that at least occasionally their children cannot understand that the family and social values of their parents are not the same as those of other Canadians. On a similar note, 21.7% of parents felt that they have lost their children to Canadian society which they say is foreign to them. The main peer-pressure concerns reported by Arab parents were concerns about pre-marital sex (35.4%), drug abuse (31.5%), and alcohol abuse (30.0%).

With regards to racial identity, when respondents were asked whether they saw themselves as white, brown, olive, or black, 35.5% chose white, 26.1% chose olive, 25.7% chose brown, and 0.4% chose black. Khouri (2003) wrote “Generally, the distribution of the responses indicates that Arabs do not have any specific colour” (p. 21). With regards to religious identity, 32.4% of respondents said that they strongly or somewhat agreed that religion defined who they are more so than being Arab, Canadian, or otherwise.

Regarding experiences of discrimination, Khouri (2003) noted that “Respondents almost unanimously agreed that Canadians in general know little about Arab culture and are influenced in their view of it by negative stereotypes” (p. 33). More specifically, 33.2% believed that
Canadians don’t like Arabs; 41.2% believed that Canadians think Arabs are violent; 41.3% of the sample believed that Canadians don’t like Muslims; and the majority (84.6%) believed that Canadians think Muslims are violent. A large majority (91.2%) also believed that Arabs are regularly stereotyped in Canadian media at least occasionally. Similarly, 86.1% believed that Canadian media does not understand the Arab point of view and 64.3% believed that Canadian media is racist in its coverage of topics that relate to Arab women.

Almost a quarter (24.8%) of the sample reported that they or someone in their family experienced discrimination first hand. Examples given of places where discrimination occurred included schools, workplaces, public transport, airports, border crossings, with neighbours and friends, with police/ the Canadian Security Intelligence Services (CSIS), and in relation to women wearing the headscarf. Examples of discrimination experiences included being told insulting jokes about Arabs or their religion; name calling with most of the examples given using the term “terrorist” (other examples of name calling included camel jockey, sand nigger, little terrorist, and camel nigger). In addition, respondents reported discrimination at the institutional level citing examples such as post September 11 detentions, interrogations by CSIS, and Bill C36/Anti-Terrorism bill.

**Discrimination against Arabs and Muslims in Canada.** The Canadian Council for Refugees has recently been bringing awareness to and advocating against discrimination against Arabs and Muslims in Canada stating that “Media coverage has irresponsibly associated entire groups of Muslims and Arabs with terrorism, linking them by virtue of religious or ethnic association with the crimes of others” (Canadian Council for Refugees, 2004, p.1). The effects of such discrimination come in many forms and include unfair labeling as supporters of terrorism; harassment and name calling; distorted representation in the media; detention, interrogation, and humiliation of travelers entering or transiting the United States; Vandalism...
against mosques, discrimination in employment and housing, and intrusive interviewing by CSIS. According to this report

“Canadian Muslims report fears of police surveillance and having their phones tapped. They worry their neighbours regard them with suspicion merely due to their religion. In such a climate, many Arabs and Muslims are afraid to report discriminatory behaviour or incidents, for fear of making things worse.” (Canadian Council for Refugees, 2004, p.2)

Canada’s general demographics: Ethnicity and religion. According to the 2006 Census by Statistics Canada, over 200 different ethnic groups exist in Canada. Ethnic origin in the Census was defined as “the ethnic or cultural origins of the respondent’s ancestors” (Statistics Canada, 2006). This number includes Canada Aboriginal peoples (North American Indian, Métis, and Inuit) in addition to the European groups that first settled in Canada (English, French, Scottish, and Irish). It also includes other immigrant groups who came to Canada over the past century (E.g., German, Italian, Arab, Chinese, Ukrainian, Dutch, Polish, East Indian). The most frequently reported ethnic origins were: Canadian, English, French, Scottish, Irish, German, Italian, Chinese, North American Indian, and Ukranian.

The term visible minority was defined in this census based on the definition used in the Employment Equity Act that defines visible minorities as “persons, other than Aboriginal persons, who are non-Caucasian in race or non-white in colour” (Statistics Canada, 2006). Groups that are included in this definition are: Chinese, South Asians, Blacks, Arabs, West Asians, Filipinos, Southeast Asians, Latin Americans, Japanese, Koreans, and other groups such as Pacific Islanders. It was reported that visible minorities made up 16.2% of the Canadian population (Statistics Canada, 2006). Thus, the remaining 83.3% of the Canadian population is made up of people of English, French, Scottish, Irish, German, and Dutch ancestry as well as of invisible minority groups such as individuals of Italian, Greek, Ukrainian, Polish, Russian,
Norwegian, Portuguese, and Swedish ancestry. Thus, the dominant culture in Canada is of European origin. Depending on the individual’s city and province of residence this European influence may not be as obvious. For example, according to the 2006 census, Ontario is home to over half of Canada’s visible minority groups with the largest number of visible minorities living in the city of Toronto. Ottawa and Montreal are the two other major cities that are home to a large number of Canadian visible minorities. The ethnic make-up and diversity of the Canadian population varies dramatically depending on the specific province, city, and/or town.

The majority of the respondents to Statistic Canada’s 2001 census identified themselves religiously as Christians. Specifically, 72% of the Canadian population identified themselves as Roman Catholic or Protestant. The remainder of the population either did not identify with any religion (16.2%) or identified as Muslim (2%), Jewish (1.1%), Buddhist (1.0%), Hindu (1.0%), or Sikh (0.9%) (Statistics Canada, 2001).

These demographics of the general Canadian context reveal that Arab Canadians are a minority group that differs from the dominant group on the basis of culture, language, and in some cases religion (e.g., Muslim Arabs). The review of the core cultural values of the Arab culture also revealed significant differences between those values found in the dominant Canadian culture.

**Study Rationale**

Studies of disordered eating and body shape challenges in Arab women are almost non-existent in North America. To date, no studies have directly examined disordered eating patterns, body shape challenges, and internalization of thinness in young, Arab-Canadian women. Also, very few studies of acculturation, ethnic identity, and bicultural stress and conflict have been conducted with this population. Furthermore, no study has examined the ways in which disordered eating and body shape challenges relate to acculturation, ethnic identity, and
bicultural stress and conflict in Arab-Canadian women. The aim of the current study is to address these limitations in previous research.

In particular, the purpose of this study is two-fold: First, it aims to examine the range and relationships among disordered eating patterns, body shape challenges, and internalization of thinness in young, Arab-Canadian women. The second, and main, aim of the study is to examine the relationships between disordered eating patterns and body shape measures and three cultural variables: acculturation, ethnic identity, and bicultural stress and conflict. For these purposes, a cross-sectional, quantitative, correlational, internet-based study was designed to assess individual difference variables as they naturally occurred.

Central Research Question

The overarching research question is as follows: How do the three cultural variables of acculturation, ethnic identity, and bicultural stress and conflict relate to disordered eating and body shape challenges in Arab-Canadian women? The main premise of this study is that bicultural stress and conflict (which encompasses the experience of identity conflict and confusion) would be an important contributor to disordered eating symptoms.

Study Hypotheses

Hypotheses about disordered eating and body shape-related variables.

1. Young Arab-Canadian women will exhibit a range of disordered eating patterns and body shape challenges similar to rates reported about Arab women who reside outside of North America (i.e., in the Middle East and Europe) (Abou-Saleh et al., 1998; Al-Subaie, 2000; Ford et al., 1990; Nasser, 1986, 1994; Thomas et al., 2010).

2. Disordered eating, body shape concerns and internalization of thinness will be positively related to one another in Arab-Canadian women as these constructs are both theoretically related to each other (e.g., Stice, 1994; Striegel-Moore et al., 1986; Thompson & Stice,
2001) and have been shown to be positively related in Arab samples outside of North
America (e.g., Afifi-Soweid et al., 2002; Al-Subaie, 2000; Eapen et al., 2006).

**Hypotheses about the associations between culture-related variables and eating and
body shape variables.**

3. Acculturation will not be correlated with disordered eating and body shape-related
variables since most studies have reported no relationship between acculturation and
eating and body-related variables in samples of Mexican American, African American,
East Asian, and South Asian women (Joiner & Kashubeck, 1996; Kuba & Harris, 2001;
Lester & Petrie, 1995; Stark-Wroblewski et al., 2005; Wildes et al., 2001).

4. Ethnic identity will be related to disordered eating and body shape-related variables
consistent with most studies, which found a relationship between ethnic identity and
eating and body-related measures (e.g., Henrickson et al., 2010; Rogers Wood & Petrie,
2010; Phan & Tylka, 2006). The direction of this relationship is difficult to predict,
however, since several studies found high ethnic identity to be protective (e.g., in
African American women; Rogers Wood & Petrie, 2010); while others found that high
ethnic identity increased risk of eating- and body-related challenges (e.g., in East Asian
women; Phan & Tylka, 2006).

5. Bicultural stress and conflict will be positively related to disordered eating and body
shape challenges in line with previous research showing a consistent positive link
between these variables in Hispanic, African American, and South Asian women (e.g.,
Gordon et al., 2010; Perez et al., 2002; Reddy & Crowther, 2007).

6. Bicultural stress and conflict will predict a significant amount of variance in eating
disorder and body shape-related variables above and beyond both acculturation and
ethnic identity due to the stronger and more consistent empirical support for the role of
cultural conflict and acculturative stress in relation to disordered eating in Hispanic, African American and South Asian women (e.g., Gordon et al., 2010; Perez et al., 2002; Reddy & Crowther, 2007).

7. It is hypothesized that acculturation, ethnic identity, and bicultural stress and conflict will interact to predict disordered eating and body shape-related difficulties. The inconsistent findings in studies of disordered eating and body shape challenges as they relate to ethnic identity, acculturation, and bicultural stress and conflict reviewed in the literature review suggest the presence of interactions among these variables. Very few studies have examined such interactions and the ones that did, found significant moderating effects in African American and Mexican American women (e.g., Henrickson et al., 2010; Bettendorf & Fischer, 2009). Since acculturation is a two-dimensional measure, this hypothesis will be tested by examining a series of three-way interactions. Thus, hypothesis seven was divided into three sub-hypotheses as follows:

(a) The two dimensions of acculturation (Arab-orientation and Anglo-orientation) will interact with bicultural stress and conflict to predict disordered eating and body shape-related difficulties.

(b) Anglo-orientation, ethnic identity, and bicultural stress and conflict will interact to predict disordered eating and body shape-related difficulties.

(c) Arab-orientation, ethnic identity, and bicultural stress and conflict will interact to predict disordered eating and body shape-related difficulties.
CHAPTER THREE

Methods

Participants

A total of 196 Arab-Canadian women who ranged in age from 18-35 with a mean age of 23.77 ($M = 23.77, SD = 4.87$) were included in the analyses. All fulfilled inclusion criteria which were: Female, of Arab origin, between 18-35 years of age, born in Canada (or arrived before the age of 7), raised in Canada, resided in Canada at the time of the study, and proficient in the English language.

Age was limited to young adults because the ethnic identity development process is at its peak during young adulthood (Phinney, 2006) and because disordered eating and body-related difficulties are more prevalent in young adults (Bettendorf & Fischer, 2009). Age of immigration was limited to a pre-adolescence age point to assure that individuals lived through the key developmental phases of adolescence and young adulthood in Canada and as such were socialized in a bicultural context.

Online data revealed that a total of 481 individuals accessed the online study link. A total of 167 (35%) individuals did not attempt any questions (including consent). Of the 314 individuals who began the questionnaire; 72 (23 %) did not meet study criteria; 34 (11 %) did not complete the full battery of questionnaires, and 208 (66 %) completed the questionnaire in its entirety. Eleven of these questionnaires were not usable: Six were problematic due to unreasonably quick response times and unusual responses patterns (e.g., the same response was given for all questions). The remaining five questionnaires were missing the entire final questionnaire as a result of technical difficulties (i.e., these responses were not saved.
adequately) and as such needed to be removed from the sample. A total final and usable sample of 196 Arab-Canadian women was recruited for this study.

Demographic characteristics of included participants are presented in Table 1. All participants reported Arab origin with ethnic or cultural heritage in the Middle East or North Africa. The majority of individuals (approximately 60%) were born in Canada and as such are considered second generation (or later) individuals. For those born outside of Canada, all arrived before the age of 7. Details about age of arrival and country of origin may be found in Table 1.

Table 1

*Demographic Characteristics of Participants*

<table>
<thead>
<tr>
<th>Demographic Variable</th>
<th>Percentage (N = 196)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generation</td>
<td></td>
</tr>
<tr>
<td>First Generation</td>
<td>34.2%</td>
</tr>
<tr>
<td>Second Generation</td>
<td>61.2%</td>
</tr>
<tr>
<td>Third Generation</td>
<td>2.6%</td>
</tr>
<tr>
<td>Fourth Generation</td>
<td>0.5%</td>
</tr>
<tr>
<td>No response</td>
<td>1.5%</td>
</tr>
<tr>
<td>Age of Arrival</td>
<td></td>
</tr>
<tr>
<td>Born in Canada</td>
<td>60.2%</td>
</tr>
<tr>
<td>Before age two</td>
<td>12.2%</td>
</tr>
<tr>
<td>Before age five</td>
<td>15.8%</td>
</tr>
<tr>
<td>Before age seven</td>
<td>11.7%</td>
</tr>
<tr>
<td>No response</td>
<td>0.0%</td>
</tr>
<tr>
<td>Birth Country</td>
<td></td>
</tr>
<tr>
<td>Canada</td>
<td>59.7%</td>
</tr>
<tr>
<td>USA</td>
<td>2.6%</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>6.6%</td>
</tr>
<tr>
<td>Kuwait</td>
<td>6.1%</td>
</tr>
<tr>
<td>Lebanon</td>
<td>5.6%</td>
</tr>
<tr>
<td>Country of Origin</td>
<td>Percentage</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Egypt</td>
<td>4.6%</td>
</tr>
<tr>
<td>Jordan</td>
<td>4.6%</td>
</tr>
<tr>
<td>Syria</td>
<td>3.1%</td>
</tr>
<tr>
<td>Iraq</td>
<td>2.6%</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>1.0%</td>
</tr>
<tr>
<td>Palestine</td>
<td>1.0%</td>
</tr>
<tr>
<td>Libya</td>
<td>0.5%</td>
</tr>
<tr>
<td>Morocco</td>
<td>0.5%</td>
</tr>
<tr>
<td>Brazil</td>
<td>0.5%</td>
</tr>
<tr>
<td>Japan</td>
<td>0.5%</td>
</tr>
<tr>
<td>No response</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current Province of Residence</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Palestine</td>
<td>39.3%</td>
</tr>
<tr>
<td>Egypt</td>
<td>36%</td>
</tr>
<tr>
<td>Lebanon</td>
<td>35.2%</td>
</tr>
<tr>
<td>Syria</td>
<td>16.3%</td>
</tr>
<tr>
<td>Jordan</td>
<td>11.7%</td>
</tr>
<tr>
<td>Iraq</td>
<td>8.2%</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>4.1%</td>
</tr>
<tr>
<td>Libya</td>
<td>3.1%</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>3.1%</td>
</tr>
<tr>
<td>Kuwait</td>
<td>2.6%</td>
</tr>
<tr>
<td>Yemen</td>
<td>2.6%</td>
</tr>
<tr>
<td>Morocco</td>
<td>2.6%</td>
</tr>
<tr>
<td>Algeria</td>
<td>2.0%</td>
</tr>
<tr>
<td>Maghreb</td>
<td>1.5%</td>
</tr>
<tr>
<td>Sudan</td>
<td>1.5%</td>
</tr>
<tr>
<td>Tunisia</td>
<td>1.5%</td>
</tr>
<tr>
<td>Berber</td>
<td>1.0%</td>
</tr>
<tr>
<td>Somalia</td>
<td>0.5%</td>
</tr>
<tr>
<td>No response</td>
<td>0.0%</td>
</tr>
<tr>
<td>Region</td>
<td>Percentage</td>
</tr>
<tr>
<td>-----------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Ontario</td>
<td>91.3%</td>
</tr>
<tr>
<td>Quebec</td>
<td>3.6%</td>
</tr>
<tr>
<td>British Columbia</td>
<td>2.6%</td>
</tr>
<tr>
<td>Alberta</td>
<td>2.0%</td>
</tr>
<tr>
<td>Saskatchewan</td>
<td>0.5%</td>
</tr>
<tr>
<td>No response</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

**Highest Level of Education Achieved**

<table>
<thead>
<tr>
<th>Level</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>High School Graduates</td>
<td>13.8%</td>
</tr>
<tr>
<td>Some College</td>
<td>4.6%</td>
</tr>
<tr>
<td>College Graduates</td>
<td>6.6%</td>
</tr>
<tr>
<td>Some University</td>
<td>31.6%</td>
</tr>
<tr>
<td>University Graduates</td>
<td>25%</td>
</tr>
<tr>
<td>Some graduate/medical/law school</td>
<td>7.1%</td>
</tr>
<tr>
<td>Graduate/medical/law school graduates</td>
<td>11.2%</td>
</tr>
<tr>
<td>No response</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

**Employment Status**

<table>
<thead>
<tr>
<th>Status</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employed full-time</td>
<td>30.6%</td>
</tr>
<tr>
<td>Employed part-time</td>
<td>19.4%</td>
</tr>
<tr>
<td>Self-employed</td>
<td>1.5%</td>
</tr>
<tr>
<td>Students</td>
<td>35.7%</td>
</tr>
<tr>
<td>Homemakers</td>
<td>4.1%</td>
</tr>
<tr>
<td>Not employed</td>
<td>7.1%</td>
</tr>
<tr>
<td>No response</td>
<td>1.5%</td>
</tr>
</tbody>
</table>

**Marital Status**

<table>
<thead>
<tr>
<th>Status</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single, Never Married</td>
<td>67.9%</td>
</tr>
<tr>
<td>Married</td>
<td>18.9%</td>
</tr>
<tr>
<td>Engaged/Committed Relationship</td>
<td>9.2%</td>
</tr>
<tr>
<td>Divorced</td>
<td>2.6%</td>
</tr>
<tr>
<td>Separated</td>
<td>0.5%</td>
</tr>
<tr>
<td>Living with Partner</td>
<td>0.5%</td>
</tr>
<tr>
<td>No response</td>
<td>0.5%</td>
</tr>
</tbody>
</table>

**Religion**
Muslim 70.4%
Christian 18.4 %
No Religious affiliation 4.1%
Other 5.1%
No response 2.0%

Religiosity
Not at all religious 10.2%
Somewhat religious 58.7%
Very religious 26.5%
No response 4.6%

Skin Colour
‘White’ 34.2%
‘Olive’ 55.6%
‘Brown’ 6.6%
‘Other’ 3.6%
No response 0.0%

All participants were raised in Canada and were residents of Canada at the time of participation. The majority were Ontario residents. All participants were proficient in the English language and the research was conducted entirely in English. Most participants were single (approximately 68%) and were highly educated (see Table 1 for full distribution). About 50% of the sample was employed and approximately 36% were students. The majority of participants identified themselves as Muslim (approximately 70%). The second largest religious group represented were Christians (approximately 20%). The majority of individuals (approximately 60%) rated themselves as ‘somewhat religious’ and approximately 27% rated themselves as ‘very religious.’

The average body mass index for respondents in this sample was 23.59 kg/m² ($SD = 4.30$). According to weight guidelines from the Centers for Disease Control and Prevention
(2012), 4.1% could be classified as underweight (BMI < 18.5 kg/m²); 67.3% as normal weight (BMI = 18.5 – 24.9 kg/m²), 19.9% as overweight (BMI = 25.0 to 29.9 kg/m²), and 8.7% as obese (BMI > 30.0 kg/m²).

Measures

Demographic information. Participants completed a demographic questionnaire which inquired about gender; ability to read, write and understand English; age; generation; country of birth; age of immigration; if the individual grew up in Canada and currently lives in Canada; place of residence (City and Canadian Province); Arab country or countries of origin; religious affiliation; level of religiosity; marital status; skin colour; height and weight; highest level of education; and employment status (see Appendix B).

Measures of ethnic identity, acculturation, and bicultural stress and conflict.

The Multigroup Ethnic Identity Measure (MEIM; Phinney, 1992). This is a 14-item self-report scale (see Appendix C) that measures three central aspects of ethnic identity: (a) positive ethnic attitudes and a sense of belonging, including degree of ethnic pride, positive feelings about one’s group, contentment with group membership, and attachment to that group (e.g., “I have a strong sense of belonging to my own ethnic group”); (b) ethnic identity achievement which refers to the developmental process of exploring the meaning of one’s ethnicity and sense of self as a group member (e.g., “I have a clear sense of my ethnic background and what it means for me”); and (c) ethnic behaviours and practices which refers to involvement in social activities with members of one’s group and participation in cultural traditions (e.g., “I am active in organizations or social groups that include mostly members of my own ethnic group”). Response options ranged from 1 (strongly disagree) to 4 (strongly agree). Total scores were calculated by taking the mean score across all items with higher scores indicating stronger ethnic identity. Additional items not included in the total score assessed
ethnic self-identification (e.g., “In terms of ethnic group, I consider myself to be _________”) and ethnicity (paternal and maternal ethnicity). The MEIM total score has shown high internal consistency reliability (Cronbach’s alpha for the total score ranged from .81 to .90; Phinney, 1992) and convergent validity (e.g., positive relationships with a salience of ethnicity measure; Roberts et al., 1999). The alpha coefficient in the current study was .86 for the total scale score.

**Acculturation Rating Scale of Arab Americans** (ARSAA; Jadalla, 2007). This is a 30-item self-report measure that was designed to assess the acculturation process through an orthogonal, multidimensional approach by measuring cultural orientation toward Arab culture and the Anglo culture independently (see Appendix D). Items assess cultural domains relevant to acculturation including language use and preference as well as ethnic identity, behaviours, and interactions. This is a modified version of the Mexican American Rating Scale for Mexican Americans-II (ARSMA-II) (Cuellar et al., 1995) where Jadalla changed any references to ‘Mexican Americans’ to ‘Arab Americans’. In the current study any references to American were changed to Canadian. Also, references to ‘Anglos’ were modified to ‘Anglos/non-Arabs’ for clarity and to account for the cultural diversity in some cities where this research was conducted. This measure is made up of two subscales: Anglo Orientation Subscale (13-items) (AOS), which assesses orientation to Anglo culture (e.g., “I enjoy listening to English-language-music”; “My friends are now of Anglo/non-Arab origin”); and Arab Orientation Subscale (ArOS) (17-items), which assesses orientation to Arabic culture (e.g., “My contact with my home country has been”; “My thinking is done in the Arabic language”). Items are rated on a 5-point Likert-type scale ranging from 1 (not at all) to 5 (extremely often or almost always) with higher scores indicating greater orientation to Arab- and Anglo- culture respectively. Both scales were shown to have good internal consistency reliabilities (alpha for AOS = .89; alpha for ArOS = .81; Jadallah, 2007). Convergent validity was reported by the original developers of
this scale with other measures of acculturation (Cuellar et al., 1995). The alpha coefficients in
the current study were .72 for the AOS subscale and .86 for the ArOS subscale. Cuellar et al.’s
original scale also had a marginality scale, however, they stated, “The marginality scale is for
the most part an experimental scale and should be considered as such until it can be adequately
validated” (p. 283). Since this scale was not administered, it was not possible to group
participants in the current study into four groups based on Berry’s acculturation strategies. This
did not pose any problems, however, as the focus of this study was not on acculturation
strategies per se. Instead, various combinations of low and high Arab- or Anglo- Orientation
were examined in an alternative manner via interaction tests using multiple regression.

_Cultural Values Conflict Scale_ (CVCS; Inman et al., 2001). This is a 24-item self-report
measure which was developed to assess the degree to which South Asian women living in the
United States experienced cultural value conflicts. Due to copyright restrictions, it was not
possible to include this measure in the appendices. The first author of this scale has authorized
the use of the CVCS for the purpose of this study. Two subscales make up this measure:
Intimate Relations (11-items), which contains items that assess value conflicts in the dating-
premarital sexual relations realm and the marriage realm (e.g., “I believe dating is acceptable
only in a mutually exclusive relationship leading to marriage”; “I would experience guilt
engaging in premarital sexual relations due to the social stigma attached to it within my
culture”); and Sex Role Expectations (13-items), which contains items that assess value
conflicts related to family relations and sex-role expectations (e.g., “I feel like a pendulum in my
role as a woman, wherein within my ethnic culture, I am expected to be dependent, submissive,
and putting other’s needs before mine, but in the Canadian culture, I am encouraged to be
independent, autonomous, and self-asserting of my needs”; “I feel conflicted about my
behaviours and options as a woman within the Arab and Canadian culture”). Items are rated on
a 6-point Likert-type scale (1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree, 6 = not applicable) with higher scores indicated higher levels of conflict. Inman et al. reported an alpha coefficient of .84 for the entire scale, .98 for the Intimate Relations subscale, and .85 for the Sex Role Expectations subscale. Inman et al. reported convergent validity with other measures of cultural maladjustment (Inman et al., 2001). Only the total scale score was used in the current investigation. The coefficient alpha for the total scale in the present investigation was .87. In this study, any references to South Asian were changed to Arab and any references to American were changed to Canadian.

**Cultural Adjustment Difficulties Checklist Acculturative Distress subscale** (CADC-AD; Sodowsky & Lai, 1997). The CADC is a 59-item self-report measure which was developed to assess bicultural stress and conflict along two dimensions: intrapersonal and interpersonal. It is comprised of two subscales: Acculturative Distress (CADC-AD; 35-items) which measures the intrapersonal dimension and Intercultural Competence (CADC-IC; 24-items) which measures the interpersonal dimension. Only the Acculturative Distress subscale was utilized in this investigation. Due to copyright restrictions, it was not possible to include this measure in the appendices. The first author of this scale has authorized the use of the CADC for the purpose of this study. The Acculturative Distress subscale includes both cultural stress and general stress items. Cultural stress items assess experiences of identity crisis, personal sense of inferiority as a member of one’s cultural group, lack of ethnic ego differentiation due to feeling marginalized from both cultural groups, and feelings of anger and guilt towards one or both cultural groups. General stress items measure affective responses (e.g., anxiety, sadness, guilt, nervousness, and anger); behavioural responses (e.g., suicidal ideation, drinking, procrastination, and violence); psychosomatic symptoms (e.g., backaches, stomachaches, and headaches); and academic and career-related concerns (e.g., high performance anxiety, feeling overworked, etc). Items were
rated on a 6-point Likert-type scale ranging from 1 (a very inaccurate description of you) to 6 (a very accurate description of you). Higher scores indicated higher levels of bicultural conflict and stress. Internal consistency reliability for the Acculturative Distress subscale was reported as .92 by scale developers (Sodowsky & Lai, 1997). The coefficient alpha in the current investigation was .92. Alphas were also calculated for the cultural stress items (alpha = .89) and general stress items (alpha = .87) separately in order to be able to analyze the differential contribution of each in future analyses. The first author of this scale has used similar methods in previous research (see Kuo & Roysircar, 2006).

The two items which assessed suicidal ideation and one item which assessed violence were omitted from this measure as it was not possible to identify, follow-up, and intervene if individuals responded positively to such items. Any references to ‘White Americans’ in the CADC were changed to ‘White Canadians’ in the current study.

**Measures of disordered eating.**

*The Eating Attitudes Test-26 (EAT-26)* (Garner et al., 1982). This is a 26-item questionnaire that measures thoughts, attitudes and behaviours associated with disordered eating and is comprised of three subscales: Dieting (13 items) (e.g. “I avoid foods with sugar in them”), Bulimia and Food Preoccupation (6 items) (e.g. “I have gone on eating binges where I feel that I may not be able to stop), and Oral Control (7 items) (e.g. “I avoid eating when I am hungry) (see Appendix E). Respondents are asked to rate their agreement with each of the items using a 6-point-likert-type scale that ranges from “always” to “never,” with higher scores indicating increased risk for eating disorders. Although the EAT-26 contains subscales, research studies have used the total scale score most often. Cronbach’s alpha was reported as .90 for an anorexic group and .83 for a control group by scale developers (Garner et al., 1982). Convergent validity was supported through strong relationships of the EAT-26 with measures of drive for
thinness and bulimia (Brookings & Wilson, 1994). The coefficient alpha in the current investigation was .85 for the total scale.

A Score of 20 or higher on the EAT-26 has been suggested as a cut-off point that identifies individuals at risk for eating disorders (Garner et al., 1982). The EAT-26 is able to differentiate individuals with anorexia nervosa and bulimia nervosa from controls (Garfinkel & Newman, 2001; Williamson, Prather, McKenzie, & Blouin, 1990). However, it cannot differentiate anorexia nervosa from bulimia nervosa (Garfinkel & Newman, 2001; Williamson et al., 1995). High scores on the EAT-26 do not provide definitive evidence for an eating disorder – each case meeting the cut-off would require further investigation via diagnostic interviewing to determine whether or not full criteria are met (Garfinkel & Newman, 2001).

The EAT-26 has been translated into different languages and used in studies of various ethnic groups including South Asians, Chinese, Japanese, Afro-Caribbean, and Mexican (Chamorro & Flores-Oritz, 2000; Lake et al., 2000; Mumford et al., 1991; Stark-Wroblewski et al., 2005; Sussman et al., 2007). The Arabic version of the EAT has been used in studies of Arabs in the Middle East and North Africa (Al-Adawi et al., 2002; Eapen, et al., 2006; Latzer et al., 2009; Nasser, 1986, 1994; Thomas et al. 2010).

**The Bulimia Test-Revised (BULIT-R)** (Thelen et al., 1991). This is a 28-item questionnaire that was designed to measure thoughts, attitudes and behaviours associated with bulimia nervosa including bingeing, purging, and other forms of compensatory behaviour (see Appendix F). Each item is presented in a 5-point-forced-choice format, ranging from 1, the extreme normal direction to 5, the extreme bulimic dimension. Items are summed to create a total score, with higher scores indicating higher levels of bulimia symptoms. Cronbach’s alpha for the BULIT-R was reported to be between .92 and .93 (Brelsford, Hummel, & Barrios, 1992). Convergent validity was supported through strong relationships of the BULIT-R with measures...
of bulimic symptoms of binge eating and purging (Brelsford et al., 1992). Coefficient alpha in the current study was .95.

