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CULTURAL, FAMILIAL AND INDIVIDUAL CORRELATES OF EATING PATHOLOGY AND EXTREME WEIGHT LOSS BEHAVIOURS AMONG GREEK AND ITALIAN SECOND GENERATION IMMIGRANT WOMEN

by

Gavriela Geller

A Dissertation
Submitted to the Faculty of Graduate Studies and Research
Through the Department of Psychology in Partial
Fulfillment of the Requirements for the
Degree of Doctor of Philosophy at the
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Windsor, Ontario, Canada

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ABSTRACT

Previous research in the field of cross-cultural eating disorders suggests that eating pathology may be more prevalent among immigrant women than women in their country of origin or their new country of residence. The purpose of this study was to identify the variables that predict eating pathology and extreme weight loss behaviours among Greek and Italian second-generation immigrant women. A second goal was to determine how culture-change was related to eating pathology by comparing several models of acculturation. 110 Greek and Italian women were recruited through several means including the introductory psychology participant pool, cultural organizations and snowball sampling methods. Administration of a questionnaire package occurred either in person, by mail or on a web page. Based on EAT-26 scores, 20 women were considered at risk for an eating disorder. Crash dieting and fasting were the most common extreme weight loss behaviours reported (43% of the sample endorsed each), followed by the use of appetite suppressants (20%), diuretics (18%), laxatives (16%) and vomiting (10%). General dissatisfaction and internalization of Western values of thinness were found to be predictive of eating pathology. Family conflict was positively correlated with eating pathology, however, it did not account for unique variance in eating pathology once general dissatisfaction and internalization of Western values of thinness were taken into account. Body Mass Index (BMI) was found to be predictive of extreme weight loss behaviours, particularly crash dieting. This relationship is discussed in the context of research that identifies dieting as a strong causal risk factor for eating pathology (Stice, 2001). No direct relationships were found between eating pathology and any of the acculturation models tested, however, acculturation strategies were correlated with family conflict. Finally, results suggest that other variables, such as perfectionism and parental enmeshment, have complex relationships with variables that predict eating pathology and need to be investigated further. The findings are discussed in the context of theoretical, research and clinical implications.

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CHAPTER I

Overview

Within the cross-cultural study of eating disorders it has been established that many immigrant women who enter a Western country have higher rates of eating disorders after entry than women from their country of origin (Fichter, Weyerer, Sourdi, & Sourdi, 1983; Nasser, 1986) or than women from their host country (Ahmad, Waller, & Verduyn, 1994; Dolan, Lacery, & Evans, 1990; Mildred, Paxton, & Wertheim,1995; Mumford, Whitehouse, & Platts,1991; Wichstrøm, Skogen, & Oia, 1994). To determine why there are higher rates of eating pathology among these women, one must study the conditions that put these women at higher risk. The current investigation examined several variables that were identified as potential correlates of eating pathology among immigrant women. Individual, familial, and cultural variables that have been associated with eating pathology were studied to determine which of these variables contributed to an increased risk of eating pathology among Greek and Italian second-generation immigrant women. Furthermore, studying these variables simultaneously allowed for an investigation of their relative importance and the complex relationships among variables.

This research pursuit is important for a number of reasons. There has been little research in the area of risk factors for eating pathology among immigrant women and therefore the reasons why these women have higher rates of eating pathology than women in their new country and from their country of origin remains unknown. Beyond the relative dearth of research in this area, there are also theoretical and practical reasons to do this research. From a theoretical perspective, it allows for an assessment of culture-change and Western culture's role in the development and construction of eating pathology. From a practical perspective, this investigation is important because research in this area can and should inform the clinical practice of health and mental health practitioners who work with immigrant populations, and may contribute to existing prevention programs or to the development of prevention programs aimed at immigrant women.

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To identify which variables are associated with eating pathology among immigrant women, the available literature on eating disorders among immigrant women was reviewed. It was also necessary to review the related fields of immigrant mental health and general risk factors for eating pathology. These areas of research are more established and provide empirical support for many variables that may contribute to the development of eating pathology among immigrant women. These areas are reviewed below with a focus on variables that have received empirical or theoretical support, the problems researchers have encountered, and the methodological limitations inherent in these research areas. The literature that is available on eating pathology among immigrant women will also be reviewed. Finally, the main findings and critiques of the research areas will be summarized and the rationale and hypotheses will conclude the chapter. To begin, however, it is necessary to review the history and culture of Greek and Italian Canadian immigrants.

History and Culture of Greek Canadian Immigrants

History of Greek Immigration to Canada

First wave (1880s-1930s). Greek immigration to Canada began in the 1800's as an offshoot of the Greek immigration to the US (Gavaki, 1979). From 1870-1880 there were only 39 Greeks living in Canada. By 1911 this number rose to almost 4,000, primarily in the larger cities (Gavaki, 1979). The first wave of Greek immigrants to Canada were primarily young men who came alone and who planned to move back to Greece and buy land after making enough money in their new country. The few families that did arrive were traditional (patriarchal and authoritarian) with strong bonds to their extended kin and family in Greece. They often faced discrimination and remained traditional and insular as a way of protecting themselves from the host culture (Tastoglou & Stubos, 1992).

As the first wave of immigrants became established they were able to sponsor relatives and friends into Canada after World War II (Chimbos & Agocs, 1983). This process, referred to as chain migration, often resulted in ethnic enclaves and often the move of entire extended families (Chimbos & Agocs, 1983).

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Second wave (1940s- 1960s). After World War II and the Greek Civil War (1946-1949) a large wave of Greek immigrants entered Canada (Gavaki, 1979). For example, from 1945 to 1971 107,780 Greeks immigrated to Canada (Tastoglou & Stubos, 1992). This increase was primarily due to new policies in Canadian immigration, pressure from family already in Canada, and unstable conditions in Greece (Tastoglou & Stubos, 1992). In one Canadian study, Greek immigrants from the "second wave" who were interviewed indicated that they left Greece primarily for economic reasons, although almost a third cited joining relatives in Canada or to marry a Greek in Canada (Chimbos & Agocs, 1983). Most of the new immigrants settled in Quebec and Ontario, with 99% settling in urban areas and concentrating in certain neighborhoods (Chimbos & Agocs, 1983; Gavaki, 1979).

Most new immigrants were from rural areas, from all parts of Greece, and tended to be unskilled or semiskilled workers. They carried the values of strong ties to the community and Church with them to the new country (Gavaki, 1979). Compared to the first wave immigrants, the new immigrants had more education, more balanced gender distribution, and the families were less authoritarian (Tastoglou & Stubos, 1992). Although kinship ties remained important they had weakened (Tastoglou & Stubos, 1992). Financial ties to family in Greece remained strong as many Greek immigrants came to Canada not only to increase their own prosperity but to also help relatives in Greece (Chimbos & Agocs, 1983).

The majority of Greek families currently residing in Canada are second wave immigrants (Gavaki, 1979). After 1968 the rates of new immigrants dropped due to new immigration criteria (education and occupational criteria) and to increased stability and prosperity in Greece (Tastoglou & Stubos, 1992). In the 1970's a new smaller wave of Greek immigrants entered Canada who differed from previous immigrants as they were primarily from large urban centers in Greece and tended to be skilled workers with higher levels of education (Gavaki, 1979).

Greek Culture and Family

Prior to the overview of Greek culture and family in Canada, it is important to note that only generalities are discussed in this section, and that there is a wide range of cultural and family characteristics that can be found in today's Greek Canadian communities. For example, considerable differences exist between immigrants originating from Greek rural areas and urban

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Greeks (Rosenthal, Bell, Demetriou & Efklides, 1989). Urban Greeks tend to hold more individualistic values and report less authoritarian parenting practices (Rosenthal et al., 1989). Moreover, differences can also be found as a function of social class and education. Poorer, less educated families tend to be more traditional and therefore less egalitarian (Tastoglou & Stubos, 1992).

In the majority of Greek Canadian communities it is the family and the Greek Orthodox Church that help to retain Greek culture (Gavaki, 1979). Family is often considered the center of Greek culture including its transmission of customs, traditions, language, and food. The Church and cultural organizations such as hometown-based civic organizations (*topika somatia*) also promote Greek culture and support new immigrants (Tsemberis & Orfanos, 1996). As in the traditional Greek family, women play a secondary role in these cultural institutions. They may be involved in charity or care taking work but rarely assume positions of power or business (Tsemberis & Orfanos, 1996).

Most relationships remain within the Greek family and community (Gavaki, 1979; Tastoglou & Stubos, 1992) and there is a reported preference for social contacts to remain in the Greek community (Lambert, Mermigis & Taylor, 1986). Intermarriage is discouraged and children who marry non-Greeks are considered "lost" (p. 10, Gavaki, 1979). Although intermarriage is frowned upon (Lambert et al., 1986) the rates have increased. For example, in the 1920s only 20% of marriages in the Greek Orthodox church were mixed marriages whereas by the mid 1970s this rate was almost 50% (Tastoglou & Stubos, 1992).

The Greek marriage remains quite traditional despite acculturation (Tsemberis & Orfanos, 1996). There is no Greek word for dating and there are very few Greek courting rituals (Tsemberis & Orfanos, 1996). In the past, Greek men found wives through relatives or close friends who helped them arrange a marriage (*proxenia*), or they sent for a wife from Greece. In these cases the wife would come to the new country and often live with the husband's family and be cut off from most other ties (Tsemberis & Orfanos, 1996). Although this is no longer the usual pattern of courtship, Greek marriages are still defined by rigid roles where the wife is expected to not make too many demands. Conflicts are expected to be resolved without discussion, primarily

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through the wife's submission (Tsemberis & Orfanos, 1996). The husband is expected to be a good provider and is responsible for most economic decisions of the couple.

As mentioned previously, the family (*ikoyenia*) is central in the Greek culture and is considered "the basic social unit" (p. 518, Tsemberis & Orfanos, 1996). The traditional Greek family is organized in a hierarchical fashion, is often extended, extremely cohesive, and family honour is valued (Tsemberis & Orfanos, 1996). The family is primarily patriarchal and authoritarian in nature (Gavaki, 1979). The father is the "indisputable and final authority" (p.6, Gavaki, 1979). He may remain more distant but is responsible for the family reputation, economic welfare, and decision-making (Gavaki, 1979). The mother is characterized by self-sacrifice, modesty and submissiveness in public (Gavaki, 1979; Rosenthal et al., 1989). In traditional families the mother's primary responsibility is the care of her children and maintenance of Greek culture through language, customs and family values (Tsemberis & Orfanos, 1996). In extended families the mother may be helped in these duties by the aunts and grandmother (Ierodiakonou, 1988). Both parents see themselves as the moral guardians of their children and report high emotional commitment to their children (Rosenthal et al., 1989). There is often a differential preference for sons who are seen as carrying on the family name and who a source of family pride, particularly through their achievements (Tsemberis & Orfanos, 1996).

Children are expected to be obedient and to respect their parents regardless of what they are told (Tsemberis & Orfanos, 1996). Greek immigrant parents have been rated as overprotective by their children, particularly their daughters (Parker & Lipscombe, 1979; as cited in Siefen, Kirkcaldy, Athanasou & Peponis, 1996). For children there is little privacy at home, in fact there is no Greek word for privacy (Tsemberis & Orfanos, 1996). Greek parents are often very strict with adolescents and will often expect early curfews, no dating, and maintenance of Church ties and responsibilities (Tsemberis & Orfanos, 1996). Obligations to siblings are important in Greek families, particularly the brothers' responsibility to "protect" their sisters until marriage (Tastoglou & Stubos, 1992).

The Greek culture has been described as valuing collectivism and lying between the individualistic orientation of North American culture and the collectivism of Asian cultures (Rosenthal et al., 1989). This is evident within the traditional Greek family where, unlike North

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American families, the needs of the individual are secondary to the needs of the family (Ierodiakonou, 1988; Rosenthal et al., 1989; Tsemberis & Orfanos, 1996).

Within the Greek family, education is highly valued and achievement both in school and work is emphasized (Tsemberis & Orfanos, 1996). A child's achievement at school increases the family's prestige (Ierodiakonou, 1988). For example, in an Australian study, Greek adolescents perceived that their parents and friends provided more support for their learning. Correspondingly, Greek adolescents reported elevated achievement and educational ambitions compared to their peers from other cultures (Marjoribanks, 1986). The adolescent son is particularly expected to achieve and to incorporate the family's ambitions (Ierodiakonou, 1988). The daughters are often neglected in this concern but, interestingly; often do better in school than their male siblings (Tsemberis & Orfanos, 1996). As the daughters continue to achieve, family tensions may arise since their parents expect them to marry rather than continue with their education and career (Tsemberis & Orfanos, 1996).

Within Greek immigrant families, the process of acculturation may move away from this traditional model of Greek family and include changes in family structure and roles. Changing sex-roles and a reduction in authority of the father may lead to strains and conflict within the family (Gavaki, 1979). Children's roles may also change as they acculturate more rapidly to Canada and they are often needed as cultural brokers for their parents (Tsemberis & Orfanos, 1996). For example, many companies (e.g., Bell, Ontario Hydro) report that they communicate with the child most often in Greek homes (Gavaki, 1979). This change in children's roles may lead to increased tensions in the Greek Canadian family as they often result in "awkward positions of power" (p. 520, Tsemberis & Orfanos, 1996). Within acculturating families there may also be increased tensions due to the parents' perceptions of the children's abandonment of the Greek culture (Tsemberis & Orfanos, 1996).

History and Culture of Italian Canadian Immigrants

Italian Canadians make up the fourth largest cultural group in Canada (Ramirez, 1989). The immigration of Italians to Canada is only part of a larger emigration from Italy. Between 1876 and 1976 more than twenty six million Italians emigrated from Italy (Iacovetta, 1991). The

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following discussion of the history of Italian immigration and the characteristics of Italian culture, as with any description of a cultural group, is limited to generalities. It is not meant to be representative or comprehensive. It is important to also highlight the wide range of cultural and family characteristics that can be found in today's Italian Canadian communities.

History of Italian Immigration to Canada

First wave (1880's to 1930's). During the 19th century very few Italians lived in Canada and those who did, resided almost exclusively in Montreal (Ramirez, 1989). By the 1880's Italians began entering Canada in larger numbers. They were mostly single men and most of the immigration was temporary and associated with construction, mining, mills or the railroad (Iacovetta, 1991;Ramirez, 1989). Over time, however, companies based in cities began recruiting workers who brought their families and a more permanent migration began (Ramirez, 1989). As this first wave of immigration progressed the rate of immigration increased substantially. For example, by 1913, as many as 28 thousand Italians immigrated to Canada in one year (Ramirez, 1989).

Second wave (1950's-1970's). During World War II most migration stopped. Once the war ended, however, Italian immigration once again grew to large proportions. During the 1950's and early 1960's Italian immigrants made up 20-25% of all immigrants arriving in Canada (Citizenship and Immigration Canada, 1996). In fact during that time period only Great Britain provided more immigrants to Canada than Italy (Ramirez, 1989).

By the early 1970's these rates dropped significantly. In 1972, for example, Italian immigrants made up only 4% of the immigrants to Canada that year (Ramirez, 1989). In 1994 that rate dropped even lower, with only 500 people from Italy immigrating to Canada, representing 0.2% of all immigrants entering Canada in 1994 (Citizenship and Immigration Canada, 1996). The rates of immigration dropped primarily due to new restrictions and requirements added to the Canadian immigration policy, particularly on family sponsorship.

Common characteristics. Both periods of immigration were characterized by chain migration, the process whereby once newcomers were established they were able to sponsor relatives and friends into Canada. This process lead to the creation of ethnic enclaves, "little

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Italy", where large family networks, and in some case, almost entire villages could be found residing together in cities across Canada (Iacovetta, 1991; Ramirez, 1989).

During both periods of immigration most Italians arriving in Canada settled in a city (Ramirez, 1989). For example, in 1976, 90% of Italians lived in cities with populations over 100, 000 or more, and 69% of those lived in cities of over 1million (Ramirez, 1989). This has changed little over time, in a recent 1991 census, 92% of all Italian immigrants lived within a "census metropolitan area" (Citizenship and Immigration Canada, 1996). The majority of Italian immigrants reside in Ontario and Quebec, with 44% of all Italian immigrants in Canada living in Toronto (Citizenship and Immigration Canada, 1996).

A third commonality was that the majority of Italians who immigrated to Canada were from Southern Italy, representing all the Southern regions except for Sardinia (Ramirez, 1989). This region of Italy, often referred to as *mezzogiorno* or *meridionale* (Cacciola, 1982), was more agrarian and poorer than the industrialized northern region of Italy. The southern Italians tended to be less educated than the northerners and were primarily farmers (*contadini*), labourers, or tradesmen (Cacciola, 1982; Giordano & McGoldrick, 1996; Marinangeli, 2001). Due to these differences, southern Italians were often subjected to prejudice and discrimination in Italy (Cacciola, 1982; Iacovetta, 1991). Unfortunately the southern Italians did not escape prejudice upon arriving to Canada (Giordano & McGoldrick, 1996; Ramirez, 1989). As southern Europeans they were considered less desirable immigrants by Canadians than the British and northwestern Europeans immigrants (Iacovetta, 1991). Moreover, the bias against southern Italians occurred among Canadian immigration officials and the Roman Catholic church (Iacovetta, 1991).

Italian Culture and Family

Due to chain migration, most Italian ethnic enclaves in Canada were very regional in nature. Italians in both Canada and Italy, prior to W.W.II, placed more value on the region or town somebody was from than being Italian. This pride in one's region or village, referred to as *campanilismo*, while it remains quite strong today, no longer precedes national pride and identity (Ramirez, 1989). Within the Italian Canadian communities, community associations and the local Roman Catholic parish contributed to increasing nationalism and reduced the regional divides among Italians. These organizations played a central role in the community and social lives of

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Italians. Although many different kinds of Italian associations exist today, the earliest were mutual aid societies (Ramirez, 1989).

Roman Catholicism is very important to many Italians and the local parishes are central to community life. In a 1991 census, 96% of Italian immigrants identified themselves as Catholic (Citizenship and Immigration Canada, 1996). Many authors note that Italians value the social and traditional aspects of religious practice (Giordano & McGoldrick, 1996; Ramirez, 1989).

More important than the church or community association, and by far the most important institution to Italians, is the family. Although other cultures value family, they do not place as much importance on the family as Italians do. According to Italian tradition, the family must be protected, revered and made powerful and its honour must be maintained (Giordano & McGoldrick, 1996). For most Italians, "the importance of the family supersedes that of country, state, region, town, or even Church" (p. 217, Marinangeli, 2001). Family is placed above everything else and individuals will often place the family above their individual needs and/or achievement (Marinangeli, 2001).

The value of family is also demonstrated in the finding that the rates of divorce and separation are less common among Italians than other cultural groups in North America (Marinangeli, 2001). *La via vecchia*, the old way, is cherished by Italians and represents the values primarily associated with protecting the family (Giordano & McGoldrick, 1996). Italian immigrants are also more likely to be married than other cultural groups (Citizenship and Immigration Canada, 1996).

Corresponding with this value placed on family is a mistrust of anyone outside of the extended family and a general mistrust of institutions (Cacciola, 1982; Marinangeli, 2001). This mistrust can be understood in the context of Italian history. Italy is a country that had been continuously invaded over centuries and the southern Italian population were not protected or supported by their church or by their political institutions. Over time, therefore, they learned that they could only trust and depend on their families and close neighbors (Marinangeli, 2001). This history also accounts for Italian immigrants' relative lack of involvement in, and the mistrust of, political, labour and social organizations in North America (Cacciola, 1982).

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The importance of physical and emotional closeness in an Italian extended family is highlighted in a study conducted in Montreal where over 60% of the second generation Italian respondents reported living either in the same building or a five-minute walk from a relative (described in Ramirez, 1989). Moreover, 94% of Italian immigrants aged 15-64 reporting that they lived with members of their immediate family. Children tend to remain at home until they are married and often move close by to the rest of the extended family (Marinangeli, 2001). Even if they go on to university, more than 80% of Italian students continue to live at home (Giordano & McGoldrick, 1996).

The Italian family is the extended family, which includes cousins, aunts and uncles. It also includes godparents, known as *comparaggio* (Cacciola, 1982) and close friends and neighbors, known as *gumbares* (Giordano & McGoldrick, 1996). The father traditionally is the head of the family and the rule maker and his role is to provide for his family and to protect them. He is also expected to have the solutions to most family problems (Giordano & McGoldrick, 1996).

Southern Italian women, the *contadina*, have often been characterized as "passive submissive and conservative" (p.26) and yet, as Perin (2001) notes, within very strict gender roles they in fact have had much control and power in the family through the influence of their husbands. As mothers, they also play an important role in the family, responsible for raising children, instilling religion and cultural values, and establishing relationships with family and neighbors (Marinangeli, 2001). This is referred to in the statement that "though the father may be the head of the family, the Italian mother is the heart" (p.220).

Despite the constraints of traditional gender roles, Italian women were also a large part of the labour force during WWII (Perin, 2001). Moreover, after migration to Canada more women began working outside of the home, thereby contributing financially as well as taking on "double duty" (both paid work and housework). Through this process many Italian immigrant wives began to be more involved in making important family decisions (Haddad & Lam, 1994).

Intimacy in the traditional Italian marriage is not seen as a priority. Rather the mutual and complementary roles the members of the couple each play in the family are valued (Giordano & McGoldrick, 1996). Children are taught the family values of obedience, respect and hard work within the family (Ramirez, 1989). Italian families are close, and strong relationships often exist

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between mother and son, father and daughter, and between siblings (Giordino & McGoldrick, 1996; Marinangeli, 2001).

Daughters and sons are often treated very differently in Italian families, and have different roles in the family (Giordano & McGoldrick, 1996). Daughters have stricter supervision and experience more parental control over many aspects of their lives. After adolescence there are strict rules regarding dating and sexual issues for daughters (Marinangeli, 2001). On the other hand, sons are expected to act out and misbehave as part of establishing their masculinity (Giordano & McGoldrick, 1996). Sons are also expected to protect their sisters.

The Italian family is the primary source for transmission of cultural values and traditions. One example of a traditional value held by many Italian Canadians is achievement and economic security for the family. For many of the first generation Italians arriving in Canada this economic security was in the form of ownership of a house (Ramirez, 1989). In fact, after W.W.II a popular song in Italy referred to the ideal of owning a house with a pool and garden in Canada (Ramirez, 1989). Moreover, a home represented family security and allowed the family to be independent from outsiders (Giordano & McGoldrick, 1996).

Despite the values of hard work and achievement, Italian immigrants traditionally did not value education (Ramirez, 1989). In the past, formal education was not seen as a priority in helping to support the family (Marinangeli, 2001). Schools were seen as a waste of time because they did not teach practical skills and too much education of children was often seen as a threat to the family (Giordano & McGoldrick, 1996). Although education is now valued in later generations (Giordano & McGoldrick, 1996), there are still those who hold on to the old values against formal schooling. For example, the leadership of Italian communities, often referred to as *prominenti*, are often considered to be anti-intellectual (Perin, 2001). Italian immigrants are also less likely to have a university degree than other groups (Citizenship and Immigration Canada, 1996), and remain underrepresented in the more prestigious careers (Marinangeli, 2001).

Cultural retention within immigrant Italian families has been strong. Over many generations, however, some acculturation and assimilation does occur. Often later generations experience intergenerational conflict and the children struggle with the conflict between family cohesion and the North American emphasis on individuality and independence (Giordano &

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McGoldrick, 1996). They often experience cultural identity confusion (Giordano & McGoldrick, 1996) and those who try to distance themselves or separate from the family are often met with family reactions of feelings of betrayal, rejection, and abandonment (Giordano & McGoldrick, 1996). Although intermarriage had been rare in the early history of Italian immigration, currently 80% of Italians are marrying outside of their culture (Giordano & McGoldrick, 1996). In families where there is a shift of family roles due to acculturation, fathers are most often affected as they lose some of their status and power and Italian men view this as a loss of self-esteem (Giordano & McGoldrick, 1996). Despite these documented difficulties, most Italian Canadians are very successful at living in two cultures and balancing between the old way, *la via vecchia*, and the new cultural way, *la via nuovo* (Cacciola, 1982).

Mental Health of Immigrant Populations and Associated Risk Factors

As is evident from the previous reviews of Italian and Greek immigrants in Canada, immigration has been occurring for a very long time, and yet only within the last two decades has there has been an increase in the amount of attention that the mental health of immigrants has received. For example, research and reports of immigrant mental health have been commissioned for the Canadian government (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees,1988a), the United States government (Committee on the Health and Adjustment of Immigrant Children and Families, 1998), and the Australian government (Jayasuriya, Sang, & Fielding, 1992) and it has become the subject of international conferences (e.g., Jablensky, Marsella, Ekblad, Levi, & Jansson, 1992).

In 1997, 216, 000 immigrants came to Canada, including 17, 189 children (Statistics Canada, 1998). Since the time of Confederation the ratio of immigrants to Canadian-born has been approximately one in six (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a). The rates in the United States have been similar. In 1997, one in five children in the U. S. were first- or second-generation immigrants (Committee on the Health and Adjustment of Immigrant Children and Families, 1998). It has also been estimated that 100 million people around the world live outside of their country of origin (Russel & Teitlebaum, 1992; as cited in Ward, Bochner & Furnham, 2001).

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If the percentage of immigrants has not increased significantly over time, to what can we attribute the increased interest in their mental health and well-being? Part of this is due to academic trends. There has been an increase in the awareness of and study of the role of culture in many psychological domains, from the construction of identity to health and mental health. This research has important implications for the development of culturally appropriate prevention and intervention strategies and has direct ramifications for public policy and programs.

Secondly, the countries that immigrants are coming from have changed over time. Early migration in Canada, for instance, occurred primarily from Europe and the US. During the last 20 years there has been an increase in the number of immigrants from Asia and Latin America (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a) such that immigrants from Asia, Africa, the Middle East and Latin America now make up 75% of immigrants (Beiser, Dion, Gotowiec, Hyman, & Vu, 1995). This change in countries of origin has also been cited as a reason for the increased focus on the mental health of immigrants. It is assumed that there is a relationship between the degree of discrepancy between one's country of origin and the host country, and the degree of difficulty encountered during adaptation (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a).

A third reason for the increased attention to immigrant mental health is that the demographics of North America are changing. Due to the low birth rate in North America, it is predicted that future growth "will occur primarily through immigration and through births to immigrants and their descendants" (Committee on the Health and Adjustment of Immigrant Children and Families, 1998, p.20). Therefore the well being of immigrants has become more salient to governments of countries that will be relying heavily on their contributions in the future. Countries such as Canada, the U.S, and Australia take in large numbers of newcomers and would like to insure that their policies and services facilitate an adaptive resettlement process. As the Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees (1988a) reports, "since we can alter post-migration conditions for immigrants, it is important to delineate and understand factors which affect mental health during resettlement" (p.9).

The focus of this review is on first- and second- generation immigrants, defined as people born in a foreign country who immigrate to a new country or who have been born in the new

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country but have at least one parent who was born in a foreign country. These definitions do not include foreign students, temporary workers or sojourners (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a). The literature on prevalence rates of mental health problems among immigrants from clinical and community surveys is summarized, although the focus is primarily on risk and protective factors that have been identified in the literature.

Refugees

Although much of the research on immigrant mental health is applicable to refugees, there are also very important differences in the experiences of immigrants and refugees, which have repercussions for their mental health. A refugee is a person who has left their country of origin because of persecution, or fear of persecution, for reasons of race, religion, or politics, and cannot return home (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a). Some of the differences between refugees and immigrants are inherent in this definition. In most cases, refugees do not have a choice to migrate, as most immigrants do, and they are unable to go home if they want to. This lack of choice increases their risk for mental health problems and the higher likelihood of the presence of premorbid mental health problems (Beiser et al., 1995; Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a). It is also likely that their initial contact and their attitudes towards change will not be as positive as for other immigrants (Berry, 1990).

Refugees may have also experienced trauma before and/or during their migration, which may have included loss of property, death of loved ones, or torture and internment camps (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a) . This trauma can lead to an increased risk for developing Post Traumatic Stress Disorder (PTSD) (Beiser et al., 1995; Cervantes, Salgado de Snyder, & Padilla, 1989).

Refugees often have the additional stress of awaiting judgments of their claims, which can take many months or even years, and may also involve prolonged separation from family. The separation and uncertainty of their future can often increase mental health risk (Beiser et al., 1995; Berry, 1990). They are also less likely to speak the language of the host country, another

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factor that is associated with increased risk for mental health problems (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a).

Therefore, as authors of one review conclude, refugees have "additional psychological burdens and potential risk factors for mental illness not encountered in non-refugee immigrants or migrants" (Ekblad, Kohn, & Jansson, 1998, p. 42). However, others point out that although these are important differences, the line between immigrants and refugees are not always as clear as they have been depicted by researchers and policy makers (Guarnaccia & Lopez, 1998).

Prevalence Rates of Mental Health Problems Among Immigrants

Epidemiological and Clinical Surveys

The study of the relationship between immigration and mental health dates back to at least 1885 (Ekblad et al., 1998). The definition of mental health has been problematic for just as long. Definitions and measurement of mental health and illness have variously encompassed abnormal behaviour, psychopathology as defined by the *Diagnostic and Statistical Manual of Mental Disorders* (*DSM-IV*, American Psychiatric Association, 1994), psychological symptoms, distress, demoralization, acculturative stress, emotional/behavioral difficulties, self-esteem, self-efficacy, well being, and competencies. For the purposes of this review, terms such as mental health, mental health problems, and mental illness and psychopathology, are used when more specific descriptions were not provided in the literature.

The primary goal of earlier research was to determine if there were higher rates of mental health problems among immigrants, and if so, what the relationship was between the two. Most early studies (e.g., 1930s to 1960s) did find higher rates of disorders among immigrants based on hospital admission rates (Ekblad et al., 1998). For example, in a review of early research on the rates of mental illness in Caribbean immigrants in the UK (Thomas & Lindenthal, 1990), most of the hospital admission studies found higher rates for certain disorders (schizophrenia and affective disorders) among these immigrants. Similarly, in a review of Australian research, early clinical studies found high rates of depression among all immigrants compared to Australian born, and higher rates of schizophrenia among some immigrant groups (Jayasuriya et al., 1992).

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Based on the results of this early research it was concluded that there was a strong relationship between immigration and mental health problems for both adults (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b) and children (Aronowitz, 1984). A frequently cited report by Murphy (1973, as cited in Ekblad et al., 1998) outlines three possible explanations for these results: the rates could be due to the stress of the migration and acculturation process (often called the stress hypothesis), or due to selective migration, such that those with more mental illness or who are more vulnerable are likely to migrate (referred to as the selection hypothesis), or the rates could just be a reflection of the rates of the disorder in the country of origin. Researchers quickly adopted the selection hypothesis and the stress hypothesis to account for the relationship between migration and mental health problems (Al-Issa, 1997a). The stress hypothesis also prompted empirical studies that identified the positive effects of assimilating into the mainstream dominant society. However, one must keep in mind that these results and interpretations were made at a time when many countries followed government policies of assimilation (Escobar, 1998; Jayasuriya et al., 1992).

There are many methodological problems with the early clinical studies. For example, they usually involved very small samples, and did not include or control for demographic variables such as age, gender or SES (Thomas & Lindenthal, 1990), all of which influence rates of hospital admissions (Ekblad et al., 1998). One of the most frequently cited criticisms leveled against the early research was that the prevalence rates of psychopathology were not measured directly but rather researchers depended on hospital or clinic admission rates to infer prevalence rates. Therefore, early studies were more likely assessing rates of help seeking, behaviours which are thought to vary cross-culturally (Ekblad et al., 1998) and which may also be confounded by doctors' prejudice and difficulties diagnosing cross-culturally (Thomas & Lindenthal, 1990).

Community Surveys

Community surveys of the mental health of immigrants began in part due to the limitations of clinical studies (Ekblad et al., 1998). Although there has been considerable research done in this area there is also significant variability in designs, samples, and measures. The majority of

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designs have been cross-sectional, some have no comparison groups, others have included comparison groups of host-culture populations, some of country of origin populations, and some compare between generations of immigrants. Some researchers have studied specific immigrant groups and others have collapsed groups across country of origin. Some measure general well being, others measure psychological distress or symptoms, demoralization, or specific disorders.

Overall, the results of the community surveys have been inconclusive and often contradictory for both adults (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b; Ekblad et al., 1998) and children (Beiser et al., 1995; Davies & McKelvey, 1998). Almost half the surveys report higher rates of psychological distress and specific disorders among immigrant groups than their nonimmigrant population counterparts and the other half report either no difference in rates or lower rates (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b). For example, Beiser and colleagues (1995) reviewed the literature and found that some studies show children and adolescents of immigrant families to be at greater risk for delinquency, substance abuse, and depression than children from nonimmigrant families. However, a large Canadian study (the Ontario Child Health Study) found rates of mental health problems and school performance of immigrant children and adolescents to be similar to nonimmigrants (Munroe-Blum, Boyle, Offord, & Kates, 1989). Another large study in Norway found that 10 to 17 year old immigrants had fewer psychological symptoms than nonimmigrants (Sam, 1994, as cited in Davies and Mckelvey, 1998).

Some of the contradictions and inconsistencies in the literature may be due to methodological limitations such as marked variations in how many concepts are measured (Ekblad et al., 1998). However, as Beiser et al. (1995, p.67) point out, "inconsistent results are not necessarily invalid results." Authors of other reviews concur that the “contradictions” in the literature could actually reflect real differences in mental health outcomes (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b; Committee on the Health and Adjustment of Immigrant Children and Families, 1998; Ekblad et al., 1998; Guarnaccia & Lopez, 1998; Hicks, Lalonde, & Pepler, 1993). One review states that the mandate for future

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research should be to "understand under what conditions migrant populations experience higher or lower rates of emotional disorder than native-born groups" (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a, p.3) rather than attempting to determine if immigrant groups have higher or lower rates of psychological problems.

Current research. Many researchers in the area are following this mandate by investigating risk and protective factors for immigrant mental health. A risk factor has been defined as any variable that precedes a disorder and increases the likelihood that the disorder will develop (Smolak, Levine, & Schermer, 1998). Risk factors have been further differentiated into causal risk factors that can vary (e.g., dieting) and fixed markers, which do not vary (e.g., sex). Correlates are factors that are associated with a disorder but that have not been shown to either precede or cause it (e.g., self-esteem) (Franko & Orosan-Weine, 1998). Unfortunately, due to the common practice of using these terms interchangeably it is not always clear what "status" identified risk factors have. For the purposes of this review, unless otherwise noted, “risk factor” is used without the implication that causality has been established for that variable.

Protective factors have been defined as variables that are "associated with a reduced likelihood of negative outcomes, because of their own direct effects, or because they moderate the relationship between risk factors and negative outcomes" (Committee on the Health and Adjustment of Immigrant Children and Families, 1998, p.32).

Although there are some recent studies that assess the prevalence rates of mental health distress and disorder among immigrant groups (Davies & McKelvey, 1998; Stuart, Klimidis, & Minas, 1998), many studies now incorporate other variables to determine risk and protective factors. For example, in a study of Iranian immigrants in Sydney, Australia, Khavarpour and Rissel (1997) determined not only the rate of psychological distress for that specific group (37%) but also found that young single students were more likely to have reported distress than other Iranian immigrants, therefore identifying a high risk subgroup. In a similar study, Abbott, Wong, Williams, Au, and Young, (1999) identified and assessed predictors of adjustment and psychological distress among Chinese immigrants in New Zealand. In this case, 17% reported

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adjustment problems. Risk factors identified included rejection by locals, being between the ages of 20 and 30, low English proficiency, and separation from family.

Other researchers have been using unique comparison groups to study single risk factors in depth. For example, to study dominant culture attitudes as a risk factor some have compared two immigrant groups in one country (Ponizovsky et al., 1998) or compared the same immigrant group in more than one dominant culture (Flaherty, Kohn, Levav, & Birz, 1988) to determine differences in their adjustment and psychological distress. A promising research direction to study a single risk factor in depth is the design, implementation, and evaluation of intervention programs that focus on one risk factor (e.g., Ying, 1999).

Another promising direction for current research is the simultaneous study of several variables, in an attempt to determine the relative importance of these factors and their direct and indirect impacts on mental health. This has been accomplished through the use of statistical techniques like path analysis (e.g., Nicholson, 1997) and longitudinal designs (Rumbaut, 1994).

Some researchers have put together complex models and frameworks of varaibles related to mental health problems among immigrant populations that include both risk and protective factors, including pre-migration, post-migration factors, personal characteristics and personal and social resources (e.g., Beiser et al., 1995; Berry, 1990; 1998). Beiser and colleagues discard the selection and stress hypotheses of Murphy (1973, as cited in Ekblad et al., 1998), and instead refer to a vulnerability-exposure model in which mental health problems among immigrants are seen as the result of a complex interaction between existing vulnerabilities and exposure to risk factors associated with migration and acculturation.

Risk and Protective Factors in Immigrant Mental Health

Some of the variables that will be discussed in relation to immigrant mental health have been researched quite extensively while others have not received much attention. Variables identified as risk and protective factors include personal characteristics as well as familial, social and environmental conditions that occur both prior to immigration and after resettlement. Although variables will be discussed separately it is important to note that the relationship

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between them is complex; many are interrelated or interact and they often have both direct and indirect effects on mental health (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b).

Pre-migration Factors

Decision to migrate. For many individuals, the decision to migrate is not voluntary. Often spouses, children, and refugees do not want to leave their country of origin but do not have the choice to stay. When the decision to migrate is involuntary it is often associated with higher risk of mental health problems (Committee on the Health and Adjustment of Immigrant Children and Families, 1998) as these individuals continue to mourn for their lost culture (Al-Issa, 1997a).

Expectations of immigration experience and host culture. Although one might expect that having more positive attitudes about a host culture prior to immigration is a positive factor for mental health and well being, unrealistically high expectations may be a risk factor. For example, there is some evidence that when there are high expectations of achievement in the host culture, the discrepancy between expected and actual achievement can be a risk factor (Al-Issa, 1997a). Expectations of support from the ethnic community in a new country that are not realized may also be a risk factor. In a study of Vietnamese American adolescents, those who had higher expectations of support upon their arrival from Vietnam and did not receive it from the ethnic community had the highest number of symptoms of depression a few months after arrival (McKelvey & Webb, 1996). This research highlights the importance of engendering realistic expectations, which can often be facilitated through information programs prior to migration (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b).

Trauma. As reported earlier, in the discussion of differences between refugees and immigrants, many refugees experience high levels of trauma before and/or during migration. The experience of trauma has been found to increase risk for later mental health problems (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b). However, there is also evidence that some types of past trauma may not be as important to mental health as experiences during the first year of resettlement (Beiser & Hyman, 1997).

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Separation from family and community. Many immigrants and refugees must leave family members behind; for example, a father may immigrate first to find employment and save money to sponsor his family. The separation from family (both nuclear and extended) and the community can be a risk factor for mental health problems (Abbott et al., 1999; Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a; Jablensky et al., 1992).

Post-migration Factors

Reception of dominant culture and public attitudes. Reception of the dominant society is cited as being one of the most important factors determining if immigration will be a positive or negative experience (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a). Government policies that take away an individual's decision to choose if they want to retain their heritage culture by enforcing or prescribing an assimilationist or isolationist policy jeopardize mental health (Berry, 1990; Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a). Since public attitudes often correspond to government policy, negative or discriminatory public attitudes have also been identified as a risk factor (Abbott et al., 1999; Committee on the Health and Adjustment of Immigrant Children and Families, 1998; Jayasuriya et al., 1992). For example, France is known to have a social policy of assimilation (e.g., girls are not allowed to wear religious scarves in school) and associated negative public attitudes. Researchers who have studied immigrant groups in France hypothesize that the high rates of depression and other mental health problems may be a result of such policies (Al-Issa & Tousignant, 1997). Discriminatory public attitudes may also be more salient for immigrant groups of colour and of similar ethnicity to existing minority groups in the new country (Beiser et al., 1995; Guarnaccia & Lopez, 1998). For example, Asian Indian immigrants' perception of acceptance by Americans predicted mental health better than many demographic variables (Mehta, 1998).

Not all immigrant groups will experience the same reception and treatment by the host culture. For example, the effects of a host society's attitudes were compared by assessing the adjustment of Nicaraguan and Cuban immigrant adolescents in Miami (Gil & Vega, 1996). At the

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time of the study there was more government support and positive public attitudes towards Cuban immigrants, which was reflected in the adolescents' adjustment and perceptions of discrimination. The effects of host culture reception have also been studied by using a design that compares the same immigrant group in two different countries, such as Russian immigrant Jews in Israel and the U.S. (Flaherty et al., 1988).

Language competency/fluency. Language competency has been extensively studied. It has been repeatedly demonstrated that the inability to speak the language of the host culture is a risk factor (Abbott et al., 1999; Guarnaccia & Lopez, 1998) as it is difficult to "enter a culture" without the language and it can easily create feelings of marginalization and alienation that can contribute to isolation and loneliness (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a, p.23). There is also evidence that being fluent or competent in the language is a protective factor (Beiser et al., 1995).

Unemployment or underemployment. Unemployment and underemployment are related to language competency, gender, and discrimination by host society. Unemployment, which is higher among immigrants than nonimmigrants, has been directly linked to an increase in risk for mental health problems including suicide, alcoholism, depression, and increased rates of spousal and child abuse and marriage breakdown (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a). Researchers have identified underemployment as a risk factor through loss of occupational status (Al-Issa, 1997a), frustration, and alienation (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a). Others point not to status but rather to the stress associated with feeling responsible for making enough money to sponsor relatives or to support relatives in the country of origin (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a). Additional support for the importance of employment variables are derived from research that finds that employment satisfaction is a stronger predictor of mental health than separation from family or pre-migration stress (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b).

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Poverty. Immigration, and especially refugee status, increases the chance that families will live in poverty, which is a general risk factor for mental health problems (Beiser et al., 1995; Jablensky et al., 1992). Researchers have also noted that a drop in socioeconomic status of the family can also have an effect on mental health of both parents and children (Committee on the Health and Adjustment of Immigrant Children and Families, 1998).

Availability of social support. The impact of multiple risk factors and stressors increases the need for, and use of, social supports from family, friends, community groups, or social services. The quality and quantity of this support have a direct impact on the mental health of immigrants (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a).

Family composition and functioning. The importance of having family with you during immigration is evident. For example, in one large-scale study of Southeast Asian immigrants in Canada, increased rates of anxiety and depression were found among single immigrants compared to those with a spouse. Mental health improved among single immigrants if they were reunited or married during the two year period of the study (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a). The importance of family during resettlement is also evident from research that demonstrates that children who immigrate without their parents are at elevated risk for mental health problems (Committee on the Health and Adjustment of Immigrant Children and Families, 1998).

Family functioning has also been studied as a risk factor, particularly in the context of differential acculturation, which is commonly found in immigrant families (Gil & Vega, 1996). Differential acculturation, sometimes referred to as differential assimilation, refers to the process whereby children and adolescents learn the new culture and language faster than their parents. This can threaten family cohesion (DiNicola, 1998) and frequently leads to conflict between generations and cultures in the home. It may also lead to role-reversals when the child is put in the position of "culture broker" and thus acquires power and responsibility in the family (Beiser et al., 1995). Role reversals and intergenerational conflict are both risk factors for the development

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of mental health problems among children (Aronowitz, 1984; Beiser et al., 1995; Carlin, 1990; Committee on the Health and Adjustment of Immigrant Children and Families, 1998; Guarnaccia & Lopez, 1998) whereas family stability and closeness is considered a protective factor (Beiser et al., 1995).

Ethnic community/enclave. In the absence of family or relatives, friends and a similar ethnic enclave can also provide practical and psychological support and reduce isolation and loneliness (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b). This factor also refers to the composition of the community that the new immigrants settle into. When the community has very few people of similar ethnicity this can often be a risk factor (Abbott et al., 1999), whereas if there is an established ethnic community this often acts as a protective factor (Beiser et al., 1995). Immigrants who reside in an established ethnic community have lower levels of distress and fewer hospitalizations for mental health reasons than other immigrants, especially in the earlier years of resettlement (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a). For example, in a study that compared Chinese immigrants in Vancouver with Vietnamese and Laotian immigrants (that did not have an established ethnic community), the two latter groups had four times higher risk for developing depression than the Chinese immigrants (Beiser & Hyman, 1997). Although the ethnic community plays a role in providing practical support, the protective aspect may have more to do with the opportunity for social interaction and supporting ethnic and social identity (Beiser & Hyman, 1997). Therefore, although the existence of an ethnic enclave is in itself important, the characteristics of cohesion and size influence its relationship to immigrant mental health (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b).

Acculturation. Acculturation has been defined as occurring when "two cultures in contact come to develop beliefs, values, and practices from one another, a continuous process of one group learning from another " (Ekblad et al., 1998, p.49). However, over time, acculturation has come to specifically refer to the process of the immigrating group and individual adapting to the host or dominant culture (Berry, 1990; Committee on the Health and Adjustment of Immigrant

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Children and Families, 1998; Ekblad et al., 1998). Acculturation has received significant attention in the area of immigrant mental health. Although there is agreement among researchers on the definition of acculturation, there are numerous conceptual frameworks for understanding the acculturation process. Some see it as a unidimensional construct with assimilation on one end of the spectrum and traditionalism on the other (e.g., Hurh & Kim, 1990), whereas others have categorized acculturation styles and related them to specific mental health problems (e.g., Khoa & Van Deusen, 1981, as cited in Ekblad et al., 1998).

In his popular conception of acculturation, Berry (1976; 1990; 1997) describes two dimensions, attitudes towards retaining one's own culture and attitudes towards contact and participation with the dominant culture. The combination of these two dimensions results in four acculturation strategies: a) assimilation, which is not maintaining one's own culture and seeking interaction with the dominant culture; b) integration, which is interest in retaining one's own culture and positive attitudes and participation with the dominant culture; c) separation, when one retains one's own culture but rejects or avoids participation with the dominant culture; and d) marginalization, when one either has no interest or is forced to give up one's own culture and is not interested in participating in the dominant culture. Berry also describes a process of acculturation that highlights the importance of time and views acculturation not as a static process but rather a dynamic one (Berry, 1990). Despite the variability in conceptualizations and terminology there are some overlaps. For example, biculturalism, which is referred to often in the literature (e.g., Escobar, 1998) appears to correspond to Berry's description of integration.

The variability in researchers' conceptualizations of acculturation is compounded when one adds the variability in measurement of acculturation. Measurement may range from one or two items regarding language use or time in country (e.g., Hurh & Kim, 1990), to measures developed for one specific immigrant group and modified for another (e.g., Ghaffarian, 1998), to measures based on theory that have been modified for a particular acculturating group (Berry, 1998).

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Despite these caveats, the literature does point to some common findings. There is evidence that keeping traditional culture in one's identity (i.e., integration, ethnic resilience, biculturalism) acts as a protective factor both for first and second generation children (Beiser et al., 1995; Committee on the Health and Adjustment of Immigrant Children and Families, 1998; Guarnaccia & Lopez, 1998) and adults (Berry, 1998; 1987; Ghaffarian, 1998) and is related to better mental health. The majority of the research in the area suggests that immigrant families who can incorporate the new culture and skills, while retaining the strengths of their own culture, will be better adjusted and at less risk for mental health problems compared to others (Committee on the Health and Adjustment of Immigrant Children and Families, 1998). There is corresponding research that finds other acculturation strategies are related to increased risk for mental health problems, such as assimilation (Escobar, 1998) and separation or marginalization (Krishnan & Berry, 1992) . However, some authors caution (Al-Issa, 1997b) that no single strategy of acculturation is right for everyone.

Length of time in new country. Other research highlights stages or phases of resettlement that are associated with higher risk for mental health problems (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b). During the first few years of resettlement, immigrants are more at risk than when they have spent some time in the country (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b). However, there is some dispute over this. For some immigrant groups (for example, Mexican immigrants in the US), health and mental health appears to decrease with length of time in the new country with a concomitant increase in risky behaviours (Committee on the Health and Adjustment of Immigrant Children and Families, 1998). This may be related to segmented assimilation (Rumbaut, 1994) which is the process of immigrants assimilating not into the dominant culture but into the ethnic minority culture that has a number of their own mental health risks.

Other researchers have asserted that there is no simple linear relationship between time and adjustment; that the relationship may be curvilinear with later phases (10 to 15 years after

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resettlement) being associated with increased mental health risk (Hurh & Kim, 1990). Others have attributed adjustment difficulties occurring several years after resettlement to family problems associated with differential acculturation and marital and intergenerational conflict (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b).

Demographic Factors

Age at time of migration. Two subgroups of immigrants, adolescents and the elderly, appear to be at higher risk than other immigrants (Beiser et al., 1995; Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a). Adolescents face many of the same challenges that other immigrants do, such as language difficulties and rejection by members of the host culture, but they may be more vulnerable to the effects of such challenges, leaving them feeling unhappier and more marginalized (Davies & McKelvey, 1998). There is an increased risk for alcohol abuse, drug addiction, depression and delinquency among immigrant adolescents (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b).

For immigrant adolescents whose developmental tasks include the formation and establishment of an identity, identity formation becomes more complex with two sets of values which often conflict (DiNicola, 1998; Guarnaccia & Lopez, 1998), when there are few role models for this identity (Carlin, 1990) and when parents react to identity issues by increasing controls (Chiu, Feldman, & Rosenthal, 1992). This can be a formidable task and the resulting identity confusion (Carlin, 1990) can be a risk factor for mental health problems (Flaherty et al., 1988). Due to changes in family structure, where role reversals may occur, immigration may also make the developmental task of separation difficult for adolescents (Carlin, 1990). According to family systems theory, adolescents often develop psychological symptoms in an effort to resolve family or marital conflicts, or when they are placed in inappropriate family roles (DiNicola, 1998).

Being elderly at the time of migration is also associated with increased risk for mental health problems (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b; Jayasuriya et al., 1992). However there is much less research on the elderly

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than adolescents. The elderly are more vulnerable to the stresses of immigration for a number of reasons. They have difficulty in adapting to change in general, particularly changes of culture, traditions, and language. They have, not surprisingly, higher rates of cultural resistance (Ghaffarian, 1998) which has been demonstrated to be a risk factor for mental health problems. There is also little peer support and they are likely to be dependent on their children. Another important factor affecting the mental health of the elderly may be a loss of status. Their families acculturate faster than they do and this may include incorporating values of the host culture, including decreased respect for elders. The elderly may therefore suffer a significant drop in status as well as alienation from family (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a).

Gender. Women, particularly from a culture in which gender roles and values differ from the host country, appear to be at higher risk for mental health problems (Abbott et al., 1999; Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a; Carlin, 1990; Committee on the Health and Adjustment of Immigrant Children and Families, 1998; Jayasuriya et al., 1992). However, there is some debate about whether being a woman is by itself a risk factor or whether many other known risk factors affect women to a greater extent than their male counterparts (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b). For example, immigrant women have less say in the decision to immigrate and where to settle in a new country. They are less likely to speak the language, have less education and fewer job skills, are more likely to be unemployed or underemployed, and may be more vulnerable to loss of extended family support (Carlin, 1990).

Summary and Conclusions

Although research on the mental health of immigrants has been conducted for decades there are still few definite conclusions to be drawn about the prevalence rates of psychological well being, distress, or psychopathology among immigrant groups. Earlier clinical and epidemiological work showed higher rates of some disorders for immigrant groups but this

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research was methodologically flawed and confounded with help-seeking rates. More recent community survey research has produced inconsistent and often contradictory results for both adults and children. What can be concluded from the research is that, in general, migration does not necessarily lead to higher risk for mental health problems. Rather, the inconstancies in the literature point to certain subgroups that are more at risk due to a complex interaction of risk and protective factors.