The BULIT-R has been shown to differentiate normal individuals from those with bulimia nervosa (Thelen et al., 1991). The BULIT-R can also discriminate between anorexia nervosa and bulimia nervosa. Thelen et al. (1991) recommend that a cut-off of 104 be used to differentiate individuals with bulimia nervosa from controls, but a lower cut-off score of 85 was also recommended to avoid false negative identification of at-risk cases. The BULIT-R has been used in cross-cultural studies of disordered eating in groups of Hispanic and African American women (Bettendorf & Fischer, 2009; Rogers Wood & Petrie, 2010).

**Measures of body shape-related concerns.**

*Body Shape Questionnaire 16-item Alternate Form (BSQ-16) (Evans & Dolan, 1993).* This 16-item questionnaire is a short form of the original BSQ (Cooper, Taylor, Cooper, & Fairburn, 1987) and is used to measure concerns with body shape, in particular the experience of “feeling fat” (see Appendix G). Concern about body shape is a component of body image disturbances that often co-exists with eating disturbances. Participants were asked to indicate on a 6-point scale the frequency with which they experience specific body related events (never, rarely, sometimes, often, very often, always), with higher scores indicating higher levels of body shape concerns. Sample items include “Have you thought that your thighs, hips, or bottom are too large for the rest of you?” and “Have you worried about your thighs spreading out when sitting down?” The BSQ-16 has been shown to have excellent internal consistency (alphas ranged from .93 to .96; Evans & Dolan, 1993). High convergent validity was demonstrated via strong relationships with eating disorder symptoms and body weight measures (Evans & Dolan, 1993). Coefficient alpha in the current study was .95. The BSQ-16 has been used in cross-
cultural studies of disordered eating in groups of South Asian and East Asian women (Mumford et al. 1991; Phan & Tylka, 2006).

**Sociocultural Attitudes Toward Appearance Questionnaire-3-Internalization General subscale** (SATAQ-3-IG; Thompson, van den Berg, Roehrig, Guarda & Heinberg, 2004). This is a 30-item self-report measure of societal influences on body image and eating disturbances and is comprised of four subscales: Internalization-General (9 items); Internalization-Athlete (5 items); Information (9 items); and Pressures (7 items). One of the main purposes of this study was to examine how internalization of thinness relates to disordered eating and body shape challenges in Arab-Canadian women. As such, only the Internalization-General subscale was used in the current investigation as it is the only subscale that measured internalization of the thinness ideal (see Appendix H). Internalization is defined as “the extent to which an individual cognitively buys into societal norms of size and appearance, to the point of modifying one’s behaviour in an attempt to approximate these standards” (p. 294, Thompson et al., 2004). The Internalization-General subscale measures internalization of the thin body ideal disseminated by media influences such as TV, magazines and movies. Items are rated on a 5-point Likert-type scale (1 = definitely disagree, 2 = mostly disagree, 3 = neither agree nor disagree, 4 = mostly agree, 5 = definitely agree) and then summed to create a total score. Higher subscale scores indicate higher levels of internalization of the thinness ideal. Internal consistency reliability for the Internalization-General scale was reported as .92 by scale developers. The SATAQ-3 was shown to have excellent convergent validity with measures of body image and eating disturbance (Thompson et al., 2004). The coefficient alpha in the current investigation was .93 for the Internalization-General scale. The SATAQ has been used in cross-cultural studies of disordered eating in groups of East Asian women (Phan & Tylka, 2006; Stark-Wroblewski et al., 2005).
Procedure

Participants were recruited via a non-randomized snowball or reputational sampling method in order to gain greater access to participants (Hessler, 1992). Efforts were made to identify Arab-Canadian women through Arab community organizations, Arab student organizations, and various academic and personal-social circles. Recruitment occurred both online and in-person. Online recruitment occurred via the social networking site Facebook, a website created for this study, and email list-serves of various Arab student and community organizations. In-person recruitment occurred via brief presentations by the researcher at Arab community events and via dissemination of paper-based advertisements at Arab student and community events.

The survey itself was hosted on a cost-based website called Fluid Surveys which allows for the creation and dissemination of online surveys. All recruitment material (online and paper) directed participants to a secure Fluid Surveys link where they read an information sheet, completed the consent form, and then completed the questionnaire package. The first page of the questionnaire included a number of screening items that determined study eligibility. To qualify, interested individuals must have indicated they were female, of Arab origin, between 18-35 years of age, born in Canada (or arrived before the age of 7), raised in Canada, residence in Canada, and proficient in the English language. Individuals who did not meet any one of the above requirements were automatically directed to a termination page.

Eligible participants filled out a series of online questionnaires assessing ethnic identity, acculturation, cultural value conflict, acculturative distress, eating disorder symptoms, body shape concerns, and influences of sociocultural appearance expectations. Estimated completion time was 30 minutes. Most individuals completed the questionnaire within 30 to 45 minutes.
Upon successful completion of the series of questionnaires, participants were offered $10 compensation either in the form of a $10 cheque in the mail or in the form of a $10 electronic Amazon gift card. Of the 198 individuals who proceeded to the compensation page after study completion, 109 (55.1%) requested compensation in the form of a cheque; 38 (19.2%) requested compensation in the form of an Amazon gift card and 51 (25.8%) declined compensation. Compensation was then provided for those who requested it. At the end of the study, participants were given the option to enter their email addresses in order to receive a summary of the results once compiled. Of the 195 individuals who continued onto this final page, 137 (70.3%) requested a summary and 57 (29.2%) declined this option.

**Statistical Analyses**

**Data analysis strategy.** First, preliminary analyses were conducted. Missing data was initially examined and dealt with. Next, descriptive statistics for each of the variables in this study including means, standard deviations, internal consistency reliability, kurtosis, skewness, and measures of linearity were obtained. These descriptives were then analysed in order to assure that assumptions necessary for conducting correlational analyses and hierarchical multiple regressions were met. The data were pre-screened for possible violations of the assumptions of the regression model including evidence of nonnormality, heteroscedasticity, or nonlinearity. Violations of assumptions were then dealt with via data transformations.

Second, zero-order bivariate correlations were calculated among each of the measures of disordered eating (EAT-26, BULIT-R), body shape concerns (BSQ-16), internalization of thinness (SATAQ-3-IG), acculturation (ARSAA-AOS; ARSAA-AROS) ethnic identity (MEIM), each of the measures of bicultural stress and conflict (CVCS; CADC-AD), age, and BMI. Third, the same associations were examined in partial correlation analyses that controlled for individual differences in age and BMI. Previous research and the current investigation both
revealed that age and BMI are participant variables that are significantly related to disordered eating and body shape variables (results of the current investigation will be presented in the results section). Eating- and body-related concerns are more prevalent in younger, college-aged women (Bettendorf & Fischer, 2009) and actual body size has been shown to be related to body image concerns and disordered eating (e.g., Stice, 1994; Stice 2002). As a result of these associations, both age and BMI were controlled for in all analyses in this investigation.

Fourth, a series of hierarchical regressions were performed. The first set was conducted in order to test the incremental contribution of bicultural stress and conflict measures to disordered eating, body shape concerns, and internalization of thinness.

The second set of exploratory regressions was conducted in order to differentiate between the general stress and cultural stress components of the Acculturative Distress subscale. A series of regressions were run in order to assess the ability of the cultural stress items to predict unique variance in each of the eating- and body-related measures over and above the general stress items. This was important to explore since cultural stress is a central construct to many of this study’s hypotheses, and determining the relative contribution of cultural stress above and beyond general stress would confirm that the relative importance of this construct.

The third set of regressions was conducted in order to test for the presence of three-way interactions among specific facets of acculturation, ethnic identity, and bicultural stress and conflict. Simple effects and simple slopes analyses were conducted if a significant interaction was found.

Please note that the terms ‘predict’ or ‘predictors’ were used throughout the Results and Discussion chapters while discussing the results of these regression analyses. These terms were used in a statistical sense referring to the ability of each predictor variable in a regression analysis to explain a significant portion of the variance above and beyond other variables that
were entered first into the regression equation. The use of these terms was not meant to imply that these variables could predict other variables from a temporal perspective. For such claims, a prospective methodology would be required.

**Missing data.** In terms of participants who were excluded from the analysis, five were dropped because the final questionnaire was completely blank as a result of technical difficulties (i.e., these responses were not saved adequately). Of those who were included in the study, some had missing data. Examination of all missing data points revealed a random pattern of missing data across questionnaires. A total of 0.46% of the possible data items were missing across all participants. Examination of missing data within each scale revealed that 78% of those who had missing data missed only one or two items on one scale; 19% missed three or four items on one scale; 2.9% missed five or more items on one scale. If less than 25% of the data was missing per scale, missing data points were replaced with the participant’s mean score from the measure in question. In a few cases where more than 25% of the data was missing per scale, the Expectation Maximation (EM) method was used to compute total scale/subscale scores. A total of three cases required such imputations. The first was missing 31% of the data on one scale, the second was missing 41% of the data on one scale, and the third was missing 69% of the data on one scale. The decision was made to keep this latter individual in the analyses as she had fully completed the remainder of the questionnaires. Five individuals (2.6% of the data set) did not report either their height and/or weight. As such, mean substitution was used for the BMI variable in order to retain these individuals in subsequent analyses. The means of the variables with the imputed values were very similar to the means without the imputed values.

**Transformations.** After missing data points were replaced and imputations were completed, the distribution of each variable was examined both visually and with the use of skewness and kurtosis statistics. This examination revealed a number of skewed variables
Various transformations were applied in order to normalize each of the skewed variables (see Table 2). Although the skewness statistic remained above two for the transformed age and BMI variables, they were considered adequately normalized as alternative transformations produced skews in the opposite direction. Transformed scale scores were used in the remainder of the analyses.

Table 2

Transformations Applied to Normalize Variables

<table>
<thead>
<tr>
<th>Scale</th>
<th>Skew Direction</th>
<th>Before Transformation Skewness (z)</th>
<th>Before Transformation Kurtosis (z)</th>
<th>Transformation</th>
<th>After Transformation Skewness (z)</th>
<th>After Transformation Kurtosis (z)</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAT-26</td>
<td>Positive</td>
<td>7.54</td>
<td>3.70</td>
<td>Log</td>
<td>-0.28</td>
<td>-0.82</td>
</tr>
<tr>
<td>BULIT-R</td>
<td>Positive</td>
<td>6.95</td>
<td>2.98</td>
<td>Negative Reciprocal Root</td>
<td>1.63</td>
<td>-2.59</td>
</tr>
<tr>
<td>BSQ-16</td>
<td>Positive</td>
<td>2.16</td>
<td>-1.14</td>
<td>Square Root</td>
<td>0.13</td>
<td>-1.94</td>
</tr>
<tr>
<td>Age</td>
<td>Positive</td>
<td>4.78</td>
<td>-1.31</td>
<td>Negative Reciprocal Root</td>
<td>2.60</td>
<td>-2.74</td>
</tr>
<tr>
<td>BMI</td>
<td>Positive</td>
<td>8.12</td>
<td>7.70</td>
<td>Negative Reciprocal Root</td>
<td>3.58</td>
<td>0.55</td>
</tr>
<tr>
<td>MEIM</td>
<td>Negative</td>
<td>-6.80</td>
<td>6.33</td>
<td>Cube</td>
<td>-1.17</td>
<td>-1.82</td>
</tr>
<tr>
<td>ARSSAA-AOS</td>
<td>Negative</td>
<td>-4.00</td>
<td>3.18</td>
<td>Cube</td>
<td>-0.05</td>
<td>-0.98</td>
</tr>
</tbody>
</table>

Note. EAT-26 = Eating Attitudes Test-26; BULIT-R = Bulimia Test Revised; BSQ-16A = Body Shape Questionnaire (short form); BMI = Body Mass Index; MEIM = Multi-group Ethnic Identity Measure; ARSSAA-AOS = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans.
**Examination of underlying assumptions.** Relationships between the independent variables (MEIM, ARSAA-AOS, ARSAA-AROS, CVCS, CADC-AD) and the dependent variables (EAT-26, BULIT-R, BSQ-16, Internalization-General) were then examined for homoscedasticity and linearity through the use of residual plots. Using the transformed data, all predictors did not show evidence for heteroscedasticity and non-linearity. The variates also revealed linear and homoscedastic residual plots.

Collinearity among the predictors was assessed for each of the analysis. All of the variance inflation factors were below two and therefore there was no excessive collinearity among the predictors that would impact the results.

Multivariate outliers were assessed for each of the analysis using a studentized residual cut-off of three. Multivariate outliers for each analysis were evaluated. One such outlier was found and deleted after her response time (unreasonably short completion time) and response patterns (same responses throughout each questionnaire) were examined. Deletion of this outlier did not impact the normality, linearity, and homoscedasticity of the variate. No additional outliers were identified.

**Sample size, power, and alpha-related decisions.** According to Stevens (1996), 15 participants per predictor are required for reliable regression equations. The highest number of predictors in any one regression equation in the analysis that follow was nine. As such a sample size of 135 or more was required for reliable analysis. The current sample size of 196 is well above this cut-off.

Type II error was of greater concern in this study than type I error because correlations between culture-related variables and eating- and body-related variables are typically small. Similarly, interaction effects in multiple regression are known to be difficult to detect (McClelland & Judd, 1993). A review of the social science literature revealed that interactions
typically account for only 1% to 3% of the total variance (Champoux & Peter, 1987). Due to
difficulty in detecting such effects, Evans (1985) concluded that interactions explaining as little
as 1% of the total variance should be considered important. For this reason, Type II error was of
greater concern than usual in multiple regression. Also, considering the fact that this is the first
time these variables have been investigated in a sample of Arab-Canadian women, the loss of
power that would result in adjusting alpha was not justified (O’Keefe, 2003). For these reasons,
alpha was not adjusted downward and an alpha level of .05 was used throughout the study.

Regarding internal consistency reliability, Cronbach’s alpha levels of .70 and above are
considered acceptable (Nunnally, 1978). All alphas for each variable in this study were reported
in the measures section and were above this level.
CHAPTER FOUR

Results

Descriptive Statistics

Means, standard deviations, and ranges for each of the measured variables are presented in Table 3. In order to test hypothesis one which stated that Arab-Canadian women would exhibit a range of disordered eating patterns and body shape concerns, the distributions of each of the EAT-26, BULIT-R, BSQ-16, and SATAQ-3-IG variables were examined. Hypothesis one was supported as Arab-Canadian women did exhibit a range of disordered eating symptoms, body shape concerns, and levels of internalization of the thinness ideal.
Table 3

*Means, Standard Deviations, and Ranges of Individual Difference Measures*

<table>
<thead>
<tr>
<th>Individual Difference Measures</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>23.77</td>
<td>4.87</td>
<td>18-35</td>
</tr>
<tr>
<td>BMI</td>
<td>23.59</td>
<td>4.30</td>
<td>16.56-42.87</td>
</tr>
<tr>
<td>EAT-26</td>
<td>13.90</td>
<td>9.78</td>
<td>3-48</td>
</tr>
<tr>
<td>BULIT-R</td>
<td>54.21</td>
<td>21.47</td>
<td>29-130</td>
</tr>
<tr>
<td>BSQ-16A</td>
<td>46.37</td>
<td>17.95</td>
<td>16-96</td>
</tr>
<tr>
<td>SATAQ-3-IG</td>
<td>26.65</td>
<td>8.83</td>
<td>9-45</td>
</tr>
<tr>
<td>ARSAA-AOS</td>
<td>4.14</td>
<td>0.43</td>
<td>2.38-5.00</td>
</tr>
<tr>
<td>ARSAA -ArOS</td>
<td>3.45</td>
<td>0.57</td>
<td>2.18-4.76</td>
</tr>
<tr>
<td>MEIM</td>
<td>3.31</td>
<td>0.49</td>
<td>1.14-4.00</td>
</tr>
<tr>
<td>CVCS</td>
<td>3.22</td>
<td>0.66</td>
<td>1.17-4.79</td>
</tr>
<tr>
<td>CADC-AD</td>
<td>2.96</td>
<td>0.78</td>
<td>1.16-5.06</td>
</tr>
<tr>
<td>CADC-AD-G</td>
<td>2.77</td>
<td>0.84</td>
<td>1.00-5.44</td>
</tr>
<tr>
<td>CADC-AD-C</td>
<td>3.14</td>
<td>0.91</td>
<td>1.00-4.81</td>
</tr>
</tbody>
</table>

*Note.* The means and standard deviations were derived from non-transformed variables. BMI = Body Mass Index; EAT-26 = Eating Attitudes Test-26; BULIT-R = Bulimia Test Revised; BSQ-16A = Body Shape Questionnaire (short form); SATAQ-3-IG = Internalization-General subscale of the Sociocultural Attitudes Toward Appearance Questionnaire; ARSAA-AOS = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; ARSAA-ArOS = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; MEIM = Multi-group Ethnic Identity Measure; CVCS = Cultural Value Conflict Scale; CADC-AD = Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; CADC-AD-G = General stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; CADC-AD-C = Cultural stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist.
Further descriptive analyses were conducted on the two measures of disordered eating symptoms to determine the proportion of the sample exceeding levels indicating increased risk of having an eating disorder. A total of 47 individuals (24%) scored above 20 on the EAT-26. Six participants (3.1%) met the cut-off of 104 on the BULIT-R that would indicate the presence of a clinical level of bulimia symptoms. Use of the more liberal cut-off of 85 (to decrease the number of false negatives; Thelen et al., 1982), revealed 22 participants (11.2%) who showed signs of disturbed eating patterns related to the clinical syndrome of bulimia nervosa.

**Exploratory Analysis of Demographic Variables and Disordered Eating, Body Shape, and Culture-Related Variables**

A series of exploratory ANOVA’s were conducted to examine how each of the eating (EAT-26; BULIT-R), body shape-related (BSQ-16; SATAQ-3-IG), and culture-related variables (Anglo-orientation; Arab-orientation; ethnic identity; cultural value conflict, and acculturative distress) relate to each of the following demographic variables: Generation, education, employment status, marital status, religion, religiosity, age, and BMI. Only relevant significant findings are reported here.

Employment status was related to both age, \( F(2, 186) = 19.08, p = .000 \), and acculturative distress, \( F(2, 186) = 3.87, p = .023 \). Students were the youngest and showed the highest levels of acculturative distress as compared to employed and unemployed individuals. The relationship between acculturative distress and employment status was no longer significant after age was controlled for in an exploratory ANCOVA.

Religion was significantly related to cultural value conflict, \( F(2, 186) = 3.80, p = .024 \), with the Muslim group exhibiting higher levels of cultural value conflict as compared to the Christian and ‘other’ religious groups. Religion was also significantly related to body shape concerns, \( F(2, 186) = 3.33, p = .038 \), with the Muslim group exhibiting higher levels of body
shape concerns as compared to the Christian and ‘other’ groups. Religiosity was significantly related to cultural value conflict, $F(2, 186) = 4.28, p = .015$, with the ‘somewhat religious’ group showing higher levels of cultural value conflict as compared to the ‘not at all’ and ‘very’ religious groups.

In the analyses that follow, both age and BMI were controlled for. The significant findings with religion and religiosity highlight a potential source of cultural value conflict which is not surprising since many of the Islamic religious values, beliefs, and expectations differ from those of mainstream Western culture. The experience of bicultural conflict and stress itself was the focus of this study, not religion or religiosity, and as such religion or religiosity was not further analyzed. The potential impact of religion and religiosity will be discussed further in the discussion section.

**Exploratory Correlational Analyses Between Culture-Related Variables**

An initial set of correlational analyses were conducted to explore how each of the culture-related variables (Anglo-orientation, Arab-orientation, ethnic identity, cultural value conflict, and acculturative distress) relate to one another. Zero-order bivariate correlations were calculated between each of these variables (see Table 4).
Table 4

Correlations Between Acculturation, Ethnic Identity, Cultural Value Conflict, and Acculturative Distress

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. ARSAA-AOS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. ARSAA-ArOS</td>
<td>-.154*</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. MEIM</td>
<td>-.120</td>
<td>.541**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. CVCS</td>
<td>-.053</td>
<td>.233**</td>
<td>.065</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. CADC-AD</td>
<td>.023</td>
<td>-.013</td>
<td>-.219**</td>
<td>.541**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. CADC-AD-C</td>
<td>.080</td>
<td>-.051</td>
<td>-.279**</td>
<td>.558**</td>
<td>.881**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. CADC-AD-G</td>
<td>-.036</td>
<td>.027</td>
<td>-.118</td>
<td>.407**</td>
<td>.896**</td>
<td>.580**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. BMI</td>
<td>.081</td>
<td>-.063</td>
<td>.047</td>
<td>.038</td>
<td>.139</td>
<td>.159*</td>
<td>.092</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. Age</td>
<td>.062</td>
<td>-.148*</td>
<td>.039</td>
<td>-.076</td>
<td>-.218**</td>
<td>-.156*</td>
<td>-.229*</td>
<td>.168*</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Transformed variables were used in these analyses. ARSAA-AOS = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; ARSAA-ArOS = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; MEIM = Multi-group Ethnic Identity Measure; CVCS = Cultural Value Conflict Scale; CADC-AD = Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; CADC-AD-C = Cultural stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; CADC-AD-G = General stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; BMI = Body Mass Index. *p < .05. **p < .01.

Ethnic identity and Arab-orientation were significantly positively correlated which indicates that stronger internal identification with the Arab culture coincides with higher behavioural involvement with that culture (e.g., friends, language, etc.). Since these scales are positively related, one would expect them to behave similarly with measures of bicultural conflict and stress, but this was not the case. Arab-orientation was significantly positively related with cultural value conflict, whereas ethnic identity was significantly negatively
correlated with acculturative distress. This suggests the presence of an interaction which was examined in later analyses.

Age and BMI are participant variables that theoretically relate to eating disorder and cultural variables, and as such, were important to explore and control for. Age was significantly negatively correlated with Arab-orientation and acculturative distress (see Table 4). That is, younger individuals reported more behavioural involvement in the Arab culture and higher levels of acculturative distress. BMI was significantly positively related to age and cultural stress. That is, younger individuals reported lower BMI’s and individuals with higher BMI’s reported higher levels of cultural stress. The correlation matrix presented in Table 4 was re-run while controlling for both age and BMI and all significance patterns remained the same.

**Correlational Analyses between Disordered Eating and Body Shape-Related Variables**

Another set of correlational analyses was conducted to test hypothesis two which stated that measures of disordered eating, body shape concerns, and internalization of thinness will be positively related to one another. In order to test this hypothesis, zero-order bivariate correlations between each of the disordered eating variables (EAT-26; BULIT-R), BSQ-16 and SATAQ-3-IG were calculated (see Table 5). All of these variables were significantly positively correlated with each other.
Table 5

Correlations Between Eating and Body Image and SATAQ-3 Subscale Measures

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. EAT-26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. BULIT-R</td>
<td>.605**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. BSQ-16</td>
<td>.571**</td>
<td>.745**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. SATAQ-3-IG</td>
<td>.477**</td>
<td>.511**</td>
<td>.642**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. BMI</td>
<td>.111</td>
<td>.341**</td>
<td>.418**</td>
<td>.085</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Age</td>
<td>-.084</td>
<td>-.196**</td>
<td>-.112</td>
<td>-.052</td>
<td>.168*</td>
<td></td>
</tr>
</tbody>
</table>

Note. Transformed variables were used in these analyses. **EAT-26** = Eating Attitudes Test-26; **BULIT-R** = Bulimia Test Revised; **BSQ-16A** = Body Shape Questionnaire (short form); **SATAQ-3-IG** = Internalization-General subscale of the Sociocultural Attitudes Toward Appearance Questionnaire; **BMI** = Body Mass Index.

*<p < .05. **<p < .01.

Significant positive relationships were also found between BMI and both the BULIT-R and BSQ-16. Those with higher BMI’s reported higher concerns with body shape and also reported more bulimia symptoms. With respect to age, it was significantly positively correlated with BMI and significantly negatively correlated with BULIT-R scores. Younger individuals reported lower BMI’s and more bulimia symptoms. The correlations presented in Table 5 were re-run while controlling for both age and BMI and significance patterns remained the same.

Correlational Analyses between Culture-Related Variables, Disordered Eating, and Body Shape-Related Variables

The next set of correlational analyses was conducted in order to test hypotheses three through five. Hypothesis three stated that acculturation would not be correlated with eating disturbances, body shape challenges, and internalization of thinness. Hypothesis four stated that ethnic identity would correlated with eating disturbances, body shape challenges, and
internalization of thinness. Hypothesis five stated that bicultural stress and conflict would be significantly positively correlated with eating disturbances, body shape challenges, and internalization of thinness. In order to test these hypotheses, zero-order bivariate correlations between each of the disordered eating variables (EAT-26; BULIT-R), body shape-related variables (BSQ-16; SATAQ-3-IG), and culture-related variables (Anglo-orientation, Arab-orientation, ethnic identity, cultural value conflict, and acculturative distress) were calculated (see Table 6).
Table 6  
Correlations Between Each of the Cultural Variables and Each of the Eating- and Body-Related Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>EAT-26</th>
<th>BULIT-R</th>
<th>BSQ-16A</th>
<th>SATAQ-3-IG</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARSAA-AOS</td>
<td>.114</td>
<td>-.016</td>
<td>.164*</td>
<td>.161*</td>
</tr>
<tr>
<td>ARSAA-ArOS</td>
<td>-.026</td>
<td>-.014</td>
<td>-.008</td>
<td>-.123</td>
</tr>
<tr>
<td>MEIM</td>
<td>-.021</td>
<td>-.058</td>
<td>-.049</td>
<td>-.111</td>
</tr>
<tr>
<td>CVCS</td>
<td>.198**</td>
<td>.276**</td>
<td>.281**</td>
<td>.344**</td>
</tr>
<tr>
<td>CADC-AD</td>
<td>.319**</td>
<td>.490**</td>
<td>.512**</td>
<td>.459**</td>
</tr>
<tr>
<td>CADC-AD-C</td>
<td>.290**</td>
<td>.406**</td>
<td>.405**</td>
<td>.405**</td>
</tr>
<tr>
<td>CADC-AD-G</td>
<td>.276**</td>
<td>.463**</td>
<td>.501**</td>
<td>.409**</td>
</tr>
</tbody>
</table>

Note. Transformed variables were used in these analyses. **EAT-26** = Eating Attitudes Test-26; **BULIT-R** = Bulimia Test Revised; **BSQ-16A** = Body Shape Questionnaire (short form); **SATAQ-3-IG** = Internalization-General subscale of the Sociocultural Attitudes Toward Appearance Questionnaire; **ARSAA-AOS** = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; **ARSAA-ArOS** = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; **MEIM** = Multi-group Ethnic Identity Measure; **CVCS** = Cultural Value Conflict Scale; **CADC-AD** = Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; **CADC-AD-C** = Cultural stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; **CADC-AD-G** = General stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist.

*\( p < .05 \). **\( p < .01 \).

Hypothesis three was only partially supported in that both Arab-orientation and Anglo-orientation were unrelated to each of the disordered eating measures. Anglo-orientation, however, was significantly positively related to both body shape related variables: Higher Anglo-orientation was associated with both higher internalization of the thinness ideal and increased body shape concerns.
Hypothesis four was not supported since ethnic identity was not significantly correlated with any of the disordered eating or body shape-related variables.

Hypothesis five was supported such that both measures of bicultural stress and conflict (CVCS and CADC-AD) were significantly positively correlated with each of the disordered eating and body shape-related variables.

Correlations found in Table 6 were re-run while controlling for age and BMI and all significance patterns remained the same. This pattern confirmed that each of the culture-related measures taps into a different construct since the correlational patterns were not the same with each of the disordered eating and body shape-related measures even though these latter measures were positively correlated with each other (see Table 5).

Assessing the Predictive Value of Bicultural Stress and Conflict on Disordered Eating, Body Shape Concerns, and Internalization of the Thinness Ideal

The next set of regression analyses was conducted in order to test hypothesis six which stated that bicultural stress and conflict would be able to predict disordered eating symptoms, body shape concerns, and internalization of thinness above and beyond both acculturation (Anglo-orientation and Arab-orientation) and ethnic identity. This hypothesis was tested separately for both measures of bicultural stress and conflict (CVCS and CADC-AD).

In order to test this hypothesis, a four step regression analysis was set up where both age and BMI were entered in Step 1 to statistically control for these variables (since they were both significantly correlated with some of the eating, body shape-related, and culture-related variables). In Step 2, the two acculturation subscales (Anglo-orientation and Arab-orientation) were entered to assess the amount of variance in each of the disordered eating and body shape-related measures that could be attributed to acculturation. In Step 3, ethnic identity was entered to determine whether or not ethnic identity predicted unique variance in each of the disordered
eating and body shape-related measures over and above acculturation. In Step 4, a measure of bicultural stress and conflict (CVCS or CADC-AD) was entered to assess the ability of this construct to predict significant unique variance in each of the disordered eating and body shape-related measures. This regression was run twice (once for each of the measures of bicultural stress and conflict) for each of the four outcome variables (EAT-26; BULIT-R; BSQ-16; SATAQ-3-IG). Results are presented separately for each measure of bicultural stress and conflict. First, results using the CVCS are presented followed by results using the CADC-AD.

**Assessing the predictive value of cultural value conflict on each outcome variable.**

A set of four hierarchical regressions was run to test hypothesis six using the CVCS as the measure of bicultural stress and conflict. Results are presented separately for each outcome variable.

**Assessing the predictive value of cultural value conflict on EAT-26 scores.** The first hierarchical regression was run to predict EAT-26 scores (see Table 7). Entry of the covariates (age and BMI) in Step 1, acculturation subscales in Step 2 and ethnic identity in Step 3 did not predict a significant amount of variance in EAT-26 scores. Entry of the CVCS in Step 4 predicted a significant amount of variance in EAT-26 scores, $F_{change} (1, 184) = 8.26, p = .005$, $R^2_{change} = .041$. Thus, cultural value conflict variable was able to account for an extra 4.1% of the variance in EAT-26 scores over and above age, BMI, acculturation and ethnic identity.
Table 7
Hierarchical Regression Analysis with Acculturation, Ethnic Identity, and Cultural Value Conflict as Predictors of EAT-26 Scores

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
<th>Model</th>
<th>FΔ</th>
<th>t</th>
<th>df</th>
<th>Partial R²</th>
<th>R² Δ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Covariates</td>
<td>2.21</td>
<td>2.21</td>
<td>2, 188</td>
<td>.023</td>
<td>.023</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-1.44</td>
<td>188</td>
<td>-.104</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td>1.76</td>
<td>188</td>
<td>.127</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.  ARSAA-AOS</td>
<td>1.76</td>
<td>1.31</td>
<td>2, 186</td>
<td>.037</td>
<td>.014</td>
<td></td>
</tr>
<tr>
<td>ARSAA-AOS</td>
<td>1.54</td>
<td>186</td>
<td>.112</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARSAA-ArOS</td>
<td>-.258</td>
<td>186</td>
<td>-.019</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. MEIM</td>
<td>1.41</td>
<td>.015</td>
<td>-.123</td>
<td>1,185</td>
<td>-.009</td>
<td>.037</td>
</tr>
<tr>
<td>4. CVCS</td>
<td>2.60</td>
<td>8.26**</td>
<td>2,184</td>
<td>.207</td>
<td>.078</td>
<td>.041</td>
</tr>
</tbody>
</table>

Note. Transformed variables were used in these analyses. EAT-26 = Eating Attitudes Test-26; BMI = Body Mass Index; ARSAA-AOS = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; ARSAA-ArOS = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; MEIM = Multi-group Ethnic Identity Measure; CVCS = Cultural Value Conflict Scale.

*p < .05. **p < .01.

Assessing the predictive value of cultural value conflict on BULIT-R scores. The second hierarchical regression was run to predict BULIT-R scores (see Table 8). Similar to findings with the EAT-26, acculturation and ethnic identity variables did not predict a significant amount of variance in bulimia symptoms. However, the CVCS predicted a significant amount of variance in BULIT-R scores over and above the first three steps, \( F \text{ change} (1, 184) = 15.81, p < .001, R^2 \text{ change} = .06 \). Thus, cultural value conflict accounted for 6% of variance in bulimia symptoms over and above age, BMI, acculturation, and ethnic identity.
Table 8

Hierarchical Regression Analysis with Acculturation, Ethnic Identity, and Cultural Value Conflict as Predictors of BULIT-R Scores

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
<th>Model</th>
<th>$F\Delta$</th>
<th>$t$</th>
<th>$df$</th>
<th>Partial $R^2$</th>
<th>$R^2$ Δ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.Covariates</td>
<td></td>
<td>20.65</td>
<td>2.188</td>
<td>.180</td>
<td>.180</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>-3.83**</td>
<td>188</td>
<td>.269</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td>5.73**</td>
<td>188</td>
<td>.386</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>10.35</td>
<td>.223</td>
<td>2.186</td>
<td>.182</td>
<td>.002</td>
</tr>
<tr>
<td>ARSAA-AOS</td>
<td></td>
<td>-.499</td>
<td>186</td>
<td>.037</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARSAA-ArOS</td>
<td></td>
<td>-.510</td>
<td>186</td>
<td>.037</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. MEIM</td>
<td></td>
<td>8.45</td>
<td>.897</td>
<td>-.947</td>
<td>.186</td>
<td>.004</td>
</tr>
<tr>
<td>4. CVCS</td>
<td></td>
<td>10.24</td>
<td>15.81**</td>
<td>3.98**</td>
<td>1.184</td>
<td>.250</td>
</tr>
</tbody>
</table>

Note. Transformed variables were used in these analyses. BULIT-R = Bulimia Test Revised; BMI = Body Mass Index; ARSAA-AOS = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; ARSAA-ArOS = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; MEIM = Multi-group Ethnic Identity Measure; CVCS = Cultural Value Conflict Scale.

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

Assessing the predictive value of cultural value conflict on BSQ-16 scores. A third hierarchical regression was run to predict BSQ-16 scores (see Table 9). Acculturation and ethnic identity variables did not predict a significant amount of variance in body shape concerns. The CVCS, however, predicted a significant amount of variance in BSQ-16 scores over and above the first three steps, $F_{change} (1, 184) = 19.04, p < .001, R^2_{change} = .072$. Thus, cultural value conflict accounted for 7.2 % of variance in body shape concerns over and above age, BMI, acculturation, and ethnic identity.
Table 9
Hierarchical Regression Analysis with Acculturation, Ethnic Identity, and Cultural Value Conflict as Predictors of BSQ-16 Scores

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
<th>Model</th>
<th>$F$</th>
<th>$F_{\Delta}$</th>
<th>$t$</th>
<th>$df$</th>
<th>Partial $R^2$</th>
<th>$R^2_{\Delta}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Covariates</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>24.22</td>
<td></td>
<td>24.22**</td>
<td></td>
<td>2,188</td>
<td>.196</td>
<td>.205</td>
</tr>
<tr>
<td>BMI</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. ARSAA-AOS</td>
<td>13.44</td>
<td></td>
<td>2.32</td>
<td></td>
<td>2,186</td>
<td>.208</td>
<td>.019</td>
</tr>
<tr>
<td>ARSAA-ArOS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. MEIM</td>
<td>11.03</td>
<td></td>
<td>1.33</td>
<td></td>
<td>1,185</td>
<td>.209</td>
<td>.006</td>
</tr>
<tr>
<td>CVCS</td>
<td>13.26</td>
<td></td>
<td>19.04**</td>
<td></td>
<td>1,184</td>
<td>.279</td>
<td>.072</td>
</tr>
</tbody>
</table>

Note. Transformed variables were used in these analyses. BSQ-16A = Body Shape Questionnaire (short form); BMI = Body Mass Index; ARSAA-AOS = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; ARSAA-ArOS = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; MEIM = Multi-group Ethnic Identity Measure; CVCS = Cultural Value Conflict Scale.

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

Assessing the predictive value of cultural value conflict on SATAQ-3-IG scores. The fourth hierarchical regression was run to predict SATAQ-3-IG scores (see Table 10).

Acculturation was a significant predictor of SATAQ-3-IG scores, but ethnic identity was not. The CVCS predicted a significant amount of variance in SATAQ-3-IG scores over and above the first three steps, $F_{\text{change}} (1, 184) = 32.57, p < .001, R^2_{\text{change}} = .143$. Thus, cultural value conflict accounted for 14.3% of the variance in internalization of thinness over and above age, BMI, acculturation and ethnic identity. This is a relatively larger amount of variance as compared to findings with the EAT-26, BULIT-R, and BSQ-16.
Table 10

*Hierarchical Regression Analysis with Acculturation, Ethnic Identity, and Cultural Value Conflict as Predictors of SATAQ-3-IG Scores*

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
<th>Model</th>
<th>$F_{Δ}$</th>
<th>$t$</th>
<th>df</th>
<th>Partial $R^2$</th>
<th>$R^2$ Δ</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Covariates</td>
<td></td>
<td>1.044</td>
<td>1.04</td>
<td>2,188</td>
<td>.011</td>
<td>.011</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>-.850</td>
<td>188</td>
<td>.062</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td>1.30</td>
<td>188</td>
<td>.094</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. ARSAA-AOS</td>
<td>2.28</td>
<td>3.49</td>
<td>186</td>
<td>.143</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARSAA-ArOS</td>
<td>1.96</td>
<td></td>
<td>186</td>
<td>.143</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARSAA-ArOS</td>
<td></td>
<td>1.96</td>
<td>186</td>
<td>.143</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. MEIM</td>
<td>1.91</td>
<td>.472</td>
<td>-.687</td>
<td>1,185</td>
<td>.049</td>
<td>.002</td>
</tr>
<tr>
<td>4. CVCS</td>
<td>7.30</td>
<td>32.57**</td>
<td>5.70**</td>
<td>1,184</td>
<td>.192</td>
<td>.143</td>
</tr>
</tbody>
</table>

*Note.* Transformed variables were used in these analyses. SATAQ-3-IG = Internalization-General subscale of the Sociocultural Attitudes Toward Appearance Questionnaire; BMI = Body Mass Index; ARSAA-AOS = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; ARSAA-ArOS = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; MEIM = Multi-group Ethnic Identity Measure; CVCS = Cultural Value Conflict Scale.

*Summary of findings: The predictive value of cultural value conflict on all four outcome variables.* Hypothesis six was supported for each of the EAT-26, BULIT-R, BSQ-16, and SATAQ-3-IG. Cultural value conflict was able to predict a significant amount of variance in disordered eating symptoms, body shape concerns and internalization of thinness above and beyond age, BMI, acculturation, and ethnic identity.
Assessing the predictive value of acculturative distress on each outcome variable.

This next set of four regressions was run to test hypothesis six using the CADC-AD as the measure of bicultural stress and conflict. Since the CADC-AD is comprised of both cultural stress and general stress items, these were separated in the following regressions to examine the contribution of each type of item to each of the outcome variables.

Assessing the predictive value of acculturative distress on EAT-26 scores. The next hierarchical regression was run to predict EAT-26 scores (see Table 11). Entry of the acculturation subscales in Step 2 and ethnic identity in Step 3 did not predict a significant amount of variance in EAT-26 scores. Entry of the CADC-AD in Step 4 predicted a significant amount of variance in EAT-26 scores over and above the first three steps, \(F\) change \( (2, 183) = 9.51, p < .001, R^2\) change = .091. Thus, acculturative distress was able to account for an extra 9.1% of the variance in EAT-26 scores over and above age, BMI, acculturation, and ethnic identity. Cultural stress was a significant predictor within the final step, \(t\) (183) = 2.18, \(p = .031\), but general stress item was only marginally significant, \(t\) (183) = 1.94, \(p = .054\).
Table 11

*Hierarchical Regression Analysis with Acculturation, Ethnic Identity, and Acculturative Distress Subscales as Predictors of EAT-26 Scores*

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
<th>Model</th>
<th>$F\Delta$</th>
<th>$t$</th>
<th>$df$</th>
<th>Partial $R^2$</th>
<th>$R^2$ $\Delta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Covariates</td>
<td></td>
<td>2.21</td>
<td></td>
<td>2, 188</td>
<td>.023</td>
<td>.023</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td>-1.44</td>
<td>188</td>
<td>-.104</td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td></td>
<td>1.76</td>
<td>188</td>
<td>.127</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>1.76</td>
<td>1.31</td>
<td>2, 186</td>
<td>.037</td>
<td>.014</td>
</tr>
<tr>
<td>ARSAA-AOS</td>
<td></td>
<td>1.54</td>
<td></td>
<td>186</td>
<td>.112</td>
<td></td>
</tr>
<tr>
<td>ARSAA-ArOS</td>
<td></td>
<td>-.258</td>
<td></td>
<td>186</td>
<td>-.019</td>
<td></td>
</tr>
<tr>
<td>3. MEIM</td>
<td></td>
<td>1.41</td>
<td>.015</td>
<td>2, 185</td>
<td>-.009</td>
<td>.037 .000</td>
</tr>
<tr>
<td>4. CADC-AD-C</td>
<td></td>
<td>3.81</td>
<td>9.51**</td>
<td>2, 183</td>
<td>.127</td>
<td>.091</td>
</tr>
<tr>
<td>CADC-AD-G</td>
<td></td>
<td>2.18*</td>
<td>183</td>
<td>183</td>
<td>.159</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Transformed variables were used in these analyses. **EAT-26** = Eating Attitudes Test-26; **BMI** = Body Mass Index; **ARSAA-AOS** = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; **ARSAA-ArOS** = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; **MEIM** = Multi-group Ethnic Identity Measure; **CVCS** = Cultural Value Conflict Scale; **CADC-AD-C** = Cultural stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; **CADC-AD-G** = General stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist.

*p < .05. **p < .01.*
Assessing the predictive value of acculturative distress on BULIT-R scores. The next hierarchical regression was run to predict BULIT-R scores (see Table 12). Similar to findings with the EAT-26, acculturation and ethnic identity variables did not predict a significant amount of variance in bulimia symptoms. However, the CADC-AD predicted a significant amount of variance in BULIT-R scores over and above the first three steps, $F_{\text{change}}(2, 183) = 22.13, p < .001, R^2_{\text{change}} = .159$. Thus, acculturative distress accounted for 15.9% of variance in bulimia symptoms over and above age, BMI, acculturation, and ethnic identity. Both general stress, $t(183) = 4.07, p < .001$, and cultural stress, $t(183) = 2.12, p = .036$, were significant contributors within the final step.
Table 12

Hierarchical Regression Analysis with Acculturation, Ethnic Identity, and Acculturative Distress Subscales as Predictors of BULIT-R Scores

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
<th>Model $F$</th>
<th>$F_{\Delta}$</th>
<th>$t$</th>
<th>$df$</th>
<th>Partial $r$</th>
<th>$R^2$</th>
<th>$R^2_{\Delta}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Covariates</td>
<td></td>
<td>20.65**</td>
<td>2</td>
<td>188</td>
<td>.180</td>
<td>.180</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>-3.83**</td>
<td>188</td>
<td></td>
<td>-2.69</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td>5.73**</td>
<td>188</td>
<td></td>
<td>.386</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. ARSAA-AOS</td>
<td></td>
<td>10.35</td>
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<td>.182</td>
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<tr>
<td>ARSAA-ArOS</td>
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<td>-499</td>
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<td></td>
</tr>
<tr>
<td>MEIM</td>
<td></td>
<td>8.45</td>
<td>.897</td>
<td>-947</td>
<td>-947</td>
<td>.186</td>
<td>.004</td>
</tr>
<tr>
<td>3. MEIM</td>
<td></td>
<td>13.74</td>
<td>22.13**</td>
<td>2</td>
<td>183</td>
<td>.345</td>
<td>.159</td>
</tr>
<tr>
<td>CADC-AD-C</td>
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<td>2.12*</td>
<td>183</td>
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<tr>
<td>CADC-AD-G</td>
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<td>4.07**</td>
<td>183</td>
<td></td>
<td>.288</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note. Transformed variables were used in these analyses. BULIT-R = Bulimia Test Revised; BMI = Body Mass Index; ARSAA-AOS = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; ARSAA-ArOS = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; MEIM = Multi-group Ethnic Identity Measure; CVCS = Cultural Value Conflict Scale; CADC-AD-C = Cultural stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; CADC-AD-G = General stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist.

* $p < .05$. ** $p < .01$. 
Assessing the predictive value of acculturative distress on BSQ-16 scores. The next hierarchical regression was run to predict BSQ-16 scores (see Table 13). Acculturation and ethnic identity variables did not predict a significant amount of variance in body shape concerns. The CADC-AD, however, predicted a significant amount of variance in BSQ-16 scores over and above the first three steps, $F_{change} (2, 183) = 31.98, p < .001$, $R^2_{change} = .199$. Thus, acculturative distress accounted for 19.9% of variance in body shape concerns over and above age, BMI, acculturation, and ethnic identity. General stress was a significant contributor within the final step, $t (183) = 5.63, p < .001$, but cultural stress was not, $t (183) = 1.60, p = .112$. 
Table 13
Hierarchical Regression Analysis with Acculturation, Ethnic Identity, and Acculturative Distress Subscales as Predictors of BSQ-16 Scores

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
<th>Model</th>
<th>$F_{\Delta}$</th>
<th>$t$</th>
<th>df</th>
<th>Partial $r$</th>
<th>$R^2$</th>
<th>$R^2_{\Delta}$</th>
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<tbody>
<tr>
<td>1. Covariates</td>
<td>24.22</td>
<td>24.22**</td>
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<td>.205</td>
<td>.205</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>-2.67**</td>
<td>188</td>
<td>-.191</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td>6.78**</td>
<td>188</td>
<td>.443</td>
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</tr>
<tr>
<td>2. ARSAA-AOS</td>
<td>13.44</td>
<td>2.32</td>
<td>2, 186</td>
<td></td>
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<td>.019</td>
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<tr>
<td>ARSAA-ArOS</td>
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<td>186</td>
<td>.156</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ARSAA-ArOS</td>
<td>.228</td>
<td>186</td>
<td>.017</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. MEIM</td>
<td>11.03</td>
<td>1.33</td>
<td>-1.15</td>
<td>1, 185</td>
<td>-.084</td>
<td>.230</td>
<td>.006</td>
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<tr>
<td>4. CADC-AD-C</td>
<td>19.66</td>
<td>31.98**</td>
<td>2, 183</td>
<td></td>
<td>.429</td>
<td>.199</td>
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<tr>
<td>CADC-AD-C</td>
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<td>183</td>
<td>.117</td>
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</tr>
<tr>
<td>CADC-AD-G</td>
<td>5.63**</td>
<td>183</td>
<td>.384</td>
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<td></td>
</tr>
</tbody>
</table>

*Note.* Transformed variables were used in these analyses. BSQ-16A = Body Shape Questionnaire (short form); BMI = Body Mass Index; ARSAA-AOS = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; ARSAA-ArOS = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; MEIM = Multi-group Ethnic Identity Measure; CVCS = Cultural Value Conflict Scale; CADC-AD-C = Cultural stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; CADC-AD-G = General stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist.

* $p < .05$. ** $p < .01$. 
Assessing the predictive value of acculturative distress on SATAQ-3-IG scores. The next hierarchical regression was run to predict SATAQ-3-IG scores (see Table 14). Acculturation was a significant predictor of SATAQ-3-IG scores, but ethnic identity was not. The CADC-AD predicted a significant amount of variance in SATAQ-3-IG scores over and above the first three steps, $F_{change} (2, 183) = 24.65, p < .001$, $R^2_{change} = .202$. Thus, acculturative distress accounted for 20.2% of the variance in internalization of thinness over and above age, BMI, acculturation and ethnic identity. Both general stress, $t (183) = 3.62, p < .001$, and cultural stress, $t (183) = 3.00, p = .003$, were significant contributors within this final step.
### Table 14

*Hierarchical Regression Analysis with Acculturation, Ethnic Identity, and Acculturative Distress Subscale as Predictors of SATAQ-3-IG Scores*

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
<th>Model</th>
<th>$F_{Δ}$</th>
<th>$t$</th>
<th>$df$</th>
<th>Partial $R^2$</th>
<th>$R^2_{Δ}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Covariates</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
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<td>188</td>
<td>-.062</td>
<td>.011</td>
</tr>
<tr>
<td>BMI</td>
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<td></td>
<td>1.30</td>
<td>188</td>
<td>.094</td>
<td>.094</td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td>2.28</td>
<td></td>
<td>186</td>
<td>.143</td>
<td>.047</td>
</tr>
<tr>
<td>ARSAA-AOS</td>
<td></td>
<td>1.96</td>
<td></td>
<td>186</td>
<td>.143</td>
<td>.047</td>
</tr>
<tr>
<td>ARSAA-ArOS</td>
<td></td>
<td>-1.47</td>
<td></td>
<td>186</td>
<td>-.107</td>
<td>.036</td>
</tr>
<tr>
<td>3. MEIM</td>
<td></td>
<td>1.91</td>
<td></td>
<td>1,185</td>
<td>-.050</td>
<td>.049</td>
</tr>
<tr>
<td>4.</td>
<td></td>
<td>8.76</td>
<td></td>
<td>1,185</td>
<td>-.050</td>
<td>.049</td>
</tr>
<tr>
<td>CADC-AD-C</td>
<td></td>
<td>3.00**</td>
<td></td>
<td>183</td>
<td>.216</td>
<td>.202</td>
</tr>
<tr>
<td>CADC-AD-G</td>
<td></td>
<td>3.62**</td>
<td></td>
<td>183</td>
<td>.259</td>
<td>.202</td>
</tr>
</tbody>
</table>

*Note.* Transformed variables were used in these analyses. **SATAQ-3-IG** = Internalization-General subscale of the Sociocultural Attitudes Toward Appearance Questionnaire; **BMI** = Body Mass Index; **ARSAA-AOS** = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; **ARSAA-ArOS** = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; **MEIM** = Multi-group Ethnic Identity Measure; **CVCS** = Cultural Value Conflict Scale; **CADC-AD-C** = Cultural stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; **CADC-AD-G** = General stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist.

*p < .05. **p < .01.
Summary of findings: The predictive value of acculturative distress on all four outcome variables. Hypothesis six was supported once again for each of the EAT-26, BULIT-R, BSQ-16, and SATAQ-3-IG. Acculturative distress was able to predict a significant amount of variance in disordered eating symptoms, body shape concerns and internalization of thinness above and beyond age, BMI, acculturation, and ethnic identity. Cultural stress items on their own were significant predictors for both eating disorder measures and internalization of thinness. However, cultural stress items were not significant predictors of body shape concerns.

Overall, results from the previous regression analysis using both measures of bicultural stress and conflict (cultural value conflict and acculturative distress) supported hypothesis six. It may be noted that the amount of variance accounted for by the acculturative distress measure in the final step was relatively higher (9.1% - 20.2%) than that accounted for by the cultural value conflict measure (4.1% - 14.3%).

Exploratory Assessment of the Incremental Predictive Value of Cultural Stress (Beyond General Stress) on Disordered Eating and Body Shape-Related Variables

The next set of four regressions was run to explore whether or not the cultural stress items of the Acculturative Distress subscale (CADC-AD-C) will be able to predict a significant amount of variability in disordered eating symptoms, body shape concerns, and internalization of thinness, above and beyond the general stress items (CADC-AD-G). This exploratory analysis was conducted as a follow-up to the previous set of analyses because cultural stress is central to this study’s hypotheses. Determining the relative contribution of cultural stress above and beyond general stress would confirm that the relative importance of cultural stress items within this measure.

In order to explore this, a four step hierarchical regression analysis was set up where age and BMI were entered in Step 1 to statistically control for these variables. In step 2, CADC-AD-
G was entered. In step 3, CADC-AD-C was entered to assess the amount of unique variance in disordered eating, body shape concerns and internalization of thinness may be attributed to cultural stress above and beyond general stress.

**Assessing the incremental predictive value of cultural stress on EAT-26 scores.** The first hierarchical regression in this set was run to predict EAT-26 scores (see Table 15). Entry of the CADC-AD-C in Step 3 predicted a significant amount of variance in EAT-26 scores over and above the first two steps, $F_{change} (1, 186) = 4.84, p = .029, R^2_{change} = .023$. Thus, cultural stress was able to account for an additional 2.3% of the variance in EAT-26 scores over and above age, BMI, and general stress.

Table 15

*Hierarchical Regression Analysis with Acculturative Distress item as Predictors of EAT-26 Scores*

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
<th>Model</th>
<th>$F_{\Delta}$</th>
<th>$t$</th>
<th>df</th>
<th>Partial $r$</th>
<th>$R^2$</th>
<th>$R^2_{\Delta}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Covariates</td>
<td>2.21</td>
<td>2.21</td>
<td>2, 188</td>
<td>.023</td>
<td>.023</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td>-1.44</td>
<td>188</td>
<td>-.104</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td>1.76</td>
<td>188</td>
<td>.127</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. CADC-AD-G</td>
<td>6.09</td>
<td>13.54**</td>
<td>1, 187</td>
<td>.260</td>
<td>.089</td>
<td>.066</td>
<td></td>
</tr>
<tr>
<td>3. CADC-AD-C</td>
<td>5.87</td>
<td>4.84*</td>
<td>1, 186</td>
<td>.159</td>
<td>.112</td>
<td>.023</td>
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</tr>
</tbody>
</table>

*Note.* Transformed variables were used in these analyses. **EAT-26** = Eating Attitudes Test-26; **BMI** = Body Mass Index; **CADC-AD-G** = General stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; **CADC-AD-C** = Cultural stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist.

*p < .05. **p < .01.
Assessing the incremental predictive value of cultural stress on BULIT-R scores.

The second hierarchical regression was run to predict BULIT-R scores (see Table 16). Entry of the CADC-AD-C in Step 3 predicted a significant amount of variance in BULIT-R scores over and above the first two steps, BMI, and CADC-AD-G, $F_{change} (1, 186) = 4.28, p = .040, R^2_{change} = .015$. Thus, cultural stress was able to account for an additional 1.5% of the variance in bulimia symptoms over and above age, BMI, and general stress.

Table 16
*Hierarchical Regression Analysis with Acculturative Distress items as Predictors of BULIT-R Scores*

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
<th>Model</th>
<th>$F$</th>
<th>$F_{\Delta}$</th>
<th>$t$</th>
<th>$df$</th>
<th>Partial $R^2$</th>
<th>$R^2_{\Delta}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Covariates</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>20.65</td>
<td>20.65**</td>
<td>-3.83**</td>
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<td>.180</td>
<td>.180</td>
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<tr>
<td>BMI</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. CADC-AD-G</td>
<td>30.30</td>
<td>40.86**</td>
<td>6.39**</td>
<td>1, 187</td>
<td>.423</td>
<td>.327</td>
<td>.147</td>
</tr>
<tr>
<td>3. CADC-AD-C</td>
<td>24.19</td>
<td>4.28*</td>
<td>2.07*</td>
<td>1, 186</td>
<td>.150</td>
<td>.342</td>
<td>.015</td>
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</tbody>
</table>

Note. Transformed variables were used in these analyses. **BULIT-R** = Bulimia Test Revised; **BMI** = Body Mass Index; **CADC-AD-G** = General stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; **CADC-AD-C** = Cultural stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; *$p < .05$. **$p < .01$.**
Assessing the incremental predictive value of cultural stress on BSQ-16 scores. A third hierarchical regression was run to predict BSQ-16 scores (see Table 17). Entry of the CADC-AD-C in Step 3 did not predict a significant amount of variance in BSQ-16 scores over and above the first two steps, $F_{\text{change}}(1, 186) = 3.43, p = .066, R^2_{\text{change}} = .011$. Entry of the CADC-AD-G in Step 2 predicted a very large amount of variance in BSQ-16 scores, $F_{\text{change}}(1, 186) = 60.27, p < .001, R^2_{\text{change}} = .399$. Thus, general stress was a strong predictor of body shape concerns and cultural stress was not able to predict a significant amount of variance in body shape concerns beyond general stress.

Table 17
Hierarchical Regression Analysis with Acculturative Distress items as Predictors of BSQ-16 Scores

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
<th>Model</th>
<th>$F_{\Delta}$</th>
<th>$t$</th>
<th>$df$</th>
<th>Partial $r$</th>
<th>$R^2$</th>
<th>$R^2_{\Delta}$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Covariates</td>
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<td>24.22**</td>
<td>2</td>
<td>188</td>
<td>.205</td>
<td>.205</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>-2.67**</td>
<td>188</td>
<td>-.191</td>
</tr>
<tr>
<td>BMI</td>
<td></td>
<td>6.78**</td>
<td>188</td>
<td></td>
<td>.443</td>
<td></td>
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<tr>
<td>BMI</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. CADC-AD-G</td>
<td></td>
<td>41.33</td>
<td>7.76**</td>
<td>1, 187</td>
<td>.494</td>
<td>.399</td>
<td>.194</td>
</tr>
<tr>
<td>3. CADC-AD-C</td>
<td></td>
<td>32.25</td>
<td>3.43</td>
<td>1, 186</td>
<td>.135</td>
<td>.410</td>
<td>.011</td>
</tr>
</tbody>
</table>

Note. Transformed variables were used in these analyses. BSQ-16A = Body Shape Questionnaire (short form); BMI = Body Mass Index; CADC-AD-G = General stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; CADC-AD-C = Cultural stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist.

*p < .05. **p < .01.
Assessing the incremental predictive value of cultural stress on SATAQ-3-IG scores. The fourth hierarchical regression was run to predict SATAQ-3-IG scores (see Table 18). Entry of the CADC-AD-C in Step 3 predicted a significant amount of variance in BULIT-R scores over and above the first two steps, $F_{change} (1, 186) = 10.29$, $p = .002$, $R^{2}_{change} = .043$. Thus, cultural stress was able to account for an additional 4.3% of the variance in internalization of thinness over and above age, BMI, and general stress.

Table 18
Hierarchical Regression Analysis with Acculturative Distress items as Predictors of SATAQ-3-IG Scores

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
<th>Model</th>
<th>$F$</th>
<th>$F_{Δ}$</th>
<th>$t$</th>
<th>$df$</th>
<th>Partial $R^2$</th>
<th>$R^2_{Δ}$</th>
</tr>
</thead>
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<td></td>
</tr>
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<td>1.04</td>
<td>1.04</td>
<td>2, 188</td>
<td>-.850</td>
<td>188</td>
<td>.011</td>
<td>.011</td>
</tr>
<tr>
<td>BMI</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. CADC-AD-G</td>
<td>13.30</td>
<td>37.41**</td>
<td>6.11**</td>
<td>1, 187</td>
<td>.408</td>
<td>.176</td>
<td>.165</td>
</tr>
<tr>
<td>3. CADC-AD-C</td>
<td>13.04</td>
<td>10.29**</td>
<td>3.21**</td>
<td>1, 186</td>
<td>.229</td>
<td>.219</td>
<td>.043</td>
</tr>
</tbody>
</table>

Note. Transformed variables were used in these analyses. SATAQ-3-IG = Internalization-General subscale of the Sociocultural Attitudes Toward Appearance Questionnaire; BMI = Body Mass Index; CADC-AD-G = General stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; CADC-AD-C = Cultural stress items of the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist.

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

Summary of findings: Incremental predictive value of cultural stress (beyond general stress) on all four outcome variables. Cultural stress was able to predict a significant amount of variance for the EAT-26, BULIT-R, and SATAQ-3-IG above and beyond general distress. However, in the case of the BSQ-16, general stress was a strong predictor and cultural...
stress did not predict additional variance in body shape concerns above and beyond general stress.