Despite the number of investigations in the area of immigrant mental health it is very difficult to compare across studies or accumulate findings. This is due to the variability in methodologies, samples, informants, conceptualizations and measures of important variables (Beiser et al., 1995; Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b; Escobar, 1998; Jayasuriya et al., 1992). Areas that are particularly variable are the conceptualization, operational definition, and measurement of mental health problems and acculturation. Therefore, it would be beneficial to use multiple measures of mental health and illness within the same study and to have a limited number of operational definitions in the research area. One or two standardized measures of acculturation that are based on empirically supported theory and can be easily adapted to many different ethnic and immigrant groups would help reduce the variability of the conceptualization and measurement of acculturation.

Another barrier to the accumulation of findings within the risk factor literature on immigrant mental health is that the majority of designs are retrospective and cross-sectional in nature and yet many variables are defined as risk factors. The use of statistical techniques alone to determine the predictive value of different variables makes for questionable interpretation of causality. It is important to first identify correlates through cross-sectional designs. There is also a need, however, for longitudinal or experimental designs before the variables can be labeled as risk or protective factors. It is not surprising that the majority of researchers in this area emphasize the need for more longitudinal prospective designs. There are a few (Beiser & Hyman, 1997; Rumbaut, 1994; Simoes, 1991) but they are costly and time intensive. Another option may be quasi-experimental designs that develop specific interventions that could lead to stronger

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causal inferences (Stice, 2001; Ying, 1999). For example Ying (1999) developed an 8-week parenting program for Chinese American immigrants to help prevent and reduce intergenerational conflict. The intervention improved intergenerational relationships, and perception of parental control, which was associated with an increase in the child's self-esteem.

Our knowledge of immigrant mental health is also limited by the methodological difficulties inherent in most cross-cultural work, including difficulty with sample recruitment that results in concerns about obtaining a representative sample (Al-Issa, 1997b). An additional problem with many samples is the "assumed homogeneity among immigrant groups" (London, 1986, p.265) that may obscure important differences between groups if not first evaluated. For example, Chinese and Vietnamese, when studied separately rather than under the label Asian, have different migration and resettlement experiences and different mental health outcomes (Beiser & Hyman, 1997). There are also concerns over linguistic and conceptual equivalence of measures and standardization (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b), and difficulties diagnosing and assessing individuals across cultures (Ekblad et al., 1998).

An area of study that has been repeatedly overlooked is the study of personal characteristics, such as personality functioning or coping styles. Although most authors state that risk factors create stress that combine with certain personal characteristics (Beiser et al., 1995; Berry, 1998; Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988a), very few attempt to study these personal characteristics or to even delineate what these may be (Jablensky et al., 1992, p.176). Other areas that have received relatively little attention include study of second-generation immigrants (Jayasuriya et al., 1992; London, 1986), and the study of certain diagnostic categories, particularly eating disorders and their subclinical variants. Prior to reviewing the literature that is available on eating pathology among immigrant women, it was necessary to briefly summarize the literature on risk factors for eating disorders to determine what variables have been identified as increasing risk for eating pathology in general. Please refer to Appendix A for this review.

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A Review of Eating Disorders in Immigrant Women

Sociocultural theories of eating disorders identify the Western emphasis on appearance and slimness, the concomitant "normative discontent" expressed by Western women regarding their weight and shape, and the prevalent practice of dieting as factors that contribute to the etiology of eating disorders (Garner & Garfinkel, 1980; Striegel-Moore, Silberstein, & Rodin, 1986). Findings from early epidemiological studies of eating disorders supported these theories (e.g., Crisp, Palmer, & Kalucy, 1976; Pope, Hudson, & Yurgelun, 1984), and promoted the belief that eating disorders and associated attitudes and behaviors were characteristically the problem of white middle- to upper-class Western women.

Prince (1983) has referred to eating disorders as culture-bound syndromes. Culture-bound syndromes are classified as "patterns of aberrant behaviour and troubling experience" that are generally confined to specific cultures (*DSM-IV*, American Psychiatric Association, 1994, p. 844) . Eating disorders are conceptualized as culture-bound to Western or industrialized societies because the symptoms and signs of the disorders are believed to be uncommon outside of Western culture and are largely influenced by Western cultural factors. Cross-cultural research has often been cited to support this classification.

However, more recent cross-cultural reviews, (e.g., Crago, Shisslak, & Estes, 1996; Davis & Yager, 1992; Dolan, 1991; Mumford, 1993) have indicated that eating disorders and disordered eating attitudes and behaviors are more common than expected among cultural groups previously believed to be at low risk. These findings pose a challenge to the classification of eating disorders as culture-bound syndromes. To account for these discrepant findings, DiNicola (1990) posits that eating disorders are culture-bound for most cases in the West, whereas cases occurring outside of Western culture are culture-change syndromes. He defines these syndromes as occurring "under conditions of rapid economic and sociocultural change" (p.264). He believes that adolescents are at increased risk for developing eating disorders when they encounter rapid culture change because they must cope with changes not only on an individual level, but also a cultural one. DiNicola notes that rapid culture changes may occur in two ways; through the global Westernization of countries or through immigration of individuals.

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There is recent evidence from the cross-cultural literature to support the notion of culture change syndrome through Westernization of other countries. In many non-Western countries, traditional beliefs and concepts of beauty exclude thinness as socially desirable. Heavier figures are not only seen as beautiful, but are also considered a sign of womanhood, health, fertility, motherhood, and success (Nasser, 1988). These countries have traditionally reported an absence of eating disorders. However, in countries with rapid economic, social, and political changes, some researchers are now reporting sharp increases in eating disorders once believed to be rare or even absent in their countries. For example, there have been reports of increasing rates in South Africa (le Grange, Telch, & Tibbs, 1998), the United Arab Emirates (Abou-Saleh, Younis, & Karim, 1998), and India (Mumford, Whitehouse, & Choudry, 1992).

According to DiNicola (1990), the second source of rapid culture change occurs during immigration. The available literature in this area supports this assertion. Immigrant women report higher rates of eating pathology than their nonimmigrant counterparts (Ahmad et al., 1994; Dolan et al., 1990; Mildred et al., 1995; Mumford et al., 1991; Wichstrøm et al., 1994) and their counterparts from their culture of origin (Fichter et al., 1983; Nasser, 1986). What remains unclear, however, is what factors put these women at risk. DiNicola's theory of a culture-change syndrome does not clarify the mechanisms of risk, and the available literature on acculturation and increased risk for eating disorders among immigrant women are contradictory (Franko & Herrera, 1997; Mumford et al., 1991). It is not clear if assimilation of Western values, traditionalism, marginalization, differential acculturation, or some combination of these factors is responsible for the increased risk.

Case Studies

Much of the early literature on eating disorders among immigrant women is in the form of case reports. The majority of these reports, with two exceptions, are from the UK. They include descriptions of anorexia and bulimia in immigrant women from Southeast Asia, the Caribbean, Bangladesh, India, Kenya, the Middle East, Guyana, and Eastern Europe (see Table 1).

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Prevalence and Referral Rates.

In case reports that include a summary of cases seen over time, differential referral rates of immigrant and Caucasian women have been estimated (Bryant-Waugh & Lask, 1991; Holden & Robinson, 1988; Lacey & Dolan, 1988). In each instance, the rate of immigrant referrals was significantly lower than the rate of Caucasian women seen over the same time period. For example, Bryant-Waugh and Lask (1991) saw four cases of anorexia among female Asian adolescents. These girls comprised 13% (4 out of 30) of the total referrals who fulfilled both *DSM-III* and ICD-9 criteria for anorexia nervosa at their clinic. Lacey and Dolan (1988) estimated that within their catchment area, 20% of the women were from immigrant families, suggesting an expected referral rate of 5:1 to their clinic. However, in one year (1982 to 1983) their referral rate was 55:1. They hypothesized that the lower rates of immigrant women seen in their clinic could be due to lower prevalence rates or to decreased rates of help seeking among non-Western women.

Symptomatic Features

One finding common to all but one case report (Fahy, Robinson, Russell, & Sheinman, 1988) was that the immigrant women seen in clinics had all the core features of eating disorders, such as fear of weight gain, body image dissatisfaction and distortion, amenorrhea, and purging

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Table 1:Summary of Case Studies

Author	Case Characteristics	Findings/Comments
Bhadrinath (1990)	3 cases of AN in Asian adolescents (2 b. in Pakistan, 1 b. in Kenya) seen in UK, age 14-16	typical clinical features; for two Muslim women symptoms worse during Ramadan
Bryant-Waugh & Lask (1991)	4 cases of AN in Asian adolescents (2 b. in India, 1 b. in Bangladesh, 1 b. in England), seen in UK; mean age 12.6	typical clinical features; noted cultural conflicts in all cases
Bulik (1987)	2 cases of AN, 1 w/BN features in Russian women seen in US; mean age 23.5	typical clinical features; both women Jewish, onset of ED soon after arrival to US
Fahy et al. (1988)	1 case of AN in Ethiopian refugee, seen in UK	atypical clinical features, torture victim; AN attitudes developed during time in hospital
Holden & Robinson (1988)	11 cases of BN, 2 cases of AN over 5 year period; 8 of West Indian parentage, 1 African, 4 mixed parentage (white/Afro-Caribbean); seen in UK, age 17-23	typical clinical features; parental separation; noted differences in channels of referral; includes 3 cases reported by Thomas & Szmukler (1985)

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Table 1 (cont.): *Summary of Case Studies*

Author	Case Characteristics	Findings/Comments
Kope & Sack (1987)	3 cases of AN in Vietnamese refugees; seen in US, age 14-18	typical clinical features; parental separation and trauma during escape; one case of cultural conflict
Lacey & Dolan (1988)	5 cases of BN over 4 year period; (1 b. in Pakistan, 1 b. in Guyana, 1 Jamaican parentage, 2 mixed parentage, white/West Indian); seen in UK; age 18-26	typical clinical features; noted parental separation, family discord, and sexual conflicts, also noted cultural conflicts
Thomas & Szmukler (1985)	1 case of BN, 2 cases of AN ; all cases of Afro-Caribbean parentage, seen in UK; age17-20	typical clinical features, noted traditional West Indian homes, lower SES
Timimi (1995)	1 case BN in Arab immigrant adolescent; seen in UK; age 17	typical features; case part of larger paper on cultural and family characteristics of Arab immigrant families

Note. AN = anorexia nervosa; BN = bulimia nervosa.

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(Bhadrinath, 1990; Bryant-Waugh & Lask, 1991; Bulik, 1987; Holden & Robinson, 1988; Kope & Sack, 1987; Lacey & Dolan, 1988; Thomas & Szmukler, 1985; Timimi, 1995). This suggests that there is little cultural variation in the core features of eating disorders among immigrant women. This finding is also consistent with findings from previous cross-cultural reviews of the eating disorder literature (e.g., Davis & Yager, 1992). However, apparent uniformity may also be due to another factor; namely, that the clinicians who report these cases may fail to diagnose unusual expressions of the disorder, or may be unwilling to publish cases that do not fit into Western classification systems. Nonetheless, the observed commonalties suggest that the expression of core features of eating disorders for immigrant women from different countries is consistent with symptoms presented by Western women.

Risk Factors

Some case reports also include descriptions of risk factors that are often associated with eating disorders in the West. For example, sexual conflict and issues of control are mentioned by Lacey and Dolan (1988) and Timimi (1995). Two reports described cases where traumatic events occurred prior to the onset of the disorder (Fahy et al., 1988; Kope & Sack, 1987). For example, Kope and Sack (1987) reported three cases of anorexia in Vietnamese refugees who had all experienced trauma during their escape from the country.

In many case reports, important cultural factors were associated with the disorders. Some authors speculate that assimilation of Western values of slimness and dieting occurs as a coping strategy for immigrant adolescents in their attempts to fit in and cope with isolation (Bulik, 1987; Silber, 1986). For example, Bulik (1987) reported on two cases of anorexia in adolescent immigrants from the former Soviet Union, who lost their sense of belonging and experienced isolation because of a lack of a coherent immigrant group. Bulik hypothesized that they attempted to fit in through dieting and thinness.

Others mention the impact of culture conflict and immigration on the developmental tasks characteristic of adolescence, including establishing some autonomy from the family and establishing an integrated sense of self (Bryant-Waugh & Lask, 1991; Bulik, 1987; Lacey & Dolan,

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1988). For example, Bryant-Waugh and Lask (1991) note the importance of developing an integrated sense of self, establishing independence, and accepting a sexual self. Such developmental tasks are largely culturally determined, and are usually more difficult to accomplish for children from immigrant traditional families. Bulik (1987) reports that the immigrant adolescents she saw had difficulty establishing autonomy as their parents depended on them as "cultural mediators" when they arrived in the U.S.

Many case reports suggest that culture conflicts and immigration impact on family functioning to increase risk for developing eating disorders due to the greater likelihood of enmeshment and changing family roles (Bulik, 1987; Timimi, 1995). For example, Timimi reports that for families with adolescents, immigration may be associated with family enmeshment as parents attempt to protect their children and guard against losing them to the new culture. In some case reports, the differential speed of assimilation across generations was attributed to increased intergenerational conflict (Bryant-Waugh & Lask, 1991; Bulik, 1987; Timimi, 1995). For example, Bryant-Waugh and Lask (1991) conclude that the more traditional the family, the greater the possibility of cultural conflict (e.g., over dress, marriage, sex roles, and food) as adolescents assimilate and take on Western values. They note that they have not seen an Asian anorexic child from a family who had completely adapted to the Western lifestyle. Religion may also play an important role in the development of eating disorders. Some case reports noted that religious factors, such as fasting, influenced eating disorder symptoms. Bhadrinath (1990) reported on 3 cases of anorexia and noted that for the two adolescents who were Muslim, symptoms worsened during the religious fasting month of Ramadan. Timimi (1995) suggests that some Muslim adolescents may see fasting as a way of coping with intergenerational and intercultural conflicts.

Cross-sectional Survey Studies

Survey studies of eating pathology among immigrant women are heterogeneous in terms of the immigrant groups studied, the host country, and the methodology used (see Table 2). As is evident in Table 2, most survey studies have been conducted with immigrant groups in Europe. Only two studies of the studies reviewed were conducted in the U.S. Although Asian Indian,

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Table 2: Summary of Survey Studies

Author	Participant Characteristics	Findings/Comments
Ahmad, Waller, & Verduyn (1994)	131 Asian and 223 Caucasian students (mean age =14.9) in UK	Muslim adolescents had significantly more bulimic attitudes than either Caucasian or Hindu counterparts. No info. provided for girls separately in discussion of group differences.
Dolan, Lacey, & Evans (1990)	365 Caucasian, 71 Afro-Caribbean, and 43 Asian (including Indian, Pakistani, Sri Lankan) British women attending a woman's health clinic in UK; mean age = 28.2 years	Asian women scored significantly higher on EAT-26 than Caucasian women; no significant differences were found in concern for weight and shape; Assessed cultural specificity of measures.
Fichter et al. (1983)	867 Greek students in Munich, Germany compared to 2,700 Greek students in Veria, Greece (age 13-19)	Found prevalence rate of AN 1.10% in Greek students in Munich vs. 0.42% in Veria. Authors highlight the impact of immigration and exposure of new culture on family dynamics.
Franko & Herrera (1997)	28 Guatemalan-American students (mean age = 20.1) compared to 29 white-American students (mean age = 18.7)	Guatemalan-American women reported less body dissatisfaction and drive for thinness, and less fear of fat than white women. More acculturated Guatemalan women reported greater body dissatisfaction and fat phobia
Furnham & Alibhai (1983)	15 Kenyan Asian women (mean age = 24.0) compared to 15 Kenyan Asian women living in UK (mean age = 23.4) and 15 white women in UK (mean age = 22.5)	Kenyan Asian women rated heavier figures more favorably than British women and Kenyan Asian immigrant women. Although samples matched, very small *n*.
Furukawa (1994)	146 Japanese (102 female, 42 male) high *school students, ages 17 to 19, who participated* in a 1 year exchange program	Prospective study; 20% of girls and 10% boys reported abnormal eating attitudes during stay; No differences between host countries on eating behaviour attributed to fact that Japanese adolescents already exposed to sociocultural pressures to be thin.

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Table 2 (cont.): *Summary of Survey Studies*

Author	Participant Characteristics	Findings/Comments
Lopez, Blix, & Blix (1995)	135 Latinas and 32 non-Latina white women recruited in a US WIC clinic, ages 15 to 45; 70% of Latinas born outside of US	Latinas identified a heavier ideal body size than non-Latina women; length of residence in US was not a significant variable, however age of immigration was. Did not measure acculturation; no information on country of origin.
Mildred, Paxton, & Wertheim (1995)	50 Anglo-Australian and 50 Greek-Australian female students (mean age = 13.5)	Greek girls scored higher on extreme weight loss behaviors and lower on family adaptability than Anglo-Australian girls. No differences found for body dissatisfaction or subscales of EDI. No measure of acculturation given.
Mumford, Whitehouse & Platts (1991)	204 South Asian and 355 Caucasian female students in UK, age 14-16	Found 7 cases of BN and 1 case of AN among Asian girls and 2 cases of BN among Caucasian girls. Asian girls who came from "traditional" homes had highest mean scores on body image and ED questionnaires.
Nasser (1986)	50 Arab female college students in UK (mean age = 21.8) compared to a matched sample of 60 Arab students in Cairo (mean age = 23.4)	Six cases of BN in London sample, none in Cairo sample. Author attributed differences to different levels of Westernization. However, no measure of acculturation given; Back-translation of EAT-40
Toriola, Dolan, Evans, & Adetimole (1996)	68 Nigerian women living in UK compared to a matched sample of 68 Nigerian women living in Nigeria (mean age = 24.3). Similar BMI across groups (22.2).	Nigerian women living in UK had a significantly lower desired body weight and significantly higher body dissatisfaction (as measured by discrepancy between current and desired BMI) than their Nigerian counterparts in Nigeria.
Wichstrøm, Skogen, & Øia (1994)	11,315 Norwegian adolescents aged 13 to 20; included 440 non-Western and 505 Western immigrants	Adolescents from non-Western countries had higher EAT scores than Norwegian adolescents, and adolescents from other Western countries. No information on country of origin or breakdown of differences by gender

Note. AN = anorexia nervosa; BN = bulimia nervosa.

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Greek and Latina immigrant women have been repeatedly studied, there has been only one study of Middle Eastern immigrant women and one of Caribbean women. Women from Eastern Europe, China, and other groups of women entering the Western countries remain unstudied.

Prevalence and Referral Rates

In studies that have compared prevalence rates in community samples and clinical samples, immigrant women in community samples have generally reported higher rates of eating disorders than their native counterparts, whereas the clinical prevalence rates for immigrant women were much lower. These findings suggest that immigrant samples are significantly underrepresented in clinics (Dolan et al., 1990; Fichter et al., 1983; Mumford et al., 1991).

Comparisons with Nonimmigrant Women

New country. Five studies involve comparisons of the rates of eating pathology or cases of identified eating disorders between immigrant adolescents and their native counterparts. All report higher rates among the immigrant sample (Ahmad et al., 1994; Dolan et al., 1990; Mildred et al., 1995; Mumford et al., 1991; Wichstrøm et al., 1994). In the study conducted by Mumford et al. (1991), a two stage design was used to survey 204 Asian (88% Muslim, 9% Sikh, and 3% Hindu) and 305 Caucasian 14- to 16-year old female students in Bradford, England, to assess prevalence rates of anorexia and bulimia nervosa. The girls completed screening measures including the Body Shape Questionnaire (BSQ; Cooper et al, 1987), the Eating Attitudes Test (EAT-26; Garner, Olmstead, Bohr, & Garfinkel, 1982), and a culture questionnaire designed by the researchers; this measure included questions regarding language, dress, and food. Girls who scored high on screening measures were subsequently interviewed and diagnosed using *DSM-III-R* (1987) criteria. For the Asian sample, Mumford et al. found no significant differences on the measures between the religious groups, or between girls born in the UK and those born abroad. However, the authors did find a significantly higher rate of bulimia among Asian girls compared to Caucasian girls in their sample [7 (3.4%) Asian and 2 (0.6%) Caucasian cases of bulimia], and one case of anorexia in an Asian girl. Asian girls who belonged to "traditional" families had the highest mean scores on both the BSQ and the EAT-26. Mumford and collegues (1991)

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hypothesized that the clash of cultures, and the opposing values they convey, may lead to both identity conflicts and more intergenerational conflicts thus making immigrant adolescent girls from traditional families more vulnerable to developing eating disorders.

Dolan et al. (1990) compared 365 Caucasian, 71 Afro-Caribbean, and 43 Asian (including Indian, Pakistani, Sri Lankan) women attending a woman's health clinic in the U.K. Participants completed the EAT-26, the BSQ, and a measure of depression and anxiety (Hospital Anxiety and Depression scale, HAD; Zigmond & Snaith, 1983). Asian women scored significantly higher on the EAT-26 than Caucasian women. No significant group differences were found in reported concerns about weight and shape as assessed on the BSQ. When the authors compared group differences in EAT scores to differences in the referral rates reported at clinics, they found that Asian women in the community sample were much less likely to be referred to eating disorder clinics despite their higher rates of reported eating pathology.

A more recent study by Ahmad et al. (1994) highlights the importance of including religion as a cultural variable in the study of eating pathology. They assessed 131 Asian and 223 Caucasian students in the UK using the EAT-26, the Body Satisfaction Scale (BSS; Slade, Dewey, Newton, Brodie, & Kiemle, 1990), and a measure of religious and ethnic background. Muslim children had more bulimic eating attitudes than either Caucasian or Hindu children, although they were happier about their bodies than the Caucasian students. Ahmad et al. concluded that the focus on dietary practices and fasting in the Muslim religion may represent an additional risk factor for eating disorders. However, they did not break down their comparisons by gender. Consequently, it is unclear if Muslim girls in their sample scored significantly higher than Hindu girls on the measures of eating pathology. However, their results do replicate previous reports that Asian immigrant adolescents have higher rates of eating pathology than their Caucasian counterparts (Dolan et al., 1990; Mumford et al., 1991). They also highlight the importance of assessing religion as an additional factor that may influence the rate and expression of eating disorder symptoms.

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One study that is unique in the size and representativeness of the sample employed was conducted in Norway as part of a larger national health survey (Wichstrøm et al., 1994). The authors assessed 11,315 Norwegian adolescents between the ages of 13 and 20 years using the EAT-26. Adolescents who immigrated from non-Western countries scored higher than both Western immigrant and Norwegian adolescents on the EAT-26. Unfortunately, Wichstrøm et al. did not describe the criteria for classifying countries as Western or non-Western and they did not provide comparisons by country of origin or a breakdown of their sample by gender. They did mention, however, that the majority of immigrant families in Norway are from Pakistan and Vietnam.

Asian immigrant adolescents are not the only immigrating group that has been studied. Mildred et al. (1995) compared 50 Anglo-Australian adolescents with 50 Greek-Australian adolescents on three measures of body image and disturbed eating, including the Eating Disorder Inventory (EDI; Garner, Olmstead, & Polivy, 1983) , Extreme Weight Loss Behavior Scale (EWLB; Paxton et al., 1991), and the Body Figure Perception Questionnaire (BFPQ; Stunkard, Sorensen, & Schlusinger, 1980). They also included measures of family cohesion and adaptability (Family Adaptability and Cohesion Scale III, FACES-III; Edman, Cole, & Howard, 1990), self-esteem and depression, and a measure of cultural eating designed by the authors. Two factors significantly discriminated between the two groups; the Greek girls scored significantly higher than their Anglo-Australian counterparts on extreme weight loss behaviors, and significantly lower on family adaptability. The authors found no differences on measures of body dissatisfaction or other subscales of the EDI. They hypothesized that the Greek girls had either completely assimilated or had high rates of eating pathology in their country of origin. A third comparison group of Greek adolescents in Greece would have enhanced the study design and made their interpretations more conclusive.

Country of origin. When comparisons are made between immigrant samples and samples from their countries of origin (Fichter et al., 1983; Nasser, 1986), rates are generally higher among the immigrant samples. Fichter et al. (1983) studied 867 Greek adolescent girls in

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Munich and 2,700 Greek students in Veria, Greece. All participants were given an anorexia self-rating questionnaire and a General Health Questionnaire (GHQ; Goldberg, 1972) to measure psychological distress. Probable cases were subsequently interviewed and diagnosed using modified Feighner et al. (1972) criteria for caseness. The authors found a prevalence rate for anorexia nervosa of 1.10% in the Munich sample compared to a 0.42% rate in Veria. None of the Munich girls who were identified as having anorexia had consulted a physician.

Using a similar two-stage design, Nasser (1986) compared 50 Arab students at a university in London to a matched (for SES and marital status) sample of 60 Arab students attending university in Cairo. These women were given the EAT-40 (Garner & Garfinkel, 1979), and the high scorers were interviewed and diagnosed based on Russell's criteria (Russell, 1979). Nasser found that 22% of the London sample scored above the cutoff compared to 12% of the Cairo sample. Six of the London women met criteria for a diagnosis of bulimia, whereas none of the women in Cairo did. Although Nasser did not compare the London sample to a sample of Caucasian students, she did report that the rate of eating pathology found in her study was higher than what is usually reported in the West and approached the rates found in high risk populations (such as dancers or models).

In a more recent investigation that did not find higher rates of eating pathology among an immigrant sample, Abdollahi and Mann (2001) compared 45 Iranian female students living in Los Angeles to a sample of 59 Iranian female students living in Tehran. These women were given a measure of eating pathology (Eating Disorder Examination-Questionnaire; Fairburn & Cooper, 1993, as cited in Abdollahi & Mann, 2001) and the Figure Rating Scale. Contrary to expectations, Abdollahi and Mann did not find differences in number of eating disorder symptoms between Iranian women in Iran and their counterparts in America. Moreover, there was no relationship between exposure to Western media and eating pathology among Iranian women living in Iran; and no relationship between acculturation and eating pathology among the Iranian women living in the U.S. The authors discussed these findings in the context of the Westernization of Iran prior to the 1978 Islamic revolution (Abdollahi & Mann, 2001). It is notable, however, that the

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measurement of exposure to Westernization (based on three items regarding Western media) and acculturation (one item regarding length of residence in the U.S.) were limited. Nevertheless, these findings pose a challenge to the culture-change model of eating pathology risk. Future investigations replicating and extending this study, using more thorough assessments of acculturation, are warranted.

Body image. Results are inconclusive with regard to body image dissatisfaction and ideal body weight selection among immigrant women. In the frequently cited study by Furnham and Alibhai (1983), the responses of 15 Kenyan Asian women, 15 Kenyan Asian women living in the UK, and 15 white British women were compared using a figure rating scale with semantic differentials. The authors found that the Kenyan Asian women rated heavier figures more favorably than British women or Kenyan Asian immigrant women in the UK. Moreover, the immigrant women preferred thinner shapes than the white women. The authors suggested that exposure to Western values leads to overidentification with the values of the new country. The conclusions drawn from this study however, are tenuous due to the small size of their sample.

In a similar study with a larger sample, Toriola, Dolan, Evans and Adetimole (1996) compared the desired BMI of a sample of 68 Nigerian women living in the UK with a matched sample of 68 Nigerian women living in Nigeria. The British sample reported a significantly lower desired BMI and had significantly higher body dissatisfaction (as measured by the discrepancy between current and desired BMI) than their counterparts living in Nigeria. Although the authors conclude that these results suggest that exposure to Western values may result in an increase in body dissatisfaction among immigrant women, they caution that these results may also be due to a selection bias, as those women who choose to move to the UK may differ on certain psychological or social variables that may account for these results.

Although Furnham and Alibhai (1983) found that immigrant women rated thinner silhouettes more favorably than their native counterparts, some researchers have found no differences in body image dissatisfaction across groups (e.g., Dolan et al., 1990; Mildred et al., 1995). Others find that immigrant women report less body dissatisfaction (e.g., Ahmad et al.,

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1994; Franko & Herrera, 1997) and select heavier ideal shapes (Lopez, Blix, & Blix, 1995) compared to Caucasian native-born women. For example, Lopez and colleagues (1995) used a figure rating measure to compare 135 Latinas (70% of whom were born outside of the US) to 35 non-Latina white women. The authors found that Latinas who immigrated to the US after the age of 17 were likely to select larger silhouettes as their ideal body image, compared to non-Latina white women, or Latina women who were born in the U.S. The authors concluded that the age of immigration to the U.S. was an important factor in the self-evaluation of ideal figures. Women who came at a younger age or who were born in the U.S. had attitudes that were more similar to white women. Unfortunately, Lopez et al. did not provide information about country of origin for women born outside the U.S.

Risk Factors

Furukawa (1994) used a unique prospective design to assess risk factors associated with eating pathology among Japanese adolescents who lived abroad for one year. Japanese adolescents (102 women, 42 men) ages 17 to 19 who participated in a one year exchange program were measured at three different time points. Prior to leaving Japan, they were given the Maudsley Personality Inventory (MPI Research Group, 1969), the GHQ, measures of parental practices and social relationships, and the EDI. Sixty-six percent of the adolescents spent their year abroad in North America, 25% in Europe, and the remainder in Asia and South America. Six months after they arrived in their host countries they were administered the GHQ and the social relationships questionnaire. Upon their return to Japan they were given the MPI, the GHQ, and the EDI. Furukawa found that personality traits of neuroticism and introversion were predictive of high scores on the drive for thinness subscale during the adolescents' stay. High parental overprotection, high interpersonal distrust, and low introceptive awareness were predictive of high scores on the bulimia scale. There was significant weight gain during the year abroad, and a minority of the group did report abnormal eating attitudes (20% of the females and 10% of the males). There were no significant differences in body weight or EDI scores between adolescents who went to a Western country and those who went to a non-Western country. Furukawa suggested that Japanese adolescents are already exposed to values of thinness and pressures to

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conform to this body type in their own culture. Therefore, individual characteristics were the only predictors for eating pathology.

The use of exchange programs to assess the impact of rapid culture change allows for a well-controlled prospective study and comparisons across host cultures. However, the extent to which these results can be generalized to adolescents who know that they are making a permanent change and who are not always separated from their families is not known. There is also the chance for selection bias to occur in this type of self-selected sample.

In a series of studies (Furnham & Adam-Saib, 2001; Furnham & Husain, 1999; Tamjid & Furnham, 2001), Furnham and her colleagues have been able to demonstrate that family variables of overprotectiveness and family conflict are related to eating pathology among samples of East Asian women in the UK. In one investigation, Pakistani women living in the UK rated family conflict and overprotectiveness higher than a sample of British Caucasian women in the UK and Pakistani women in Pakistan. The immigrant women also had the highest eating pathology scores, and their eating pathology scores were correlated with their overprotection and conflict scores (Tamjid & Furnham, 2001).

Acculturation was directly assessed in only two studies. These yielded conflicting results. In the case of Asian schoolgirls in England (Mumford et al., 1991), the more traditional girls scored the highest on eating pathology measures, whereas Franko and Herrera (1997) found that Guatemalan-American women (n = 28) who were more assimilated were more dissatisfied with their bodies and had a greater fear of gaining weight than white Americans (n = 29). Franko and Herrera had their participants complete measures of body image, including the EDI-2, the Fear of Fat Scale (Goldfarb, Dykens, & Gerrard, 1985), the Multidimensional Body Self Relations Questionnaire (MBSRQ; Brown, Cash, & Mikulka, 1990), and a culture questionnaire designed to assess acculturation. They found that Guatemalan women reported less body dissatisfaction, less fear of fat and were less driven to lose weight than their white counterparts. Due to the small sample, conclusions based on these results must be tentative. Nevertheless, they do suggest an intriguing relationship between assimilation and body dissatisfaction.

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Summary and Conclusions

As Dolan (1991) observed in attempting to provide prevalence rates for eating disorders in other cultures, it is not possible to draw any firm conclusions regarding prevalence among immigrant women. Numerous methodological constraints and the shortage of studies in this area preclude accurate estimation of prevalence rates. There were only 9 case reports and 16 survey studies that focused primarily on the experiences of immigrant women or adolescents. However, this may not be an exhaustive review of the published literature. Many cross-cultural studies of eating pathology do not identify if women born abroad are included in their samples. Some studies do not provide enough information to determine immigration status or country of origin. Therefore, although certain common findings are emerging, much more research is needed before conclusive findings are derived from this literature.

Case Studies

Despite the limitations of case study methodology, some interesting observations do emerge from clinical case reports. It appears that most cases of eating disorders among immigrant women seen in clinics have the core features of the disorder (e.g., fear of fatness, body image dissatisfaction), as well as some characteristic features (e.g., control and autonomy issues). Assimilation of Western values of slimness and dieting, and cultural conflicts resulting from immigration were noted in several case reports. The findings also suggest that immigration may increase an adolescent's vulnerability by interacting with culturally embedded family and developmental factors.

Clinical case studies provide a wealth of idiographic information and provide some insight into the meanings behind many symptoms. However, the qualitative nature of the information, the small sample sizes, and the lack of controls, limit the reliability and external validity of such reports. Moreover, referral biases, differential health care usage, and cultural variations in what is labeled as illness make case studies poor sources for estimates of prevalence rates (Dolan, 1991; Wakeling, 1996). Case reports would be strengthened by quantitative measurement of primary variables and the use of single-N methodology (Barlow & Hersen, 1984). Unfortunately it appears

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that a common trend for published case studies is that only those cases that are unusual or rare are reported. As such, the frequency of case reports of eating disorders in immigrant women has dwindled as the number of identified cases in the population has increased.

Cross-sectional Survey Studies

Many interesting trends also emerged from the findings of survey studies. Of the five studies that compared the rates of eating pathology or cases of identified eating disorders in groups of immigrant adolescents and their native counterparts, all reported higher rates among the immigrant sample (Ahmad et al., 1994; Dolan et al., 1990; Mildred et al., 1995; Mumford et al., 1991; Wichstrøm et al., 1994). When comparisons were made between immigrant samples and samples from their respective countries of origin, the rates were higher among the immigrant samples (Fichter et al., 1983; Nasser, 1986) except for one investigation (Abdollahi & Mann, 2001). No group differences were observed on eating pathology measures when first and second generation immigrants were compared (Mumford et al., 1991; Wichstrøm et al., 1994).

Surveys also suffer from methodological problems. For example, there is no uniformity in criteria used to define immigrant status and there are inconsistencies in reporting characteristics of samples, including country of birth and length of time in the new country. Only a few studies attempted to measure acculturation. Those studies that did so used crude measures of assimilation (Abdollahi & Mann, 2001; Franko & Herrera, 1997; Mumford et al., 1991) that measure acculturation with one item or on a single continuum rather than assessing it as a multidimensional construct (Berry, 1976). As mentioned previously, there is a need for the development of more sophisticated measures of acculturation that take the multidimensional nature of acculturation into account. This idea is supported by the findings of Mumford and colleagues (1991) who noted that there was only a modest inverse relationship between their measures of Westernization and Traditionalism.

One feature that clinical case studies provide that is missing from many survey studies is information on the culture of participants. This might include information regarding cultural differences in values, family roles and norms, attitudes about food, dress, social relationships, and

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sex. Few survey studies give more than a cursory description of the culture of origin of the immigrant women with eating disorders in their samples. There is a need for cultural information in conjunction with the surveys to understand the meaning and the context of disorders (Szmukler & Patton, 1995).

Future survey research could also be informed by the findings from case studies. Until recently there was only two studies (Furukawa, 1994; Mildred et al., 1995) that attempted to measure the role of family functioning variables (e.g., enmeshment, intergenerational conflict) as possible risk factors among immigrant adolescents despite evidence from related research areas that familial variables play a role in the development of eating disorders. The significance of these variables is confirmed from a newer series of investigations (Furnham & Adam-Saib, 2001; Furnham & Husain, 1999; Tamjid & Furnham, 2001). Furnham and her colleagues have found relationships between overprotectiveness, family conflict, and eating pathology among immigrant women. The developmental tasks of autonomy or integrated self have yet to be assessed. It would also be beneficial to study other immigrating groups, including immigrants from China, the Middle East, Europe, and the Caribbean.

Overall, the majority of the studies reviewed provide some support for DiNicola's (1990) theory that eating disorders are culture-change syndromes. Although more research is needed before we can draw definitive conclusions, it appears that the experience of rapid culture change, through immigration, increases the vulnerability of adolescent and adult women to developing eating disorders. It remains to be determined, however, what specific forms or mechanisms of culture-change increase an immigrant woman's risk for developing eating pathology.

Summary and Rationale

The review of the literature on eating pathology among immigrant women has identified several variables that may put immigrant women at higher risk for eating pathology, although the evidence is limited. Potential risk factors include internalization of Western values of thin body ideal, acculturation, family functioning (enmeshment, and intergenerational conflict) and personality factors such as general dissatisfaction and perfectionism. To date, there have been

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no systematic investigations of variables that may be contributing to the high rates of eating problems among these women.

Both the literature pertaining to immigrant mental health and the literature on risk factors for eating disorders provide additional support for the variables listed above and suggest many other possible variables. These include biological, individual, familial, and cultural variables and a host of pre-and post-migration variables related to increased mental health problems among immigrants. It is evident from this review that any risk factor study needs to include variables from many different domains.

All three literature domains of immigrant mental health, risk factors for eating disorders, and eating disorders and immigrant women are similar with respect to limitations of the research and suggested future research directions. Among the most frequent, was the observation that most of the research on risk factors is cross-sectional, and there is a call for longitudinal prospective research that can clarify the causal roles of identified correlates of eating pathology. Another common observation is the lack of specificity and clarity in the use of the term 'risk factor' as well as variability in the conceptualization of mental health problems and acculturation.

There is empirical support for many variables that may contribute to the development of eating pathology among immigrant women. However, it was impractical to include all identified variables in the current investigation. Therefore, only those variables that had received considerable empirical support or the variables that were found to increase risk in both the eating disorder and immigrant mental health domains were selected. Moreover, an effort was made to select crucial variables from the individual, familial, and cultural domains. There is considerable support for the importance of studying variables from all of these domains. For example, there is consensus among researchers investigating risk factors for eating pathology that the etiology of the disorders is multifactorial (e.g., Federoff & McFarlane, 1998; Striegel-Moore & Steiner-Adair, 1998) and most etiological models include variables from the individual, familial and sociocultural domains (e.g., Smolak et al, 1998). Moreover, across all the research areas reviewed, there is a

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consensus that researchers need to move beyond the study of individual risk factors to assess their relationship with others.

To determine which variables were related to eating pathology among this sample, a cross-sectional correlational design was used. The ability of these variables to predict eating pathology and general psychological distress were determined statistically. Although there is a need for prospective longitudinal designs in risk factor research, the research on risk factors for eating pathology among immigrant women is so limited that prospective designs are premature at this time. A correlational investigation can provide some direction as to what variables should be included in future investigations and is necessary prior to launching a costly and time intensive longitudinal study.

Variables Selected for Current Investigation

Selected variables included the individual variables of Body Mass Index (BMI; kg/m^2) and the personality traits of neuroticism (which will be referred to as general dissatisfaction), perfectionism and self-esteem. Familial variables of enmeshment and conflict were also included. Within the cultural domain, the variables of acculturation and internalization of Western values of thinness were included. There is some empirical support for each of these variables as either a correlate or risk factor for eating pathology or for general mental health problems among immigrant populations. Some variables (such as familial conflict) have received empirical support as risk factors for both eating disorders in general and mental health problems among immigrants. The rationale for selecting these variables and not including others is discussed below.

Individual Domain

BMI. Support for this variable, primarily from risk factors for eating pathology literature, is not strong and often contradictory (Stice, 2001). It was included in the current investigation primarily to control for any effects it may exert. There is some support for conceptualizing BMI as a risk factor. BMI may be important because of its relationship to other variables that may increase risk for eating pathology, including teasing by peers (Attie & Brooks-Gunn, 1989) and

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body dissatisfaction (Shisslak et al., 1998; Stice, 2001). Moreover, the research on eating pathology among ethnic minority women does identify BMI as an important variable associated with eating pathology (Smollak & Striegel-Moore, 2001).

Perfectionism. This variable has been identified as a risk factor for anorexia (Shisslak et al., 1998) and has been an important variable in many etiological theories of eating disorders (e.g., Joiner et al., 1997). However, conflicting results have led some reviewers to conclude that the status of perfectionism as a risk factor is inconclusive (Stice, 2001). There is evidence, however, that perfectionism may interact with other variables to increase risk, particularly its interaction with general dissatisfaction (Slade et al., 1990). The interaction of perfectionism and dissatisfaction has been shown to discriminate between cases of eating pathology and controls and the interaction has been identified as having predictive utility (Franko & Orosan-Weibe, 1998; Slade & Dewey, 1986; Slade et al., 1990).

General dissatisfaction. This variable, often referred to as neuroticism, affective instability, or negative emotionality, has strong support as a general risk factor for eating pathology, and as a risk factor for eating pathology in immigrant women. A high level of general dissatisfaction has been repeatedly identified as a risk factor for eating pathology (Shisslak et al., 1998; Striegel-Moore & Steiner-Adair, 1998) and more recently, a causal relationship between general dissatisfaction and eating pathology has been established (Stice, 2001). Furukawa (1994), for example, demonstrated, by using a prospective design with adolescents who studied abroad for a year, that neuroticism predicted higher scores on a measure of drive for thinness.

Self-esteem. This variable has also been repeatedly studied as a risk factor for eating pathology. Researchers have found a negative relationship between self-esteem, eating pathology and body dissatisfaction (Shisslak et al., 1998). Self-esteem has also been identified as a risk factor for anorexia (Striegel-Moore & Steiner-Adair, 1998) and bulimia (Fairburn at al., 1997). More recent reviews, however, have concluded that although there is considerable support for self-esteem as a correlate of eating pathology, the evidence is weaker for self-esteem's role as a causal risk factor (Stice, 2001).

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Body dissatisfaction and dieting are both established risk factors for eating pathology (Franko & Orosan-Weine, 1998; Patton et al., 1990; Shisslak et al., 1998; Stice, 2001). They were not included in the current investigation, however, because of the research that questions whether these are actually risk factors or rather the first signs of an eating disorder process that already exists (Leung, Geller & Katzman, 1996; Szmukler & Patton, 1995). In fact, researchers have identified body image dissatisfaction and dieting as "symptom-related" risks and question their utility for prevention work (Leung et al., 1996).

Familial domain

Conflict. Family conflict has considerable empirical support for its role in eating pathology among immigrant women, as it is identified as a risk factor in all three literature areas reviewed. From the immigrant mental health literature, intergenerational conflict has been identified as a risk factor for the development of mental health problems among children (Aronowitz, 1984; Beiser et al., 1995; Carlin, 1990; Committee on the Health and Adjustment of Immigrant Children and Families, 1998; Guarnaccia & Lopez, 1998). In addition, adjustment difficulties several years after resettlement have been attributed to family problems associated with intergenerational and marital conflict (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b).

Family conflict has also been established as an important factor in the development of eating disorders in general (Brookings & Wilson, 1994;Fariburn et al., 1997; Graber et al., 1994; Steiner and Lock, 1998), and it has been found to be associated with eating pathology among immigrant women (Furnham and Husain, 1999).

Enmeshment. Support for this variable is not as strong as for family conflict, but there is some to support the inclusion of this variable. Structural family theorists, as noted earlier, have identified enmeshment along with overprotectiveness, rigidity and lack of conflict resolution as the family characteristics of an "anorexic family" (Minuchin, Rosman & Baker, 1978). Results from empirical tests of this theory have been inconsistent (Rowa & Kerig, 1999). However, when the construct is measured separately from family cohesion, anorexics do report more boundary

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problems than controls (Rowa &Kerig, 1999). Support for the inclusion of enmeshment also comes from the literature on immigrant women and eating pathology. Boundary problems, particularly in the form of overprotectiveness, have been associated with eating pathology among immigrant women (Furnham & Adam-Saib, 2001; Furukawa, 1994). Although it is usually anecdotal in nature, enmeshment is often observed when parents attempt to protect their children in a new country and try to ensure that they do not lose them to a new culture (e.g., Timimi, 1995).

Cultural Domain

Acculturation. There are many sources of information on acculturation and extensive support for its inclusion in this study. As discussed earlier, however, the evidence that does exist is often contradictory in terms of the direction of the relationship between acculturation and eating pathology and even what kind of acculturation may be more salient in the development of eating pathology.

Support for the role of identification with mainstream culture (often referred to as assimilation) as a risk factor for eating pathology is found primarily in the general risk factor literature for eating disorders. Within this area, researchers assert that Westernization and assimilation are risk factors for minority groups within Western countries (Crago et al., 1996; Smolak & Striegel-Moore, 2001), for immigrant women (Franko & Herrera, 1997), and for countries undergoing rapid Westernization on a more global level (Abou-Saleh et al., 1998). On the other hand, there is also evidence that identification with one's heritage culture (also referred to as traditionalism) is related to eating pathology (Mumford, 1993; Lake, Staiger, & Glowinski, 2000). This finding is often attributed to culture-clash (Mumford, 1993), a phenomenon that has frequently been studied as a risk factor for mental health problems among sojourners, diplomats and immigrants (Ward et al., 2001).

In addition to the support for the role of identification with mainstream and heritage culture in eating pathology risk, there is also evidence to support their interaction (i.e., Berry's four types of acculturation strategies) as a risk factor for eating pathology. Although integration, marginalization and separation have not been studied in relationship to eating pathology, there is

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evidence that keeping one's heritage culture (in the form of integration or biculturalism) is related to better mental health for both first and second generation immigrant children (e.g., Beiser et al., 1995; Guarnaccia & Lopez, 1998) and adults (Berry, 1998; Ghaffarian, 1998). In contrast, other acculturation strategies, such as assimilation and marginalization, have been associated with poorer mental health (Escobar, 1998; Krishnan & Berry, 1992).

Despite numerous anecdotal observations regarding the effects of differential acculturation on family functioning and general adjustment in immigrant families (Beiser et al., 1995; DiNicola, 1998; Gil & Vega, 1996), there is no published measure of this construct. Thus, it was not included in this study.

Internalization of Western values of thinness. Support for this variable is derived primarily from the eating disorder literature. Researchers in this area have come up with many ingenious ways to study how the Western emphasis on thinness as an ideal of beauty is related to eating pathology (Striegel-Moore et al., 1986). For example, the adverse effects of Western values of thinness have been demonstrated in sociohistorical analyses (e.g., Garner et al., 1980), in high-risk subgroups (e.g., dancers, models) (Franko & Orosan-Weine, 1998) and in media studies (e.g., Shisslak et al., 1998; Franko & Orosan-Weine, 1998). However, the evidence that these investigations provides does not explain why only some women seemed to be more affected by these values and go on to develop eating pathology. More recently, internalization of the thin ideal has been identified as a potential mediating variable to increase risk associated with media exposure (Heinberg, Thompson & Stromer, 1995). Furthermore, internalization has been found to be a strong predictor of eating pathology (Heinberg et al., 1995; Stice, 2001) and has been used to discriminate between eating disordered and control samples (Griffiths et al., 1999). Although anecdotal in nature, some of the case studies of eating disorders among immigrant women do identify assimilation, specifically of the Western values of thinness, as significant in the development of eating pathology in these women (Bulik, 1987; Silber, 1986).

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Sample Characteristics

The sample in the current study included women who were Greek and Italian second-generation immigrants. Ideally, investigating a large number of different immigrant groups in Canada would provide for the most generalizable test of risk for eating pathology among immigrant women. However, the uniqueness and diversity of immigrant groups in Canada would make it impossible to study many different cultural groups as one (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b). Studying these groups separately was beyond the scope and resources of the current investigation. Therefore, one cultural group, Greek immigrant women, was selected for this study. After significant difficulty obtaining a large enough sample of Greek women, Italian women were added to the study.

Second-generation immigrant women were selected as they have been studied infrequently in the literature, despite evidence that, over time, acculturation stressors change and adjustment difficulties arise, particularly with second-generation children (Berry, 1997;1998 ; Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988b). Secondly, studying only second-generation women in the current investigation controlled for differences in age at time of migration, language proficiency, and concerns over language equivalence for translated measures.

Greek and Italian Canadian women were selected over other cultural groups for many reasons. First, there have been investigations of Greek immigrant women and eating disorders in Australia (Mildred et al., 1995) and Germany (Fichter et al., 1983). However, to date, there have been no investigations of eating pathology among Greek Canadian women. Moreover, no studies of eating pathology have been conducted with Italian immigrant women. Both Greek and Italian Canadians are significant cultural groups in Canada with a long history of immigration and established cultural enclaves across Canada, particularly in Ontario. Moreover, until quite recently, Greece and Italy were not very Westernized, particularly in rural areas.

A non-clinical sample was selected for a number of reasons. First, there is a call for more community studies of eating pathology to increase the generalizability of results and to keep open

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the possibility of studying resilience and protective factors among women (Steiner & Lock, 1998). Secondly, many argue that the symptoms of eating disorders occur on a continuum (e.g., Shisslak et al., 1995; Striegel-Moore & Steiner-Adair, 1998) from normal eating on one end to full-syndrome eating disorders. Although overall rates of eating disorders are quite small (.05 to 3%) a much larger number of women suffer from disordered eating attitudes and behaviours (Shisslak et al., 1995). There is also evidence that a large number of women with subclinical eating disorders go on to develop full-syndrome eating disorders (Franko & Orosan-Weine, 1998). There is also evidence that the same risk factors that influence full-syndrome anorexia and bulimia also influence partial-syndrome eating disorders (Striegel-Moore & Steiner-Adair, 1998). Moreover, it has been argued that narrow definitions of eating pathology based on Western diagnostic criteria may result in a failure to capture many cross-cultural cases of eating pathology that do not conform to Western expressions of the disorders (Katzman & Lee, 1997).

Statement of Research Problem and Hypotheses

The purpose of this study was to identify the variables that predict eating pathology and extreme weight loss behaviours among Greek and Italian second-generation immigrant women. A second goal was to determine how culture-change was related to eating pathology by comparing several models of acculturation. Hypotheses have been organized into individual, family and cultural domains. A section is also included for hypothesized relationships across domains and secondary hypotheses.

I. Individual Domain

a) It was hypothesized that perfectionism and general dissatisfaction would be positively associated to eating pathology and extreme weight loss behaviors, whereas self-esteem would be negatively related to these variables.

b) It was predicted that perfectionism, self-esteem, general dissatisfaction and the interaction between perfectionism and general dissatisfaction would predict, and each uniquely explain,

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variance in eating pathology and extreme weight loss behaviours, once body weight (BMI) was held constant.

II. Family Domain

a) It was hypothesized that family conflict and parental enmeshment would be positively related to eating pathology and extreme weight loss behaviours.

b) It was hypothesized that family conflict and parental enmeshment would predict, and each uniquely explain, variance in eating pathology and extreme weight loss behaviours, once BMI was controlled.

III. Cultural Domain

a) It was hypothesized that internalization of Western values and Mainstream cultural identification would be positively related to eating pathology and extreme weight loss behaviours, whereas Heritage cultural identification would be negatively related to eating pathology and extreme weight loss behaviours.

b) It was predicted that Heritage cultural identification and Mainstream cultural identification would be orthogonal.

c) It was hypothesized that internalization of Western values, Mainstream and Heritage cultural identifications, and their interaction (Mainstream x Heritage) would predict, and each uniquely explain, variance in eating pathology and extreme weight loss behaviours once BMI had been controlled.

IV. Connections between Domains

a) It was hypothesized that general dissatisfaction, perfectionism, internalization of Western values, parental enmeshment, and family conflict would predict, and each uniquely explain, variance in eating pathology and extreme weight loss behaviours once BMI was held constant.

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V. Secondary Hypotheses

a) It was hypothesized that general dissatisfaction, perfectionism, internalization of Western values, parental enmeshment, and family conflict would predict, and each uniquely explain, variance in general distress once BMI was held constant.