**Examining 3-way Interactions among Culture-Related Variables as Predictors of Disordered Eating, Body Shape Concerns, and Internalization of Thinness**

Hypothesis seven stated that acculturation, ethnic identity, and bicultural stress and conflict will interact to predict disordered eating, body shape challenges, and internalization of thinness. This hypothesis was divided into three sub-hypotheses as follows:

Hypothesis 7a: The two dimensions of acculturation (Arab-orientation and Anglo-orientation) will interact with bicultural stress and conflict to predict disordered eating and body shape-related difficulties.

Hypothesis 7b: Anglo-orientation, ethnic identity, and bicultural stress and conflict will interact to predict disordered eating and body shape-related difficulties.

Hypothesis 7c: Arab-orientation, ethnic identity, and bicultural stress and conflict will interact to predict disordered eating and body shape-related difficulties.

The next set of regressions was conducted in order to test these hypotheses. A series of three-way interactions among specific facets of acculturation (i.e., Anglo-orientation and Arab-orientation), ethnic identity, and bicultural stress and conflict (i.e., cultural value conflict and acculturative distress) were investigated as predictors of disordered eating, body shape concerns, and internalization of thinness. Specifically, three pairs of interactions were tested.

The first pair tested hypothesis 7a and assessed the interaction between Anglo-orientation, Arab-orientation and bicultural stress and conflict as follows: (a) Anglo-orientation x Arab-orientation x cultural value conflict; and (b) Anglo-orientation x Arab-orientation x acculturative distress. The only difference between each pair of regression tests was the measure of bicultural stress and conflict utilized.
The next pair of interactions tested hypothesis 7b and assessed the interaction between Anglo-orientation, ethnic identity and bicultural stress and conflict as follows: (c) Anglo-orientation x ethnic identity x cultural value conflict; and (d) Anglo-orientation x ethnic identity x acculturative distress.

The final pair of interactions tested hypothesis 7c and assessed the interaction between Arab-orientation, ethnic identity, and bicultural stress and conflict as follows: (e) Arab-orientation x ethnic identity x cultural value conflict; and (f) Arab-orientation x ethnic identity x acculturative distress. Each interaction test (a-f) was run once for each eating and body shape-related measure in the study (EAT-26; BULIT-R; BSQ-16; and SATAQ-3-IG).

In each interaction test, all relevant predictors were centred, and the interaction terms were created from the products of centred variables (Aiken & West, 1991). In Step 1, age and BMI were entered to control for these variables. Main effects were entered simultaneously in Step 2 and two-way interactions were entered simultaneously in Step 3. In Step 4, the three-way interaction was entered to assess for its predictive ability above and beyond the covariates, main effects, and two-way interactions. The presence of a moderating effect between the culture-related variables as predictors of disordered eating and body shape challenges would be demonstrated by significant three-way interactions at Step 4.

(a) Examining the interaction of Anglo-orientation x Arab-orientation x cultural value conflict as predictive of disordered eating, body shape concerns, and internalization of thinness. The Anglo-orientation x Arab-orientation x cultural value conflict interaction was tested separately for each of the four outcome variables. Detailed results are presented next.

Anglo-orientation x Arab-orientation x cultural value conflict as predictive of EAT-26 scores. As seen in Table 19, addition of the three-way interaction in Step 4 (Anglo-orientation x Arab-orientation x cultural value conflict) predicted a significant amount of variance in EAT-26
scores above and beyond the first three steps, $F_{\text{change}} (1,181) = 5.01, p = .027, R^2_{\text{change}} = .025$. Thus, the three-way interaction predicted an additional 2.5% of the variance in EAT-26 scores over and above the covariates, main effects, and two-way interactions.

Table 19

Hierarchical Regression Analysis with Anglo-Orientation, Arab-Orientation, Cultural Value Conflict and the Three-Way Interaction Predicting EAT-26 Scores

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
<th>Model</th>
<th>$F$</th>
<th>$F_{\Delta}$</th>
<th>$t$</th>
<th>$df$</th>
<th>Partial $r$</th>
<th>$R^2$</th>
<th>$R^2_{\Delta}$</th>
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<td>2.21</td>
<td>2</td>
<td>188</td>
<td>.023</td>
<td>.023</td>
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<tr>
<td>BMI</td>
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<td></td>
<td>-1.44</td>
<td>188</td>
<td></td>
<td>-.104</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td>1.76</td>
<td>188</td>
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<tr>
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<td>3.68*</td>
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<td>.055</td>
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<td></td>
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<td>ArOS</td>
<td></td>
<td></td>
<td>-.905</td>
<td>185</td>
<td></td>
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<tr>
<td>CVCS</td>
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<td>185</td>
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<tr>
<td>AOS x CVCS</td>
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<td>-.126</td>
<td>182</td>
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<td>181</td>
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<td>.164</td>
<td>.073</td>
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Note. Transformed variables were used in these analyses. EAT-26 = Eating Attitudes Test-26; BMI = Body Mass Index; AOS = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; ArOS = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; CVCS = Cultural Value Conflict Scale. *$p < .05$. **$p < .01$. 


In order to understand the nature of this interaction, it was plotted at 1 $SD$ above and 1 $SD$ below the mean for each variable (Aiken & West, 1991). Simple effects and simple slopes analyses were then conducted for each plot. Using procedures outlined by Aiken & West (1991), this interaction was plotted by examining high and low cultural value conflict separately (see Figure 1).
Figure 1. EAT-26 Scores as a function of Arab-Orientation and Anglo-Orientation for participants with high cultural value conflict and low cultural value conflict.

Note: Transformed variables were used in these analyses. EAT-26 = Eating Attitudes Test-26; Cultural Value Conflict = Cultural Value Conflict Scale; Arab-Orientation = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; Anglo-Orientation = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans. High and low values are plotted at one standard deviation above and below the mean respectively.
High cultural value conflict. Considering only those with high cultural value conflict (see Figure 1A), simple effects analyses revealed that there was a significant difference between those high and low in Arab-orientation at low levels of Anglo-orientation. Those with high cultural value conflict, low Arab-orientation, and low Anglo-orientation reported significantly higher levels of eating disorder symptoms as compared to their high Arab-orientation counterparts (β = -.78, t (181) = -2.29, p = .02). The simple effect at high levels of Anglo-orientation was not significant (β = .19, t (181) = .70, p = .49). The simple slope of high Arab Orientation was significantly positive (β = .39, t (181) = 2.50, p = .01), but the simple slope for low Arab Orientation was not significant (β = -.09, t (181) = -.61, p = .54).

Low cultural value conflict. Considering those participants with low cultural value conflict (see Figure 1B), simple effects analyses revealed no significant difference between those high and low in Arab Orientation at neither low levels of Anglo Orientation (β = .181, t (181) = .575, p = .57) nor high levels of Anglo Orientation (β = -.188, t (181) = -.711, p = .48). The simple slopes of both high Arab Orientation (β = -.07, t (181) = -.415, p = .68) and low Arab Orientation (β = .11, t (181) = 1.07, p = .29) were not significant.

Meaning of interaction. This interaction examined the interplay between the two dimensions of acculturation (Arab-orientation and Anglo-orientation) and cultural value conflict as predictive of EAT-26 scores. The significant interaction indicated that the relationship between the two dimensions of acculturation and disordered eating is moderated by cultural value conflict. Specifically, the ways in which various combinations of Arab-orientation and Anglo-orientation relate to disordered eating depends on the level of cultural value conflict. Under low levels of cultural value conflict, no significant differences in disordered eating as measured by the EAT-26 were found between individuals with various combinations of Anglo- and Arab-orientation. Under high levels of cultural value conflict, however, EAT-26 scores
increased overall and high Arab-orientation became protective when combined with low Anglo-orientation (lower EAT-26 scores), but increased risk of eating disorder symptoms when combined with high Anglo-orientation (higher EAT-26 scores). Among those low on Anglo-orientation, those who were also low on Arab-orientation were at significantly increased risk for having an eating disorder as compared to those low on Anglo-orientation and high on Arab-orientation.

**Anglo-orientation x Arab-orientation x cultural value conflict as predictive of BULIT-R scores.** As seen in Table 20, addition of the three-way interaction in Step 4 (Anglo-orientation x Arab-orientation x cultural value conflict) predicted a significant amount of variance in BULIT-R scores over and above the first three steps, $F_{change} (1,181) = 4.14, p = .043, R^2_{change} = .017$. Thus, the three-way interaction predicted an additional 1.7% of the variance in BULIT-R scores over and above the covariates, main effects, and two-way interactions. To clarify the meaning of this significant interaction, it was plotted using high and low values of each of the variables involved (See Figure 2).
Table 20

*Hierarchical Regression Analysis with Anglo-Orientation, Arab-Orientation, Cultural Value Conflict and the Three-Way Interaction Predicting BULIT-R Scores*

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
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<th>$t$</th>
<th>$df$</th>
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<tr>
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<tr>
<td>CVCS</td>
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<td>2.04*</td>
<td>1, 181</td>
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<td>.270</td>
<td>.017</td>
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</table>

*Note.* Transformed variables were used in these analyses.  **BULIT-R** = Bulimia Test Revised; **BMI** = Body Mass Index; **AOS** = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; **ArOS** = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; **CVCS** = Cultural Value Conflict Scale.  

$p < .05$.  **$p < .01$.  **
Figure 2. BULIT-R Scores as a function of Arab-Orientation and Anglo-Orientation for participants with high cultural value conflict and low cultural value conflict.

Note: Transformed variables were used in these analyses. BULIT-R = Bulimia Test Revised; Cultural Value Conflict = Cultural Value Conflict Scale; Arab-Orientation = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; Anglo-Orientation = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans. High and low values are plotted at one standard deviation above and below the mean respectively.
High cultural value conflict. Considering only those with high cultural value conflict (see Figure 2A), simple effects analyses revealed no significant difference between those high and low in Arab Orientation at either low levels of Anglo Orientation ($\beta = .535, t \ (181) = -1.72, p = .09$) or high levels of Anglo Orientation ($\beta = -.13, t \ (181) = -.532, p = .60$). The simple slopes of both high Arab Orientation ($\beta = -.15, t \ (181) = 1.02, p = .31$) and low Arab Orientation ($\beta = -.06, t \ (181) = -.41, p = .68$) were not significant.

Low cultural value conflict. Considering those participants with low cultural value conflict (see Figure 2B), simple effects analyses revealed no significant difference between those high and low in Arab Orientation at neither low levels of Anglo Orientation ($\beta = .30, t \ (181) = 1.04, p = .30$) nor high levels of Anglo Orientation ($\beta = -.40, t \ (181) = -1.68, p = .09$). The simple slope of high Arab Orientation was significantly negative ($\beta = -.34, t \ (181) = -2.07, p = .04$), but the simple slope for low Arab Orientation was not significant ($\beta = .02, t \ (181) = .16, p = .87$).

Meaning of interaction. This interaction examined the interplay between the two dimensions of acculturation (Arab-orientation and Anglo-orientation) and cultural value conflict as predictive of BULIT-R scores. The significant interaction indicated that the relationship between the two dimensions of acculturation and disordered eating is moderated by cultural value conflict. Specifically, the ways in which various combinations of Arab-orientation and Anglo-orientation relate to disordered eating depends on the level of cultural value conflict. At low levels of cultural value conflict, high Arab-orientation was associated with increased bulimia symptoms when combined with low-Anglo Orientation, but was associated with decreased bulimia symptoms when combined with high Anglo-orientation. This effect was not present under high levels of cultural value conflict.
Anglo-orientation x Arab-orientation x cultural value conflict as predictive of BSQ-16 scores. Addition of the three-way interaction (Anglo-orientation x Arab-orientation x cultural value conflict) in Step 4 did not account for a significant amount of variance in BSQ-16 scores, $F_{change} (1, 181) = 1.91, p = .17$. The lower two-way interaction block was also not significant, $F_{change} (3, 182) = .472, p = .70$. The main effects block, however, predicted a significant amount of variance in BSQ-16 scores above and beyond the covariates, $F_{change} (3, 185) = 8.28, p < .001, R^2_{change} = .094$. Thus, the main effects block predicted another 9.4% of variance in BSQ-16 scores over and above age and BMI. Examination of the predictors within the main effects block showed that both Anglo-orientation, $t (185) = 2.33, p = .02$, and cultural value conflict, $t (185) = 4.45, p < .001$, were significant predictors of BSQ-16 scores.

Anglo-orientation x Arab-orientation x cultural value conflict as predictive of SATAQ-3-IG scores. Addition of the three-way interaction (Anglo-orientation x Arab-orientation x cultural value conflict) in Step 4 did not account for a significant amount of variance in SATAQ-3-IG scores, $F_{change} (1, 181) = .720, p = .40$. The lower two-way interaction block also was not significant, $F_{change} (3, 182) = .54, p = .66$. The main effects block, however, predicted a significant amount of variance in SATAQ-3-IG scores above and beyond the covariates, $F_{change} (3, 185) = 13.80, p < .001, R^2_{change} = .181$. Thus, the main effects block predicted another 18.1% of variance in Internalization of thinness over and above age and BMI. Examination of the predictors within the main effects block showed that Anglo-orientation, $t (185) = 2.23, p = .03$, Arab-orientation, $t (185) = -2.85, p = .005$, and cultural value conflict, $t (185) = 5.76, p < .001$, were significant predictors of internalization of thinness.

Summary of findings for the Anglo-orientation x Arab-orientation x cultural value conflict interaction across all four outcome variables. The interaction between Anglo-orientation, Arab-orientation, and cultural value conflict was significant for both eating disorder
measures (EAT-26 and BULIT-R). The three-way interaction in both cases was driven by significant changes in the way Arab-orientation moderated the relationship between Anglo-orientation and disordered eating under conditions of high versus low cultural value conflict.

The two-way and three-way interactions were not significant predictors of the BSQ-16 or the SATAQ-3-IG. The main effects were significant, however, for both these variables. Both Anglo-orientation and cultural value conflict were significant main effects in that each predicted a significant amount of variance in body shape concerns and internalization of thinness above and beyond age and BMI.

(b) Examining the interaction of Anglo-orientation x Arab-orientation x acculturative distress as predictive of disordered eating, body shape concerns, and internalization of thinness. The only difference between this set of interactions and the previous set was the use of acculturative distress as the measure of bicultural stress in the third prong of the interaction. Detailed results are presented next.

Anglo-orientation x Arab-orientation x acculturative distress as predictive of EAT-26 scores. Addition of the three-way interaction (Anglo-orientation x Arab-orientation x acculturative distress) in the Step 4 did not account for a significant amount of variance in EAT-26 scores above and beyond the first three steps, $F_{change}(1, 181) = 2.13, p = .15$. The lower two-way interaction block was also not significant, $F_{change}(3, 182) = .573, p = .63$. The main effects block, however, predicted a significant amount of variance in EAT-26 scores above and beyond the covariates, $F_{change}(3, 185) = 7.03, p < .001, R^2_{change} = .100$. Thus, the main effects block predicted another 10.0% of variance in EAT-26 scores over and above age and BMI. Examination of the predictors within the main effects block showed that acculturative distress, $t(185) = 4.27, p < .001$, was the only significant predictor.
Anglo-orientation x Arab-orientation x acculturative distress as predictive of BULIT-R scores. Addition of the three-way interaction (Anglo-orientation x Arab-orientation x acculturative distress) in the Step 4 did not account for a significant amount of variance in BULIT-R scores above and beyond the first three steps, $F$ change $(1, 181) = 1.66, p = .20$. The lower two-way interaction block was also not significant, $F$ change $(3, 182) = .696, p = .56$. The main effects block, however, predicted a significant amount of variance in BULIT-R scores above and beyond the covariates, $F$ change $(3, 185) = 14.94, p < .001, R^2$ change $= .160$. Thus, the main effects block predicted another 16% of variance in BULIT-R scores over and above age and BMI. Examination of the predictors within the main effects block showed that only acculturative distress, $t (185) = 6.65, p < .001$, was a significant predictor.

Anglo-orientation x Arab-orientation x acculturative distress as predictive of BSQ-16 scores. Addition of the three-way interaction (Anglo-orientation x Arab-orientation x acculturative distress) in Step 4 did not account for a significant amount of variance in BSQ-16 scores above and beyond the first three steps, $F$ change $(1, 181) = .195, p = .66$. The lower two-way interaction block was also not significant, $F$ change $(3, 182) = .809, p = .49$. The main effects block, however, predicted a significant amount of variance in BSQ-16 scores above and beyond the covariates, $F$ change $(3, 185) = 22.13, p < .001, R^2$ change $= .210$. Thus, the main effects block predicted another 21% of variance in BSQ-16 scores over and above age and BMI. Examination of the predictors within the main effects block showed that only acculturative distress, $t (186) = 7.76, p < .001$, was a significant predictor.

Anglo-orientation x Arab-orientation x acculturative distress as predictive of SATAQ-3-IG scores. Addition of the three-way Anglo-orientation x Arab-orientation x acculturative distress interaction in Step 4 did not account for a significant amount of variance in SATAQ-3-IG scores above and beyond the first three steps, $F$ change $(1, 181) = .001, p = .97$. The lower
two-way interaction block was also not significant, $F_{\text{change}} (3, 182) = .710, p = .55$. The main effects block, however, predicted a significant amount of variance in SATAQ-3-IG scores above and beyond the covariates, $F_{\text{change}} (3, 185) = 19.40, p < .001, R^2_{\text{change}} = .237$. Thus, the main effects block predicted another 23.7% of variance in internalization of thinness over and above age and BMI. Examination of the predictors within the main effects block showed that Anglo-orientation, $t (185) = 2.02, p = .04$, and acculturative distress, $t (185) = 7.03, p < .001$, were significant predictors.

**Summary of findings for the Anglo-orientation x Arab-orientation x acculturative distress interaction across all four outcome variables.** The interaction between Anglo-orientation, Arab-orientation, and acculturative distress was not significant for any of the four outcome variables. Similarly, none of the two-way interactions were significant. The main effects were significant for all four outcome variables. In the case of the EAT-26, BULIT-R, and SATAQ-3-IG, acculturative distress was the only significant main effect that predicted a significant amount of variance in each variable above and beyond age and BMI. In the case of internalization of thinness, both acculturative distress and Anglo-orientation were significant main effects that each predicted a significant amount of variance in internalization of thinness above and beyond age and BMI.

(c) **Examining the interaction of Anglo-orientation x ethnic identity x cultural value conflict as predictive of disordered eating, body shape concerns, and internalization of thinness.** In the next set of interactions, the ways in which Anglo-Orientation, ethnic identity and cultural value conflict interact with each other to predict EAT-26, BULIT-R, BSQ-16, and SATAQ-3-IG scores was examined. Detailed results for each will be presented next.

**Anglo-orientation x ethnic identity x cultural value conflict as predictive of EAT-26 scores.** Addition of the three-way interaction (Anglo-orientation x ethnic identity x cultural value conflict...
value conflict) in Step 4 did not account for a significant amount of variance in EAT-26 scores above and beyond the first three steps, $F_{\text{change}} (1, 181) = 2.61, p = .11$. The lower two-way interaction block was also not significant, $F_{\text{change}} (3, 182) = 1.14, p = .34$. The main effects block, however, predicted a significant amount of variance in EAT-26 scores above and beyond the covariates, $F_{\text{change}} (3, 185) = 3.45, p = .02, R^2_{\text{change}} = .052$. Thus, the main effects block predicted another 5.2% of variance in EAT-26 scores over and above age and BMI.

Examination of the predictors within the main effects block showed that cultural value conflict, $t (185) = 2.77, p = .006$, was the only significant predictor.

**Anglo-orientation x ethnic identity x cultural value conflict as predictive of BULIT-R scores.** Addition of the three-way interaction (Anglo-orientation x ethnic identity x cultural value conflict) in Step 4 did not account for a significant amount of variance in BULIT-R scores above and beyond the first three steps, $F_{\text{change}} (1, 181) = .066, p = .80$. The lower two-way interaction block was also not significant, $F_{\text{change}} (3, 182) = 2.09, p = .10$. The main effects block, however, predicted a significant amount of variance in BULIT-R scores above and beyond the covariates, $F_{\text{change}} (3, 185) = 5.54, p = .001, R^2_{\text{change}} = .068$. Thus, the main effects block predicted another 6.8% of variance in BULIT-R scores over and above age and BMI. Examination of the predictors within the main effects block showed that cultural value conflict, $t (185) = 3.90, p < .001$, was the only significant predictor.

**Anglo-orientation x ethnic identity x cultural value conflict as predictive of BSQ-16 scores.** Addition of the three-way interaction (Anglo-orientation x ethnic identity x cultural value conflict) in Step 4 did not account for a significant amount of variance in BSQ-16 scores above and beyond the first three steps, $F_{\text{change}} (1, 181) = 3.56, p = .061$. The lower two-way interaction block was also not significant, $F_{\text{change}} (3, 182) = 1.45, p = .23$. The main effects block, however, predicted a significant amount of variance in BSQ-16 scores above and beyond
the covariates, $F_{\text{change}} (3, 185) = 8.57, p < .001, R^2_{\text{change}} = .097$. Thus, the main effects block predicted another 9.7% of variance in BSQ-16 scores over and above age and BMI.

Examination of the predictors within the main effects block showed that Anglo-orientation, $t (185) = 2.31, p = .02$, and cultural value conflict, $t (185) = 4.46, p < .001$, were significant predictors.

**Anglo-orientation x ethnic identity x cultural value conflict as predictive of SATAQ-3-IG scores.** Addition of the three-way interaction (Anglo-orientation x ethnic identity x cultural value conflict) in Step 4 did not account for a significant amount of variance in SATAQ-3-IG scores above and beyond the first three steps, $F_{\text{change}} (1, 181) = .251, p = .62$. The lower two-way interaction block was also not significant, $F_{\text{change}} (3, 182) = 1.50, p = .22$. The main effects block, however, predicted a significant amount of variance in SATAQ-3-IG scores above and beyond the covariates, $F_{\text{change}} (3, 185) = 11.91, p < .001, R^2_{\text{change}} = .160$. Thus, the main effects block predicted another 16% of variance in internalization of thinness over and above age and BMI. Examination of the predictors within the main effects block showed that Anglo-orientation, $t (185) = 2.37, p = .02$, and cultural value conflict, $t (185) = 5.29, p < .001$, were significant predictors.

**Summary of findings for the Anglo-orientation x ethnic identity x cultural value conflict interaction across all four outcome variables.** The interaction between Anglo-orientation, ethnic identity, and cultural value conflict was not significant for any of the four outcome variables. Similarly, none of the two-way interactions were significant. The main effects were significant for all four outcome variables. In the case the disordered eating measures (EAT-26 and BULIT-R), cultural value conflict was the only significant main effect that predicted a significant amount of variance in disordered eating symptoms variable above and beyond age and BMI. In the case of both body shape concerns and internalization of
thinness, both cultural value conflict and Anglo-orientation were significant main effects that each predicted a significant amount of variance in internalization of thinness above and beyond age and BMI.

(d) Examining the interaction of Anglo-orientation x ethnic identity x acculturative distress as predictive of disordered eating, body shape concerns, and internalization of thinness. The only difference between the next four interactions and the previous four was the use of the acculturative distress subscale as the measure of bicultural stress in the third prong of the interaction. Detailed results of each test are presented next.

**Anglo-orientation x ethnic identity x acculturative distress as predictive of EAT-26 scores.** As seen in Table 21, addition of the three-way interaction block (Anglo-orientation x ethnic identity x acculturative distress) predicted a significant amount of variance in EAT-26 scores above and beyond the first three steps, $F_{change} (1,181) = 5.12, p = .025, R^2_{change} = .024$. Thus, the three-way interaction predicted another 2.4% of the variance in EAT-26 scores over and above the covariates, main effects and two-way interactions. To clarify the meaning of this significant interaction, it was plotted using high and low values of each of the variables involved (see Figure 3).
Table 21

*Hierarchical Regression Analysis with Anglo-Orientation, Ethnic Identity, Acculturative Distress, and the Three-Way Interaction Predicting EAT-26 Scores*

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
<th>Model</th>
<th>$F\Delta$</th>
<th>$F$</th>
<th>$t$</th>
<th>$df$</th>
<th>Partial $R^2$</th>
<th>$R^2\Delta$</th>
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<td>2.21</td>
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<td>Age</td>
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<td></td>
<td></td>
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<td>-1.44</td>
<td>-.104</td>
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<tr>
<td>BMI</td>
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<td></td>
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<td>.127</td>
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</tr>
<tr>
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<td>.102</td>
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<tr>
<td>MEIM</td>
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<td>.719</td>
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<td></td>
<td></td>
<td>.053</td>
<td></td>
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<tr>
<td>AD</td>
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<td>4.34**</td>
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<td></td>
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<td>3. Two-way interactions</td>
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<td>.011</td>
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<tr>
<td>AOS x AD</td>
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<td>-.937</td>
<td>-.069</td>
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</tr>
<tr>
<td>MEIM x AD</td>
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<td></td>
<td></td>
<td></td>
<td>-.229</td>
<td>-.017</td>
<td></td>
</tr>
<tr>
<td>4. Three-way interaction</td>
<td>3.84</td>
<td>5.12*</td>
<td>2.26*</td>
<td>1.181</td>
<td>1.181</td>
<td>.166</td>
<td>.024</td>
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*Note. Transformed variables were used in these analyses. EAT-26 = Eating Attitudes Test-26; BMI = Body Mass Index; AOS = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; MEIM = Multi-group Ethnic Identity Measure; AD = Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist. *

* $p < .05$. ** $p < .01$. 
Figure 3. EAT-26 Scores as a function of Anglo-Orientation and ethnic identity for participants with high acculturative distress and low acculturative distress.

Note: Transformed variables were used in these analyses. EAT-26 = Eating Attitudes Test-26; **Acculturative Distress** = Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; **Anglo-Orientation** = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; **Ethnic identity** = Multi-group Ethnic Identity Measure. High and low values are plotted at one standard deviation above and below the mean respectively.
**High acculturative distress.** Considering only those with high acculturative distress (see Figure 3A), simple effects analyses revealed no significant difference between those high and low in ethnic identity at neither low levels of Anglo Orientation ($\beta = -.53, t (181) = -1.61, p = .11$) nor high levels of Anglo Orientation ($\beta = .42, t (181) = 1.83, p = .07$). The simple slope of high ethnic identity was significantly positive ($\beta = .35, t (181) = 2.01, p = .04$), but the simple slope for low ethnic identity was not significant ($\beta = -.13, t (181) = -1.07, p = .29$).

**Low acculturative distress.** Considering only those with low acculturative distress (see Figure 3B), simple effects analyses revealed no significant difference between those high and low in ethnic identity at neither low levels of Anglo Orientation ($\beta = .42, t (181) = 1.31, p = .19$) nor high levels of Anglo Orientation ($\beta = -.03, t (181) = -.117, p = .91$). The simple slope of high ethnic identity was not significant ($\beta = 10, t (181) = .72, p = .47$), whereas the simple slope for low ethnic identity was significantly positive ($\beta = .32, t (181) = 2.12, p = .04$).

**Meaning of interaction.** This interaction examined the interplay between Anglo-orientation, ethnic identity, and acculturative distress as predictive of EAT-26 scores. The significant interaction indicated that the ways in which Anglo-orientation and ethnic identity interact to predict disordered eating is moderated by acculturative distress. At high levels of acculturative distress, high ethnic identity was protective against eating disorder symptoms when combined with low Anglo-orientation (lower EAT-26 scores), but increased risk for disordered eating when combined with high Anglo-orientation (higher EAT-26 scores). At low levels of acculturative distress, lower levels of disordered eating were reported overall with the lowest scores noted for those low on both ethnic identity and Anglo-orientation.
Anglo-orientation x ethnic identity x acculturative distress as predictive of BULIT-R scores. As seen in Table 22, addition of the three-way interaction block (Anglo-orientation x ethnic identity x acculturative distress) predicted a significant amount of variance in BULIT-R scores above and beyond the first three steps, $F_{change} (1,181) = 4.71, p = .031, R^2_{change} = .017$. Thus, the three-way interaction predicted another 1.7% of the variance in BULIT-R scores over and above the covariates, main effects and two-way interactions. To clarify the meaning of this significant interaction, it was plotted using high and low values of each of the variables involved (See Figure 4).
### Table 22

**Hierarchical Regression Analysis with Anglo-Orientation, Ethnic Identity, Acculturative Distress, and the Three-Way Interaction Predicting BULIT-R Scores**

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
<th>Model $F$</th>
<th>$F \Delta$</th>
<th>$t$</th>
<th>df</th>
<th>Partial $R^2$</th>
<th>$R^2 \Delta$</th>
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<tr>
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<td>-3.83**</td>
<td>188</td>
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<td><strong>2. Main Effects</strong></td>
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<td>.160</td>
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<td>MEIM</td>
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<td>.023</td>
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<td>.035</td>
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<td>AOS x AD</td>
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<td>-.081</td>
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<tr>
<td>MEIM x AD</td>
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<td>182</td>
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<td></td>
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<td><strong>4. Three-way interaction</strong></td>
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<td>2.17*</td>
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<td>.365</td>
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<td>AOS x MEIM x AD</td>
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</table>

*Note.* Transformed variables were used in these analyses. **BULIT-R** = Bulimia Test Revised; **BMI** = Body Mass Index; **AOS** = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; **MEIM** = Multi-group Ethnic Identity Measure; **AD** = Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist.

*p < .05. **p < .01.*
Figure 4. BULIT-R Scores as a function of Anglo-Orientation and ethnic identity for participants with high acculturative distress and low acculturative distress.