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CHAPTER II

METHOD

Participants

Participant recruitment. It was originally estimated that 100 Greek Canadian participants would be recruited for this study (a minimum requirement for intended statistical analyses). Unfortunately, despite numerous and varied recruitment strategies that will be outlined in further detail below, the number of participants remained below 50 after a year of data collection. At this point, Italian Canadian women were added to the study. They represent a similar cultural group from Southern Europe. Although this was not ideal, there are precedents for collapsing across these two cultural groups (e.g., Schmitz, 1992; Sundquist, 1995). More recent research has incorporated these two cultural groups under the label "Southern European" (e.g., Leung, 2001) with apparently little adverse effects. Moreover, there is evidence that these two groups have very similar acculturation dimensions and characteristics (Laroche, Kim & Hui, 1997).

Participation in the current investigation required that women identify one of their parents as being born in Greece or Italy. Participants themselves had to have been born in Canada. Due to the projected difficulty in obtaining a relatively large sample of participants, multiple methods of recruitment were used. Initially, the recruitment procedures were limited to the Windsor region, but the geographic area was later expanded to include Toronto and other parts of Ontario.

The initial recruitment method involved the participant pool of the University of Windsor. Additionally, participants were recruited from cultural clubs and community centers, such as the Hellenic club in Windsor, and by approaching people in a predominantly Greek cultural enclave in Toronto. These recruitment methods have been successfully used in previous studies requiring relatively large samples of immigrant women (e.g., Ghaffarian, 1998; Mehta, 1998).

Snowball sampling was also used. Thus, each participant was asked to nominate other women who might be interested in participating in the study. This method is commonly used with

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samples that are difficult to obtain. Other researchers have found that "immigrant communities with strong social networks may be ideally suited for the application of snowball sampling" (p. 828, Khavapour & Rissel, 1997). In the current investigation, three business cards, with the name of the study and contact information were attached to each questionnaire package. Participants were asked to pass them on to other women who would meet criteria for the study. Women who were contacted through snowball sampling methods, or through immigration or cultural organizations, were given a verbal description of the study and a questionnaire package (including consent and feedback sheets) with a self-addressed stamped envelope to return completed questionnaires.

Prior to adding Italian women to the study, an attempt was made to increase recruitment of Greek participants by creating a web-based version of the questionnaire package that could be accessed from anywhere by individuals who were provided with the secure web-page address. E-mail requests were sent to all Greek and Hellenic student organizations that advertised their web pages on a central Ontario Greek Web site. Each representative of the identified student organizations received a request from the investigator to circulate information about the study and the request for participants on their list serves (please refer to Appendix B for a copy of the e-mail request). Participants who were interested in the study were then directed to a secure web-based version of the questionnaire package (please refer to Appendix C for a more thorough description of the web-based version of the questionnaire including its development and rationale for its use).

Response rates. Greek and Italian participants completed the questionnaire packages (a) in small groups, (b) individually at home, or (c) on the web page. The response rate for the mail-in packages was very low (approximately 6%). We could not determine the response rate for the web-based packages. This was due to the unexpected difficulty in obtaining information about the size of the e-mail list-serves of Greek student organizations. Although some student representatives responded, most of those contacted did not return a request for information on how many students were on their list-serves.

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Participant characteristics. A total of 115 Greek (n = 47) and Italian (n = 68) women responded to requests to participate in the study. Two cases were dropped because they did not provide complete data on all measures (less than 75%). An additional three cases were dropped because they were found to be duplicates of other cases. (Multiple entries were a result of participants submitting a completed questionnaire package more than once on the web-page. This difficulty with the web-based questionnaires is discussed in Appendix C). The results of a one-way ANOVA testing indicated that there were no significant differences on demographic variables between women who filled out the paper version of the questionnaire and women who completed the web-based version (please refer to Table 3 for means, standard deviations and F-values for each demographic variable). Therefore, all further discussion of participant characteristics will be collapsed across questionnaire form type.

Overall, 110 participants were included in final sample. There were 45 Greek and 65 Italian second-generation Canadian women in the sample. All had to have at least one parent born in either Greece or Italy and they themselves had to be born in Canada. Please refer to Appendix I for a table of the birthplaces of the participants' parents.

Sixty-two participants (56.4%) reported that both parents were born in the country of origin; 41 participants (37.3%) reported that only their father was born in the country of origin; and only seven participants (6.4%) reported that their mother was born in the country of origin. The length of time participant's parents lived in Canada ranged from 20 to 51 years, with an average of 35.7 years (SD = 7.2). (The length of time parents were in Canada was averaged over both parents if they arrived in Canada at different times).

Forty-three participants (39.1%) spoke Greek or Italian as their first language, whereas 59 participants (53.6%) spoke English as their first language. Seven participants (6.4%) reported that they spoke both English and Greek or Italian and one participant (.9%) spoke a different language as her first language.

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Table 3

Means, standard deviations and F-values of demographic variables for hard-copy (n=89) and web-based (n=21) questionnaires

Variables	Hard-copy	Web-based	F-value	*p*
BMI (kg/m^2)	22.55 (3.54)	23.60 (4.78)	1.30	.26
Age	22.05 (4.04)	23.23 (5.8)	1.21	.27
SES	42.7 (14.48)	43.10 (13.56)	0.01	.91
Education	14.74 (1.43)	14.33 (1.31)	1.43	.23

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It is of note that when these demographic variables were analyzed by cultural group, a larger portion of the Greek sample had both parents born in their country of origin [χ^2 (2) = 12.75, $p < .01$], spoke a first language that was not English [χ^2 (3) = 31.28, $p < .01$], and had parents who had lived fewer years in Canada [Greek: M = 32.59, SD = 7.11; Italian: M = 38.22, SD = 6.28; t (88) = -3.99, $p < .01$] than their Italian counterparts. There were no significant differences on other demographic variables. The results of a series of one-way ANOVA testing indicated no significant differences on the demographic variables of age, weight, socioecomic status or education between Greek and Italian women. Please refer to Table 4 for means, standard deviations, and F-values for each demographic variable. When the data was analyzed separately for each cultural group there was no difference in the pattern of results obtained.

Participants (N = 110) ranged in weight, as measured by the Body Mass Index (BMI = kg/m^2) from 16.13 to 35 (M = 22.8, SD = 3.9). They ranged in age from 17 to 42; the average age was 22.4 years (SD = 4.7). Years of education ranged from 12 to 20 (M = 14.7, SD = 1.4). The majority of women in the sample (over 90%) were university students. Socioeconomic status, as measured by an index constructed by Blishen, Carroll, and Moore (1987) and based on data from the total Canadian labour force, ranged from a low of 19 to a high of 101.3 (M=42.8, SD=1.4).

Procedure

Prior to filling out the questionnaires, all participants signed a consent form (Appendix D) that included a general description of the study, and assurances about the anonymity of their responses. After completing the questionnaires, participants were provided with a feedback sheet that included a request form for more detailed description about the investigation as well as information about community and health contacts in the region (see Appendix E).

Measures

A total of eleven self-report measures of the primary variables were included in the questionnaire package. Due to the large number of measures, an effort was made to select brief questionnaires. Please refer to Table 5 for a summary of selected measures for each variable.

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Table 4

Means, standard deviations and F-values of demographic variables for Italian (n=65) and Greek (n=45) women

Variables	Italian	Greek	F-value	*p*
BMI (kg/m^2)	22.46 (3.2)	23.16 (4.55)	0.91	.34
Age	21.64 (3.75)	23.2 (5.16)	3.35	.07
SES	42.8 (12.7)	42.8 (16.35)	0.00	.98
Education	14.69 (1.31)	14.62 (1.56)	0.07	.80

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Table 5

Questionnaires for Study

Variable	Measure	Source
PREDICTOR VARIABLES		
Demographic Variables		
(e.g., age, height, weight,)	Demographic Questionnaire 13 items	author
Individual Variables		
Personality	Setting Conditions for Anorexia Nervosa (SCANS) 22 items	Slade & Dewey (1986)
Self-Esteem	Rosenberg Self-Esteem Inventory 10 items	Rosenberg (1965)
Family Variables		
Enmeshment	Parent-Child Boundaries Scale (PBS) 70 items	Kerig &Brown (1996)
Conflict	Family Environment Scale Conflict subscale (FES-C) 10 items	Moos & Moos (1986)
Sociocultural Variables		
Internalization	Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ) 14 items	Heinberg Thompson, & Stormer (1995)
Acculturation	Vancouver Index of Acculturation (VIA) 20 items	Ryder, Alden & Paulhus (1999)
	Greek-American Acculturation Scale (GAAS)	Harris and Verven (1996)
CRITERION VARIABLES		
Eating Pathology	Eating Attitudes Test (EAT-26) 26 items	Garner,Olmstead, Bohr & Garfinkel (1982)
Extreme Weight Loss Behaviours	Extreme Weight Loss Behaviours Checklist (EWLB) 6 items	Paxton et al. (1991)
Psychological Distress	General Health Questionnaire (GHQ-12) 12 items	Goldberg (1972)

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1. *Demographic Questionnaire.* This measure, developed by the investigator, included questions pertaining to the participants' age, height, weight, and education. To determine the participant's immigration status there were questions regarding the birthplace of the participant and the participant's parents (see Appendix F for a copy of the questionnaire).

Socioeconomic status was assessed by asking about parental occupations and determined by using the socioeconomic index constructed by Blishen, Carroll, and Moore (1987). This unidimensional index is based on data from the total Canadian labour force that was derived from the 1981 Census. It calculates SES scores for each of 514 occupational categories, according to the Canadian Classification and Dictionary of Occupations (CCDO). The index values range from 17.81 to a maximum of 101.74, with a mean of 42.74 and a standard deviation of 13.28. The index also lists income and educational levels and gender composition for each occupational category. When both parents were working, the parent with the highest index value occupation was used.

2. *Setting Conditions for Anorexia Nervosa (SCANS).* (Slade &Dewey, 1986). This questionnaire is a 40-item measure of personality features that are associated with risk for eating pathology. The traits include a combination of "general dissatisfaction and loss of control" and "perfectionism". This measure is based on Slade's model of eating disorders in which he hypothesizes that eating pathology arises from personality traits that act as setting conditions and leave an adolescent predisposed to eating pathology if she begins to diet.

Five scales were empirically derived from a factor analysis of items and include: General Dissatisfaction (14 items), Social and Personal anxiety (10 items), Perfectionism (8 items), Adolescent Problems (3 items), and Need for Weight Control (2 items). The two scales of interest in the current investigation are the General Dissatisfaction scale and the Perfectionism scale. These scales discriminate between control and eating disorder samples (Slade and Dewey, 1986; Slade, Dewey, Kiemle, & Newton, 1990) and have been found to be orthogonal (Slade, Butler, & Newton, 1989). The General Dissatisfaction scale includes items such as "Over the last couple of years how often have you felt happy with life?" The Perfectionism scale includes items such as "Over the last couple of years how often have you felt able to accept a below-par performance

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from yourself?" Participants are asked to underline one of five answers that best suits them and these are scored according to a Likert-type scale from 1 to 5. With reverse scoring of some items the final scores are summed and higher scores indicate more "unhealthy" functioning.

The authors suggest that a combined cutoff score of 42 for General Dissatisfaction and 22 for Perfectionism is appropriate for identifying participants who are at risk for developing eating pathology. This has been supported by the finding that "normal" individuals who were classified as high risk based on this cutoff scored significantly higher on the EAT-26 than those participants who scored below the cutoff (Slade and Dewey, 1986).

Support for the convergent validity of the measure has been demonstrated by the finding that the scales of Perfectionism and General Dissatisfaction correlate well with established personality measurements (Slade, Butler, & Newton, 1989). For example, General Dissatisfaction was positively correlated (.71) with Eysenck's Neuroticism scale. Further support for the validity of the measure was obtained by the finding that those participants who scored above the cutoff obtained significantly higher scores on "food avoidance" and "preoccupation with weight" as assessed by interview (Kiemle, Slade, & Dewey, 1987). Support for the predictive value of the General Dissatisfaction scale was demonstrated by Wood, Waller, and Gowers (1994) who found that those girls who had significantly higher scores on dissatisfaction were classified as high risk (abnormal eating attitudes) on the EAT-26 at two-year follow up.

3. *Rosenberg Self-Esteem Scale (RSE)* (Rosenberg, 1965). This 10 item scale measures general self-esteem and has been widely used in a variety of settings and populations. Items include "I am a useful person to have around" and "I feel I do not have much to be proud of". Participants are asked to indicate how often each of these statements is true for them from "Never" to "Almost always" according to a 5-point Likert type scale. After reverse scoring of some items, higher scores reflect better self-esteem. This scale has been demonstrated to have good convergent validity as it relates well with other measures of self-esteem. It has also demonstrated relatively good stability with a test-retest reliability of .85 (Rosenberg, 1965).

4. *Parent-Child Boundaries Scale (PBS).* (Kerig & Brown, 1996). The PBS is a 70-item inventory of family boundary problems (see Appendix G). The measure is structured so that the

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first 35 items refer to the mother-daughter dyad and the remaining 35 items refer to the father-daughter dyad. Boundary problems are conceptualized as multidimensional and the subscales of this inventory reflect these dimensions. They include scales labeled Enmeshment, Intrusiveness, Spousification, Role-Reversal-Caregiver, Role-Reversal-Confidante. A total score can also be calculated. The scale of interest in this study was Enmeshment. Enmeshment measures the participant's perception of lack of separation and individuation between herself and her parents. The PBS is relatively new but has demonstrated good reliability, concurrent validity, and is significantly and positively related to eating disorder severity (Rowa & Kerig, 1999).

This measure was selected over other more established measures of family functioning such as FACES-III (Olson, Portner, & Levee, 1985) or FES (Moos & Moos, 1986) for both theoretical and empirical reasons. The traditional measures have been measuring cohesion and have interpreted the findings in terms of enmeshment (Rowa & Kerig, 1999). However, more recent family theory has differentiated between the constructs of cohesion and enmeshment by asserting that they are two different constructs (Barber & Buehler, 1996). This may also account for the mixed results that have been obtained from the eating disorder literature on the relationship between cohesion and eating pathology. In fact, more recent investigations have supported the distinction between enmeshment and cohesion as measures of adolescent problem behaviors (Barber & Beuhler, 1996) and for eating pathology (Rowa & Kerig, 1999).

5. *Family Environment Scale: Conflict subscale (FES-C)* (Moos & Moos, 1986). The FES is a 90 item true-false questionnaire of family environment which includes ten dimensions: Cohesion, Expressiveness, Conflict, Independence, Achievement Orientation, Intellectual-Cultural Orientation, Active-Recreational Orientation, Moral-Religious Emphasis, Organization, and Control. The subscale of interest for the current investigation was the Conflict scale that consists of 9 items measuring the participant's perception of the amount of general conflict, anger and aggression expressed in her family.

The subscales of the FES have demonstrated good test-retest reliability (.86 for an eight week interval to .73 for a twelve month interval) and internal consistencies (Cronbach Alphas

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range from .61 to .78) (Moos & Moos, 1986). Predictive validity of the Conflict subscale has received some support in studies that demonstrate that this subscale (along with cohesion and recreational orientation subscales) predict positive outcome following therapy. Moreover, in a study of family and personality predictors of eating attitudes and behaviours, of the FES subscales only Conflict was significantly related to the three "core" subscales of the EDI (i.e., Drive for Thinness, Bulimia, and Body Dissatisfaction) (Brookings & Wilson, 1994). Subscales of the FES have also successfully discriminated between normal and "disturbed" families (Anderson, 1984).

6. *Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ).* (Heinberg, Thompson, &Stormer, 1995). The SATAQ is a 14-item measure of a woman's awareness of, and internalization of Western's society's emphasis on appearance, particularly the thin standard of beauty. A factor analysis of the original measure resulted in two factors: the Awareness Scale (6 items) and the Internalization scale (8 items). The Awareness scale includes statements such as "Attractiveness is very important if you want to get ahead in this culture". The Internalization scale includes statements such as " I believe that clothes look better on thin models". Participants are asked to respond to these statements on a 5-point Likert scale from "completely disagree" (1) to "completely agree" (5). Higher ratings reflect more awareness and internalization of the attractiveness standards for women.

The subscales demonstrate good internal consistency (Awareness, alpha = .71; Internalization, alpha = .88) (Heinberg et al., 1995), and strong relationships with many measures of body image dissatisfaction and eating pathology. The Internalization scale is also a strong predictor of eating pathology (Heinberg et al., 1995), and the Internalization Scale successfully discriminates between eating disordered and control samples (Griffiths et al., 1999).

7. *Vancouver Index of Acculturation (VIA).* (Ryder, Alden, & Paulhus, 1999). The VIA is a 20-item general acculturation measure that has recently been developed (please see Appendix H). It was developed partially in response to the need for a measure of bidimensional acculturation that allows for the concept of integration (retaining one's own culture and positive

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attitudes and participation in the new culture). Traditional unidimensional models of acculturation that have Traditionalism on one end of a continuum and Assimilation on the other, do not allow for this.

The VIA was selected for the current investigation over a measure based on Berry's four typologies for several reasons. Firstly, it avoids numerous conceptual and psychometric difficulties in the fourfold model identified by many authors (e.g., Rudmin & Ahmadzadeh, 2001; Triandis, 1997; Ward, 1997). Secondly, there was no existing measure based on Berry's model that was adapted for Greek and Italian women living in Canada. According to Berry, when a questionnaire is developed based on his model it must be modified for each particular group and society. This requires ethnographic work first to develop culturally appropriate items (Berry et al., 1989), a task that was beyond the scope of the current investigation. Moreover, as Rudmin and Ahmadzadeh (2001) point out, the fourfold typology can not be used in multivariate analyses that require correlation matrices as input (like a multiple regression) because the four scales are not independent of each other. Finally, one can still create the fourfold acculturation typology by splitting the scales (in this case Mainstream and Heritage) at the midpoints and classifying them into the four acculturation strategies (Rudmin & Ahmadzadeh, 2001).

The bidimensional model is reflected in VIA's subscales of Heritage Culture (10 items; e.g., "I often participate in heritage cultural traditions) and Western Culture (10 items; e.g., "I believe in North American values"). Participants are asked to respond to these statements on a 9 point Likert scale from "Disagree" (1) to "Agree" (9). The mean of the odd numbered items is the Heritage culture score and the mean of the even numbered items is the Western culture score, with higher scores reflecting more retention/acquisition of the culture.

The two dimensions of Heritage and Western culture have been demonstrated to be independent and associated with self-identity. This measure has been studied with Canadian East Asian groups, as well as South Asian and European immigrants (Ryder, Alden, & Paulhus, 1999). The internal reliabilities of the subscales are good (average alpha = .90), and the two subscales correlate in the expected directions with many other indicators of acculturation, such as

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years in Canada, status of English as a first language, and with other unidimensional acculturation measures. Factor analyses yielded support for the two subscales and factor loadings are high (A. Ryder, personal communication, October 12, 1999).

8. *Greek-American Acculturation Scale (GAAS).* (Harris and Verven, 1996). This second measure of acculturation is specific to Greek acculturation. Although it measures acculturation on a continuum from traditional cultural identification to assimilation, it was chosen to complement the VIA by providing a culturally specific measure of acculturation. A description is included here as it was included in the questionnaire package; however, it was not used in primary analyses due to the addition of the sample of Italian second-generation women.

The 44-item scale measures six different dimensions: Social Affiliation and Activities (e.g., "It's better to marry a poor Greek than a rich non-Greek"), Greek School Attendance and Greek Language Acquisition (e.g., "My parents insisted I learn how to speak Greek when I was growing up"), Traditional Greek Values and Practices (e.g., "Greek-Americans should be married in the Greek Church"), Cultural Identification and Pride (e.g., "I want my children to be raised Greek"), Attitudes about Greeks (e.g., "It bothers me that some Greek Americans can't speak Greek"), and Cultural Familiarity and Comfort (e.g., "My best friends are Greeks"). Participants are asked to respond to these statements on a 7 point Likert scale of their agreement to each item. Higher scores indicate a more "traditional" orientation. For the purposes of this study some items' wording will be changed to replace "American" with "Canadian". The authors argue that because the scale measures Greek ethnicity in general it may be useful for non U.S. Greek populations (Harris & Verven, 1996).

In the development of this measure, the authors demonstrated that the GAAS has good reliability with the subscales' alphas ranging from .93 to .80 (Harris & Verven, 1996; 1998). Concurrent validity was also demonstrated by positive correlations with generation status and its sensitivity was demonstrated by the finding that the scale scores were not related to demographic variables of education or income.

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9. *Eating Attitudes Test (EAT-26).* (Garner, Olmsted, Bohr, & Garfinkel, 1982). The EAT-26 is a commonly used measure of general eating pathology. This measure is based on a factor analysis of the original 40-item EAT (Garner & Garfinkel, 1979). The 26 items reflect different disordered eating attitudes and behaviours and include statements such as "find myself preoccupied with food" and "like my stomach to be empty". Participants respond to these statements with one of four responses ranging from "never" (0) to "always" (3). The overall score is a sum of all items, with higher scores indicating more eating pathology. A score of 20 has been suggested as a cutoff point for identifying potential eating pathology (Garner et al., 1982). Although originally designed for clinical populations it has also been found useful in community samples for identifying individuals with eating disorders or with milder forms of eating pathology (Koslowsky et al., 1992) and has demonstrated reliability and good construct validity.

The original EAT-40 demonstrated excellent internal consistency (alpha = .94) and validity (Garner & Garfinkel, 1979). The EAT-26 has also demonstrated good internal consistency (alpha = .83) and demonstrated excellent concurrent validity with significant high correlations with the original EAT-40 (r = .90), and other eating pathology measures (Berland, Thompson, & Linton, 1986). It is interesting to note that it has also been found to identify milder forms of eating pathology better than severe cases (Scheinberg et al., 1993).

This measure was selected not only for its strong psychometric characteristics, but also for the large body of cross-cultural research in which this measure of eating pathology has been used. It has been translated into many languages (e.g., Hebrew, Arabic) and has demonstrated good psychometric properties cross-culturally (e.g., Al-Subaie et al., 1996).

10. *Extreme Weight Loss Behaviour Checklist (EWLB).* (Paxton, et al., 1991). This measure consists of six types of weight loss strategies, such as vomiting and use of appetite suppressants. Participants are asked to rate the frequency of each behaviour on a four point scale from "never" (0) to "daily" (3). All ratings are summed with higher scores indicating frequency of extreme weight loss behaviors.

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There is limited information on this measure's psychometric properties although it has demonstrated reliability in adolescents (Paxton et al., 1999). The primary purpose of including this measure with the EAT-26 is to provide some indication of eating disordered behaviours in the current sample, and to provide some continuity between the current investigation and previous studies, including a study of eating pathology among Greek-Australian women that used the EWLB (Mildred et al., 1995).

11. *General Health Questionnaire (GHQ-12).* (Goldberg, 1972). The 12-item version of the GHQ is a general measure of psychological distress that has been extensively used as a clinical screening instrument, particularly in cross-cultural research. The GHQ-12 has demonstrated excellent psychometric properties. It has been recently translated into 10 languages and used in many different countries in a World Health Organization study of mental health with little changes to it's validity (Goldberg et al., 1997). The literature supports the use of the GHQ-12, particularly for cross-cultural studies.

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CHAPTER III

RESULTS

Data screening

Prior to analysis, the primary variables of the study were assessed to ensure that the assumptions underlying the intended multivariate analyses were met. Missing data were replaced with the calculated mean from all other scores for that variable.

Univariate outliers were found on BMI, Education, Age, Self-Esteem, Mother Spousification, Father Intrusiveness, Father Role-Reversal (Caregiver), and Father Parental Boundaries Total. Of these variables, BMI, Age and Father Role-Reversal (Caregiver) had two univariate outliers each. The outliers were adjusted to one score above the next extreme score for that variable in order to reduce their influence. After modification, z-scores were calculated to ensure that the previous outliers were within three standard deviations of the mean.

The following variables were significantly positively skewed: Age, BMI, Education, Mother Intrusiveness, Mother Spousification, Mother Role-Reversal (Caregiver), Father Intrusive, Father Role-Reversal (Caregiver), Father Role-Reversal (Confidante), Father Parental Boundaries Total, Eating Pathology, and Extreme Weight Loss Behaviours. Square root transformations were applied to most of the skewed variables, which effectively approximated a normal distribution for these variables. Transformations were not applied to the demographic variables of Age, BMI and Education as they are ratio variables with meaningful scales and transformations would make interpretations of analyses in which these variables were employed difficult (Tabachnick & Fidell, 1989).

The remaining assumptions were evaluated for each analysis and were found to be acceptable. This process included ensuring that there was no singularity or multicollinearity for any pair of variables, and that the assumptions of multivariate normality, linearity, and homoscedasticity had been met. This was accomplished by examining the standardized residual plots and calculating the Mahalanobis distance and Cooks distance for each case in the analysis.

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Participant Characteristics

Comparison of Greek and Italian Women

Greek and Italian women were compared to determine if they differed significantly on any of the primary variables of the study. Table 6 presents the means and standard deviations for all primary variables for the two groups and for the overall sample. Alpha was set at .01, prior to the analyses. Three independent sample t-tests (two-tailed) were conducted using cultural group as the independent variable (Greek or Italian) and Eating Pathology, Extreme Weight Loss Behaviours, and General Distress as the dependent variables. No significant differences between groups were observed on Eating Pathology, $t\,(108) = 1.19$, $p > .01$, Extreme Weight Loss Behaviours, $t\,(108) = 1.60$, $p > .01$, or General Distress, $t\,(108) = -0.14$, $p > .01$.

A second set of three independent sample t-tests (two-tailed) was conducted using cultural group (Greek or Italian) as the independent variable and General Dissatisfaction, Perfectionism, and Self-Esteem as the dependent variables. No significant between group differences were observed on General Dissatisfaction, $t\,(108) = 1.64$, $p > .01$, Perfectionism, $t\,(108) = 1.77$, $p > .01$, or Self-Esteem, $t\,(108) = -0.93$, $p > .01$.