Note: Transformed variables were used in these analyses. BULIT-R = Bulimia Test Revised; Acculturative Distress = Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; Anglo-Orientation = Anglo Orientation Subscale of the Acculturation Rating Scale for Arab Americans; Ethnic identity = Multi-group Ethnic Identity Measure. High and low values are plotted at one standard deviation above and below the mean respectively.
High acculturative distress. Considering only those with high acculturative distress (see Figure 4A), simple effects analyses revealed no significant difference between those high and low in ethnic identity at neither low levels of Anglo Orientation ($\beta = -0.51$, $t (181) = -1.78, p = 0.08$) nor high levels of Anglo Orientation ($\beta = 0.18$, $t (181) = 0.09, p = 0.37$). The simple slope of high ethnic identity was not significant ($\beta = 0.12$, $t (181) = 0.79, p = 0.43$), but the simple slope for low ethnic identity was significantly negative ($\beta = -0.23$, $t (181) = -2.20, p = 0.03$).

Low acculturative distress. Considering only those with low acculturative distress (see bottom of Figure 5), simple effects analyses revealed no significant difference between those high and low in ethnic identity at neither low levels of Anglo Orientation ($\beta = 0.181$, $t (181) = 0.575, p = 0.57$) nor high levels of Anglo Orientation ($\beta = -0.188$, $t (181) = -0.711, p = 0.48$). The simple slopes of both high ethnic identity ($\beta = -0.07$, $t (181) = -0.415, p = 0.68$) and low ethnic identity ($\beta = 0.11$, $t (181) = 1.07, p = 0.29$) were not significant.

Meaning of interaction. This interaction examined the interplay between Anglo-orientation, ethnic identity, and acculturative distress as predictive of BULIT-R scores. The significant interaction indicated that the ways in which Anglo-orientation and ethnic identity interact to predict disordered eating is moderated by acculturative distress. Under low levels of acculturative distress no significant differences in disordered eating as measured by the EAT-26 were found between individuals with various combinations of Anglo-orientation and ethnic identity. Under high levels of acculturative distress, however, EAT-26 scores increased overall and low ethnic identity significantly increased risk of eating disorder symptoms when combined with low Anglo-orientation.

Anglo-orientation x ethnic identity x acculturative distress as predictive of BSQ-16 scores. Addition of the three-way interaction (Anglo-orientation x ethnic identity x acculturative distress) in the Step 4 did not account for a significant amount of variance in BSQ-16 scores.
above and beyond the first three steps, $F_{change} (1, 181) = 2.07, p = .15$. The lower two-way interaction block was also not significant, $F_{change} (3, 182) = 1.05, p = .37$. The main effects block, however, predicted a significant amount of variance in BSQ-16 scores above and beyond the covariates, $F_{change} (3, 185) = 22.27, p < .001, R^2_{change} = .211$. Thus, the main effects block predicted another 21.1% of variance in BSQ-16 scores over and above age and BMI.

Examination of the predictors within the main effects block showed that Anglo-orientation, $t (185) = 2.29, p = .02$, and acculturative distress, $t (185) = 7.74, p < .001$, were significant predictors.

**Anglo-orientation x ethnic identity x acculturative distress as predictive of SATAQ-3-IG scores.** Addition of the three-way interaction (Anglo-orientation x ethnic identity x acculturative distress) in Step 4 did not account for a significant amount of variance in SATAQ-3-Intern-G scores above and beyond the first three steps, $F_{change} (1, 181) = 2.41, p = .12$. The lower two-way interaction block was also not significant, $F_{change} (3, 182) = 1.08, p = .36$. The main effects block, however, predicted a significant amount of variance in SATAQ-3-IG scores above and beyond the covariates, $F_{change} (3, 185) = 18.58, p < .001, R^2_{change} = .229$. Thus, the main effects block predicted an additional 22.9% of variance in internalization of thinness over and above age and BMI. Examination of the predictors within the main effects block showed that Anglo-orientation, $t (185) = 2.21, p = .03$, and acculturative distress, $t (185) = 6.88, p < .001$, were significant predictors.

**Summary of findings for the Anglo-orientation x ethnic identity x acculturative distress interaction across all four outcome variables.** The interaction between Anglo-orientation, ethnic identity, and acculturative distress was significant for both eating disorder measures (EAT-26 and BULIT-R). The three-way interaction in both cases was driven by
significant changes in the way ethnic identity moderated the relationship between Anglo-orientation and disordered eating under conditions of high versus low cultural value conflict.

The two-way and three-way interactions were not significant predictors of either of the body shape-related measures (BSQ-16 and SATAQ-3-IG). The main effects were significant, however, for both these measures. Anglo-orientation and acculturative distress were both significant main effects that were able to predict significant amount of variability in body shape concerns and internalization of thinness above and beyond age and BMI.

(e) Examining the interaction of Arab-orientation x ethnic identity x cultural value conflict as predictive of disordered eating, body shape concerns, and internalization of thinness. In the next set of interactions, the ways in which Arab-orientation, ethnic identity and cultural value conflict interact with each other to predict EAT-26, BULIT-R, BSQ-16, and SATAQ-3-Intern-G scores was examined. Detailed results are presented next.

**Arab-orientation x ethnic identity x cultural value conflict as predictive of EAT-26 scores.** Addition of the three-way interaction (Arab-orientation x ethnic identity x cultural value conflict) in Step 4 did not predict a significant amount of variance in EAT-26 scores over and above the first three steps, \( F_{change} (1, 181) = .014, p = .90 \). The lower two-way interaction block was also not significant, \( F_{change} (3, 182) = .536, p = .66 \). The main effects block, however, predicted a significant amount of variance in EAT-26 scores over and above the covariates, \( F_{change} (3, 185) = 2.76, p = .04, R^2_{change} = .042 \). Thus, the main effects block predicted another 4.2% of variance in EAT-26 scores above and beyond age and BMI.

Examination of the predictors within the main effects block showed that cultural value conflict, \( t(185) = 2.83, p = .005 \), was the only significant predictor.

**Arab-orientation x ethnic identity x cultural value conflict as predictive of BULIT-R scores.** Addition of the three-way interaction (Arab-orientation x ethnic identity x cultural value conflict)
conflict) in Step 4 did not account for a significant amount of variance in BULIT-R scores over and above the first three steps, $F_{change} (1, 181) = .016, p = .90$. The lower two-way interaction block was also not significant, $F_{change} (3, 182) = 2.19, p = .09$. The main effects block, however, predicted a significant amount of variance in BULIT-R scores over and above the covariates, $F_{change} (3, 185) = 5.70, p = .001, R^2_{change} = .069$. Thus, the main effects block predicted another 6.9% of variance in BULIT-R scores above and beyond age and BMI.

Examination of the predictors within the main effects block showed that cultural value conflict, $t (185) = 4.00, p < .001$, was the only significant predictor.

$Arab$-orientation $\times$ ethnic identity $\times$ cultural value conflict as predictive of BSQ-16 scores. Addition of the three-way interaction (Arab-orientation x ethnic identity x cultural value conflict) in Step 4 did not account for a significant amount of variance above and beyond the first three steps, $F_{change} (1, 181) = .956, p = .33$. The lower two-way interaction block was also not significant, $F_{change} (3, 182) = .471, p = .70$. The main effects block, however, predicted a significant amount of variance in BSQ-16 scores above and beyond the covariates, $F_{change} (3, 185) = 6.64, p < .001, R^2_{change} = .077$. Thus, the main effects block predicted another 7.7% of variance in BSQ-16 scores over and above age and BMI. Examination of the predictors within the main effects block showed that cultural value conflict, $t (185) = 4.27, p < .001$, was the only significant predictor.

$Arab$-orientation $\times$ ethnic identity $\times$ cultural value conflict as predictive of SATAQ-3-Intern-G scores. Addition of the three-way interaction (Arab-orientation x ethnic identity x cultural value conflict) in Step 4 did not account for a significant amount of variance in SATAQ-3-Intern-G scores above and beyond the first three steps, $F_{change} (1, 181) = .296, p = .59$. The lower two-way interaction block was also not significant, $F_{change} (3, 182) = .249, p = .86$. The main effects block, however, predicted a significant amount of variance in SATAQ-3-IG scores
over and above the covariates, $F$ change $(3, 185) = 11.90, p < .001, R^2$ change $= .160$. Thus, the main effects block predicted another 16% of variance in internalization of thinness over and above age and BMI. Examination of the predictors within the main effects block showed that Arab-orientation, $t (185) = -2.36, p = .02$, and cultural value conflict, $t (185) = 5.60, p < .001$, were significant predictors.

**Summary of findings for the Arab-orientation x ethnic identity x cultural value conflict interaction across all four outcome variables.** The interaction between Arab-orientation, ethnic identity, and cultural value conflict was not significant for any of the four outcome variables. Similarly, none of the two-way interactions were significant. The main effects were significant for all four outcome variables. In the case of the EAT-26, BULIT-R, and SATAQ-3-IG, cultural value conflict was the only significant main effect that predicted a significant amount of variance in each variable above variables (beyond age and BMI). In the case of internalization of thinness, both acculturative distress and Arab-orientation were significant main effects that each predicted a significant amount of variance in internalization of thinness above and beyond age and BMI.

(f) Examining the interaction of Arab-orientation x ethnic identity x acculturative distress as predictive of disordered eating, body shape concerns, and internalization of thinness. The only difference between the next four interactions and the previous four was the use of acculturative distress as the measure of bicultural stress in the third prong of the interaction. Detailed results of each test for each outcome variable are presented next.

**Arab-orientation x ethnic identity x acculturative distress as predictive of EAT-26 scores.** As seen in Table 23, addition of the three-way interaction block (Arab-orientation x ethnic identity x acculturative distress) predicted a significant amount of variance in EAT-26 scores over and above the first three steps, $F$ change $(1,181) = 4.68, p = .032, R^2$ change $= .022$. 
Thus, the three-way interaction predicted another 2.2% of the variance in EAT-26 scores over and above the covariates, main effects and two-way interactions. To clarify the meaning of this significant interaction, it was plotted using high and low values of each of the variables involved (See Figure 5).
Table 23

Hierarchical Regression Analysis with Arab-Orientation, Ethnic Identity, Acculturative Distress, and the Three-Way Interaction Predicting EAT-26 Scores

<table>
<thead>
<tr>
<th>Order of entry of set and predictors in set</th>
<th>Model</th>
<th>FΔ</th>
<th>t</th>
<th>df</th>
<th>Partial R²</th>
<th>R² Δ</th>
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<td>2.21</td>
<td></td>
<td>2, 188</td>
<td>.023</td>
<td>.023</td>
</tr>
<tr>
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<td>-1.44</td>
<td>188</td>
<td>-0.104</td>
<td></td>
</tr>
<tr>
<td>BMI</td>
<td>1.76</td>
<td>188</td>
<td>1.76</td>
<td>188</td>
<td>0.127</td>
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<tr>
<td>2.Main Effects</td>
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<td>6.48**</td>
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<td>3, 185</td>
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<td>185</td>
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<td>MEIM</td>
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<td>.858</td>
<td>185</td>
<td>0.063</td>
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<td>AD</td>
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<td>4.37**</td>
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</table>

Note. Transformed variables were used in these analyses. EAT-26 = Eating Attitudes Test-26; BMI = Body Mass Index; ArOS = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; MEIM = Multi-group Ethnic Identity Measure; AD = Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist. 
*<i>p < .05</i>. **<i>p < .01</i>. 
Figure 5. EAT-26 Scores as a function of Arab-Orientation and ethnic identity for participants with high acculturative distress and low acculturative distress.

Note: Transformed variables were used in these analyses. EAT-26 = Eating Attitudes Test-26; Acculturative Distress = Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist; Arab-Orientation = Arab Orientation Subscale of the Acculturation Rating Scale for Arab Americans; Ethnic identity = Multi-group Ethnic Identity Measure. High and low values are plotted at one standard deviation above and below the mean respectively.
High acculturative distress. Considering only those with high acculturative distress (see Figure 6A), simple effects analyses revealed no significant difference between those high and low in ethnic identity at low levels of Arab Orientation ($\beta = -.242, t (181) = -.82, p = .41$). The simple effect at high levels of Arab Orientation was marginally significant ($\beta = .50, t (181) = 1.75, p = .08$) (Those with high acculturative distress, high ethnic identity, and high Arab Orientation reported marginally significantly higher levels of eating disorder symptoms as compared to their low ethnic identity counterparts). The simple slopes of both high ethnic identity ($\beta = .22, t (181) = 1.27, p = .21$) and low ethnic identity ($\beta = -.15, t (181) = -1.14, p = .26$) were not significant.

Low acculturative distress. Considering only those participants with low acculturative distress (see Figure 6B), simple effects analyses revealed no significant difference between those high and low in ethnic identity at neither low levels of Arab Orientation ($\beta = .43, t (181) = 1.28, p = .20$) nor high levels of Arab Orientation ($\beta = -.08, t (181) = -.27, p = .79$). The simple slope of high ethnic identity was not significant ($\beta = -.22, t (181) = -1.39, p = .17$), nor was the simple slope for low ethnic identity ($\beta = .04, t (181) = .25, p = .81$).

Meaning of interaction. Although the three way interaction between Arab-orientation, ethnic identity, and acculturative distress was significant, probing of this interaction revealed only marginally significant simple effects. This interaction examined the interplay between internal aspects of Arab-identification (i.e., ethnic identity) and external aspects of Arab-Identification (i.e., Arab-orientation) with acculturative stress as predictors of EAT-26 scores. According to this interaction, these internal and external aspects do not necessarily coexist. One can be involved behaviourally in the Arab culture, but not fully identify with it and vise versa. The marginally significant simple effect at high levels of acculturative distress again suggested a moderating effect of high ethnic identity as it changed the relationship between Arab-orientation
and eating disorder symptoms as a function of acculturative distress. At high levels of acculturative distress, high ethnic identity combined with high Arab-orientation increased risk of eating disorder symptoms (as compared to those high in Arab-orientation and low in ethnic identity). This effect was not present at low levels of acculturative distress.

_Arab-orientation x ethnic identity x acculturative distress as predictive of BULIT-R scores._ Addition of the three-way interaction (Arab-orientation x ethnic identity x acculturative distress) in Step 4 did not account for a significant amount of variance in BULIT-R scores over and above the first three steps, $F_{change} (1, 181) = 3.03, p = .08$. The lower two-way interaction block was also not significant, $F_{change} (3, 182) = .696, p = .56$. The main effects block, however, predicted a significant amount of variance in BULIT-R scores over and above the covariates, $F_{change} (3, 185) = 14.87, p < .001, R^2_{change} = .159$. Thus, the main effects block predicted another 15.9% of variance in BULIT-R scores above and beyond age and BMI. Examination of the predictors within the main effects block showed that acculturative distress, $t (185) = 6.58, p < .001$, was the only significant predictor.

_Arab-orientation x ethnic identity x acculturative distress as predictive of BSQ-16 scores._ Addition of the three-way interaction (Arab-orientation x ethnic identity x acculturative distress) in Step 4 did not account for a significant amount of variance in BSQ-16 scores over and above the first three steps, $F_{change} (1, 181) = 1.40, p = .24$. The lower two-way interaction block was also not significant, $F_{change} (3, 182) = .362, p = .78$. The main effects block, however, predicted a significant amount of variance in BSQ-16 scores over and above the covariates, $F_{change} (3, 185) = 19.96, p < .001, R^2_{change} = .194$. Thus, the main effects block predicted another 19.4% of variance in BSQ-16 scores above and beyond age and BMI. Examination of the predictors within the main effects block showed that acculturative distress, $t (185) = 7.60, p < .001$, was the only significant predictor.
*Arab-orientation x ethnic identity x acculturative distress as predictive of SATAQ-3-IG scores.* Addition of the three-way interaction (Arab-orientation x ethnic identity x acculturative distress) in Step 4 did not account for a significant amount of variance in SATAQ-3-IG over the first three steps, $F_{change}(1, 181) = 1.53, p = .22$. The lower two-way interaction block was also not significant, $F_{change}(3, 182) = .657, p = .58$. The main effects block, however, predicted a significant amount of variance in SATAQ-3-IG scores over and above the covariates, $F_{change}(3, 185) = 17.97, p < .001$, $R^2_{change} = .223$. Thus, the main effects block predicted another 22.3% of variance in internalization of thinness above and beyond age and BMI. Examination of the predictors within the main effects block showed that acculturative distress, $t(185) = 7.02, p < .001$, was the only significant predictor.

**Summary of findings for the Arab-orientation x ethnic identity x acculturative distress interaction across all four outcome variables.** The interaction between Arab-orientation, ethnic identity, and acculturative distress was a significant predictor of EAT-26 scores, but probing of this interaction revealed only marginally significant findings. Similar to other interactions found in this study, the three way interaction appeared to be driven by changes in the way ethnic identity moderated the relationship between Arab-orientation and disordered eating under conditions of high versus low acculturative distress.

The two-way and three-way interactions were not significant predictors of the BULIT-R, BSQ-16, or the SATAQ-3-IG. The main effects were significant, however, for each of these variables. Acculturative distress was the only significant main effect that was able to predict a significant amount of variability in bulimia symptoms, body shape concerns and internalization of thinness above and beyond age and BMI.
Summary of interaction tests among culture related variables as predictors of disordered eating, body shape concerns, and internalization of thinness. A total of six three-way interactions (a-f) were tested for each of the disordered eating and body shape-related measures (EAT-16; BULIT-R; BSQ-16; and SATAQ-3-IG). A pattern emerged in that none of these three way interactions were significant for the body shape-related measures (BSQ-16 and SATAQ-3-IG). However, in the case of the disordered eating measures (EAT-26 and BULIT-R), certain three-way interactions proved to be significant predictors. Two three-way interactions between the two acculturation dimensions (Arab-orientation and Anglo-orientation), and cultural value conflict were significant for each of the EAT-26 and BULIT-R. Two three way interactions between Anglo-orientation, ethnic identity, and acculturative distress were also significant for each of the EAT-26 and BULIT-R. One interaction between Arab-orientation, ethnic identity, and acculturative distress was marginally significant for the EAT-26. These findings partially supported hypothesis seven which stated that acculturation, ethnic identity and bicultural stress and conflict would interact to predict disordered eating and body-shape related difficulties. The results of these interaction tests will be discussed in more detail in the next chapter.
CHAPTER FIVE

Discussion

The purpose of the current investigation was two-fold: First, it aimed to examine the range and relationships among disordered eating patterns, body shape challenges, and internalization of thinness in young, Arab-Canadian women. The second, and main, aim of the study was to examine the relationships between disordered eating patterns and body shape measures and three cultural variables: acculturation, ethnic identity, and bicultural stress and conflict. A series of correlation and regression analyses were conducted to address each of the hypotheses in this study. Each of these hypotheses and the results obtained will be discussed next.

Disordered Eating Symptoms and Body Shape Concerns in Arab-Canadian Women

Hypothesis one stated that young Arab-Canadian women will exhibit a range of disordered eating patterns and body shape challenges similar to rates reported about Arab women who reside outside of North America (i.e., in the Middle East and Europe) (Abou-Saleh et al., 1998; Al-Subaie, 2000; Ford et al., 1990; Nasser, 1986, 1994; Thomas et al., 2010).

Results supported hypothesis one as the data revealed that a range of disordered eating, body shape concerns, and levels of internalization of the thinness ideal were present in this sample of Arab-Canadian women. The current study is the first to obtain data about the rate of disordered eating in a sample comprised solely of Arab-Canadian women. In this sample 24% scored above the cut-off of 20 on the EAT-26; 3.1% scored above the cut-off of 104 on the BULIT-R, and 11.2% scored above the cut-off of 85 on the BULIT-R. In the current investigation, students made up approximately one third of the sample and the remainder of the sample was made up of non-student members of the Arab community. All participants were between the ages of 18 and 35. The rates of individuals exceeding cut-offs found in this study
are relatively high, and were at the higher end of rates found in other studies with Arab and non-Arab samples.

The present study did not utilize a nationally or provincially representative sample of Arab women who fulfilled study criteria. It utilized a convenience sample where the snowball technique was used throughout recruitment to gain access to this population. This is not unusual in this area of research as demonstrated by the very few nationally representative prevalence studies of disordered eating. Especially when seeking hard to access populations, most studies utilize convenience samples and are based on access rather than representativeness of a particular population. Although this study was not a prevalence study conducted with a representative sample of a specified population, it did show that disordered eating was a challenge faced by a substantial minority of the young Arab-Canadian women who participated. The rates found in this study were high compared to other findings in studies of Arab and non-Arab females. A review of the rates found in some of these previous studies will exemplify this point.

Research studies on Arab females conducted in the Middle East and Europe used samples of primarily university students or younger adolescents. Studies that utilized college student samples reported a range of disordered eating and body shape concerns. For instance, Nasser (1986) reported that 12% of university students in Egypt and 22% of Arab university students in London exceeded EAT cut-off scores. Thomas et al. (2010) noted that 24.6% of their sample of university students in the United Arab Emirates exceeded EAT-26 cut-offs and 74.8% reported significant body dissatisfaction via large discrepancies in their ideal and current body size ratings. Ford et al.’s (1990) study showed “a clear preference for thinness in the Arabic culture” (p. 501) based on ratings of current and ideal body shapes in a group of university students in Egypt.
The remainder of the studies conducted on Arabs were conducted with adolescents. Nasser (1994) reported that 11.4% of her sample of Egyptian girls (15-years-old) in Egypt exceeded EAT cut-offs. Al Subaie (2000) found that 15.9% of his sample of Saudi Arabian girls (grades 7-12) exceeded cut-offs on the EDI Drive for Thinness subscale. Al-Adawi et al. (2002) found that 29.9% of Omani teenage females (average age of 15) in their sample exceeded EAT cut-off and 13.7% exceeded the BITE cut-off (a measure of bulimia symptoms). Eapen et al. (2006) found that 23.4% of their sample of adolescent girls (13- to 18-years-old) in the UAE exceeded the EAT cut-off. Latzer et al.’s (2007) studies with Arab adolescent girls (12- to 18-years-old) in Israel showed that 13% to 20.4% of their samples exceeded cut-offs on the EDI Drive for Thinness subscale. Latzer et al.’s (2009) study showed that 25% of Arab school girls (12- to 18-years-old) in Israel exceeded EAT-26 cut-offs.

In terms of findings that utilized non-Arab samples, Miller, Schmidt, Vaillancourt, McDougall, and Laliberte (2006) found that 15.5% of their sample of female undergraduate students in Ontario scored higher than the clinical cut-off for the EAT-26. Anstine and Ginenko (2000) found that 17% of their sample of college students from the University of Florida scored above the EAT-26 cut-off. Prouty, Protinsky, and Canady (2002) found that 17% of their female undergraduate student sample from a US university exceeded the cut-off. Haslam, Stevens, and Haslam (1989) found that 11% of their sample of female undergraduate students in the UK scored above the cut-off on the EAT-26. Konstantellou and Reynolds (2010) found that approximately 25% of their female sample students from a UK-based university scored above the cut-off on the EAT-26. This sample was a diverse sample made up of British, European, Black British, Asian, British, Hispanic and ‘other’ ethnic groups.

In terms of studies that utilized the BULIT-R, lower rates exceeding the cut-off were noted since this is a cut-off suggesting clinical levels of bulimia symptoms. For instance,
Fernandez, Malcarne, Wifley, and McQuaid’s (2006) study on female college students at San Diego State University found that 3% of the African American students scored above 104 on the BULIT-R. They further found that 2.1% of their Caucasian American students, 2.1% of the Asian American students, and 1% of the Latino students in their sample scored above 104 on this measure of bulimia symptoms. Ringham, Levine, Kalarchian, and Marcus (2008) found that 1.8% of students from an Ontario university scored above the cut-off of 104 on the BULIT-R. Welch, Thompson, and Hall (1993) found that 2.5% of nursing students from a New Zealand school of nursing scored above 104 on the BULIT-R.

One national study in Canada was conducted that examined rates of disordered eating. Findings of this study were based on a secondary data analysis of a nationally representative dataset collected by Statistics Canada (Gadallah & Piran, 2007). Multistage stratified cluster sampling was used when the data was originally collected in 2002 and a total of 36,984 participants responded (ages 15-years-old and above). The EAT-26 was one of the administered measures. Gadalla and Piran found that 2.8% of Canadian women scored above the cut-off on the EAT, and thus, were at risk for having an eating disorder at the time of the study. Analysis from this same data set revealed that those between 15-24 years of age were at greatest risk (3.8% exceeded the cut-off) followed by those between 25-44 years of age (3.0%) and those greater than 44 years of age (2.4%) (Piran & Gadalla, 2007b). In this nationally representative sample, there was a significant difference in the prevalence of EAT scores above the cut-off of 20 between different ethnic groups. Specifically, 6.6% of women members of the indigenous community, 5.5% of Arab-Canadian women, 3.6% of South Asian women, 2.9% of Euro-Canadians, and 1.5% of women of African- or Caribbean-Canadian (among other ethnic groups) scored above the EAT cut-off. The results of the present investigation are in line with the results
of the nationally representative sample in suggesting that disordered eating patterns may be a significant health issue for Arab-Canadian women (Piran & Gadalla, 2007a).

In terms of clinical eating disorders, in a nationally representative study in the US, lifetime estimated prevalence in women for anorexia nervosa were reported to range from 0.6% to 4.0% and from 1.2% to 5.9% for bulimia nervosa (Hudson, Hiripi, Pope, & Kessler, 2007).

In another nationally representative study in the US, lifetime estimated prevalence in adolescent girls (13- to 18-years-old) for anorexia nervosa was 0.3%, for bulimia nervosa was 0.9%, and for binge-eating disorder was 1.6% (Swanson, Crow, Le Grange, Swendsen, & Merikangas, 2011).

Rates for clinical levels of disordered eating are much lower than subclinical forms of eating problems. Nevertheless, subclinical forms of eating disorders are likely to be associated with similar levels of impairment as their clinical counterparts (e.g., Fairburn et al., 2007). Such similarities include eating disorder duration, severity of associated general psychiatric features, and degree of secondary psychosocial impairment (e.g., self-esteem, social adjustment) (Fairburn et al., 2007). Thus, high rates of sub-clinical eating disorder symptoms noted in this study (i.e., 24% scored above the cut-off on the EAT-26 and 3.1% scored above the cut-off of 104 on the BULIT-R) are concerning since they are likely associated with high levels of distress and impairment. They may also lead to increased difficulties if left unacknowledged and untreated. Arab-Canadian women appear to be at fairly high risk of having or developing an eating disorder. They are not protected from these difficulties and appear to be at even a higher risk of disordered eating than Caucasian women. The contributory role of their ethnic minority status and identification to these reported rates of disordered eating was the focus of this study.
Associations between Disordered Eating and Body Shape-Related Measures

Hypothesis two stated that disordered eating, body shape concerns, and internalization of thinness will be positively related to one another in Arab-Canadian women as these constructs are both theoretically related to each other (e.g., Stice, 1994; Striegel-Moore et al., 1986; Thompson & Stice, 2001) and have been shown to be positively related in Arab samples outside of North America (e.g., Afifi-Soweid et al., 2002; Al-Subaie, 2000; Eapen et al., 2006).

Results showed that eating disorder symptoms were positively correlated with both internalization of thinness and with body shape concerns thus supporting hypothesis two. These results are in line with Stice’s (1994) sociocultural model of disordered eating, and suggest that the model applies to Arab-Canadian women. This model indicates that eating disorders result from increased pressure placed on women in North American society to achieve a very slim body (Striegel-Moore et al., 1986). This pressure for thinness promotes internalization of the thin ideal followed by body dissatisfaction (Stice, 1994). Indeed, Rodin et al. (1985) noted that it has become ‘normative’ for a woman in North America to experience some sense of body dissatisfaction as a result of these pressures. Internalized beliefs about societal ideals of physical attractiveness and body shape lead individuals to define themselves by these ideals and contribute to increased risk for disordered eating. In his model, Stice predicted that body dissatisfaction places an individual at risk for developing disordered eating. Ample evidence in support of this model exists (see Stice, 2002, for a review); however, much of this evidence is based on studies of predominantly Caucasian participants. Recent studies on ethnic minority women have shown that body dissatisfaction is indeed related to disordered eating in groups of Hispanic American, Native American and Asian American females (e.g., Neumark-Sztainer et al., 2002; Wildes et al., 2001). Stark-Wroblewski et al. (2005) found that internalization of thinness was significantly positively related to EAT-26 scores in a sample of Chinese and
Japanese international students. Rogers Wood and Petrie (2010) found that internalization of thinness (measured via the Beliefs About Attractiveness Scale – Revised) was positively related to disordered eating (measured by the EAT-26 and BULIT-R) in African American women. Reddy and Crowther (2007) found that internalization of thinness (as measured by the Ideal-Body Internalization Scale – Revised) was not significantly related to any of the body- and eating-concern measures in a group of South Asian women living in the United States.

The current study adds to the literature by showing that (a) Arab-Canadian women do internalize the thinness ideal; (b) Arab-Canadian women experience body dissatisfaction; and (c) internalization of thinness and body dissatisfaction are indeed positively associated with disordered eating in Arab-Canadian women. However, a prospective study is needed to establish internalization of thinness and body dissatisfaction as risk factors in Arab-Canadian women.

**Associations between Acculturation, Disordered Eating, and Body Shape-Related Variables**

Hypothesis three stated that acculturation will not be correlated with disordered eating and body shape-related variables since most studies have reported no relationship between acculturation and eating and body-related variables in samples of Mexican American, African American, East Asian, and South Asian women (Joiner & Kashubeck, 1996; Kuba & Harris, 2001; Lester & Petrie, 1995; Stark-Wroblewski et al., 2005; Wildes et al., 2001).

This hypothesis was only partially supported. Acculturation was measured along two dimensions in this study: Arab-orientation and Anglo-Orientation. Arab-orientation, overall, was not related to disordered eating, body shape concerns, or internalization of thinness which supported hypothesis three. Anglo-orientation was also unrelated to disordered eating; however, it was significantly related to internalization of thinness and body shape concerns. Thus, it appears that acculturation relates differently to eating disorder symptoms than it does to risk
factors for disordered eating including internalization of thinness and body shape dissatisfaction. The lack of an association between acculturation and disordered eating is consistent with previous research and supports hypothesis three. The significant finding between Anglo-orientation and both internalization of thinness and body shape concerns did not support hypothesis three. However, it is consistent with previous theoretical work that suggests that identification with mainstream society may place individuals at increased risk of internalizing the thinness ideal and subsequently feeling dissatisfied with their bodies.

Much of the previous research that investigated the relationship between acculturation and disordered eating utilized one dimensional measures of acculturation. Many of these studies found no relationship between disordered eating and acculturation (e.g., Gordon et al, 2010; Joiner & Kashubeck, 1996; Kuba & Harris, 2001; Lester & Petrie, 1995; Reddy & Crowther, 2007, Stark-Wroblewski et al., 2005; Wildes et al., 2001) in ethnic minority groups (e.g., South Asian, Asian American African American; Hispanic American). A few studies found that acculturation positively related to EAT-26 scores (e.g., Ball & Kennardy, 2002; Cachelin et al., 2000; Chamorro & Flores-Oritz, 2000). As noted in the literature review, each of these studies utilized different measures of acculturation which may partly account for the inconsistent findings. Use of one dimensional measures of acculturation may also be causing this inconsistency since acculturation is now known to be a process that occurs along two dimensions. Only one study was found that examined acculturation in a two dimensional fashion in relation to disordered eating. This study showed that among Anglo-orientation, Mexican orientation and ethnic identity, only Anglo-orientation was able to differentiate Mexican American individuals with eating disorders from those without (Cachelin et al., 2006).

Few studies have directly examined how acculturation relates to internalization of thinness and body shape concerns. Stark-Wroblewski et al. (2005) found that acculturation was
not related to internalization of thinness. Reddy and Crowther (2007) found that acculturation was not related to body esteem. Both these studies utilized one dimensional measures of acculturation, which likely accounts for the discrepancy between their findings and the findings of the current study.

Researchers explained the positive relationship between acculturation and disordered eating by implicating bicultural conflict and/or internalization of pressures for thinness. For instance, based on the findings of their study, Cachelin et al. 2006 suggested that “Mexican American women who are Anglo oriented may experience heightened sociocultural pressures toward thinness because of their increased exposure to and adoption of European American beauty ideals” (p. 344). Similarly, Ball and Kennardy (2002) and Cachelin et al. (2000) hypothesized the positive relationship they encountered between disordered eating and acculturation was a result of increased exposure to the thinness ideal. Based on the results of their study linking acculturation to eating disorder symptoms in Mexican American women, Chamorro and Flores-Oritz hypothesized that second generation ethnic minority women are at an increased risk for disordered eating as a result of the strains involved when an “individual attempts to bridge two worlds” (p.127). On a similar note, Harris and Kuba (1997) noted that separation from one’s original ethnic culture was positively related to eating disorder symptoms and hypothesized that the reason for this was a “clash in values between the culture of origin and the host culture” (p. 342). None of these researches directly examined these claims.

A strength of the current investigation is the inclusion of measures of disordered eating in addition to measures of risk factors such as internalization of thinness and body shape concerns. Examination of the relationship between acculturation and internalization of thinness allowed for the direct examination of claims made by researchers such as Cachelin et al. (2000), Cachelin et al. (2006), and Ball and Kennardy (2002). The current results showed that Anglo-
orientation and Arab-orientation are not related directly to disordered eating. Anglo-orientation was, however, related to two well established risk factors for disordered eating: internalization of the thin ideal and body shape dissatisfaction. These findings support the notion that internalization of thinness and body dissatisfaction are more likely to occur with higher orientation towards mainstream culture. However, this does not necessarily mean that eating disorder symptoms will result as no correlation was found between Anglo-orientation and eating disorder symptoms themselves. There appears to be a middle step between internalization of thinness, body dissatisfaction and subsequent development of disordered eating. Indeed body dissatisfaction is considered a ‘normative’ condition for North American women (Rodin et al., 1985), but not all women develop symptoms of disordered eating. One main purpose of the current study was to examine the role of bicultural stress and conflict in the development of disordered eating in Arab-Canadian women. This will be discussed in a later section of this chapter.

**Associations between Ethnic Identity, Disordered Eating, and Body Shape-Related Variables**

Hypothesis four stated that ethnic identity will be related to disordered eating and body shape-related variables consistent with most studies, which found a relationship between ethnic identity and eating and body-related measures (e.g., Henrickson et al., 2010; Rogers Wood & Petrie, 2010; Phan & Tylka, 2006). The direction of this relationship was difficult to predict, however, since several studies found high ethnic identity to be protective (e.g., in African American women; Rogers Wood & Petrie, 2010); while others found that high ethnic identity increased risk of eating- and body-related challenges (e.g., in East Asian women; Phan & Tylka, 2006).
Results of the current study did not support hypothesis four as ethnic identity was not related to any of the disordered eating measures. Ethnic identity was also unrelated to body shape concerns and internalization of thinness. A more detailed examination of the studies that investigated the relationships between ethnic identity and disordered eating and body-related concerns may aid in providing a possible explanation for the seemingly conflicting findings and for the lack of support for hypothesis four.

Cachelin et al. (2006) found that ethnic identity did not differentiate groups of Mexican American participants diagnosed with eating disorders from control participants without eating disorders. Similarly, Phan and Tylka (2006) found no direct relationship between ethnic identity, internalization of the thin ideal, body preoccupation, and/or disordered eating in East Asian Americans. However, in Phan and Tylka’s study, ethnic identity was found to moderate the relationship between pressures for thinness and body preoccupation. For women high on ethnic identity, pressure for thinness and body preoccupation were strongly related; whereas for women low on ethnic identity, there was only a moderate relationship between these variables. This contradicts the notion that higher levels of ethnic identity are protective since higher levels of ethnic identity in this study strengthened the relationship between internalization of thinness and body preoccupation.

In other studies, ethnic identity was found to be protective. For instance, Stein et al. (2010) found that ethnic identity was related to decreased binge eating in Mexican American women. Rogers Wood and Petrie (2010) found that ethnic identity was negatively related to internalization of thinness in African American women. They concluded that high ethnic identity was protective against disordered eating in African American women via decreased internalization of the thinness ideal. Henrickson et al. (2010) also concluded that high ethnic identity was protective against disordered eating in African American women. Henrickson et al.
examined ethnic identity as it related to disordered eating and the reinforcing functions of eating and thinness (i.e., eating as a way to manage negative affect, as pleasure/reward, as leading to feelings of loss of control, as enhancing cognitive competence, and as alleviating boredom). The reinforcing functions of eating and thinness were measured via the Thinness and Restricting Expectancy Inventory and the Eating Expectancy Inventory. Eating disorder symptoms were measured via the EAT. Henrickson et al. found that a specific component of ethnic identity (Ethnic Identity Search) moderated the relationship between reinforcing functions of eating/thinness and disordered eating in African American women. Higher ethnic identity attenuated the relationship between reinforcing functions of eating/thinness and disordered eating which supported the notion of ethnic identity as a protective factor.

In two of the above reviewed studies, ethnic identity was related to disordered eating and body shape concerns only as a moderator (i.e., Henrickson et al., 2010; Phan & Tylka, 2006). No direct relationship between ethnic identity and disordered eating and/or body-related difficulties was found in either Henrickson et al.’s or Phan and Tylka’s study. The two other studies which found a significant negative relationship between ethnic identity and disordered eating and body-related concerns (i.e., Rogers Wood & Petrie, 2010; Stein et al., 2010) differed from the current study in terms of ethnic group studied, sample size utilized, and outcome measure used. Stein et al.’s study included only 66 Mexican American participants and found a significant negative relationship between ethnic identity and binge eating. Rogers Wood and Petrie’s study included 322 African American women and found that ethnic identity was negatively related to internalization of thinness. This latter finding may be specific to the ethnic group utilized since previous studies have shown higher levels of body satisfaction in African American females (See O’Neil, 2003; Wildes et al., 2001; Roberts, Cash, Feingold, & Johnson,
2006; Striegel-Moore & Smolak, 1996 for reviews). Still, other studies (e.g., Cachelin et al., 2006) found no relationship between ethnic identity and disordered eating.

Taken together with inconsistent findings in the literature, the lack of significant relations between ethnic identity and disordered eating and body shape-related difficulties in the current study may be indicative of the presence of interaction effects. It may be that the inconsistent findings in the literature are not indicative of true relationships between ethnic identity and eating- and body-related difficulties, but are indicative of the presence of one or more moderating variables. As discussed earlier, two previous studies found significant moderating effects of ethnic identity. With respect to the current study, ethnic identity was related to disordered eating only in the context of the three-way interactions between acculturation, ethnic identity and bicultural stress and conflict which will be discussed in a later section of this chapter.

**Associations between Bicultural Stress and Conflict, Disordered Eating, and Body Shape-Related Variables**

Hypothesis five stated that bicultural stress and conflict will be positively related to disordered eating and body shape challenges in line with previous research showing a consistent positive link between these variables in Hispanic, African American, and South Asian women (e.g., Gordon et al., 2010; Perez et al., 2002; Reddy & Crowther, 2007).

Results of this study showed that bicultural stress and conflict is positively related to disordered eating symptoms, body shape concerns, and internalization of the thinness ideal. Both measures of bicultural stress and conflict utilized in this study were positively correlated with disordered eating, body shape concerns, and internalization of thinness. These findings support hypothesis five and are consistent with previous research.
For instance, Gordon et al. (2010) found that acculturative stress was significantly positively related to higher levels of drive for thinness among Hispanic women and to higher levels of bulimic symptoms in Black women. These researchers speculated that “acculturative stress, rather than acculturation, may be most related to eating disorder symptoms” (p.141) since acculturation itself was not related to any of the EDI subscales in their study. Reddy and Crowther (2007) also found that cultural conflict was related to decreased body esteem and increased disordered eating, but to decreased thin-idealization. Reddy and Crowther acknowledged that the finding regarding decreased thin idealization was at odds with previous research.

Perez et al. (2002) found that acculturative stress significantly moderated the relationship between body dissatisfaction and bulimic symptoms in Hispanic and Black women. At higher levels of acculturative stress, body dissatisfaction significantly predicted bulimic symptoms; whereas at lower levels of acculturative stress the relationship between body dissatisfaction and bulimic symptoms was not significant. The explanation put forth for this significant finding was based on a “diathesis-stress prediction that, for minority women, body dissatisfaction may serve as a risk for bulimic symptoms only or particularly when combined with acculturative stress” (p. 445).

Both in the previous literature and in the current study, bicultural stress and conflict appears to be the only cultural variable that is consistently positively associated with eating- and body-related difficulties. As mentioned a number of times in the literature review and throughout the initial sections of this chapter, researchers have implicated the notion of ‘culture clash’ or cultural conflicts to account for findings that relate ethnic identity and/or acculturation to disordered eating. Very few, however, directly examined this link. The current study included all three of these cultural variables, so direct comparisons and hypothesis testing could occur.
For instance, Gordon et al.’s (2010) speculation that acculturative stress may be more important than acculturation was directly tested. This will be discussed in the next section.

**Importance of Bicultural Stress and Conflict Above and Beyond Ethnic Identity and Acculturation**

Hypothesis six stated that bicultural stress and conflict will predict a significant amount of variance in eating disorder and body shape-related variables above and beyond both acculturation and ethnic identity due to the stronger and more consistent empirical support for the role of cultural conflict and acculturative stress in relation to disordered eating in Hispanic, African American and South Asian women (e.g., Gordon et al., 2010; Perez et al., 2002; Reddy & Crowther, 2007).

Hypothesis six was supported such that both measures of bicultural stress and conflict predicted a significant amount of variance in disordered eating, body shape concerns and internalization of thinness above and beyond age, BMI, both dimensions of acculturation, and ethnic identity. A unique contribution of the current study is that this is the first time all three of these culture-related variables have been included in a single regression analysis to determine how much of the variance in disordered eating and body shape concerns can be accounted for by each one on its own. For each of the measures of disordered eating, body shape concerns, and internalization of thinness, results consistently showed that acculturation and ethnic identity were not significant contributors above and beyond age and BMI. Cultural value conflict and acculturative distress, however, were consistent significant predictors.

Comparison of the items that comprise the ethnic identity, acculturation, and bicultural stress and conflict measures provides a possible explanation for why bicultural stress and conflict more consistently relate to disordered eating symptoms. Examination of the items comprising the Multigroup Ethnic Identity Measure and the Acculturation Rating Scale for Arab
Americans showed that neither of these measures assesses distress related to one or both cultures. These ethnic identity and acculturation measures only assess identification and involvement with the dominant and/or original ethnic culture. The Cultural Value Conflict Scale and the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist, however, both include items that specifically assess distress in relation to one or both cultures (e.g., not fitting in, difficulty negotiating differences in behavioural expectations, conflicting value systems, negative feelings towards one or both cultures, etc.). The current results, which showed that only the bicultural stress and conflict measures were significantly related to disordered eating, support the notion that eating disorders may develop as coping strategies to deal with internal distress due to difficulties mediating two cultural worlds. Since ethnic identity and acculturation were not significant predictors, this suggests that cultural orientation and identification itself is not particularly relevant to disordered eating. It is the distress related to one’s cultural orientation/identification which may be more relevant.

The acculturative distress measure accounted for a relatively larger amount of the variance in eating disorder symptoms than did the cultural conflict measure. This is likely due to the composition the acculturative distress measure which assesses both cultural stress and general stress symptoms. The cultural value conflict measure did not include measures of general stress and was focused only cultural value conflicts.

Berry, Kim, Minde, and Mok (1987) defined stress as “a generalized physiological and psychological state of the organism, brought about by the experience of stressors in the environment, and which requires some reduction (for normal functioning to occur), through a process of coping until some satisfactory adaptation to the new situation is achieved” (p. 492). They defined acculturative stress in particular as “one kind of stress, that in which the stressors are identified as having their source in the process of acculturation” (p.492). They further noted
that acculturation has been associated with stress behaviours including: lowered mental health status (e.g., anxiety, depression), feeling alienated from both the dominant cultural group and the original ethnic group, increased psychosomatic symptoms, and identity confusion.

Although theoretically, acculturative stress is an experience that, by definition, includes symptoms of general stress (Sodowsky & Lai, 1997), exploratory analyses separating these two types of items were conducted to ensure that cultural stress itself played a contributing role. Results showed that both cultural stress and general stress were significant contributors to disordered eating and internalization of the thinness ideal above and beyond acculturation and ethnic identity. Cultural stress items also predicted a significant amount of variance in disordered eating and internalization of the thinness ideal (but not body shape concerns) above and beyond general stress items. In the case of body shape concerns, however, cultural value conflict as measured by the Cultural Value Conflict Scale, was a significant predictor. Thus, overall, the experience of bicultural stress and conflict was shown to be an important predictor of eating disorder symptoms, body shape concerns, and internalization of the thinness ideal above and beyond both acculturation and ethnic identity.

The current finding showed that children of immigrants raised in a culture different from their home culture experience stress rooted in this bicultural experience. In Arab-Canadian women, higher levels of bicultural stress and conflict was found to contribute to disordered eating behaviour as well as to body shape concerns and internalization of thinness above and beyond both acculturation and ethnic identity. These results support the notion that eating disorders are problems of transition as “women attempt to move between two worlds” (Katzman & Lee, p.392). Women may be attempting to perfect their physical bodies as a way of coping and gaining control in an environment where they feel powerless. This will be discussed further in the theoretical implications section of this chapter.
How Acculturation, Ethnic Identity, and Bicultural Stress and Conflict Interact to Predict Disordered Eating and Body Shape-Related Concerns

Hypothesis seven stated that acculturation, ethnic identity, and bicultural stress and conflict will interact to predict disordered eating, body shape-related difficulties, and internalization of thinness. The inconsistent findings in studies of disordered eating and body shape challenges as they relate to ethnic identity, acculturation, and bicultural stress and conflict reviewed in the literature review suggest the presence of interactions among these variables. Very few studies have examined such interactions and the ones that did, found significant moderating effects in African American and Mexican American women (e.g., Henrickson et al., 2010; Bettendorf & Fischer, 2009). Hypothesis seven was divided into three sub-hypotheses as will be reviewed and discussed shortly.

In terms of past research, only Bettendorf and Fischer’s (2009) study examined the interaction of two cultural variables simultaneously (acculturation and ethnic identity). The remainder of research studies which examined the interaction of cultural variables with disordered eating and body shape variables examined only one cultural variable at a time. For instance, Henrickson et al. (2010) examined a component of ethnic identity (Ethnic Identity Search) as a moderator of the relationship between reinforcing functions of eating/thinness and disordered eating in African American women. Phan and Tylka (2006) examined ethnic identity as a moderator of the relationship between pressures for thinness and body preoccupation. Perez et al. (2002) examined acculturative stress as a moderator of the relationship between body dissatisfaction and bulimia symptoms. Each of these was already discussed in the literature review and in earlier sections of this chapter.

Bettendorf and Fischer (2009) measured disordered eating via the EAT-26, the BULIT-R, and the Body Dissatisfaction subscale of the Eating Disorder Inventory (EDI-BD). However,
these investigators conducted a principal components analysis of the items comprising each of these measures and extracted three factors: Control Concerns (behaviours and concerns about losing control and the need to control one’s body size and shape); Restricted Eating (restricting the kind and amount of food consumed); and Body Dissatisfaction (dissatisfaction with the size and shape of one’s body). Bettendorf and Fischer examined these factors in relation to both ethnic identity and acculturation (measured by Anglo-orientation) and found that ethnic identity moderated the relationship between acculturation and Restricted Eating. At lower levels of ethnic identity, acculturation to mainstream U.S. society significantly predicted higher Restricted Eating; whereas, at higher levels of ethnic identity, acculturation to mainstream U.S. society significantly predicted lower Restricted Eating. This moderating relationship between ethnic identity and acculturation was not found for Control Concerns or Body Dissatisfaction.

The authors indicated that their findings provide mixed evidence for their speculation that “ethnic identity may be protective in that group membership is emphasized more than one’s physical appearance” (p. 438). Mexican orientation did not moderate the relationship between Anglo orientation and any of the measures of eating and body concerns. The authors speculated that the reason for the lack of moderating effects for Mexican cultural orientation may be that “simply living in a society in which messages and images of thinness are profoundly pervasive may be sufficient to produce body concerns, regardless of Mexican cultural orientation” (p. 438).

None of the studies which examined interactions among cultural variables and disordered eating investigated the interactions between all three cultural variables of ethnic identity, acculturation, and bicultural stress and conflict. This is a unique contribution of the current investigation. Correlational results in the current investigation showed that ethnic identity, acculturation and bicultural stress and conflict are indeed conceptually different
constructs as they each related differently to disordered eating, body shape concerns, and internalization of thinness even though the latter group of eating- and body-related variables were intercorrelated. A series of interaction tests were conducted to tease apart the interrelationships among cultural variables as they related to disordered eating, internalization of thinness and body shape concerns. Hypothesis seven was divided into three sub-hypotheses as follows:

Hypothesis 7a: The two dimensions of acculturation (Arab-orientation and Anglo-orientation) will interact with bicultural stress and conflict to predict disordered eating and body shape-related difficulties.

Hypothesis 7b: Anglo-orientation, ethnic identity, and bicultural stress and conflict will interact to predict disordered eating and body shape-related difficulties.

Hypothesis 7c: Arab-orientation, ethnic identity, and bicultural stress and conflict will interact to predict disordered eating and body shape-related difficulties.

Results partially supported hypothesis seven and its sub-hypotheses in that interactions among cultural variables predicted disordered eating symptoms, but did not predict body shape concerns or internalization of thinness. Thus, hypotheses 7a, 7b, and 7c, were only partially supported. Each of these hypotheses was supported in relation to disordered eating, but not in relation to body shape-related difficulties. As such, results regarding disordered eating will be discussed separately from those regarding body shape concerns and internalization of thinness.

**Interactions predicting body shape concerns and internalization of thinness.**

Internalization of thinness and body shape concerns are well established risk factors for disordered eating (Stice, 2002; Thompson & Stice, 2001). Current results revealed that cultural variables did not interact to predict body shape concerns or internalization of thinness. These
findings do not support hypotheses 7a, 7b, or 7c, which hypothesized that the interactions among cultural variables would predict body shape-related difficulties.

Two earlier findings may account for the lack interaction effects among cultural variables as predictors of body shape concerns and internalization of thinness: (1) Anglo-orientation is significantly positively correlated with both internalization of thinness and body shape concerns; and (2) bicultural stress and conflict predicted relatively larger amounts of variance in internalization of thinness and body shape concerns (7.2% - 20.2%) as compared to eating disorder symptoms (4.1% - 15.9%) (see Tables 7-14). As such, simultaneous entry of the three cultural variables in the main effects block of the regressions accounted for large amounts of the variance in body shape concerns and internalization of thinness. Addition of the interaction terms did not add significantly to the predictive power of the main effects. However, Anglo-orientation and bicultural stress and conflict were both significant main effects that related positively to body shape concerns and internalization of thinness even after controlling for BMI and age.

The significant main effect for Anglo-orientation highlights the fact that the dominant Western, North American culture contributes to learning and internalizing the message that thin is beautiful. Increased identification with the dominant culture was associated with increased internalization of this message in Arab-Canadian women after controlling for BMI and age. Furthermore, the significant main effect for Anglo-orientation highlights the association between Western North American culture and body dissatisfaction in women. Stronger orientation toward the dominant culture was associated with increased body shape concerns even after controlling for BMI and age. This supports the idea that the North American context contributes to the ‘normative’ sense of body dissatisfaction experience by women living in this context (Rodin et al., 1985).
The significant main effect for bicultural stress and conflict supports the idea that difficulties mediating two cultural worlds can predispose women to both increased internalization of the thinness ideal as well as increased body shape concerns. As Gilbert and Thompson (1996) stated, “the body is one entity that offers women a sense of identity and self-definition” (p.193). As such, “women who possess an underdeveloped sense of self may be more vulnerable to society’s dictates of how they should look and act and thus are at greater risk for developing an eating disorder” (Gilbert & Thompson, p.193). In the current investigation, higher levels of bicultural stress and conflict (which encompasses feelings of identity confusion, lack of belonging, value confusion, and a series of mental, physical, and emotional symptoms of stress) indeed contributed to increased internalization of thinness and increased body shape concerns. In turn, risk for the development of disordered eating as a way to meet society’s unrealistic expectations could increase. Disordered eating may also develop as a way to fit in when a woman finds herself lost between two worlds. In order to verify the directionality of the association between bicultural stress and conflict and body-related concerns, a prospective study would be required. The ways in which cultural variables in this study interacted to predict disordered eating will be discussed next.

**Interactions predicting eating disorder symptoms.** In order to test hypotheses 7a, 7b, and 7c, three sets of interactions were investigated as predictors of disordered eating. The first examined how the two-dimensions of acculturation interact with bicultural stress and conflict. The second examined how Anglo-orientation, ethnic identity, and bicultural stress and conflict interact. The third examined how Arab-orientation, ethnic identity and bicultural stress and conflict interact as predictors of disordered eating. Each of these will be discussed next.
The interaction of the two dimensions of acculturation and bicultural stress and conflict. The first set of interactions examined the interaction between bicultural stress and conflict and the two dimensions of acculturation (Arab-orientation and Anglo-orientation) as predictors of disordered eating (EAT-26 and BULIT-R). This allowed for the examination of how the four different combinations of high and low Anglo- and Arab-orientation interacted with bicultural stress and conflict to predict disordered eating symptoms. Both dimensions of acculturation mainly examined behavioural involvement in the dominant culture and the original ethnic culture (e.g., language use, friendships, music preferences, etc.). The two measures of bicultural stress and conflict produced different results: The Cultural Value Conflict Scale significantly interacted with Arab- and Anglo-orientation to predict disordered eating (both EAT-26 and BULIT-R), whereas the Acculturative Distress subscale from the Cultural Adjustment Difficulties Checklist did not.

The four possible combinations of the two acculturation dimensions are as follows: (1) high Anglo-orientation and high Arab-orientation; (2) low Anglo-orientation and low Arab-orientation; (3) low Anglo-orientation and high Arab-orientation; and (4) high Anglo-orientation and low Arab-orientation. The significant three-way interactions showed that risk for disordered eating across these four groups differed based on the level of bicultural conflict endorsed. Under high levels of bicultural conflict, increased risk was noted overall, but those in the third group (low Anglo-orientation and high Arab-orientation) exhibited the lowest risk for disordered eating. Under low levels of bicultural conflict, it was the first group (high Anglo-orientation and high Arab-orientation) who showed lowest risk for disordered eating. Results will be discussed for each of the eating disorder measures utilized.

First, with respect to the EAT-26, the significant interaction indicated that the relationship between the two dimensions of acculturation and disordered eating was moderated
by cultural value conflict. Under low levels of cultural value conflict, no significant differences in disordered eating were found among each of the four groups. Under high levels of cultural value conflict, however, EAT-26 scores increased overall, but the third group (low Anglo-orientation and high Arab-orientation) was protected from this increase. This third group showed significantly less disordered eating symptoms than the first group (low Anglo-orientation and low Arab-orientation) and the second group (high Anglo-orientation and high Arab-orientation) under high levels of cultural value conflict.

Second, with respect to the BULIT-R, the two dimensions of acculturation also interacted with cultural value conflict to predict bulimia symptoms. Similar to findings with the EAT-26, the relationship between the two dimensions of acculturation and bulimia symptoms was moderated by cultural value conflict. Under high levels of cultural conflict, overall higher levels of bulimia symptoms were reported. However, even under conditions of high cultural conflict, those in the third group (low Anglo-orientation and high Arab-orientation) reported the least bulimia symptoms. Under conditions of low cultural value conflict, those in the first group (high Anglo-orientation and high Arab-orientation) were the least troubled by disordered eating in the form of bulimia symptoms.

Thus, when it comes to the relationship between cultural variables and risk for disordered eating, it is important to consider not only the orientation towards both the dominant and original ethnic culture simultaneously, but also how much conflict the individual experiences as a result of her pattern of involvement in one or both cultures.

The four groups resulting from the various combinations of Anglo- and Arab- orientation are similar to the four acculturation strategies identified by Berry in the acculturation literature (e.g., Berry & Kim, 1998). To briefly review, according to Berry’s model of acculturation, the essence of the acculturation task involve negotiating between: (a) how much one prefers to
maintain one’s own heritage, culture, and identity and (b) how much one prefers to be in contact with and participate in the larger society made up of one or more different ethnocultural groups (Berry, 2005). These tasks make up the two dimensions of acculturation and can be assessed by asking two questions “Is my cultural identity of value and to be retained?” and “Are positive relations with the larger (dominant) society to be sought?” (Berry, 1980, p.13). Four acculturation strategies result from the different combinations of answers to these questions: Integration (yes, yes); assimilation (no, yes); separation (yes, no); and marginalization (no, no).

Although in the current investigation, these groups were not determined using the same methods that Berry used, it is useful to review findings about which of the groups tends to be best adapted. Studies have suggested that integration (strong identification and involvement with both mainstream society’s culture and the traditional ethnic culture) is the most adaptive acculturation strategy; and marginalization (rejection and/or lack of involvement in one’s own ethnic culture as well as the culture of the dominant society) is the least adaptive (Berry & Kim, 1998). Separation (exclusive involvement in one’s ethnic culture combined with rejection of the dominant culture) and assimilation (exclusive involvement in the dominant culture and rejection of original ethnic culture) have been found to be in the middle of these two extremes. In another study, Berry et al. (1987) again noted that integration was the most adaptive strategy as it was associated with the lowest levels of stress (measured by psychological and psychosomatic symptoms). Marginalization and separation were least adaptive as they were associated with the highest levels of stress. Assimilation was associated with intermediate stress levels.

When it comes to predicting disordered eating, the current study shows that it is not possible to predict which of the four groups would be at the highest or lowest risk without assessing the level of conflict experienced by the individual. Indeed, under low levels of cultural conflict, findings of the current investigation support Berry’s notion that integration is the most
adaptive strategy (high Anglo-orientation and high Arab-orientation). However, this is not the case under high levels of cultural value conflict where high orientation towards both cultures is associated with highest levels of risk for disordered eating. It is possible that one can be highly involved with both cultures and simultaneously experience high levels of conflict which ultimately leads to increased risk of disordered eating. In addition, current findings showed that separation (low Anglo-orientation and high Arab-orientation) is actually most adaptive (in relation to predicting eating disorder risk) when combined with high levels of cultural conflict. Separation from dominant Western, North American culture which emphasises the importance of thinness and high involvement in the Arab culture is in a way protective. This may be a result of feeling connected and involved with one’s ethnic community or of the opportunity to engage in cultural activities that have little to do with appearance. These speculations would benefit from further research.

The combination of Anglo-orientation and Arab-orientation did not interact with the second measure of bicultural stress and conflict (i.e., the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist). This may be due to the high proportion of variance that acculturative distress accounted for on its own. It may also be a result of the difference in the types of bicultural difficulties assessed by both measures. The Cultural Value Conflict Scale assesses only cultural value conflicts whereas the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist assesses acculturative distress more broadly via assessment of both cultural stress and general stress experiences. The two acculturation dimensions included in this interaction were mainly assessments of behavioral involvement in one or both cultures. It may be that conflicts based on behavioural choice options are more relevant to value conflicts than a broader stress response.
The interaction of Anglo-orientation, ethnic identity and bicultural stress and conflict.

The second set of interactions examined the interplay among Anglo-orientation, ethnic identity, and bicultural stress and conflict as predictors of disordered eating (EAT-26 and BULIT-R). This set of interactions included ethnic identity, a construct which mainly assesses one’s internal sense of belonging to the Arab culture, ethnic pride, positive feelings about one’s ethnic group, and ethnic identity achievement. Anglo-orientation mainly assesses behavioural involvement in the dominant culture (e.g., language use, friendships, music preferences, etc.). Interaction tests among Anglo-orientation, ethnic identity, and bicultural stress and conflict allowed for the examination of how one’s internal sense of belonging to her ethnic culture interacts with her involvement in the dominant culture, her experience of bicultural stress and conflict, and ultimately her risk of disordered eating. The two measures of bicultural stress and conflict produced different results: only the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist interacted with Anglo-orientation and ethnic identity to predict disordered eating (both the EAT-26 and BULIT-R), the Cultural Value Conflict Scale did not.