A third set of independent sample t-tests was conducted using cultural group (Greek or Italian) as the independent variable and the variables of Mother Enmeshment, Father Enmeshment, and Family Conflict as the dependent variables. Due to unequal sample variances for Father Enmeshment, a t-test for unequal variances was conducted for this variable. No significant between-group differences were observed on Mother Enmeshment, $t\,(108) = 2.32$, $p > .01$, Family Conflict, $t\,(108) = 2.23$, $p > .01$, or Father Enmeshment, $t\,(76.83) = 2.36$, $p > .01$.

The fourth set of independent t-tests was performed using cultural group (Greek or Italian) as the independent variable and the variables of Internalization of Western values of thinness, Mainstream Culture identification and Heritage Culture identification as dependent variables. No significant between group differences were observed on Internalization of Western values of thinness, $t\,(108) = -0.95$, $p > .01$, Mainstream Culture identification, $t\,(108) = -1.16$, $p > .01$, or Heritage Culture identification, $t\,(108) = 1.56$, $p > .01$.

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Due to the absence of significant differences between Greek and Italian women on all primary variables in the study, the two cultural groups were combined for all subsequent analyses.

Disordered Eating in the Sample

On the EAT-26, scores above 20 signify increased risk for an eating disorder. In the present sample 20 women (18%) scored above this cutoff and could be considered at risk. The mean score on the EAT-26 in the current sample (prior to transformation) was 9.67 (*SD* = 8.39). This is comparable to published rates for "non-anorexic comparison" samples (e.g., Garner et al., 1982).

The Extreme Weight Loss Behaviours Checklist provides for a breakdown by each of the six different forms of extreme weight loss behaviours that include Fasting, Crash Dieting, Vomiting, Laxatives, Appetite Suppressants, and Diuretics (see Table 7 for the percentage of participants who reported these behaviours). Table 7 includes a comparison of the current sample with rates from another investigation that used the Extreme Weight Loss Behaviours Checklist. Paxton and colleagues' (1991) sample included 341 Australian girls aged 11 to 18 (*m* = 14.0, *SD* = 1.28).

Acculturation Strategies in the Sample

The VIA's two subscales, Mainstream cultural identification and Heritage cultural identification, were used to create Berry's four subscales (Berry, 1990; 1997). The four acculturation strategies are Integration, Separation, Assimilation, and Marginalization. The scales were calculated by using the cutoff of 4.5 to determine "high" and "low" scorers on each subscale. Each case was then classified into one of the four categories based on their pattern of high or low scores on each subscale. Participants who were classified as using Integration as their dominant acculturation strategy scored high on both the Mainstream and Heritage VIA subscales. Those who were classified as using Separation scored low on Mainstream and high on Heritage cultural identification. Participants classified as using Assimilation scored high on Mainstream and low on

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Table 6

Means and (Standard Deviations) of the primary variables for Greek (n = 45) and Italian (n = 65) women and the overall sample (N = 110)

Variables	Greek	Italian	Overall
Perfectionism	29.62 (3.83)	28.34(3.67)	28.86 (3.77)
General Dissatisfaction	38.29 (7.70)	35.86 (7.63)	36.85 (7.71)
Self-Esteem	39.33 (5.70)	40.34 (5.47)	39.93 (5.56)
Boundary Problems- Mother	91.00 (18.87)	86.00 (16.84)	88.05 (17.79)
Boundary Problems- Father Transformed	8.81 (0.94)	8.41 (0.83)	8.57 (0.90)
Mother Enmeshment	17.09 (3.89)	15.38 (3.72)	16.08 (3.87)
Father Enmeshment	15.82 (5.25)	13.65 (3.93)	14.54 (4.62)
Family Conflict	5.07 (2.32)	4.14 (2.02)	4.52 (2.19)
Internalization	24.98 (6.54)	26.15 (6.26)	25.67 (6.37)
Heritage Culture	7.01 (1.57)	6.54 (1.54)	6.73 (1.56)
Mainstream Culture	6.70 (1.30)	6.97 (1.15)	6.86 (1.22)
Eating Pathology Transformed	2.97 (1.44)	2.64 (1.38)	2.77 (1.41)
Extreme Weight Loss Behaviours Transformed	1.25 (0.83)	0.95 (1.01)	1.07 (0.94)
General Distress	5.42 (2.42)	5.49 (2.69)	5.46 (2.57)

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Table 7

A Comparison of Rates of Extreme Weight Loss Behaviours Reported in the Current Sample (N = 110) and the Paxton et al. Sample (N = 341)

	Frequency (Percentage)	
	Current Sample *n* (%)	Paxton et al. 1991 sample
Fasting	47 (43%)	34%
Crash Dieting	47 (43%)	29%
Vomiting	11 (10%)	9%
Laxatives	17 (16%)	6%
Appetite Suppressants	22 (20%)	9%
Diuretics	19 (18%)	3%

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Heritage cultural identification. Finally, those who were classified as using Marginalization scored low on both subscales.

Using this classification system, most of the current sample (89%) used integration as their dominant acculturation strategy. An additional 7.3% were classified as using Assimilation and 3.7% were classified as using Separation. No participants in the current sample were classified as using Marginalization.

Hypothesis Testing

Please refer to Table 8 for a summary of the primary hypotheses, the variables involved and the corresponding analyses and results. The hypotheses have been modified for some domains. This was done because some of the variables that were originally hypothesized to be predictors were dropped when there was evidence of little or no relationship between the variable and the criterion measures. For example, Perfectionism and parental Enmeshment were omitted from the analysis of hypothesis IV based on their performance in earlier analyses. Due to the increased risk for Type I error with multiple correlational analyses, alpha was set at .01 for all analyses unless otherwise noted.

Hypothesis I a: Relationship Between Variables in the Individual Domain and Eating Pathology and Extreme Weight Loss Behaviours

Correlations between variables within the individual domain and the dependent measures were examined to test the hypothesis that Perfectionism and General Dissatisfaction would be positively related to Eating Pathology and Extreme Weight Loss Behaviours, and that Self-Esteem would be negatively related to these dependent variables (please refer to Table 9 for correlation table of all primary variables).

Hypothesis 1a was partially supported. General Dissatisfaction was positively associated with Eating Pathology ($r = .45$, $p < .01$), with Extreme Weight Loss Behaviours ($r = .33$, $p < .01$).

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Table 8

Summary of Primary Hypotheses, Corresponding Statistical Analyses and Results

Hypotheses	*Analyses*	*Results*
I. Individual Domain a) Perfectionism and general dissatisfaction would be positively associated with eating pathology and extreme weight loss behaviors, whereas self-esteem would be negatively related to these variables.	Pearson product moment correlations	I a *Partially supported.* General dissatisfaction was positively associated with eating pathology and extreme weight loss behaviours. Perfectionism was not related to these variables. Self-esteem was negatively related to eating.
b) Perfectionism, self-esteem, general dissatisfaction and the interaction between perfectionism and general dissatisfaction would predict variance in eating pathology and extreme weight loss behaviours, once body weight (BMI) was held constant.	Hierarchical multiple regression with: Step 1: BMI Step 2: Perfectionism, Self-Esteem, General Dissatisfaction, Perfectionism x General Dissatisfaction	I b *Partially supported.* Individual domain variables predicted variance in eating pathology and extreme weight loss behaviours once BMI was held constant. General dissatisfaction was a significant predictor of each of the criterion variables.
II. Family Domain a) Family conflict and parental enmeshment would be positively related to eating pathology and extreme weight loss behaviours.	Pearson product moment correlations	II a *Partially supported.* Family conflict was positively associated with eating pathology. Parental enmeshment was not related to eating pathology or extreme weight loss behaviours.
b) Family conflict and parental enmeshment would predict variance in eating pathology and extreme weight loss behaviours, once BMI had been controlled.	Hierarchical multiple regression with: Step 1: BMI Step 2: Conflict, Mother and Father Enmeshment	II b *Partially supported.* Family domain variables predicted variance in eating pathology once BMI had been controlled. Family conflict was a significant predictor of eating pathology.

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Table 8 (cont.)

Summary of Hypotheses, Corresponding Statistical Analyses and Results

Hypotheses	*Analyses*	*Results*
III. Cultural Domain		
a) Internalization of Western values and Mainstream cultural identification would be positively related to eating pathology and extreme weight loss behaviours, whereas Heritage cultural identification would be negatively related to these variables.	Pearson product moment correlations	III a *Partially supported.* Internalization was positively associated with eating pathology and extreme weight loss behaviours. Mainstream and Heritage cultural identifications were not associated with either criterion variable.
b) Heritage cultural identification and Mainstream cultural identification would be orthogonal.	Pearson product moment correlations	III b *Supported.* Heritage cultural identification was not significantly associated with Mainstream cultural identification.
c) Internalization of Western values, Mainstream and Heritage cultural identifications, and their interaction (Mainstream x Heritage) would predict variance in eating pathology and extreme weight loss behaviours once BMI had been controlled.	Hierarchical multiple regression with: Step 1: BMI Step 2: Internalization, Mainstream, Heritage, Mainstream x Heritage	III c *Partially supported.* Cultural domain variables predicted variance in eating pathology and extreme weight loss behaviours once BMI had been controlled. Internalization was a significant predictor of each of the criterion variables.
IV. Connections between Domains		
a) General dissatisfaction, internalization of Western values, and family conflict would predict, and each uniquely explain variance in eating pathology and extreme weight loss behaviours, once BMI was held constant.	Hierarchical multiple regression with: Step 1: BMI Step 2:General Dissatisfaction, Conflict, Internalization	IV a *Mostly supported.* General dissatisfaction, internalization of Western values, and family conflict predicted variance in eating pathology and extreme weight loss behaviours, once BMI was held constant. General dissatisfaction was a significant predictor of eating pathology, while internalization was a significant predictor of both predictor variables.

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Table 9

Intercorrelations of primary variables (N = 110)

Variables	1	2	3	4	5	6	7	8	9
1. Age	---	.15	.28**	-.36**	.16	.00	.00	.21	-.06
2. BMI		---	-.06	.14	-.08	.21	-.10	.03	.05
3. Education			---	-.03	.03	-.14	.10	-.18	-.15
4. SES				---	-.08	-.01	.07	-.18	.25**
5. Perfectionism					---	-.05	.10	.21	.26**
6. General Dissatisfaction						---	-.75**	.22	.08
7. Self-Esteem							---	-.05	.10
8. Mother Enmeshment								---	.32**
9. Father Enmeshment									---
10. Family Conflict									
11. Internalization									
12. Heritage									
13. Mainstream									
14. Eating Pathology									
15. Extreme Weight Loss Behaviours									
16. General Distress									

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Table 9 (continued)

Intercorrelations of primary variables (N = 110)

Variables	10	11	12	13	14	15	16
1. Age	.19	-.09	-.27**	-.01	.04	.06	-.03
2. BMI	.13	.09	.10	.18	.14	.29**	.07
3. Education	.08	-.19	-.20	-.09	-.02	.02	-.11
4. SES	-.07	-.01	.09	.10	-.04	.03	-.02
5. Perfectionism	.05	.17	-.05	-.02	.12	.12	-.03
6. General Dissatisfaction	.35**	.35**	-.07	-.12	.45**	.33**	.60**
7. Self-Esteem	.17	-.23	.17	.15	-.27**	-.19	-.51**
8. Mother Enmeshment	.34**	.21	.00	-.03	.21	.18	.21
9. Father Enmeshment	.15	.25**	.01	-.10	.09	.19	.10
10. Family Conflict	---	.23	-.15	-.21	.31**	.13	.20
11. Internalization		---	-.13	-.06	.61**	.41**	.41**
12. Heritage			---	.18	.00	.15	-.11
13. Mainstream				---	-.03	.06	-.08
14. Eating Pathology					---	.61**	.44**
15. Extreme Weight Loss Behaviours						---	.38**
16. General Distress							---

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Self-Esteem was negatively associated with Eating Pathology ($r = -.27$, $p < .01$), but not with Extreme Weight Loss Behaviours ($r = -.19$, $p > .01$). The prediction that Perfectionism would be positively associated with Eating Pathology and Extreme Weight Loss Behaviours was not supported ($r = .12$; $r = .12$; $p > .01$, respectively).

Hypothesis I b: Individual Domain Variables Predicting Eating Pathology and Extreme Weight Loss Behaviours.

It was hypothesized that Perfectionism, General Dissatisfaction, their interaction (Perfectionism X General Dissatisfaction), and Self-Esteem would predict, and each uniquely explain variance in Eating Pathology and Extreme Weight Loss Behaviours once BMI had been held constant. Prior to conducting hierarchical multiple regression analyses for each of the criterion variables, the assumptions of the analyses were evaluated and potential multicollinearity was found. General Dissatisfaction and Self-Esteem were highly negatively correlated (r = -.75, p < .01), raising the concern that if both variables were used in each analysis as planned, they would render the statistic unstable. Self-Esteem was dropped from the analyses because General Dissatisfaction had stronger empirical support as well as a stronger relationship with the criterion variables for this sample than Self-Esteem.

Predicting Eating Pathology. A hierarchical multiple regression was conducted with BMI entered on the first step. General Dissatisfaction, Perfectionism and their interaction were entered on the second step in order to examine their unique contribution to Eating Pathology when BMI was held constant.

Table 10 displays the correlations, standardized regression coefficients (β), semipartial correlations (sr^2), and R, R^2_{change}, and adjusted R^2 after entry of all variables. R^2_{change} was significant from zero only at step two. After the second step with all variables in the equation, $R = .49$, $F(4, 105) = 8.35$, $p < .01$.

On the first step, BMI did not significantly improve the prediction of Eating Pathology ($R^2 = .02$, $F_{change}(1, 108) = 2.30$, $p > .01$). On the second step, individual domain variables did significantly improve the prediction of Eating Pathology ($R^2 = .22$, $F_{change}(3, 105) = 10.17$, $p < .01$). Whereas General Dissatisfaction was found to uniquely explain 19% of the variance in

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Table 10

Hierarchical multiple regression of individual domain variables predicting Eating Pathology (N = 110)

Variables	*B*	*SE B*	β	*r*	sr^2	t^a	R^2_{change}
Step 1							
BMI	.02	.03	.06	.14	.00	.70	.02
Step 2							
Perfectionism	.06	.03	.16	.12	.02	1.83	
General Dissatisfaction	.08	.02	.45	.45**	.19	5.14**	
Interaction (Perfectionism x General Dissatisfaction)	-.01	.00	-.13	-.10	.02	-1.45	.22**

$R^2 = .24$ Adjusted $R^2 = .21$ $R = .49$, $F(4, 105) = 8.35$ **

[a]For regression coefficients

** $p < .01$

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Eating Pathology ($t = 5.14$, $p < .01$), Perfectionism ($t = 1.83$, $p > .01$) and the interaction between Perfectionism and General Dissatisfaction ($t = -1.45$, $p > .01$) were not found to be unique contributors.

Predicting Extreme Weight Loss Behaviours. A second hierarchical multiple regression was conducted using the same set of predictor variables, but with Extreme Weight Loss Behaviours as the criterion variable. BMI was entered on the first step. General Dissatisfaction, Perfectionism and their interaction were entered on the second step in order to examine their unique contribution to Extreme Weight Loss Behaviours when BMI was held constant.

Table 11 displays the correlations, standardized regression coefficients (β), semipartial correlations (sr^2), and R, R^2_{change}, and adjusted R^2 after entry of all variables. R^2_{change} was significant from zero at both steps. After the second step with all variables in the equation, $R = .43$, $F(4, 105) = 5.91$, $p < .01$.

On the first step, BMI significantly improved prediction of Extreme Weight Loss Behaviours ($R^2 = .08$, $F_{change}(1, 108) = 9.66$, $p < .01$). BMI was found to be a significant predictor of Extreme Weight Loss Behaviours ($t = 2.62$, $p < .01$), uniquely explaining 5% of the variance. On the second step, individual domain variables did significantly improve the prediction, accounting for an additional 10% of the variance in Extreme Weight Loss Behaviours ($R^2 = .10$, $F_{change}(3, 105) = 4.36$, $p < .01$). General Dissatisfaction uniquely explained 8% of the variance in Extreme Weight Loss Behaviours ($t = 3.22$, $p < .01$). However, Perfectionism ($t = 1.73$, $p > .01$) and the interaction between Perfectionism and General Dissatisfaction ($t = -0.42$, $p > .01$) were not unique contributors.

Hypothesis II a: Relationship Between Family Variables and Eating Pathology and Extreme Weight Loss Behaviours

Correlations between variables within the family domain and the dependent variables were examined to test the hypothesis that Family Conflict and parental Enmeshment would be positively related to Eating Pathology and Extreme Weight Loss Behaviours. Please refer to Table 9 for a correlation table of all primary variables.

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Table 11

Hierarchical multiple regression of individual domain variables predicting Extreme Weight Loss Behaviours (N = 110)

Variables	*B*	*SE B*	β	*r*	sr^2	t^a	R^2_{change}
<u>Step 1</u>							
BMI	.06	.02	.24	.29**	.05	2.62**	.08**
<u>Step 2</u>							
Perfectionism	.04	.02	.16	.12	.02	1.73	
General Dissatisfaction	.04	.01	.29	.33**	.08	3.22**	
Interaction (Perfectionism x General Dissatisfaction)	.00	.00	-.04	-.02	.00	-0.42	.10**

R^2 = .18 Adjusted R^2 = .15 R = .43, F (4, 105) = 5.91**

[a]For regression coefficients

** $p < .01$

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Hypothesis II a was partially supported with the finding that Family Conflict was positively associated with Eating Pathology ($r = .31$, $p < .01$). Family Conflict, however, was not significantly correlated with Extreme Weight Loss Behaviours ($r = .13$, $p > .01$). Contrary to expectations, Enmeshment was not positively associated with Eating Pathology or Extreme Weight Loss Behaviours (Father: $r = .08$; $r = .19$; $p > .01$; Mother: $r = .21$; $r = .18$; $p > .01$ respectively).

Hypothesis II b: Family Domain Variables Predicting Eating Pathology and Extreme Weight Loss Behaviours.

It was hypothesized that Family Conflict and parental Enmeshment would predict, and each uniquely explain variance in Eating Pathology and Extreme Weight Loss Behaviours once BMI been held constant. Hierarchical multiple regressions were conducted for each of the criterion variables. BMI was entered on the first step, and Father Enmeshment, Mother Enmeshment, and Family Conflict were entered on the second step in order to examine their unique contribution to Eating Pathology and Extreme Weight Loss Behaviours when BMI was held constant.

Predicting Eating Pathology. A hierarchical multiple regression was conducted with BMI entered on the first step. Father Enmeshment, Mother Enmeshment, and Family Conflict were entered on the second step in order to examine their unique contribution to Eating Pathology when BMI was held constant.

Table 12 displays the correlations, standardized regression coefficients (β), semipartial correlations (sr^2), and R, R^2_{change}, and adjusted R^2 after entry of all variables. R^2_{change} was significant from zero only at step two. After the second step with all variables in the equation, $R = .35$, $F(4, 105) = 3.56$, $p < .01$.

On the first step, BMI did not significantly improve the prediction of Eating Pathology ($R^2 = .02$, $F_{change}(1, 108) = 2.30$, $p > .01$). On the second step, family domain variables did significantly improve the prediction of Eating Pathology ($R^2 = .10$, $F_{change}(3, 105) = 3.92$, $p < .01$). Whereas Family Conflict was found to uniquely explain 5% of the variance in Eating Pathology (t

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Table 12

Hierarchical multiple regression of family domain variables predicting Eating Pathology (N = 110)

Variables	*B*	*SE B*	β	*r*	sr^2	t^a	R^2_{change}
Step 1							
BMI	.04	.03	.11	.14	.01	1.17	.02
Step 2							
Mother Enmeshment	.04	.04	.12	.21**	.01	1.15	
Father Enmeshment	.00	.03	.00	.09	.00	0.02	
Family Conflict	.17	.06	.26	.31**	.05	2.60**	.10**
$R^2 = .12$ Adjusted $R^2 = .09$ $R = .35$, $F(4, 105) = 3.56$							

[a]For regression coefficients

** $p < .01$

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= 2.60, $p < .01$), Mother Enmeshment ($t = 1.15$, $p > .01$) and Father Enmeshment ($t = 0.02$, $p > .01$) were not found to be unique contributors.

Predicting Extreme Weight Loss Behaviours. A second hierarchical multiple regression was conducted using the same set of predictor variables, but with Extreme Weight Loss Behaviours as the criterion variable. BMI was entered on the first step. Father Enmeshment, Mother Enmeshment, and Family Conflict were entered on the second step in order to examine their unique contribution to Extreme Weight Loss Behaviours when BMI was held constant.

Table 13 displays the correlations, standardized regression coefficients (β), semipartial correlations (sr^2), and R, R^2_{change}, and adjusted R^2 after entry of all variables. R^2_{change} was significant from zero only at the first step. After the second step with all variables in the equation, $R = .34$, $F(4, 105) = 3.89$, $p < .01$.

On the first step, BMI did significantly improve the prediction of Extreme Weight Loss Behaviours ($R^2 = .08$, $F_{change}(1, 108) = 9.66$, $p < .01$). BMI was found to be a significant predictor of Extreme Weight Loss Behaviours ($t = 2.95$, $p < .01$), uniquely explaining 7% of the variance. On the second step, family domain variables did not significantly improve the prediction of Extreme Weight Loss Behaviours ($R^2 = .05$, $F_{change}(3, 105) = 1.89$, $p > .01$). Parental Enmeshment (Mother: $t = 1.13$, $p > .01$; Father: $t = 1.40$, $p > .01$) and Family Conflict ($t = 0.40$, $p > .01$) were not unique contributors.

Hypothesis III a: Relationship Between Variables in the Cultural Domain and Eating Pathology and Extreme Weight Loss Behaviours.

Prior to analyses, the variables in the cultural domain were evaluated to determine if the assumptions of multivariate analysis had been met. During this examination a case was identified through Mahalanobis distance as a multivariate outlier (p < .001). This outlier was omitted from all analyses involving cultural domain variables. This left 109 remaining cases.

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Table 13

Hierarchical multiple regression of family domain variables predicting Extreme Weight Loss Behaviours (N = 110)

Variables	B	$SE\ B$	β	r	sr^2	t^a	R^2_{change}
Step 1							
BMI	.07	.02	.27	.29**	.07	2.95	.08**
Step 2							
Mother Enmeshment	.03	.03	.12	.18	.01	1.13	
Father Enmeshment	.03	.02	.13	.19	.02	1.40	
Family Conflict	.02	.04	.04	.13	.00	0.39	.05
$R^2 = .13$	Adjusted $R^2 = .10$	$R = .36$, $F(4, 105) = 3.14$					

[a]For regression coefficients

** $p < .01$

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Correlations between variables within the cultural domain and the dependent variables were examined to test the hypothesis that Internalization of Western Values (Internalization) and Mainstream cultural identification (Mainstream) would be positively related to Eating Pathology and Extreme Weight Loss Behaviours, while Heritage Culture identification (Heritage) would be negatively related to these dependent variables. See Table 9 for the correlation table of all primary variables.

Hypothesis III a was partially supported with the finding that Internalization was positively associated with Eating Pathology ($r = .60$, $p < .01$) and Extreme Weight Loss Behaviours ($r = .40$, $p < .01$). Mainstream cultural identification, however, was not significantly correlated with Eating Pathology ($r = -.07$, $p > .01$) or Extreme Weight Loss Behaviours ($r = .04$, $p > .01$). The prediction that Heritage cultural identification would be negatively associated with Eating Pathology and Extreme Weight Loss Behaviours was also not supported ($r = -.03$; $r = .13$; $p > .05$, respectively).

Hypotheses III b: Orthogonal Nature of Heritage and Mainstream Cultural Identifications.

Correlations between variables within the cultural domain were examined to test the hypothesis that Heritage culture identification and Mainstream cultural identification would be orthogonal. Hypothesis III b was supported. Heritage cultural identification was not significantly correlated with Mainstream cultural identification ($r = .13$, $p > .01$).

Hypothesis III c: Cultural Domain Variables Predicting Eating Pathology and Extreme Weight Loss Behaviours.

It was hypothesized that Internalization of Western values, Mainstream and Heritage cultural identification, and their interaction (Heritage x Mainstream) would predict, and each uniquely explain variance in Eating Pathology and Extreme Weight Loss Behaviours once BMI had been held constant. Hierarchical multiple regression analyses for each criterion variable were conducted with BMI entered on the first step. Internalization, Heritage, Mainstream, and their interaction (Heritage x Mainstream) were entered on the second step in order to examine their unique contribution to each criterion variable when BMI was held constant.

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Predicting Eating Pathology. Table 14 displays the correlations, standardized regression coefficients (β), semipartial correlations (sr^2), and R, R^2_{change}, and adjusted R^2 after entry of all variables. R^2_{change} was significant from zero only at step two. After the second step with all variables in the equation, $R = .62$, $F(5, 103) = 12.50$, $p < .01$.

On the first step, BMI did not significantly improve the prediction of Eating Pathology ($R^2 = .02$, $F_{change}(1, 107) = 2.34$, $p > .01$). On the second step, cultural domain variables significantly improved the prediction of Eating Pathology ($R^2 = .36$, $F_{change}(4, 103) = 14.75$, $p < .01$). Whereas Internalization uniquely explained 34% of the variance in Eating Pathology ($t = 7.52$, $p < .01$), Heritage cultural identification ($t = 0.72$, $p > .01$), Mainstream cultural identification ($t = -0.53$, $p > .01$), and the interaction between Heritage and Mainstream cultural identification ($t = 0.08$, $p > .01$) were not found to be unique contributors.

Predicting Extreme Weight Loss Behaviours. A second hierarchical multiple regression was conducted using the same set of predictor variables but with Extreme Weight Loss Behaviours as the criterion variable. Table 15 displays the correlations, standardized regression coefficients (β), semipartial correlations (sr^2), and R, R^2_{change}, and adjusted R^2 after entry of all variables. R^2_{change} was significant from zero at both steps. After the second step with all variables in the equation, $R = .50$, $F(5, 103) = 6.98$, $p < .01$.

On the first step, BMI significantly improved the prediction of Extreme Weight Loss Behaviours ($R^2 = .08$, $F_{change}(1, 107) = 9.76$, $p < .01$), accounting for 5% of the unique variance ($t = 2.66$, $p < .01$) On the second step, cultural domain variables did significantly improve the prediction, accounting for an additional 17% of the variance in Extreme Weight Loss Behaviours ($R^2 = .17$, $F_{change}(4, 103) = 5.84$, $p < .01$). Internalization was found to uniquely explain 16% of the variance in Extreme Weight Loss Behaviours ($t = 4.62$, $p < .01$), but Heritage cultural identification ($t = 1.86$, $p > .01$), Mainstream cultural identification ($t = 0.49$, $p > .01$), and the interaction between Heritage and Mainstream cultural identification ($t = -0.30$, $p > .01$) were not unique contributors.

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Table 14

Hierarchical multiple regression of cultural domain variables predicting Eating Pathology (N = 109)

Variables	B	$SE\ B$	β	r	sr^2	t[a]	R^2_{change}
Step 1							
BMI	.03	.03	.09	.15	.01	1.16	.02
Step 2							
Internalization	.06	.02	.60	.60**	.34	7.52**	
Heritage	.05	.07	.06	-.03	.00	0.72	
Mainstream	-.05	.10	-.04	-.07	.00	-0.53	
Interaction (Heritage X Mainstream)	.00	.06	-.01	-.08	.00	-.08	.36**

$R^2 = .38$ Adjusted $R^2 = .35$ $R = .62$, $F(5, 103) = 12.50$ **

[a]For regression coefficients

** $p < .01$

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Table 15

Hierarchical multiple regression of cultural domain variables predicting Extreme Weight Loss Behaviours (N = 109)

Variables	B	$SE\ B$	β	r	sr^2	t^a	R^2_{change}
Step 1							
BMI	.06	.02	.22	.29**	.05	2.66	.08**
Step 2							
Internalization	.06	.01	.42	.40**	.16	4.62**	
Heritage	.10	.05	.14	.13	.03	1.86	
Mainstream	.00	.07	.03	.04	.00	0.05	
Interaction (Heritage X Mainstream)	-.01	.04	.00	-.08	.00	-0.30	.17**

R^2 = .25 Adjusted R^2 = .22 R = .52, F (5, 103) = 6.98**

[a]For regression coefficients

** $p < .01$

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Hypothesis IV a: Variables From Individual, Cultural, and Family Domains Predicting Eating Pathology and Extreme Weight Loss Behaviours.

It was hypothesized that General Dissatisfaction, Perfectionism, Internalization of Western values, Family Conflict, and parental Enmeshment would predict, and each uniquely explain variance in Eating Pathology and Extreme Weight Loss Behaviours, once BMI was held constant. Perfectionism and parental Enmeshment were omitted from the analysis of hypothesis IV based on their performance in earlier analyses. Hierarchical multiple regression analyses for each of the criterion variables were conducted with BMI entered on the first step. General Dissatisfaction, Family Conflict, and Internalization of Western values were entered on the second step in order to examine their unique contribution to each criterion variable when BMI was held constant.

Predicting Eating Pathology. Table 16 displays the correlations, standardized regression coefficients (β), semipartial correlations (sr^2), and R, R^2_{change}, and adjusted R^2 after entry of all variables. R^2_{change} was significant from zero only at step two. After the second step with all variables in the equation, $R = .68$, $F(4, 105) = 21.08$, $p < .01$.

On the first step, BMI did not significantly improve the prediction of Eating Pathology ($R^2 = .02$, $F_{change}(1, 108) = 2.30$, $p > .01$). On the second step, General Dissatisfaction, Family Conflict, and Internalization significantly improved the prediction of Eating Pathology ($R^2 = .43$, $F_{change}(3, 105) = 26.79$, $p < .01$). Whereas Internalization uniquely explained 21% of the variance in Eating Pathology ($t = 6.35$, $p < .01$), and General Dissatisfaction uniquely explained 4% of the variance ($t = 2.76$, $p < .01$), Family Conflict ($t = 1.46$, $p > .01$) was not a unique contributor.

Predicting Extreme Weight Loss Behaviours. A second hierarchical multiple regression was conducted using the same set of predictor variables but using Extreme Weight Loss Behaviours as the criterion variable. Table 17 displays the correlations, standardized regression coefficients (β), semipartial correlations (sr^2), and R, R^2_{change}, and adjusted R^2 after entry of all

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Table 16

Hierarchical multiple regression of individual, familial, and cultural domain variables predicting Eating Pathology (N = 110)

Variables	B	$SE\ B$	β	r	sr^2	t^a	R^2_{change}
Step 1							
BMI	.01	.03	.04	.14	.00	0.49	.02
Step 2							
General Dissatisfaction	.04	.02	.23	.45**	.04	2.76**	
Family Conflict	.07	.05	.11	.31**	.01	1.46	
Internalization	.11	.02	.50	.61**	.21	6.35**	.43**

R^2 = .45 Adjusted R^2 = .42 R = .67, F (4, 105) = 21.08 **

[a]For regression coefficients

** $p < .01$

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Table 17

Hierarchical multiple regression of individual, familial, and cultural domain variables predicting Extreme Weight Loss Behaviours (N = 110)

Variables	B	$SE\ B$	β	r	sr^2	t^a	R^2_{change}
Step 1							
BMI	.06	.02	.22	.29**	.04	2.58**	.08**
Step 2							
General Dissatisfaction	.02	.01	.18	.33**	.02	1.90	
Family Conflict	-.01	.04	-.03	.13	.00	-0.36	
Internalization	.05	.01	.33	.41**	.11	3.64**	.17**

R^2 = .26 Adjusted R^2 = .23 R = .51, F (4, 105) = 8.96**

[a]For regression coefficients

** $p < .01$

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variables. R^2_{change} was significant from zero at both steps. After the second step with all variables in the equation, $R = .51$, $F(4, 105) = 8.96$, $p < .01$.

On the first step, BMI significantly improved the prediction of Extreme Weight Loss Behaviours ($R^2 = .08$, $F_{change}(1, 108) = 9.66$, $p < .01$). BMI was found to uniquely explain 5% of the variance in Extreme Weight Loss Behaviours ($t = 2.58$, $p < .01$). On the second step, General Dissatisfaction, Family Conflict, and Internalization significantly improved the prediction, accounting for an additional 17% of the variance in Extreme Weight Loss Behaviours ($R^2 = .17$, $F_{change}(3, 105) = 8.10$, $p < .01$). Whereas Internalization was found to uniquely explain 9% of the variance in Extreme Weight Loss Behaviours ($t = 3.64$, $p < .01$), General Dissatisfaction ($t = 1.90$, $p > .01$) and Family Conflict ($t = -0.36$, $p > .01$) were not unique contributors.

Secondary Hypotheses

Hypothesis V a: Variables From Individual, Cultural, and Family Domains Predicting General Distress. A hierarchical multiple regression was conducted using General Distress as the criterion variable to test the hypothesis that general dissatisfaction, internalization of Western values, and family conflict would also predict, and each uniquely explain, variance in general distress once BMI was held constant. Table 18 displays the correlations, standardized regression coefficients (β), semipartial correlations (sr^2), and R, R^2_{change}, and adjusted R^2 after entry of all variables. R^2_{change} was significant from zero at step two. After the second step with all variables in the equation, $R = .64$, $F(4, 105) = 18.51$, $p < .01$.

On the first step BMI did not significantly improve the prediction of General Distress ($R^2 = .00$, $F_{change}(1, 108) = 0.49$, $p > .01$). On the second step, General Dissatisfaction, Family Conflict, and Internalization significantly improved the prediction of General Distress, accounting for an additional 41% of the variance ($R^2 = .41$, $F_{change}(3, 105) = 24.41$, $p < .01$). Whereas General Dissatisfaction was found to uniquely explain 23% of the variance in General Distress ($t = 6.45$, $p < .01$), and Internalization 5% ($t = 2.89$, $p < .01$), Family Conflict ($t = -0.47$, $p > .01$) was not a unique contributor.

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Table 18

Hierarchical multiple regression of individual, familial, and cultural domain variables predicting General Distress (N = 110)

Variables	B	$SE\ B$	β	r	sr^2	t^a	R^2_{change}
Step 1							
BMI	-.04	.05	-.06	.07	.00	-0.83	.00
Step 2							
General Dissatisfaction	.18	.03	.55	.60**	.23	6.45**	
Family Conflict	-.04	.10	-.04	.20	.00	-0.47	
Internalization	.09	.03	.23	.41**	.05	2.89**	.41**

$R^2 = .41$ Adjusted $R^2 = .39$ $R = .64$, $F(4, 105) = 18.51$**

[a]For regression coefficients

** $p < .01$

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Supplementary Analyses

Additional analyses were run to help clarify some of the obtained results from prior analyses. These analyses are post-hoc in nature and were not intended to test any hypotheses.

Acculturation Strategies and Family Variables

When studying the relationships between acculturation strategies and the primary variables in the study, an important relationship emerged between family conflict and the acculturation strategy of Integration. Those women who endorsed Integration had significantly lower rates of family conflict than those women who endorsed other acculturation strategies. To compensate for the lopsided sample sizes (Integration n = 97, Assimilation/Separation n = 12), two different strategies were used to determine if there was a statistically significant difference between groups. The first method was to create a random sample of 12 participants from the Integration group. This Integration group scored significantly lower on family conflict (n = 12, M = 4.00, SD = 2.22) than the Assimilation/Separation group (n = 12, M = 6.08, SD = 1.68); $t\,(22) = -2.60$, $p < .01$. A nonparametric statistic was also used to determine group differences; a significant difference was found between the Integration group (n = 97, *mean rank* = 52.25) and the Assimilation/Separation group (n = 12, *mean rank* = 77.21); *Mann-Whitney U* = 315.50, $p < .01$. Therefore both statistical methods were similar in their findings that the Integration group scored significantly lower on family conflict than those women who endorsed other acculturation strategies.

Relationship Between Body Mass Index (BMI) and Extreme Weight Loss Behaviours

Contrary to expectations, BMI was positively correlated with Extreme Weight Loss Behaviours ($r = .29$, $p < .01$). In many hierarchical multiple regressions, BMI was also a significant predictor of Extreme Weight Loss Behaviours. To help understand why this occurred, correlational analyses were run with BMI and the subscales of the Extreme Weight Loss Behaviours Checklist, which include Fasting, Crash Dieting, Vomiting, Laxatives, Appetite Suppressants, and Diuretics. See Table 19 for the correlation matrix. On examination, the

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Table 19

Correlations of subscales of Extreme Weight Loss Behaviours Checklist and Body Mass Index (BMI)

Variables	1	2	3	4	5	6	7	8
1. BMI	-----	.29**	.20	.34**	.17	-.04	.09	.07
2. Extreme Weight Loss Behaviours		-----	.69**	.77**	.49**	.51**	.60**	.56**
3. Fasting			-----	.48**	.30**	.13	.35**	.19
4. Crash Dieting				-----	.36**	.24	.28**	.33**
5. Vomiting					-----	.32**	.23	.43**
6. Laxatives						-----	.34**	.44**
7. Appetite Suppressants							-----	.43**
8. Diuretics								-----

** $p < .01$

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subscale that was positively correlated with BMI was Crash Dieting ($r = .34$, $p < .01$), and a trend in the same direction was indicated with Fasting ($r = .20$, $p < .05$). No other subscales were significantly related to BMI.

General Acculturation and Eating Pathology

Supplementary analyses were conducted to explore the lack of significant relationship between general acculturation and eating pathology.

A more conservative sample of second-generation women. Sixty-two women from the overall sample identified *both* parents as being born in their country of origin. Analyses were conducted to determine if any relationships between general acculturation and other primary variables of the investigation existed within this sample. There was no significant relationship between eating pathology and general acculturation (Heritage cultural identification $r = .14$, $p > .05$; Mainstream cultural identification $r = .10$, $p > .05$). When the subsample was broken down further by cultural group, the equivalent relationships were observed.

T-tests that were conducted to assess possible differences between participants who had both parents born in country of origin and those who had father only born in country of origin (the mother born in country of origin sample was too small to include in statistical analyses) revealed no significant differences on eating pathology scores or on family variables.

Support for the Vancouver Index of Acculturation (VIA) as a general measure of acculturation. The *VIA* subscales – Heritage and Mainstream cultural identifications –were correlated in the expected directions with demographic variables including location of parental birth, length of time in Canada, and first language spoken at home. Participants whose fathers were born in their country of origin scored higher on Mainstream cultural identification than those who identified both parents as born in their country of origin; $t(101) = -2.36$, $p < .05$; (Father born, $M = 7.16$, $SD = 1.07$; Both parents born, $M = 6.59$ $SD = 1.28$). There was a positive relationship ($r = .23$, $p < .05$) between Mainstream cultural identification and length of time parents had lived in Canada. Participants who spoke Greek as their first language ($n = 31$) scored higher on Heritage cultural identification than participants who spoke English first ($n = 11$), $t(40) = 3.71$, $p < .05$; (Greek, $M = 7.40$ $SD = 1.35$; English; $M = 5.59$, $SD = 1.49$).

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Further support for the construct validity of the VIA was obtained through the examination of its relationship with the Greek unidmensional measure of acculturation, the Greek-American Acculturation Scale. Only the Greek sample (N = 52) completed this measure. There was a significant positive relationship between the Greek Acculturation Scale (higher scores indicating a more "traditional" orientation) and Heritage Cultural identification ($r = .76$, $p < .05$). No significant relationship was found between the Greek-American Acculturation Measure and Mainstream Cultural identification ($r = -.20$, $p > .05$). The correlation between eating pathology and the Greek-American Acculturation Measure was not significant ($r = -.18$, $p > .05$)

Correlations Between Predictors.

To supplement understanding of the primary hypotheses, some intercorrelations were analyzed.

Relationship between variables in the family domain. Of interest within the family domain was the finding that Family Conflict was positively associated with Mother Enmeshment ($r = .34$, $p < .01$). Family Conflict, however, was not significantly correlated Father Enmeshment ($r = .15$, $p > .01$).

Relationship between variables in the cultural domain. Mainstream cultural identification was not significantly correlated with Internalization of Western values ($r = -.08$, $p > .01$).

Relationship between variables in the individual, familial, and cultural domains. Of interest, is the finding that Family Conflict was positively correlated to General Dissatisfaction ($r = .35$, $p < .01$), however, Family Conflict was not significantly correlated with Internalization ($r = .22$, $p > .01$). Father Enmeshment was positively correlated with Perfectionism ($r = .26$, $p < .01$), but not significantly correlated with General Dissatisfaction ($r = .08$, $p > .01$)

Themes Based on Written Feedback on Questionnaires.

Participants had the option to provide written feedback at the end of the questionnaire package. Twenty women out of 110 provided feedback, which ranged from a word or two, to a few paragraphs. Although this information was not designed or appropriate for formal qualitative analysis (e.g., grounded theory analysis), two themes were apparent. Some women noted the

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need for the assessment of the differential treatment of men and women in the Greek and Italian family and culture. They emphasized, in particular, the differences between the way sons and daughters are treated. Secondly, some women wrote that religion was an important factor in their culture and it needs to also be assessed in future research.

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CHAPTER IV

DISCUSSION

Prevalence of Disordered Eating and Weight-Loss Behaviours

The prevalence of disordered eating in the current sample was estimated using the EAT-26 cutoff of 20 to determine cases "at risk" for an eating disorder. Based on this cutoff, 20 women, or 18% of the sample, were classified as at risk for an eating disorder. This is comparable to published rates reported for various samples of university women in North America (Anstine & Grinenko, 2000; Prouty, Protinsky & Canady, 2002). The mean untransformed EAT-26 score in the current sample was 9.66 (SD = 8.39), comparable to reported means for other second-generation immigrant women (e.g., means ranged from 9.30 – 10.8 for East Asian samples; Ahmed at al., 1994; Furnham & Husain, 1999; Mumford et al., 1991). The mean EAT-26 score for the current sample is comparable to reported rates for the Anglo-British comparison samples from the same studies described above (means ranged from 7.07 – 9.32).

The percentage of women in the current sample who reported different forms of weight loss behaviours was also calculated. Both crash dieting and fasting were the most common extreme weight loss behaviours endorsed (43% of the sample endorsed each), followed by use of appetite suppressants (20%) and diuretics (18%). The rates of laxative use (16%) and vomiting (10%) were also quite high. When this sample is compared to a sample of Australian immigrant girls who completed the same measure (Paxton et al., 1991) the rates were higher in the current sample for every extreme weight loss behaviour except for vomiting. Moreover, when compared to a sample of Greek-Australian and Anglo-Australian girls (see Table 7, p. 79), the current sample had comparable mean extreme weight loss behaviour scores.

The observed rates of eating pathology and weight-loss behaviours and comparisons with other samples should be interpreted with caution, as the current investigation was not designed specifically to make comparisons between samples or to estimate the prevalence of

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eating pathology in the population of Greek and Italian second-generation women (e.g., no comparison groups).

Differences in extreme weight loss behaviour scores observed in this versus other samples may be largely attributable to age differences in the samples. Whereas the current sample was of university age and older, samples studied previously were of middle school and high school women. Bulimia and its related behaviours tend to develop at a later age, often beginning when a woman enters her late teens or early twenties (Fairburn et al., 1997).

Acculturation Strategies in the Sample

The majority of the current sample (89%) endorsed integration as their dominant acculturation strategy, whereas no one in the sample endorsed marginalization as a dominant acculturation strategy. Only eight participants (7%) endorsed assimilation and four endorsed separation (4%). This pattern is consistent with research emerging from several countries in which integration is identified as the preferred acculturation strategy and marginalization as the least preferred among immigrant samples (first and second-generation) and minority groups (Berry, Kim, Power, Young, & Bujaki, 1989; Ghuman, 1997; Horenczyk, 1996; Krishnan & Berry, 1992; Pawliuk et al., 1996; Sayegh & Lasry, 1993; Sharir, 2000). The current findings extend the literature base to second generation Italian and Greek Canadian women.

Variables Associated with Eating Pathology

Individual Domain Predictors of Eating Pathology

As hypothesized, the individual domain variables were predictive of eating pathology. However, only general dissatisfaction was a significant predictor, accounting for 19% of the variance in eating pathology. The strength of general dissatisfaction in its prediction of eating pathology is consistent with the majority of research from the eating disorder field (Shisslak et al., 1998; Striegel-Moore & Steiner-Adair, 1998; Stice, 2001). It is believed that this relationship exists because a woman who is experiencing negative affect and general dissatisfaction is more likely to binge to gain comfort and to distract herself from negative feelings (Stice, 2001).

Self-esteem was correlated with eating pathology but was not included in regression analyses due to its very high correlation with general dissatisfaction. The utility of self-esteem as

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a useful predictive risk factor has been questioned (Stice, 2001). Consistent with the findings from this study, Stice noted that although self-esteem is correlated with eating pathology, it has not emerged as a significant predictor in studies that have used more rigorous prospective designs (Stice, 2001).

Whereas general dissatisfaction and self-esteem were related to eating pathology, neither perfectionism, nor the interaction between perfectionism and general dissatisfaction, were significantly related to or predictive of any of the criterion variables. Although the finding in the current sample that perfectionism and eating pathology are not significantly related contradicts earlier research and theory (Franko-Orasan-Weibe, 1998; Joiner, Heatherton, Rudd & Shmidt, 1997; Kiemle, Slade, and Dewey, 1987), it is consistent with more recent research that has found only modest support for the utility of perfectionism in understanding eating pathology, primarily through its interactions with other risk factors, such as body dissatisfaction (Stice, 2001).

Overall, within the individual domain, only general dissatisfaction accounted for a significant amount of variance in eating pathology. It is important to keep in mind, however, that general dissatisfaction was highly correlated with many individual variables, thereby reducing the chances for those variables to be significant predictors of eating pathology. In hindsight, the use of general dissatisfaction in the current investigation may have minimized the chance to observe other variable relationships.

Family Domain Predictors of Eating Pathology

As hypothesized, family conflict and parental enmeshment were predictive of eating pathology, although only family conflict was a significant predictor, accounting for 5% of the unique variance in eating pathology. Interestingly, enmeshment with mother was positively correlated with both eating pathology and family conflict.

The current findings are consistent with research that demonstrates a relationship between family variables and eating pathology (e.g., Brookings and Wilson, 1994; Rowa, Kerig & Geller, 2001). The relationships between family variables and eating pathology have also been demonstrated in a sample of immigrant women. In a series of studies (Furnham & Adam-Saib,

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2001; Furnham & Husain, 1999; Tamjid & Furnham, 2001), Furnham and her colleagues have demonstrated that family variables of overprotectiveness and family conflict are related to eating pathology among samples of East Asian women in the UK. The current finding that family conflict and eating pathology are positively related extends Furnham's findings to a Greek and Italian sample in Canada and further supports the importance of family conflict in understanding eating pathology risk. On a larger scale, the findings add support to the importance of family conflict in understanding emotional and adjustment problems among immigrants (e.g., Beiser et al., 1995; Canadian Task Force on Mental Health Issues Affecting Immigrant and Refugees, 1988b; Guarnaccia & Lopez, 1998; Ying, 1999).

The relationship between enmeshment and family conflict is also consistent with Furnham's series of studies that demonstrate a relationship between boundary problems (in this case overprotectiveness) and family conflict (Furnham & Adam-Saib, 2001). Further research is needed to clarify the relationship between enmeshment and family conflict, as there are many alternative explanations for the existence of this relationship. For example, it could reflect the influence of a third factor that was not measured in the current investigation, such as differential acculturation, which may increase both enmeshment and conflict in immigrant families (Bulik, 1987; Timimi, 1995).

The pattern of results highlights the complexity of the interrelationships between family factors, and their relationship to eating pathology. There is a need to study overprotectiveness along with enmeshment and other family variables to determine how they relate and interact with each other to help clarify the current findings.

Cultural Domain Predictors of Eating Pathology

One of the general goals of this investigation was to clarify the conceptualization of culture-change and its relationship to eating pathology. As hypothesized, the variables in the cultural domain were predictive of eating pathology, although internalization of Western values of thinness was the only significant predictor, uniquely explaining 34% of the variance in eating pathology. This finding is consistent with previous research (Griffiths et al., 1999; Heinberg et al., 1995; Stice, 2001). Internalization of Western values of thinness has been identified as a

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construct distinct from body dissatisfaction and as a strong predictor of eating pathology (Heinberg et al., 1995; Stice, 2001). Logically, internalization may be separate but causally related to body dissatisfaction. Young women must first be aware of, and internalize, the thin ideal before determining that there is a discrepancy between personal shape and the societal ideal. Many researchers in the field would agree that acculturation is multidimensional (in terms of food, clothing, language, friendships, religion, values, etc), and research indicates that people do not acculturate in all areas of their lives at the same rate (e.g., Kim, Laroche, & Tomiuk, 2001; Laroche, Kim & Hui, 1997; Mavreas, Bobbington & Der, 1989; Triandis, Kashima, Shimada, & Villareal, 1988). Blanket assessment of acculturation level in the current study might not be sensitive enough to identify the important aspects of acculturation related to eating pathology. The strength of internalization of Western values of thinnness as a predictor of eating pathology in the current investigation provides further support for the sociocultural explanations of eating pathology that assert that the Western values of thinness are poisonous to young women (e.g., Shisslak et al., 1998; Striegel-Moore et al., 1986).

Conceptualization of acculturation. The finding that the Mainstream and Heritage cultural identification scales were orthogonal supports the conceptualization of acculturation as bidimensional. Mainstream and Heritage cultural identification scales also correlated in expected directions with several cultural demographic variables. For example there was a positive relationship between Mainstream cultural identification and length of time participants' parents have lived in Canada. Participants who spoke Greek as their first language scored higher on Heritage cultural identification than those participants who spoke English first. Moreover, when the two cultural identification scales were compared to a unidimensional measure of acculturation, there was a significant positive relationship between the Greek Acculturation Scale (higher scores indicating a more "traditional" orientation) and Heritage cultural identification. No significant relationship was found between the Greek-American acculturation measure and Mainstream cultural identification.

The current findings extend and support the research and models articulated by Berry (Berry, 1990, 1997; Berry et al., 1989) and findings of many others in the acculturation field (e.g.,

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Kim, Laroche, & Tomiuk, 2001; Laroche, Kim & Hui, 1997; Ryder, Alden, & Paulhus, 2000). They also add support to the growing body of evidence that the unidimensional model of acculturation, and measures based on this model, are no longer useful. Unfortunately, recent reviews of the acculturation literature suggest that most investigators continue to use unidimensional measures of acculturation (Kim, Laroche, & Tomiuk, 2001; Smolak & Streigel-Moore, 2001).

The current findings also demonstrate that conceptualizing acculturation as bidimensional is not enough. One must also investigate the interaction of these dimensions, thereby classifying individuals into one of Berry's four acculturation strategies, Assimilation, Separation, Integration, or Marginalization. This conceptualization of acculturation provides a richer picture of an individual or group's acculturation strategy than studying the two dimensions of heritage cultural identification and mainstream heritage cultural identification separately. In the current investigation this was highlighted by the finding that participants who endorsed Integration had lower rates of family conflict than those participants who endorsed Separation or Assimilation. In this case, the study of the two dimensions of general acculturation (Heritage and Mainstream cultural identification) alone did not provide a full picture of the relationship between family variables and culture-change. Only when participants' were classified by level of acculturation on both dimensions did the connection emerge and become meaningful. This finding is consistent with a growing body of literature that demonstrates Integration is more closely associated with better mental health and adjustment among immigrant and minority group populations (Beiser et al., 1995; Berry, 1998; Guarnaccia & Lopez, 1998; Ghaffarian, 1998).