The four possible combinations of Anglo-orientation and ethnic identity are as follows: (1) high Anglo-orientation and high ethnic identity; (2) low Anglo-orientation and low ethnic identity; (3) low Anglo-orientation and high ethnic identity; and (4) high Anglo-orientation and low ethnic identity. The significant three-way interactions showed that risk for disordered eating across these four groups differed based on the level of bicultural conflict endorsed. Under high levels of bicultural conflict, increased risk was noted overall, but those in the third group (low Anglo-orientation and high ethnic identity) exhibited the lowest risk for disordered eating. Under high levels of bicultural conflict, those in the second group (high Anglo-orientation and high ethnic identity) showed highest levels of disordered eating. Under low levels of bicultural
conflict, it was the second group (low Anglo-orientation and low ethnic identity) who showed lowest risk for disordered eating. Results will be discussed for each of the eating disorder measures utilized.

First, with respect to the EAT-26, Anglo-orientation interacted with ethnic identity and acculturative distress to predict general eating disorder symptoms measured by this instrument. The significant interaction indicated that the relationship between Anglo-orientation and ethnic identity was moderated by acculturative distress. At high levels of acculturative distress, risk for disordered eating increased overall, but the third group (low Anglo-orientation and high ethnic identity) exhibited the lowest level of risk. The first group (high Anglo-orientation and high ethnic identity) exhibited the highest level of risk for disordered eating. At low levels of acculturative distress, risk decreased overall, and the second group (low Anglo-orientation and low ethnic identity) exhibited the lowest level of risk.

Second, with respect to the BULIT-R, Anglo-orientation and ethnic identity interacted with acculturative stress to predict bulimia symptoms. Similar to findings with the EAT-26, the relationship between Anglo-orientation and ethnic identity was moderated by acculturative stress. Under high levels of acculturative stress, the risk for bulimia was higher overall. Again, similar to findings with the EAT-26, even under conditions of high cultural conflict, those in the third group (low Anglo-orientation and high Arab-orientation) reported the least bulimia symptoms. The most at risk group for those experiencing high acculturative distress was the first group (high Anglo-orientation and high ethnic identity). Under conditions of low acculturative distress, the second group (low Anglo-orientation and low ethnic identity) was the least troubled by disordered eating in the form of bulimia symptoms.

Thus, when it comes to the relationship between cultural variables and risk for disordered eating, it is important to consider not only both internal and external aspects of
cultural orientation (both with respect to the dominant culture and the culture of origin), but also how much conflict the individual experiences as a result of her pattern of involvement in one or both cultures.

The four groups resulting from the various combinations of Anglo-orientation and ethnic identity represent a different way of categorizing bicultural individuals that takes into account their internal sense of belonging and pride associated with their ethnic culture. This is different from the first set of regressions that assessed the interplay between Anglo-orientation and Arab-orientation. Arab-orientation measures behavioural involvement in the Arab-culture whereas ethnic identity measures a more subjective internal process. Nonetheless, similar patterns of results were found which suggests that Arab-orientation and ethnic identity are positively related to one another. Indeed, positive correlations were found between these two constructs in the current investigation.

In terms of predicting disordered eating, findings related to the interaction of Anglo-orientation, ethnic identity, and bicultural stress again showed that the particular combination of Anglo-orientation and ethnic identity was not the most important factor to consider. It was the way in which bicultural stress interacted with each combination which held the most predictive power. Findings once again revealed that orientation to both cultures is not necessarily protective since high Anglo-orientation and high ethnic identity was associated with the highest risk of bulimia under high levels of acculturative distress. In such a case, high levels of acculturative distress indicate that some aspect(s) of both cultures have failed to integrate adequately.

In the realm of acculturation, marginalization (rejection of both the dominant and original ethnic culture) has been found to be the least adaptive acculturation strategy (Berry & Kim, 1998). Individuals low on Anglo-orientation and low on ethnic identity are similarly
separated from both cultures. Current findings, however, showed that this double separation was associated with higher risk for disordered eating symptoms only under high levels of acculturative stress. In fact, under low levels of acculturative stress, those low on Anglo orientation and low on ethnic identity were at the lowest risk of having an eating disorder. This indicates that disconnection from both cultures is not necessarily maladaptive. If an individual is separated from both cultures, but has come to terms with this and experiences low acculturative distress, then this may not be a problematic area in their life. Such individuals may find their sense of identity and belonging via another life arena outside of culture and ethnic identity (e.g., family, career, etc.). This speculation would benefit from future research.

The combination of Anglo-orientation and ethnic identity did not interact with the second measure of bicultural stress and conflict (i.e., the Cultural Value Conflict Scale). This likely is a result of the difference in the types of bicultural difficulties assessed by both measures. The Cultural Value Conflict Scale assesses only cultural value conflicts whereas the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist assesses acculturative distress more broadly via assessment of both cultural stress and general stress experiences. Anglo-orientation is a behavioral measure of orientation whereas ethnic identity is an internal measure. It may be that conflicts resulting from a mismatch between internal and external cultural processes taps into the broader stress response and acculturative distress experience more strongly.

The interaction of Arab-orientation, ethnic identity and bicultural stress and conflict.

The third set of interactions examined the interplay among Arab-orientation, ethnic identity, and bicultural stress and conflict as predictors of disordered eating (EAT-26 and BULIT-R). In this case, the interaction between involvement in the Arab culture at a behavioural level, identification with the Arab-culture on an internal level, and experiences of
bicultural stress and conflict was examined for its ability to predict disordered eating. One significant interaction was initially noted, but when probed this interaction was only marginally significant. As such, the interaction itself will not be discussed here. However, this marginally significant finding highlighted the fact that internal and external forms of identification with the Arab-culture do not necessarily coincide. For instance, one may be highly involved in the Arab culture, but have a low sense of belonging to the Arab community. This type of internal and external discrepancy could be a source of conflict that may relate to disordered eating. This is consistent with Phinney and Ong’s (2007) statement that “ethnic identity is an internal structure than can exist without behaviour” (p. 272). The way in which internal and external aspects of Arab-orientation relate to bicultural stress and conflict and disordered eating may benefit from future research. Nonetheless, this marginally significant finding combined with results showing positive correlations between Arab-orientation and ethnic identity suggest that, in this sample, there was a match between levels of behavioural involvement in the Arab culture and internal identification/sense of belonging to the culture.

**Conclusions based on the interaction tests.** The most significant finding of the interaction tests relates to the moderating role of bicultural stress and conflict in relation to the associations of the two acculturation dimensions and ethnic identity with measures of disordered eating.

With respect to the two acculturation dimensions (Anglo-orientation and Arab-orientation), the way in which each possible combination of these two dimensions was related to risk of disordered eating depended on the level of bicultural conflict experienced by the individual. For example, as described earlier, Berry and colleagues (Berry et al., 1987; Berry & Kim, 1998) considered the combination of high Anglo-orientation and high Arab-orientation to reflect the ‘integration’ acculturative strategy and considered it to be most adaptive. The current
study, however, shows that this combination is not necessarily indicative of adequate integration. Some individuals experience high bicultural conflict as a result of scoring high on both these dimensions and others experience low bicultural conflict. The present investigation suggests that it is the low scorers on bicultural conflict who are better integrated. Indeed, these low scorers were found to be protected from disordered eating. In contrast, high scorers on bicultural conflict who were also high Anglo-orientation and high Arab-orientation, classified as ‘integrated’ by Berry and colleagues, reported high levels of disordered eating. Ultimately, how an individual orients herself to one or both cultures is not of primary importance with respect to risk of disordered eating. Rather, this study suggests that how conflicted she feels about these orientations is of primary significance.

Similarly, with respect to the interplay between acculturation and ethnic identity, the particular combination of these measures was not of primary importance with respect to risk of disordered eating. It was the level of bicultural stress one experienced as a result of each combination of Anglo-orientation and ethnic identity that was significantly associated with risk for disordered eating. Arab-orientation, ethnic identity, and bicultural stress and conflict did not interact in a meaningful way in this study. A possible reason for this is the positive correlation between Arab-orientation and ethnic identity which was discussed earlier.

Another significant finding based on the interaction tests relates to the fact that cultural variables interacted to predict disordered eating, but did not interact to predict internalization of thinness or body shape concerns. Anglo-orientation alone or bicultural stress and conflict alone were sufficient predictors of internalization of thinness and body shape concerns. The other cultural variables did not play an additional predictive role. The interactions were, however, predictive of eating disorder symptoms above and beyond these initial main effects. This is a significant finding because it suggests that risk factors for disordered eating differ from actual
eating disorder symptoms as they relate to these cultural variables. Interactions appear to be more relevant to disordered eating than to either body shape concerns or internalization of thinness. This may explain the conflicting findings in the eating disorder literature as it relates to ethnic identity and acculturation since most studies examine these constructs on their own and not as they interact with each other and bicultural stress and conflict. Conflicting findings would be expected considering the findings of the current study which showed that similar patterns of identification with the mainstream and/or ethnic culture were associated with high risk of disordered eating under high levels of bicultural stress and conflict, but were associated with low risk of disordered eating under low levels of bicultural stress and conflict. If researchers examine acculturation and ethnic identity on their own without considering the influence of bicultural stress, then one would expect conflicting findings since a third variable (bicultural stress and conflict) is an important moderator of the relationship between these cultural variables and disordered eating.

**Theoretical Implications of the Study**

Previous theories linking culture and disordered eating are complex and draw upon feminist, transcultural, sociocultural and psychosocial perspectives (e.g., DiNicola, 1990a, 1990b; Gordon, 2000; Katzman & Lee, 1997; Nasser, 1997). These theories were reviewed in detail in the literature review and only relevant theory will be summarized in this section. The current study was the first quantitative study that attempted to combine relevant aspects of these theories as they relate to bicultural socialization experiences. Based on these theories, the main premise of this study was developed which stated that bicultural stress and conflict (which encompasses the experience of identity conflict and confusion) would be an important contributor to disordered eating symptoms. Many of the theoretical premises that formed the basis of this study were subsequently supported by the results. This will be discussed next.
To review, Striegel-Moore et al. (1986) outlined three appearance-based sociocultural factors in the development of eating disorders (i.e., the thin-ideal body image held for women; the centrality of appearance in the female gender role; and the importance of appearance for women’s success in society). Stice (1994) proposed that these sociocultural appearance-based pressures are transmitted by family, peers, and the media and promote internalization of the thinness ideal. Not all women, however, internalize the thinness ideal to the same extent. Stice’s (1994) model proposed that low self-esteem and identity confusion were two ways to increase the likelihood of internalization of sociocultural pressures for thinness. In short, this model indicates that internalization of thinness is the starting point that eventually results in disordered eating via body dissatisfaction and other related pathways (e.g., eating restriction, negative affect). Although, the culture of thinness and subsequent internalization of the thinness ideal is an important contributor to disordered eating, theorists are critical of etiological models of disordered eating that focus exclusively on this contributor.

For instance, Gordon (2000) was critical of theories that implicate the culture-of-thinness as the sole sociocultural contributor of disordered eating because such theories did account for the nearly universal but more subtle features of eating disorders such as concerns around autonomy, self-esteem, achievement, and control. Gordon stated that “this spectrum of psychological issues can be broadly understood as relating to the larger problem of the development of psychosocial identity” (p.95, Gordon, 2000). Gordon hypothesized that anorexia nervosa and bulimia nervosa are “both disorders of development that revolve around the core issue of shape and body weight, and in which the person, most typically female, obsessively focuses on the achievement of thinness in order to solve problems of personal identity.” (p.55)

The role of identity confusion initially outlined in Stice’s (1994) model has not received as much empirical support, but researchers such as Gordon (2000) have made theoretical
contributions elaborating on the link between identity confusion and disordered eating.

Gordon’s theories on the source of female identity difficulties focused on gender-related conflicts that he believed occurred in response to a shift in female gender-role expectations at a broader societal level. He noted that conflicting social expectations for women during a time of cultural transition of the female gender-role put women in a difficult position as their ideal role became unclear and ambiguous. In this context of cultural change, Gordon asserted that “some young women are vulnerable to becoming caught in the uncertainties and ambiguities of a drastically altered set of expectations;” And, in turn, he theorized that these conflicting expectations have made it difficult for women to “synthesize a viable or workable identity” and has in turn led them to “suffer inwardly from a sense of fragmentation, confusion, and self-doubt” (p. 96, Gordon, 2000). Eating disorders, according to Gordon are “a critical expression of dilemmas of female identity in our own time, in a period of significant cultural transition for women” (p.6, Gordon, 2000).

One theoretical contribution of the current study is with respect to the relationship between disordered eating and identity conflicts rooted in one’s ethnic identity. This is the first study to have empirically examined this theory as applied to bicultural conflicts. In the current investigation, bicultural stress and conflict was a complex and multifaceted construct which included identity confusion as one of its core symptoms. The Cultural Value Conflict Scale and the Acculturative Distress subscale of the Cultural Adjustment Difficulties Checklist explicitly assessed conflicts rooted in a bicultural experience in varied life arenas, such as: dating, premarital sex, marriage, food, clothes, religion, education, respectful behaviour towards elders, family expectations, and gender-role expectations. These measures also explicitly assessed: feeling a personal sense of inferiority as a member of one’s cultural group, lack of ethnic ego differentiation due to feeling marginalized from both cultural groups, and feelings of anger,
jealousy, and guilt towards one or both cultural groups. It is not surprising that this constellation of difficulties is closely associated with the experience of an identity crisis and identity confusion. Since identity confusion is, by definition, a part of the experience of bicultural stress and conflict, current results empirically supported the theory linking identity confusion to disordered eating in the realm of bicultural socialization.

Ethnic identity is integral to one’s sense of self and this is particularly true for minorities (Phinney, 1990). The current findings provide empirical support implicating identity confusion as an important etiological link to disordered eating in the case of ethnic minority individuals experiencing difficulties integrating their bicultural identities. It appears that the experience of conflicting value and behavioural expectations as a result of living in two cultures simultaneously results in “fragmentation, confusion, and self-doubt” (p. 96, Gordon, 2000) in relation to one’s ethnic self. If the body is “an entity that offers women a sense of identity and self-definition,” (p.193, Gilbert and Thompson, 1996) then difficulties forming an integrated ethnic identity could very well be expressed via disturbances in eating and body image as Gordon theorized.

Katzman and Lee (1997) also criticized eating disorder theories that were exclusively based on appearance. They combined feminist and transcultural theories of eating disorders and presented an analysis of disordered eating that went beyond a discussion of thin media ideals and “bodily obsessed analyses” to include an analysis of the broader context in which these difficulties develop.

In line with Bordo’s notion that cultural and political conflicts are expressed in the body, Katzman and Lee (1997) hypothesized that eating disorders develop as individual attempts to exert personal control while living under societal conditions that promote powerlessness. Rather than conceptualizing eating disorders as problems of dieting, weight, and fat phobia, Katzman
and Lee suggested that they be conceptualized as problems of disconnection, transition, and oppression. They are problems of disconnection when women lose their community groups and reference groups with which to identify themselves when faced with changes such as immigration, social class changes, and/or changes in gender-role expectations. Personal life changes, social transformations and political changes may also lead to disconnection; and eating is proposed as a method to cope with this disconnection. Katzman and Lee (1997) also conceptualized eating disorders as problems of transition when “women attempt to move between two worlds” (p. 392) and as problems of oppression resulting from adapting to a different country, socioeconomic group, or cultural group where isolation and prejudice are experienced. They further summarized a theoretical account of disordered eating, which they labelled “The Two World Hypothesis” (p. 387). This theory proposed that “attempts to straddle two worlds give rise to disordered eating” (Katzman & Lee, 1997, p.387) and outlined variations in the possible combinations of ‘two worlds’ such as: “women juggling two cultural worlds exposed to “Western ideals” in their home countries or emigrating to new lands” (Katzman & Lee, 1997, p.387); generational conflicts (Perlick & Silverstein, 1994); conflicts based on changes in gender expectations (Katzman, 1993), and conflicts resulting from the childhood to adolescence transition (Steiner-Adair, 1991). Katzman and Lee indicated that “societal-identity confusion” (p. 392) results from feelings of disconnection and psychological displacement which in turn may lead to “individual efforts at bodily control in an attempt to conform to changes in physical as well as role prescriptions” (p. 392).

A theoretical contribution of the current study was an extension of Katzman and Lee’s (1997) theory into the realm of bicultural conflict and stress. As a result of their bicultural socialization, children of immigrants growing up in North America experience another manifestation of a collision of two worlds: they must learn to straddle the cultural world at home
and that of the broader dominant society. Internal conflicts could occur as a consequence of
growing up in a home culture that espouses different value systems and behavioural
expectations than the dominant culture. Difficulties reconciling these differences and integrating
the two-worlds was shown in the current study to be a significant contributor to disordered
eating and supports Katzman and Lee’s broader theory.

Another extension of Katzman and Lee’s (1997) theory to the experience of bicultural
conflict and stress is in regards to eating disorders as problems of disconnection. In the case of
children of immigrants who are unable to integrate their bicultural worlds, they may experience
disconnection from their home culture, the dominant cultural, or both. In the current study,
simply assessing connection and disconnection from one or both cultures on its own via
acculturation or ethnic identity was not particularly informative in relation to predicting eating
disorder risk. Only when this connection/disconnection from one or both cultures was
considered under the broader context of bicultural conflict and stress did this
connection/disconnection become predictive of disordered eating. These results elaborate on
Katzman and Lee’s notion that disconnection contributes to disordered eating by specifying that,
in the case of bicultural individuals, it is the broader experience of bicultural stress and conflict
(which includes feelings of a personal sense of inferiority as a member of one’s cultural group,
lack of ethnic ego differentiation due to feeling marginalized from both cultural groups, and
feelings of anger, jealousy, and guilt towards one or both cultural groups) that influences
whether or not connection/disconnection from one or both cultures is linked to disordered
eating.

The findings of the current study also support Nasser’s (1997) theory of disordered
eating as a manifestation of disconnection and identity confusion outlined as follows:
Eating disorders are extreme forms of behaviour that are symptomatic of an underlying human distress. The distress is caused by the loss of the relation of the self to the other, and the loss of one’s ability to understand the prevailing system and be part of it. This distress is reactive to the sense of confusion, disorganization and disharmony felt by many who need to be on the inside of the system and yet are always outside it (p. 106).

The empirical findings linking bicultural stress and conflict to disordered eating in the current study further support previously presented theoretical accounts relating culture clash to disordered eating (Bryant-Waugh & Lask, 1991; McCourt & Waller, 1996; Mumford et al., 1991). For instance, Bryant-Waugh and Lask stated,

“Given that norms and social rules regarding such issues [autonomy, control and sexuality] are largely culturally determined, it is not difficult to envisage that young people growing up in a situation involving juxtaposition of two very different cultures may experience confusion. This in turn may make them more susceptible to the development of eating disorders, a process which has often been linked to confusion regarding the individual’s sense of self (e.g., Bruch, 1973)” (p. 232)

In summary, the results of the current study demonstrated the inherent complexity involved in the study of cultural variables as they relate to disordered eating. The main premise of this study, which stated that bicultural stress and conflict (which encompasses the experience of identity conflict and confusion) would be an important contributor to disordered eating symptoms, was based on the theories outlined. This is the first empirical study to examine these complex theories empirically and to subsequently corroborate them.

**Clinical Implications of the Study**

The results of the current investigation may be applied to clinical practice in a number of ways. Clinicians should be informed that Arab women are not protected from eating disorders
and actually seem to exhibit higher levels of risk than their Caucasian counterparts (Piran & Gadalla, 2007a). As such, clinicians should sensitively screen for eating disorders in this population. Clinicians should also be aware that eating disorder symptoms and the pursuit of thinness are symptoms of a deeper underlying distress that should be explored. In the case of Arab-Canadian women, bicultural stress and conflict is one source of distress that contributes to disordered eating. For this reason, bicultural conflict and stress should be explicitly assessed, explored, and treated.

Cultural contributors to disordered eating are many and can be rooted in the dominant culture, the original ethnic culture, or some combination of the two. The most important cultural factor that emerged in this study was bicultural stress and conflict, a complex and multifaceted construct which includes: experiences of identity confusion; experiences of value/behavioural conflicts in areas such as dating, premarital sex, marriage, food, clothes, religion, education, respectful behaviour towards elders, family expectations, and gender-role expectations; feeling a personal sense of inferiority as a member of one’s cultural group; lack of ethnic ego differentiation due to feeling marginalized from both cultural groups; and feelings of anger, jealousy, and guilt towards one or both cultural groups. It may be helpful to educate clinicians about these specific areas of conflict that were found to relate to disordered eating in the current study. These areas can, in turn, be explicitly explored during treatment. This is in line with Nasser and Di Nicola (2001) recommendation to “break away from the notion of body pathology and focus on issues of identity and the need to belong!” (p. 183).

Thus, in addition to exposure to the thinness ideal and other appearance-based expectations for women that have been shown to contribute to disordered eating, ethnic minority women must cope with a range of additional cultural variables that inevitably affect the way they live in their bodies. They must negotiate differences between their ethnic culture and the
dominant culture and formulate an integrated sense of self. Schupak-Neuberg and Nemeroff (1993) stated that without a strong sense of self-identity, women with eating disorders “concretize the abstract notion of self and utilize their physical bodies to represent the inner identity structure; that is, the body serves as a metaphor for self” (p.336).

If internal conflicts based on bicultural stress and conflict are manifested in the body, then clinical practice in the treatment of disordered eating and body shape difficulties would need to incorporate a strong focus on building a stable and integrated sense of an ethnic self. At an individual level, the clinician would first need to explore and identify the sources of conflict (e.g., parents, friends, family, school, religion, media, etc.). Thereafter, the clinician, in collaboration with the client, may engage in devising strategies to reconcile the conflict. These strategies would likely include: helping the individual re-connect with one or both cultures via establishing friendships, reconnecting with various aspects of the culture (e.g., music, language), learning about the culture; examining internalized discrimination and self-hate; and resolving interpersonal traumas related to culture (e.g., teasing). Clinicians would also need to explore the individual’s belief systems around the function of appearance, thinness, and food in order to understand how the eating disorder symptoms relate to the individual’s experience of cultural conflict and her fragmented sense of self.

Clinicians may also work beyond the individual level to address these problems on a broader contextual level (e.g., parents, friends, family, school, religion, media, etc.). Clinicians may, for example, engage in outreach efforts into ethnic communities to educate parents on development in a bicultural context. Parents may further benefit from education about the symptoms of bicultural stress and conflict, their negative consequences, and ways to facilitate better integration. The ways in which to facilitate better integration would likely require open and non-judgemental communication between parent and child where the child has the
opportunity discuss and process their inner conflicts in a supportive environment. Other ways to facilitate integration may be investigated in future research projects through the use of focus groups with parents and their children. Broader public education about the impact of bicultural stress on youth may also be beneficial. The way in which bicultural stress places females at risk for disordered eating should be emphasized. This may function to decrease self-blame, normalize difficulties experienced, and ultimately facilitate help-seeking behaviour. A summary of the research and clinical implications of the current study may be found in Table 24 and Table 25 respectively.
Table 24

Summary of Research Implications of Current Study

- First study that examined a range of disordered eating and body-related difficulties on their own and as they relate to acculturation, ethnic identity, and bicultural stress and conflict in Arab-Canadian women. Provides an initial base from which to conduct additional studies with Arab-Canadian women, but may also be applied to other ethnic minority groups undergoing bicultural socialization.

- Internalization of thinness and body shape concerns were positively related to disordered eating symptoms in Arab-Canadian women which demonstrated the applicability of these aspects of Stice’s (1994) model to Arab-Canadian women.

- Current results empirically supported theories linking identity confusion (e.g., Gordon, 2000; Nasser, 1997) to disordered eating in the realm of bicultural socialization.

- Extended Katzman and Lee’s (1997) two world hypothesis into the realm of bicultural conflict and stress. Empirical support for this model was provided.

- Empirically tested Katzman and Lee’s (1997) and Nasser’s (1997) theory of eating disorders as problems of disconnection in Arab-Canadian women. This model was supported and elaborated on.

- Empirically tested and supported theoretical accounts relating culture clash to disordered eating in Arab-Canadian women.

- Interactions found in this study demonstrated the importance of simultaneously assessing all three cultural variables of acculturation, ethnic identity, and bicultural stress and conflict as predictors of disordered eating.

- Acculturation should always be measured in a two-dimensional manner as the results showed that each of the two dimensions relate differently to disordered eating and body-related concerns.
### Summary of Clinical Implications of Current Study

- Arab-Canadian women are not protected from disordered eating – clinicians should sensitively screen for disordered eating in this population.

- Eating disorder symptoms are not only about appearance, but are expressions of an underlying distress – bicultural stress and conflict is once source of this distress that should be explicitly assessed, explored and treated in Arab-Canadian women.

- Clinicians may benefit from education about the sources and symptoms of bicultural stress and conflict which may facilitate focused exploration during treatment.

- Treatment for individuals experiencing bicultural stress and conflict should focus on building a stable and integrated sense of an ethnic self.

- The individual’s belief system around the function of appearance, thinness and food as it relates to her eating disorder symptoms and experience of bicultural stress and conflict should be explored.

- Clinical interventions may also occur at a broader contextual level (e.g., parents, friends, family, school, religion, media, etc). For instance, parents may be educated on development in a bicultural context, symptoms of bicultural stress and conflict, and ways to facilitate better integration. Also, public education about the impact of bicultural stress on youth may also be beneficial. The way in which bicultural stress places females at risk for disordered eating should be emphasized.
Strengths and Limitations of the Study

Studies of disordered eating and body shape challenges in Arab women are almost non-existent in North America. To date, no studies have directly examined disordered eating patterns, body shape challenges, and internalization of thinness in young, Arab-Canadian women. Also, very few studies of acculturation, ethnic identity, and bicultural stress and conflict have been conducted with this population. Furthermore, no study has examined the ways in which disordered eating and body shape challenges relate to acculturation, ethnic identity, and bicultural stress and conflict in Arab-Canadian women. A strength of the current study was that it addressed these limitations in previous research using psychometrically valid and reliable measures of eating- and culture-related variables.

Inclusion of eating disorder measures and measures of internalization of thinness and body shape concerns allowed for the exploration of the applicability of etiological theories of eating disorders, initially developed on predominantly Caucasian women, to Arab-Canadian women. Furthermore, simultaneous inclusion of ethnic identity, acculturation, and bicultural stress and conflict in a single study allowed for: (a) the examination of the importance of each of these variables in predicting eating disorders; and (b) the examination of how these variables interacted with each other to predict disordered eating. The current investigation was the first to examine interactions among acculturation, ethnic identity, and bicultural stress and conflict as they relate to disordered eating in any population.

Findings of the current study explained some of the inconsistencies in the literature by showing that: (a) the three cultural variables interacted with one another to predict disordered eating; (b) the three cultural variables did not relate in the same way to disordered eating symptoms as they did to risk factors for disordered eating (e.g., internalization of thinness and body shape concerns); and (c) a two dimensional measure of acculturation is important to use
since the two dimensions of acculturation did not relate the same way to disordered eating, internalization of thinness and body shape concerns.

Inclusion of a large sample of Arab-Canadian women comprised of both students and non-student community members was a strength of the study as many studies of disordered eating utilized only high school and college samples. However, this sample was a convenience sample which is a limitation. In order to outline the biases that may have occurred as result of this convenience sample, it would be necessary to compare the demographics of the current sample to a nationally representative data set of Arab-Canadian women in the same age range. Unfortunately, no such data exists. The most relevant population based data was available from Statistics Canada and is based on the 2001 census of Canada and the 2002 Ethnic Diversity Survey (Lindsay, 2007).

A number of differences were noted between the current sample and the available population based data. The women in the current sample: reported slightly higher levels of education (25% of the current sample held university degrees as compared to 18.1% in the census; 11.2% held post-graduate degrees compared to 7% in the census); reported slightly higher level of employment (51.5% as compared to 46.4% in the census); were more likely to be single (67.9% as compared to 48% in the census); were more likely to identify as Muslim (70% in the current sample as compared to 44% Muslim in the census), and were more likely to identify as Canadian-born (65.8% compared to 42% Canadian-born in the census). Differences in the distribution of reported country of origin were also apparent: Census data revealed that the Lebanese community was the largest group within the Arab-Canadian community (41%), followed by the Egyptian community (12%), the Syrian, Moroccan, and Iraqi communities (6% each), and the Algerian and Palestinian communities (4% each). The largest group represented in the current sample was Palestinians (39.3%), followed by Egyptians (36%), Lebanese
(35.2%), Syrians (16.3%), and Jordanians (11.7%). Thirteen other countries were also represented in the current sample.

It is important to emphasize that the 2001 census data was not broken down by age groups that were comparable with the age group of the current study. Discrepancies would likely be smaller if appropriate comparison data existed. Also, the available data is eleven years old and may have changed significantly. For instance, immigration over the past ten years from Arab countries may have changed the distribution of countries and religion in the Arab-Canadian community. Nonetheless, it is possible that the discrepancies in religion, employment, and education may all relate positively to bicultural stress and may have, in turn, led to stronger relationships between variables in this study than would have been found in a nationally representative sample.

Use of online data collection methods was both a strength and weakness of the current study. It was a strength in that online data collection methods allowed for the recruitment of participants from across Canada. Barry (2001) specifically examined the utility of online methods for studying culture and ethnic identity in Arabs in the United States. Through qualitative analysis of feedback from Arab participants about the use of the internet, he concluded that this was a particularly effective method of gathering data in this population for a number of reasons. He noted significant reluctance in Arabs to participate in his research for fear of the researcher’s intentions and how the results may be used to portray Arabs negatively (e.g., some reportedly inquired about whether Barry was working for the U.S. government or Israeli intelligence). Barry noted that in the U.S. Arabs are one of the few groups openly stereotyped and subject to prejudice which contributed to such concerns. However, Barry’s participants stated that the use of the internet alleviated their suspicions since they could access him easily via email, and he could promptly respond to their questions and concerns. Also,
Barry’s participants disclosed increased motivation to participate in the study based on a greater sense of anonymity provided via the internet. It was previously found that the internet facilitates self-exposure via this increased sense of anonymity (Gackenback, 1988, as cited in Barry, 2001).

Similar suspicions were noted throughout the recruitment process in the current investigation. The researcher, however, identified herself as an Arab-Canadian woman who was conducting the research from within the community and for the community. This was a strength of the study which alleviated participants suspicions. The researcher was also available by email and quickly responded to any questions and concerns that potential participants posed. Most questions posed by participants were related to the purpose of the study, how the data would be analyzed, and how the researcher would assure that accurate conclusions were drawn.

An unavoidable weakness with respect to the use of online data collection methods is the necessity of easy computer access. This study was limited to those who either owned computers or who had easy access to a computer. However, since internet access is becoming widely accessible, this is less of a concern than it once was (Kraut et al., 2004; Whitehead, 2007).

There are additional limitations of the study that should be taken into account when interpreting the results. First, only self-report measures were used. Although, psychometrically sound and well validated, their used has been criticized on various grounds such as the potential for self-presentational bias and distorted recall. However, self-report measures have been used in a large number of disordered eating studies and their use has provided meaningful findings which have helped advance research in the area. Another limitation of this study is that it was cross-sectional. That is, only one group of participants was assessed at one point in time. Therefore, no conclusions can be made regarding temporal ordering of the variables involved.
As such, the cause and effect relationships among the cultural variables and disordered eating symptoms could not be assessed or commented upon. Another limitation of the study was the potential inflation of type one error since alpha was not adjusted downward throughout the analyses (an alpha level of .05 was used throughout the study).

Another limitation of the study was that the order of administration of the measures was not counterbalanced. Eating disorder and body-related measures were alternated with measures of cultural variables in the online administration, however, they were not fully counterbalanced. Thus, there is a possibility that order effects (e.g., due to fatigue or priming effects) could have influenced the results.

Directions for future will be discussed in the next section. Some of these considerations may address the limitations of the current study.

**Directions for Future Research**

Research on Arab-Canadians in general is lacking. This is especially true in the area of disordered eating. Considering the high rate of difficulties with disordered eating reported by young Arab-women in this study, it is imperative that additional studies be conducted with this population to aid in the understanding of why this is occurring and how to remedy the problem.

As a follow-up to the current study, a qualitative interview study inquiring specifically about how the experience of bicultural stress and conflict relates to disordered eating would be beneficial. This would provide information about the function of the disordered eating symptoms (e.g., a strategy for affect regulation considering the high level of conflict, a method to fit in by complying with standards of thinness, a way to experience a sense of control in an overwhelming environment, or other processes). Further, in order to examine causality between bicultural stress and conflict and disordered eating, a longitudinal study could be conducted.
which would assess these variables at different points in time, starting in early adolescence and ending in early adulthood.

In order to gain information about the prevalence of disordered eating in Arab-Canadian women, it would be beneficial to recruit a nationally representative sample and administer both self-report measures and follow-up with clinical interviews. Replication of the current study with a nationally representative sample of Arab-Canadian women would also allow for greater confidence in the generalizability of the results.

Future research examining acculturation as it relates to disordered eating should utilize a two-dimensional measure of this construct. The current investigation showed that the two dimensions of acculturation related differently to eating- and body-related variables. Increased consistency in how acculturation is measured and utilized in eating disorder studies would be beneficial. Future research examining acculturation and ethnic identity as they relate to disordered eating should also include a measure of bicultural stress and conflict, since this latter variable was shown to be a moderator in this study. Future research could also extend the examination of the interaction between culture variables and disordered eating in clinical samples to determine whether or not the results apply to this group.

Future research should explore how religion relates to bicultural stress and conflict and to disordered eating. The current findings showed that individuals who identified as Muslim were at higher risk for cultural value conflict and body shape concerns. This is similar to Ahmad, Waller, and Verduyn’s (1994) study which found that out of a group of Muslim, Hindu, and Caucasian adolescents, Muslim girls and boys exhibited the highest levels of disordered eating. Ahmad et al. (1994) suggested that parental control, gender roles, and cultural conflict were possible contributors. Latzer et al. (2009), however, found no difference in disordered eating in Arab girls of Muslim, Christian, and Druze religious backgrounds. The role of religion
would benefit from future study. Also, instead of grouping all Arabs into one group, future studied could examine sub-groups of Arabs from different countries and religious backgrounds as there may be significant cultural differences among these subgroups which could influence the findings.

In may be fruitful to include measures of parental control in future studies of bicultural stress and conflict as it relates to disordered eating. Reddy and Crowther (2007) defined parental control as the influence of parents on children’s choices of friends, activities and romantic relationships. Parental control has been found to be positively related to disordered eating symptom in British Asian girls (e.g., McCourt & Waller, 1996). It has been suggested that South Asian families are particularly restrictive of their daughters’ behaviour in the social realm in general and in the realm of intimate relations in particular (Inman et al. 2001). It would be of interest to explore this factor in Arab-Canadian girls and women as it relates to the experience of bicultural conflict and ultimately to disordered eating.

In terms of future research with Arabs, researchers need to be sensitive to the discrimination and prejudice experienced by this population. Increased suspiciousness and difficulty trusting researchers is a consequence of such experiences, and thus, transparency is imperative when working with this population. Future research would benefit from the explicit examination of the experience of discrimination and prejudice as it relates to bicultural stress and conflict and disordered eating.

The study would benefit from replication with a larger sample of Arab-Canadian women where type one error can be controlled. Future studies may also replicate the study in other ethnic minority groups to determine if interactions between cultural variables predict disordered eating in the same way in other ethnic groups.
Conclusions

The results of this study highlighted that Arab women in Canada are at-risk and vulnerable to internalization of thinness, body shape concerns and ultimately to disordered eating. Bicultural stress and conflict was a particularly important cultural contributor to each of these eating- and body-related difficulties. Bicultural stress and conflict is a stronger contributor to disordered eating, body shape concerns, and internalization of thinness than both acculturation and ethnic identity. In fact, bicultural stress and conflict mediates the relationship between the two dimensions of acculturation and disordered eating. It also mediates the relationship between ethnic identity, Anglo-orientation and disordered eating. Anglo-orientation on its own was found to contribute to internalization of thinness and body shape concerns – both important risk factors for disordered eating. Results of this study highlight the importance of exploring bicultural stress and conflict in Arab-Canadian women presenting with disordered eating. Resolution of this conflict may aid in forming a more integrated sense of self and may ultimately decrease the need to cope via disordered eating symptoms.
References


CH=0&GC=99&GK=NA&VID=0&VNAMEE=&VNAMEF=&FL=0&RL=0&FREE=0

(accessed May 30, 2009)


assessment methods for eating behaviours and weight-related problems (pp.347-386).


Appendix A

Participant Information and Consent Form

My name is Dina Buttu and I am a Ph.D. graduate student in the Department of Adult Education and Counselling Psychology (AEC) at the Ontario Institute for Studies in Education of the University of Toronto (OISE/UT). I am conducting this research study in order to investigate how Arab-Canadian women, who have grown up in Canada, adapt to living simultaneously in two different cultures (Arab and Canadian). More specifically, I am interested in examining how the experience of living simultaneously in two different cultures influences ethnic identity, eating habits/behaviours, and feelings/thoughts about the body. This project is being conducted in partial fulfillment of the Ph.D. requirements by the AEC Department at OISE/UT, and is being supervised by Dr. Niva Piran.

Participation in this research will involve completion of a confidential on-line survey, where you will be asked for demographic information, and will be asked to complete a series of questionnaires on ethnic identity, coping with two different cultures simultaneously, eating habits/behaviours and feelings/thoughts about the body. The survey is anticipated to take approximately 30-45 minutes. In recognition of your time and effort, I am offering $10 compensation either in the form of a check sent to you in the mail or in the form of an Amazon gift card sent to you electronically (using email).

A potential risk of participating in the study is that as you respond to questions about your experiences living simultaneously in two different cultures (Arab and Canadian) and to questions about eating habits/behaviours and feelings/thoughts about the body, you may remember painful memories or experience negative emotions. If you require mental health support, please consult the document titled Participant Referral Information for support options. This document appears at the end of this consent form and that will be made available to you again when you exit the survey.

A possible benefit of participating in this study is that you may find it interesting and informative to think about: your ethnic identity; what it is like to live simultaneously in two different cultures; your eating habits/behaviours; and your thoughts/feelings about the body. This reflection may lead to increased insight about these areas of your life and you may experience validation of some of your feelings and experiences. Furthermore, you will be contributing to research on Arab-Canadian women that will provide a greater understanding of the struggles and unique needs of this population. This may, in turn, help develop appropriate prevention and intervention strategies to help meet these needs.

If you would like to receive a summary of the results of this study, you will be given the opportunity to submit your email address at the end of the survey. The results will be emailed to you when the study is completed.
Participation in this study is entirely voluntary and you may withdraw at any point. Additionally, if you find you do not wish to answer a particular question or questionnaire, you may omit those items. Furthermore, you have the choice to discontinue participating and your data will not be used in the study.

Your confidentiality will be strictly maintained. Survey responses will be stored separately from information collected for the purposes of compensation or receipt of study results. Once the data is submitted, it is not personally identifiable and cannot be removed from the study. Contact Information obtained for compensation or for receipt of study results will be destroyed five years after study completion.

Since privacy and confidentiality is of concern in using the internet, we have taken every possible precaution to reduce and eliminate this risk. For example, all survey responses on the website are secure and utilize firewall security. Additionally, security audits are performed regularly. Here are some additional steps that you should take to ensure your privacy:

1. Completion of the survey should take place in a private location.
2. Do not complete the survey in a place of employment as the employer may have access to internet usage.

Only myself and my supervisor, Dr. Piran, will have access to the online responses. Results of this study will not contain any information that could personally identify you as a participant in the research study. The final results may be published or presented in total or in part in various psychological, academic and community sources, while maintaining the privacy of all participants.

Your involvement in this research would be appreciated. If you would like to participate, please continue with the consent instructions below. If you have any questions, please feel free to contact me, Dina Buttu at dina.buttu@utoronto.ca. If you have any further questions about your rights as a research participant, you can contact the Ethics Review Office at 416-946-3273 or ethics.review@utoronto.ca.

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You may print this information sheet and the document below titled Participant Referral Information through your web browser. It is recommended that you do so now.

Thank you for your participation.
Dina Buttu
Appendix B
Demographics Questionnaire

1. **Gender**
   Please specify your gender
   Male _____
   Female _____

2. **Age**
   Please enter your age in the blank ________

3. **English Language Proficiency**
   Are you able to read, write, and understand English easily?
   ____ Yes
   ____ No

4. **Generation**
   Indicate the generation that best applies to you. Choose only one.
   ____ 1\(^{st}\) generation = You were born in an Arab country,
   Specify age of arrival to Canada ________
   Specify country of birth ________
   ____ 2\(^{nd}\) generation = You were born in Canada; either parent
   born in an Arab Country
   ____ 3\(^{rd}\) generation = You were born in Canada, both parents born
   in Canada and all grandparents born in an Arab country
   ____ 4\(^{th}\) generation = You and your parents born in Canada and at
   least one grandparent born in an Arab country with remainder
   born in Canada
   ____ 5\(^{th}\) generation = You and your parents born in Canada and
   all grandparents born Canada.

5. **Country of Origin**
   Please specify the country (or countries) which you associate with
   your Arab ethnic background. (You may choose multiple choices
   here and if you would like to elaborate or explain your choices,
   you may do so in the box below)
   ____ Egypt
   ____ Iraq
   ____ Jordan
   ____ Kuwait
   ____ Lebanon
   ____ Libya
   ____ Maghreb
   ____ Algeria
   ____ Berber
   ____ Morocco
   ____ Tunisia
   ____ Palestine
   ____ Saudi Arabia
   ____ Syria
   ____ Yemen
United Arab Emirates, Please Specify ________
Other, Please Specify ________
If you would like to explain your choices, please do so below:
___________________________________________________
___________________________________________________
___________________________________________________

6. Place of Upbringing Did you grow up in Canada?
___ Yes
___ No

7. Current place of Residence Do you currently live in Canada
___ Yes
___ No

8. Current City And Province Please specify which city and province you currently live in
____________

9. Religion Which of the following religious affiliations are you most likely to identify with?
___ Christian
___ Muslim
___ Hindu
___ Buddhist
___ Jewish
___ No religious affiliation
___ Other, please specify ____________________________

10. Level of Religiosity Please specify your level of religiosity
___ Not at all
___ Somewhat
___ Very

11. Marital Status Please indicate your current marital status by marking the appropriate category
___ Single/Never been married
___ Engaged/Committed relationship
___ Common-law partner
___ Married
___ Separated
___ Divorced
____ Widowed
____ Other, please specify ___________________

12. Race
How would you describe your skin colour

White ____
Black ____
Olive ____
Other ____ Please Specify __________

13. Height
Please enter your height: _______ cm or _____ feet/inches

14. Weight
Please enter your weight: _______ lbs or _____ kg

15. Education
Please indicate the highest grade or level you have completed by choosing one of the following options:

____ Some elementary school
____ Completion of elementary school
____ Some high school
____ High school graduate
____ Some college
____ College graduate
____ Some university
____ University graduate
____ Some Graduate school/Medical school/Law school
____ Graduate school/Medical school/Law school graduate

16. Employment
Please indicate the answer that best represents your current employment status by choosing one of the following options:

____ Employed Full-time, specify occupation _________
____ Employed Part-time, specify occupation _________
____ On illness leave
____ Unemployed
____ Student
____ Homemaker
____ Retired
____ Other, please specify ______________________________
Appendix C
Multigroup Ethnic Identity Measure

In this country, people come from a lot of different cultures and there are many different words to describe the different backgrounds or ethnic groups that people come from. Some examples of the names of ethnic groups are Mexican-Canadian, Hispanic, Black, Asian-Canadian, Arab-Canadian, Indian-Canadian, Aboriginal, Anglo-Canadian, and White. Every person is born into an ethnic group, or sometimes two groups, but people differ on how important their ethnicity is to them, how they feel about it, and how much their behaviour is affected by it. These questions are about your ethnicity or your ethnic group and how you feel about it or react to it.

Please fill in:

1. In terms of ethnic group, I consider myself to be ______________________________________________________

Use the numbers given below to indicate how much you agree or disagree with each statement

4 = Strongly agree
3 = Somewhat agree
2 = Somewhat disagree
1 = Strongly disagree

2. ______ I have spent time trying to find out more about my own ethnic group, such as its history, traditions, and customs.
3. ______ I am active in organizations or social groups that include mostly members of my own ethnic group.
4. ______ I have a clear sense of my ethnic background and what it means for me.
5. ______ I like meeting and getting to know people from ethnic groups other than my own.
6. ______ I think a lot about how my life will be affected by my ethnic group membership.
7. ______ I am happy that I am a member of the group I belong to
8. ______ I sometimes feel it would be better if different ethnic groups didn’t try to mix together
9. ______ I am not very clear about the role of my ethnicity in my life.
10. ______ I often spend time with people from ethnic groups other than my own
11. ______ I really have not spent much time trying to learn more about the culture and history of my ethnic group.
12. ______ I have a strong sense of belonging to my own ethnic group.
13. ______ I understand pretty well what my ethnic group membership means to me, in terms of to relate to my own group and other groups.
14. _____ In order to learn more about my ethnic background, I have often to talked to other people about my ethnic group.
15. _____ I have a lot of pride in my ethnic group and its accomplishments.
16. _____ I don’t try to become friends with people from other ethnic groups.
17. _____ I participate in cultural practices of my own group, such as special food, music, or customs.
18. _____ I am involved in activities with people from other ethnic groups.
19. _____ I feel a strong attachment towards my own ethnic group.
20. _____ I enjoy being around people from ethnic groups other than my own.
21. _____ I feel good about my cultural or ethnic background.

22. My ethnicity is:
   - [ ] Asian, Asian Canadian, or Oriental
   - [ ] Black or African American
   - [ ] White, Caucasian, European, not Hispanic
   - [ ] Aboriginal
   - [ ] Arab (please specify country)
   - [ ] Mixed; parents are from two different groups
     Please specify: ___________________
   - [ ] Other, Please specify: ____________________

23. My father’s ethnicity is:
   - [ ] Asian, Asian Canadian, or Oriental
   - [ ] Black or African American
   - [ ] White, Caucasian, European, not Hispanic
   - [ ] Aboriginal
   - [ ] Arab (please specify country)
   - [ ] Mixed; parents are from two different groups
     Please specify: ___________________
   - [ ] Other, Please specify: ____________________

24. My mother’s ethnicity is:
   - [ ] Asian, Asian Canadian, or Oriental
   - [ ] Black or African American
   - [ ] White, Caucasian, European, not Hispanic
   - [ ] Aboriginal
   - [ ] Arab (please specify country)
   - [ ] Mixed; parents are from two different groups
     Please specify: ___________________
   - [ ] Other, Please specify: ____________________
Appendix D

Acculturation Rating Scale of Arab Americans

Please read each of the following items carefully and indicate the number that best reflects your agreement with the statement.

1 = Not at all
2 = Very little or not very often
3 = Moderately
4 = Much or very often
5 = Extremely often or almost always

1. _____ I speak Arabic
2. _____ I speak English
3. _____ I enjoy speaking Arabic
4. _____ I associate with Anglos
5. _____ I associate with Arabs or Arab Canadians
6. _____ I enjoy listening to Arabic language music
7. _____ I enjoy listening to English language music
8. _____ I enjoy Arabic language TV
9. _____ I enjoy English language TV
10. _____ I enjoy English language movies
11. _____ I enjoy Arabic language movies
12. _____ I enjoy reading (e.g., books in Arabic)
13. _____ I enjoy reading (e.g., books in English)
14. _____ I write (e.g., letters in Arabic)
15. _____ I write (e.g., letters in English)
16. _____ My thinking is done in the English language
17. _____ My thinking is done in the Arabic language
18. _____ My contact with my home country has been
19. _____ My contact with Canada has been
20. _____ My father identifies or identified himself as an Arab
21. _____ My mother identifies or identified herself as an Arab
22. _____ My friends, while I was growing up, were of Arabic origin
23. _____ My friends, while I was growing up, were of Anglo origin
24. _____ My family cooks Arabic foods
25. _____ My friends now are of Anglo origin
26. _____ My friends now are of Arabic origin
27. _____ I like to identify myself as Anglo Canadian
28. _____ I like to identify myself as Arab Canadian
29. _____ I like to identify myself as an Arab
30. _____ I like to identify myself as a Canadian
Appendix E
The Eating Attitudes Test-26

Please check a response for each of the following statements:

<table>
<thead>
<tr>
<th></th>
<th>Always</th>
<th>Usually</th>
<th>Often</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Am terrified about being overweight</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>2. Avoid eating when I am hungry</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>3. Find myself preoccupied with food</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>4. Have gone on eating binges where I feel that I may not be able to stop</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>5. Cut my food into small pieces</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>6. Aware of the calorie content of foods that I eat</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>7. Particularly avoid food with a high carbohydrate content (i.e. bread, rice, potatoes, etc.)</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
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<tr>
<td>8. Feel that others would prefer if I ate more</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>9. Vomit after I have eaten</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>Number</td>
<td>Statement</td>
<td>Score</td>
<td></td>
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<td>---------------------------------------------------------------------------</td>
<td>-------</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>10.</td>
<td>Feel extremely guilty after eating</td>
<td>O</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>11.</td>
<td>Am preoccupied with a desire to be thinner</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>12.</td>
<td>Think about burning up calories when I exercise</td>
<td>O</td>
<td></td>
<td></td>
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<tr>
<td>13.</td>
<td>Other people think that I am too thin</td>
<td>O</td>
<td></td>
<td></td>
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<td>14.</td>
<td>Am preoccupied with the thought of having fat on my body</td>
<td>O</td>
<td></td>
<td></td>
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<tr>
<td>15.</td>
<td>Take longer than others to eat my meals</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>16.</td>
<td>Avoid foods with sugar in them</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>17.</td>
<td>Eat diet foods</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18.</td>
<td>Feel that food controls my life</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>19.</td>
<td>Display self-control around food</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>20.</td>
<td>Feel that others pressure me to eat</td>
<td>O</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>21.</td>
<td>Give too much time and thought to food</td>
<td>O</td>
<td></td>
<td></td>
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<td></td>
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<tr>
<td>22. Feel uncomfortable after eating sweets</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>23. Engage in dieting behavior</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>24. Like my stomach to be empty</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>25. Enjoy trying new rich foods</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>26. Have the impulse to vomit after meals</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>
Answer each question by circling the appropriate number. Please respond to each item as honestly as possible. All of your information will be kept strictly confidential.

1. I am satisfied with my eating patterns.
   1. Agree
   2. Neutral
   3. Disagree a little
   4. Disagree
   5. Disagree strongly

2. Would you presently call yourself a "binge eater"?
   1. Yes, absolutely
   2. Yes
   3. Yes, probably
   4. Yes, possibly
   5. No, probably not

3. Do you feel you have control over the amount of food you consume?
   1. Most or all of the time
   2. A lot of the time
   3. Occasionally
   4. Rarely
   5. Never

4. I am satisfied with the shape and size of my body
   1. Frequently or always
   2. Sometimes
   3. Occasionally
   4. Rarely
   5. Sometimes or never

5. When I feel my eating behaviour is out of control, I try to take rather extreme measures to get back on course (strict dieting, fasting, laxatives, diuretics, self-induced vomiting, or vigorous exercise).
   1. Always
   2. Almost always
   3. Frequently
   4. Sometimes
   5. Never or my eating behavior is never out of control
6. I am obsessed about the size and shape of my body.
   1. Always
   2. Almost always
   3. Frequently
   4. Sometimes
   5. Seldom or never

7. There are times when I rapidly eat a very large amount of food.
   1. More than twice a week
   2. Twice a week
   3. Once a week
   4. 2-3 times a month
   5. Once a month or less (or never)

8. How long have you been binge eating (eating uncontrollably to the point of stuffing yourself)?
   1. Not applicable; I don't binge eat
   2. Less than 3 months
   3. 3 months to 1 year
   4. 1-3 years
   5. 3 years or more

9. Most people I know would be amazed if they knew how much food I can consume at one sitting.
   1. Without a doubt
   2. Very probably
   3. Probably
   4. Possibly
   5. No

10. Compared with women your age, how preoccupied are you about your weight and body shape?
    1. A great deal more than average
    2. Much more than average
    3. More than average
    4. A little more than average
    5. Average or less than average

11. I am afraid to eat anything for fear that I won't be able to stop.
    1. Always
    2. Almost always
    3. Frequently
    4. Sometimes
    5. Seldom or never
12. I feel tormented by the idea that I am fat or might gain weight.
   1. Always
   2. Almost always
   3. Frequently
   4. Sometimes
   5. Seldom or never

13. How often do you intentionally vomit after eating?
   1. 2 or more times a week
   2. Once a week
   3. 2-3 times a month
   4. Once a month
   5. Less than once a month or never

14. I eat a lot of food when I’m not even hungry.
   1. Very frequently
   2. Frequently
   3. Occasionally
   4. Sometimes
   5. Seldom or never

15. My eating patterns are different from the eating patterns of most people.
   1. Always
   2. Almost always
   3. Frequently
   4. Sometimes
   5. Seldom or never

16. After I binge eat, I turn to one of several strict methods to try to keep from gaining weight
    (vigorous exercise, strict dieting, fasting, self-induced vomiting, laxatives, or diuretics).
    1. Never or I don't binge eat
    2. Rarely
    3. Occasionally
    4. A lot of the time
    5. More than 5 times in the past year

17. When engaged in an eating binge, I tend to eat foods that are high in carbohydrates (sweets and starches)
    1. Always
    2. Almost always
    3. Frequently
    4. Sometimes
    5. Seldom or I don’t binge
18. Compared to most people, my ability to control my eating behaviour seems to be:
   1. Greater than others’ ability
   2. About the same
   3. Less
   4. Much less
   5. I have absolutely no control

19. I would presently label myself “a compulsive eater” (anyone who engages in episodes of uncontrolled eating).
   1. Absolutely
   2. Yes
   3. Yes, probably
   4. Yes, possibly
   5. No, probably not

20. I hate the way my body looks after I eat too much.
   1. Seldom or never
   2. Sometimes
   3. Frequently
   4. Almost always
   5. Always

21. When I am trying to keep from gaining weight, I feel that I have to resort to vigorous exercise, strict dieting, fasting, self-induced vomiting, laxatives, or diuretics
   1. Never
   2. Rarely
   3. Occasionally
   4. A lot of the time
   5. Most or all of the time

22. Do you believe that it is easier for you to vomit than it is for most people?
   1. Yes, it’s no problem at all for me
   2. Yes, it’s easier
   3. Yes, it’s a little easier
   4. About the same
   5. No, it’s less easy

23. I feel that food controls my life?
   1. Always
   2. Almost always
   3. Frequently
   4. Sometimes
   5. Seldom or never

24. When consuming a large quantity of food, at what rate do you usually eat?
   1. More rapidly than most people have ever eaten in their lives
   2. A lot more rapidly than most people
   3. A little more rapidly than most people
   4. About the same rate as most people
   5. More slowly than most people (or not applicable)
25. Right after I binge eat, I feel:
   1. So fat and bloated I can’t stand it
   2. Extremely fat
   3. Fat
   4. A little fat
   5. OK about how my body looks or I never binge eat

26. Compared to other people of my sex, my ability to always feel in control of how much I eat is:
   1. About the same or greater
   2. A little less
   3. Less
   4. Much less
   5. A great deal less

27. In the last 3 months, on the average, how often did you binge eat (eat uncontrollably to the point of stuffing yourself?)
   1. Once a month or less (or never)
   2. 2-3 times a month
   3. Once a week
   4. Twice a week
   5. More than twice a week

28. Most people I know would be surprised at how fat I look after I eat a lot of food
   1. Yes, definitely
   2. Yes
   3. Yes, probably
   4. Yes, possibly
   5. No, probably not or I never eat a lot of food
Appendix G
Body Shape Questionnaire

We would like to know how you have been feeling about your appearance over the PAST FOUR WEEKS. Please read each question and circle the appropriate number to the right. Please answer all the questions.

OVER THE PAST FOUR WEEKS:

| Never | | Rarely | | Sometimes | | Often | | Very often | | Always |
|-------|---|---|---|---|---|---|---|---|---|

1. Has feeling bored made you brood about your shape?........................... 1 2 3 4 5 6

2. Have you thought that your thighs, hips or bottom are too large for the rest of you?........................................................................................................ 1 2 3 4 5 6

3. Have you worried about your flesh being not firm enough?..................... 1 2 3 4 5 6

4. Have you felt so bad about your shape that you have cried?................. 1 2 3 4 5 6

5. Have you avoided running because your flesh might wobble?.............. 1 2 3 4 5 6

6. Has being with thin women made you feel self-conscious about your shape?........................................................................................................ 1 2 3 4 5 6
7. Have you worried about your thighs spreading out when sitting down?

8. Has eating even a small amount of food made you feel fat?....................

9. Have you avoided wearing clothes which make you particularly aware of the shape of your body?..........................................................

10. Has eating sweets, cakes, or other high calorie food made you feel fat?

11. Have you felt ashamed of your body?..............................................

12. Has worry about your shape made you diet?......................................

13. Have you felt happiest about your shape when your stomach has been empty (e.g. in the morning)?..............................................................

14. Have you felt that it is not fair that other women are thinner than you?.

15. Have you worried about your flesh being dimply?..............................

16. Has worry about your shape made you feel you ought to exercise?.......

1  2  3  4  5  6
Appendix H

Sociocultural Attitudes Toward Appearance Questionnaire-3

Please read each of the following items carefully and indicate the number that best reflects your agreement with the statement.

1 = Definitely Disagree
2 = Mostly Disagree
3 = Neither Agree Nor Disagree
4 = Mostly Agree
5 = Definitely Agree

1. _____ TV programs are an important source of information about fashion and "being attractive."
2. _____ I've felt pressure from TV or magazines to lose weight.
3. _____ I do not care if my body looks like the body of people who are on TV.
4. _____ I compare my body to the bodies of people who are on TV.
5. _____ TV commercials are an important source of information about fashion and "being attractive."
6. _____ I do not feel pressure from TV or magazines to look pretty.
7. _____ I would like my body to look like the models who appear in magazines.
8. _____ I compare my appearance to the appearance of TV and movie stars.
9. _____ Music videos on TV are not an important source of information about fashion and "being attractive."
10. _____ I've felt pressure from TV and magazines to be thin.
11. _____ I would like my body to look like the people who are in movies.
12. _____ I do not compare my body to the bodies of people who appear in magazines.
13. _____ Magazine articles are not an important source of information about fashion and "being attractive."
14. I've felt pressure from TV or magazines to have a perfect body.
15. I wish I looked like the models in music videos.
16. I compare my appearance to the appearance of people in magazines.
17. Magazine advertisements are an important source of information about fashion and "being attractive."
18. I've felt pressure from TV or magazines to diet.
19. I do not wish to look as athletic as the people in magazines.
20. I compare my body to that of people in "good shape."
21. Pictures in magazines are an important source of information about fashion and "being attractive."
22. I've felt pressure from TV or magazines to exercise.
23. I wish I looked as athletic as sports stars.
24. I compare my body to that of people who are athletic.
25. Movies are an important source of information about fashion and "being attractive."
26. I've felt pressure from TV or magazines to change my appearance.
27. I do not try to look like the people on TV.
28. Movie stars are not an important source of information about fashion and "being attractive."
29. Famous people are an important source of information about fashion and "being attractive."
30. I try to look like sports athletes.