The connection between integration and family variables is also consistent with the concept of differential acculturation, the process in which children in a family assimilate the new culture and language faster than their parents, which often leads to intergenerational conflict among immigrant families. It is possible that through integration, children are able to reduce the effects of differential acculturation at home. Many clinicians and some researchers (e.g., DiNicola, 1997; Giordano & McGoldrick, 1996) note that many second generation children are adept at living in 'both worlds', their traditional culture and mainstream culture, by being dutiful daughters who follow traditions at home and being "Canadian" teenagers and young adults when

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not at home. In a sense they skillfully integrate both cultures and reduce potential conflict at home. Future research, particularly qualitative investigations, could determine the frequency of this form of integration, how integration is manifested in immigrant children's day to day life, and how it may be related to family conflict.

Acculturation strategies and eating pathology. Interestingly, although a direct connection between culture-change and eating pathology was found in terms of internalization of Western values of thinness, there was no similar direct connection found between Mainstream and Heritage cultural identifications and eating pathology. Moreover, when participants were grouped by acculturation strategy (i.e., Integration, Assimilation, Separation, and Marginalization), no significant relationships were observed between acculturation strategy and eating pathology. Neither did there appear to be any relationship between acculturation strategy and cases of potential eating disorders.

This finding conflicts with findings from a limited number of investigations of eating pathology and acculturation with immigrant women (Franko & Herrera, 1997; Mumford et al., 1991). In both prior studies, however, the investigators used unidimensional measures of acculturation and obtained conflicting results. The current findings are actually consistent with more recent investigations, in which no direct relationship between general acculturation strategies and eating pathology has been found (Smolak & Striegel-Moore, 2001). Studies of ethnic minority women that have found relationships between assimilation and eating pathology among primarily African American and Hispanic American women (Smolak & Streigel-Moore, 2001) may reflect a more specific form of assimilation similar to that found in the current investigation, namely, the Western value of thinness.

The lack of relationship between general acculturation and eating pathology must be interpreted with caution because the finding could be an artifact of some aspect of the current investigation, such as sampling bias, lack of statistical power to detect anything but strong relationships, or measurement error. Although sampling bias is possible, lack of power is a less plausible explanation because the absolute values of the correlations between acculturation

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strategies and eating pathology were very low. Therefore, even with more statistical power the relationships observed would still be too small to be meaningful.

Similarly, measurement error does not appear to account for these findings. The measure of acculturation used, the Vancouver Index of Acculturation (VIA; Ryder, Alden, & Paulhus, 1999), although relatively new in its development, is based on a well-established conceptualization of acculturation and has demonstrated strong internal and external validity and reliability (Ryder, Alden, & Paulhus, 1999). The VIA has been used with Canadian East Asian groups, as well as with South Asian and European immigrants (Ryder, Alden, & Paulhus, 1999). In the current study, the two VIA subscales correlated in the expected directions with many other indicators of acculturation, including status of English as a first language and a unidimensional acculturation measure.

Moreover, even when a more conservative subsample of second-generation women was studied (participants whose parents were both born in the country of origin), no significant relationship between general acculturation and eating pathology was found. Thus, this finding does not appear to be an artifact of the current investigation; rather it suggests a more complex relationship between acculturation variables and eating pathology.

One possibility suggested by the current findings is that general acculturation may be indirectly related to eating pathology through its relationship with family conflict. Those participants who endorsed integration had significantly lower family conflict than participants that endorsed separation or assimilation. Moreover, family conflict was significantly related to eating pathology. As discussed earlier, both of these findings have support in the literature. Family conflict may hold the key for understanding the connection between general acculturation and eating pathology. Relationships between family conflict, integration, and eating pathology should be investigated in more depth to determine if this possible indirect link exists.

Predictors of Eating Pathology Across Domains

After analyzing predictors by domain, a final analysis was run with variables from all the domains simultaneously. As hypothesized, general dissatisfaction, family conflict, and internalization of Western values significantly predicted eating pathology. Both general

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dissatisfaction (uniquely accounting for 4% of variance) and internalization of Western values (uniquely accounting for 21% of the variance) were significant predictors. Family conflict, despite being a significant predictor of eating pathology in earlier analyses, was not a significant predictor of eating pathology over and above the variance accounted for by general dissatisfaction and internalization of Western values. This analysis, as compared to earlier ones, accounted for the most variance in eating pathology. All together, the predictors (including the covariate of BMI) accounted for 42% of the variance in eating pathology.

One variable within each domain appeared to be very strong and to account for most of the variance. What is striking is that the variables that were the most prominent predictors in this study are similar to risk factors identified in a very recent review of the eating disorder risk factor literature by Stice (2001). Stice included only risk factors that had been identified through prospective or experimental designs; they were; BMI (in some but not all studies), sociocultural pressures to be thin, thin-ideal internalization, body dissatisfaction and dieting, and negative affectivity. These fit surprisingly well with the findings of the current study. Although measures of pressures to be thin, or body dissatisfaction and dieting, were not included in the current investigation, the variables that were identified are consistent with the risk factors for eating pathology found among women in general. The only significant variable that was observed in the current investigation, and not identified in the review, was family conflict. This finding is consistent, however, with Furnham's series of studies in which relationships between family conflict and parental overprotectiveness and eating pathology among immigrant women have been observed (e.g., Furnham & Husain, 1999).

In the current investigation the decision to include multiple variables from different domains simultaneously was supported by the finding that the variance accounted for by the final regression equation with variables from individual, familial and cultural domains was higher than the variance accounted for in any of the other regression analyses. It is also consistent with the multifactorial nature of eating pathology. Once these findings are replicated, the next step should be to study and clarify the complex set of relationships between the identified correlates, thereby

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establishing a model of eating pathology for immigrant women that can then stimulate further investigations.

General Discussion of Results

Patterns Observed Across all Findings

One pattern that emerged in the current study was the positive correlation between BMI and extreme weight loss behaviours and the significant role that BMI played in the prediction of extreme weight loss behaviours. For example, within the individual variable domain, BMI accounted for 5% of the variance in extreme weight loss behaviours and was the only significant predictor of extreme weight loss behaviours other than general dissatisfaction. When the Extreme Weight Loss Behaviour Checklist (EWLB; Paxton et al., 1991) was broken down, and its subscales were studied separately, a significant positive relationship was observed between BMI and crash dieting. BMI was not significantly related to more extreme forms of weight loss, such as vomiting or laxative use. Therefore, BMI appears to be directly related to more normative or common forms of extreme weight loss behaviours. This is an important finding as extreme weight loss behaviours, particularly dieting and fasting, are significant risk factors for eating pathology (Stice, 2001). In fact, in the current sample, there was a very strong positive relationship between crash dieting and eating pathology. Although BMI may not be directly related to eating pathology, it is likely indirectly linked to eating pathology through its influence on extreme weight loss behaviours.

A second pattern to emerge was that most of the predictors of eating pathology were also predictive of general distress. This pattern is consistent with findings from other risk factor research (Crago, Shisslak & Ruble, 2001) that suggests that the majority of risk factors are nonspecific (i.e., they are risk factors for many different mental health problems or distress). In the present study, the internalization of Western values of thinness could be considered specific to eating pathology, whereas other identified correlates, including general dissatisfaction and family conflict could be considered nonspecific. Thus culture-change may be related to increases in general distress, or increases in nonspecific correlates such as family conflict. The

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internalization of Western values of thinness, on the other hand, is more specific (and represents an idea of what to do with the distress that is culture specific, or an idiom of distress that is internalized). This conjectured conceptualization of eating pathology risk is also consistent with the understanding of cultural influences in other areas of mental health and adjustment, including suicide (Kral, 1998).

General Implications of Findings

Theoretical implications. The current findings suggest a possible mechanism of risk behind the culture-change theory of eating pathology among immigrant women (DiNicola, 1990). In the current investigation, there were both a direct, and a possible indirect, connection between culture-change and eating pathology. Directly, culture-change appears to relate to eating pathology through the internalization of Western values of thinness. A possible indirect connection could exist through a relationship between the strategy of integration and family conflict, which in turn may be related to eating pathology.

Secondly, the finding that internalization of Western values of thinness is a strong correlate of eating pathology adds additional support to the belief that eating pathology is a culture-bound syndrome. This does not negate the possibility of a culture-change model; rather it extends and clarifies the culture-change model of eating pathology by emphasizing the importance of Western culture, as well as culture-change. Just as internalization of values of thinness is unlikely to be sufficient for eating pathology to occur among immigrant women, the corollary is likely true; culture-change alone may not be sufficient, but needs to occur within the context of Western values of thinness, for risk to be significant. A true test of this assertion, however, would require the study of women who originate from one non-Western country and immigrate to another non-Western country. If culture-change is the only important factor, and Western values of thinness are not necessary, higher rates of eating pathology among immigrant women should be observed.

Clinical Implications. Until the results of the current study are replicated and extended to other samples it is unclear whether the findings will generalize beyond the current sample. With

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this qualification in mind, the current findings can inform primary care physicians, family therapists, and cross-cultural workers.

One out of five women in the current sample was classified as potentially having an eating disorder. A relatively high percentage of participants also reported engaging in extreme weight loss behaviours. These findings are alarming, particularly because the primary care physicians who likely have the most contact with these women may be unaware that second-generation immigrant women are even at risk for developing eating pathology. Traditional beliefs that white middle-class women are the only women at risk for developing eating disorders still prevail (Gordon, Perez & Joiner, 2002; Smolak & Striegel-Moore, 2001). This is even more alarming in light of the evidence that immigrant populations underutilize mental health resources and that family physicians may be the only health contact immigrant women may have (Guarnaccia & Lopez, 1998; Smolak & Striegel-Moore, 2001).

Future research should be conducted to assess what beliefs and knowledge primary care and family physicians have about immigrant and minority group women and eating pathology. If knowledge and awareness are determined to be low, a first step in prevention would be to provide information to these doctors and at the same time incorporate this information into the training of residents in family medicine.

Another form of prevention may arise out of the finding that internalization of Western values of thinness is an important risk factor for immigrant women. If this finding is replicated in first-generation women, then very early interventions could be developed to target these values. For example, it may be effective to incorporate information about the "thin ideal", and warnings about the dangers associated with the internalization of these values, into information packages and orientations provided to immigrants entering the country.

Prevention programs currently developed to reduce the internalization of Western values of thinness, such as programs that help young women learn to deconstruct media images, may be applicable to second-generation immigrant women (e.g., Kater, Rohwer, & Levine, 2001). Future research could directly test the effectiveness of these prevention programs with second-generation women.

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The finding that family conflict is associated with eating pathology in the current sample can also be applied to prevention programming. If this finding is replicated, parenting programs designed to address problems of intergenerational conflict (e.g., Ying, 1999) may also help in preventing eating pathology. In addition, the association between family conflict and eating pathology supports the utility of family therapy for immigrant women who are at risk for eating pathology. More specifically, cultural family therapy has been demonstrated to be very helpful for immigrant families (DiNicola, 1990; 1998).

Finally, findings from the current investigation, and other investigations of eating pathology in immigrant women, may also inform clinicians and policy makers in countries undergoing rapid culture-change in the form of Westernization. According to DiNicola's theory, women in these countries would be similar to immigrant women in that they would be exposed to the same experiences of culture-change and the same Western values of thinness that increase risk for eating pathology. In fact, there is growing evidence that this may be the case (Gordon, 2001). The importance of increasing awareness, identifying women who are high risk, and incorporating prevention programs and treatments, will become increasingly pressing if the rates of eating pathology in these countries continue to rise.

Limitations of the Study

One of the primary limitations of the current investigation is the cross-sectional nature of the design, which does not allow for the interpretation of causality. Therefore, the variables under investigation can only be identified as correlates until prospective or experimental work is done (Stice, 2001). Until that time, there are multiple alternative explanations for the relationships observed, including reverse causation or a third variable, not investigated in the current study that may be influencing the observed relationships. (The related research reviewed, however, particularly the longitudinal studies reviewed by Stice (2001), do make reverse causation quite unlikely as a possible interpretation of the current findings).

Another limitation of this study is what was not assessed or controlled for. Other areas or domains of possible correlates for future study include developmental factors (such as identity formation and the task of separation from family), peer relationships (including history of weight

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related teasing and peers who diet), family variables (differential acculturation and role-reversals), and school and community systems. Participants in the current sample suggested that the differential treatment of sons and daughters within the family and the influence of religion within both cultures may be important variables to examine in future studies. The addition of potential protective factors would also be beneficial. Future research could include factors that have garnered empirical support from research on immigrant mental health, such as mastery and internal locus of control (Ward et al., 2001) and from research on general resilience, such as the presence of positive mentors and role models (Crago et al., 2001).

Cultural equivalence of the measures selected is also of concern in the current investigation. The measures used were not developed or normed on Greek and Italian women. Therefore, as is common in the cross-cultural field, there is always some doubt as to the construct validity or reliability of these measures with this population. However, in the current investigation there was an attempt made to use measures that had a history of being used cross-culturally (i.e., the EAT-26 and the GHQ-12).

Internal validity was also limited by having a relatively small sample composed of two different cultural groups. Combining cultural groups is never a desirable strategy in cross-cultural work, although it is done quite often. There is a possibility that collapsing the two groups into one sample obscured unique patterns of findings for each group. Since collapsing across cultural group was necessary in the current investigation, the inclusion of other Southern European cultural groups, such as Portuguese Canadian women would have allowed stronger statements about the generalization of findings to Southern European immigrants.

The generalizability of the current findings is limited to the defining characteristics of the sample; Greek and Italian second-generation immigrant women who are university students. It was beyond the scope of the present study to extend the sample beyond these parameters. Future research can extend current findings by including first generation immigrant women, women in the country of origin, and women from other cultures, ages, and education levels.

Finally, the current study was limited in the overall approach to cross-cultural work and the underlying assumptions inherent in doing quantitative investigations. The current findings

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would be strengthened considerably by the addition of qualitative approaches to investigating eating pathology among immigrant women. Participant involvement and obtaining the meanings from within the culture (rather than imposed meanings by the investigator) would help to build theory and guide current research. It is likely that there are aspects of eating pathology we will never know to investigate if we continue to apply our constructs, meanings and measures to other cultures. This approach may also produce very effective prevention programs developed by and for that particular group being investigated (Levine & Piran, 2001)

Conclusions

The general goal of this investigation was to identify variables that are associated with increased risk of eating pathology among second-generation immigrant women. This was undertaken to try to understand why immigrant women have higher rates of eating pathology than women in their country of origin or women in their new country of residence; and secondly, to elucidate the mechanisms of risk behind the culture-change model of eating pathology. A second goal of this investigation was to clarify the conceptualization of acculturation and test different theories of culture-change and eating pathology.

The variables that were identified in the current investigation as correlates of eating pathology included general dissatisfaction, family conflict and internalization of Western values of thinness. Other variables that may play an indirect role in eating pathology include BMI, enmeshment with mother, and the acculturation strategy of integration.

Although it was perplexing to find no relationship between general acculturation and eating pathology, this result raises the possibility that the relationship between culture-change and eating pathology is more complex than once thought. Rather than culture-change being directly associated with increased risk of eating pathology through general acculturation, it appears that eating pathology may be connected more directly through the assimilation of Western values of thinness, and indirectly through integration and family conflict. Thus eating pathology may best be understood as both a culture-bound and a culture-change phenomenon.

Overall, the current investigation highlights the complexity of the relationships among variables from different domains of eating pathology risk among second-generation Greek and

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Italian immigrant women. This study is an important first step in clarifying the role of culture and culture change in eating pathology among immigrant women.

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REFERENCES

Abbott, M. W., Wong, S., Williams, M., Au, M., & Young, W. (1999). Chinese migrants' mental health and adjustment to life in New Zealand. *Australian and New Zealand Journal of Psychiatry,* 33, 13-21.

Abdollahi, P., & Mann, T. (2001). Eating disorder symptoms and body image concerns in Iran: Comparisons between Iranian women in Iran and in America. *International Journal of Eating Disorders, 30,* 259-268.

Abou-Saleh, M. T., Younis, Y., & Karim, L. (1998). Anorexia nervosa in an Arab culture. *International Journal of Eating Disorders,* 23, 207-212.

Ahmad, S., Waller, G., & Verduyn, C. (1994). Eating attitudes and body satisfaction among Asian and Caucasian adolescents. *Journal of Adolescence, 17,* 461-470.

Al-Issa, I. (1997a). Ethnicity, immigration, and psychopathology. In I. Al-Issa & M.Tousignant (Eds.), *Ethnicity, immigration, and psychopathology* (pp. 3-15). New York: Plenum Press.

Al-Issa, I. (1997b). General issues and research problems. In I. Al-Issa & M. Tousignant (Eds.), *Ethnicity, immigration, and psychopathology* (pp. 277-289). New York: Plenum Press.

Al-Issa, I., & Tousignant, M. (1997). The mental health of North Africans in France. In I. Al-Issa & M. Tousignant (Eds.), *Ethnicity, immigration, and psychopathology* (pp. 135-146). New York: Plenum Press.

Al-Subaie, A., Al-Shammari, S., Bamgboye, E., Al-Sabhan, K. (1996). Validity of the Arabic version of the Eating Attitudes Test. *International Journal of Eating Disorders, 20,* 321-324.

American Psychiatric Association. (1994). *Diagnostic and statistical manual of mental disorders.* (4th ed.). Washington, DC: Author.

Anderson, S. A. (1984). The Family Environment Scales (FES): A review and critique. *The American Journal of Family Therapy, 12,* 59-62.

Anstine, D., & Grinenko, D. (2000). Rapid screening for disordered eating in college-aged females in the primary care setting. *Journal of Adolescent Health,26,* 338-342.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Aronowitz, M. (1984). The social and emotional adjustment of immigrant children: A review of the literature. *International Migration Review, 18*, 237-257.

Attie, I., & Brooks-Gunn, J. (1989). Development of eating problems in adolescent girls: a longitudinal study. *Developmental Psychology, 25*, 70-79.

Barber, B. K., & Buehler, C. (1996). Family cohesion and enmeshment: Different constructs, different effects. *Journal of Marriage and the Family, 58*, 433-441.

Barlow, D. H., & Hersen, M. (1984). *Single case experimental designs: Strategies for studying behavior.* New York: Pergamon Press.

Beiser, M., Dion, R., Gotowiec, A., Hyman, I., & Vu, N. (1995). Immigrant and refugee children in Canada. *Canadian Journal of Psychiatry, 40*, 67-72.

Beiser, M., & Hyman, I. (1997). Southeast Asian refugees in Canada. In I. Al-Issa & M. Tousignant (Eds.), *Ethnicity, immigration, and psychopathology* (pp. 35-56). New York: Plenum Press.

Berland, N. W., Thompson, J. K., & Linton, P. H. (1986). Correlation between the EAT-26 and the EAT-40, the Eating Disorders Inventory, and the Restrained Eating Inventory. *International Journal of Eating Disorders, 5*, 569-574.

Berry, J. W. (1976). *Human ecology and cognitive style: Comparative studies in cultural and psychological adaptation.* Toronto: Sage Publications.

Berry, J. W. (1990). Acculturation and adaptation: A general framework. In W. H. Holtzman & T. H. Bornemann (Eds.), *Mental health of immigrants and refugees* (pp. 90-102). Austin, TX: Hogg Foundation for Mental Health.

Berry, J.W. (1997). Immigration, acculturation, and adaptation. *Applied Psychology: An International Review, 46,* 5-68.

Berry, J. W. (1998). Acculturation and health: Theory and research. In S. S. Kazarian & D. R. Evans (Eds.), *Cultural clinical psychology: Theory, research and practice* (pp. 39-57). New York: Oxford University Press.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Berry, J. W., Kim, U., Power, S., Young, M., & Bujaki, M. (1989). Acculturation attitudes in plural societies. *Applied Psychology: An International Review, 38*, 185-206.

Bhadrinath, B. R. (1990). Anorexia nervosa in adolescents of Asian extraction. *British Journal of Psychiatry, 156*, 565-568.

Blishen, B. R., Carroll, W. K., & Moore, K. (1987). The 1981 socioeconomic index for occupations in Canada. *Canadian Review of Sociology and Anthropology, 24*, 465-488.

Brookings, J. B., & Wilson, J. F. (1994). Personality and family-environment predictors of self-reported eating attitudes and behaviors. *Journal of Personality Assessment, 63*, 313-326.

Brown, T. A., Cash, T. F., & Mikulka, P. J. (1990). Attitudinal body-image assessment: Factor analyses of the Body-Self Relations Questionnaire. *Journal of Personality Assessment, 55*, 135-144.

Bryant-Waugh, R., & Lask, B. (1991). Anorexia nervosa in a group of Asian children living in Britain. *British Journal of Psychiatry, 158*, 229-233.

Bulik, C. M. (1987). Eating disorders in immigrants: Two case reports. *International Journal of Eating Disorders, 6*, 133-141.

Cacciola, E. J. (1982). Ethnic and cultural variations in the care of the aged: Some aspects of working with the Italian elderly. *Journal of Geriatric Psychiatry, 15 (2)*, 197-208.

Campbell, P. G. (1995). What would a causal explanation of the eating disorders look like? In G. Szmukler, C. Dare, & J. Treasure (Eds.), *Handbook of eating disorders: Theory, treatment and research* (pp. 51-64). New York:John Wiley & Sons.

Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees. (1988a). *After the door has been opened* (Ci96-38/1988E). Ottawa, ON: Ministry of Supply and Services.

Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees. (1988b). *Review of the literature on migrant mental health* (Ci96-37/1988E). Ottawa, ON: Ministry of Supply and Services.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Carlin, J. E. (1990). Refugee and immigrant populations at special risk: Women, children and the elderly. In W. H. Holtzman & T. H. Bornemann (Eds.), *Mental health of immigrants and refugees* (pp. 224-233). Austin, TX: Hogg Foundation for Mental Health.

Cervantes, R. C., Salgado de Snyder, V. N., & Padilla, A. (1989). Posttraumatic stress in immigrants from Central America and Mexico. *Hospital and Community Psychiatry, 40*, 615-619.

Chimbos, P., & Agocs, C. (1983). Kin and hometown networks as support systems for the immigration and settlement of Greek Canadians. *Canadian Ethnic Studies, 15*, 42-56.

Chiu, M. L., Feldman, S., & Rosenthal, D. A. (1992). The influence of immigration on parental behavior and adolescent distress in Chinese families residing in two Western nations. *Journal of Research on Adolescence, 2*, 205-239.

Citizenship and Immigration Canada (1996). *Profile of Italian immigrants in Canada* (Ci62-2/4-1996). Ottawa, ON: Ministry of Supply and Services.

Committee on the Health and Adjustment of Immigrant Children and Families. (1998). *From generation to generation: The health and well-being of children in immigrant families* (98-25472). Washington, DC: National Research Council and Institute of Medicine.

Conners, M. E., & Morse, W. (1993). Sexual abuse and eating disorders: A review. *International Journal of Eating Disorders, 13*, 1-11.

Cooper, P. J., Taylor, M. J., Cooper, Z., & et al. (1987). The development and validation of the Body Shape Questionnaire. *International Journal of Eating Disorders, 6*, 485-494.

Crago, M., Shisslak, C., & Estes, L. (1996). Eating disturbances among American minority groups: A review. *International Journal of Eating Disorders, 19*, 239-248.

Crago, M., Shisslak, C. M., & Ruble, A. (2001). Protective factors in the development of eating disorders. In R. Striegel-Moore & L. Smolak (Eds.), *Eating disorders: Innovative directions in research and practice* (pp.75-89). Washington, DC: American Psychological Association.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Crisp, A., Palmer, R., & Kalucy, R. (1976). How common is anorexia nervosa? A prevalence study. *British Journal of Psychiatry, 128*, 549-554.

Cronk, B., C., & West, J., L. (2002). Personality research on the internet: A comparison of web-based and traditional instruments in take-home and in-class settings. *Behavior Research Methods, Instruments and Computers, 34,* 177-180.

Davies, L. C., & McKelvey, R. S. (1998). Emotional and behavioural problems and competencies among immigrant and non-immigrant adolescents. *Australian and New Zealand Journal of Psychiatry, 32*, 658-665.

Davis, C., & Yager, J. (1992). Transcultual aspects of eating disorders: A critical literature review. *Culture, Medicine and Psychiatry, 16*, 377-394.

Davis, R. N. (1999). Web-based administration of a personality questionnaire: Comparison with traditional methods. *Behavior Research Methods, Instruments and Computers, 31*, 572-577.

DiNicola, V. F. (1990). Anorexia multiforme: Self-starvation in historical and cultural context. II: Anorexia nervosa as a culture-reactive syndrome. *Transcultural Psychiatric Research Review, 27*, 245-286.

DiNicola, V. F. (1998). Children and families in cultural transition. In S. O. Okpaku (Ed.), *Clinical Methods in Transcultural Psychiatry* (pp. 365-390). Washington, DC: American Psychiatric Press.

Dolan, B. (1991). Cross-cultural aspects of anorexia nervosa and bulimia: A review. *International Journal of Eating Disorders, 10*, 67-78.

Dolan, B., Lacey, H., & Evans, C. (1990). Eating behaviour and attitudes to weight and shape in British women from three ethnic groups. *British Journal of Psychiatry, 157*, 523-528.

Edman, S. O., Cole, D. A., & Howard, G. S. (1990). Convergent and discriminant validity of FACES-III: Family adaptability and cohesion. *Family Process, 29*, 95-103.

Edmondson, B. (1997). The wired bunch: online surveys. *American Demographics, 19*, 10-12.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Eisler, I. (1995). Family models of eating disorders. In G. Szmukler, C. Dare, & J. Treasure (Eds.), *Handbook of eating disorders: Theory, treatment and research* (pp. 155-175). New York: John Wiley & Sons.

Ekblad, S., Kohn, R., & Jansson, B. (1998). Psychological and clinical aspects of immigration and mental health. In S. O. Okpaku (Ed.), *Clinical Methods in Transcultural Psychiatry* (pp. 42-66). Washington, DC: American Psychiatric Press.

Epstein, J., Klinkenberg, W. D., Wiley, D., McKinley, L. (2001). Insuring sample equivalence across internet and paper-and-pencil assessments [Electronic version]. *Computers in Human Behavior, 17*, 339-346.

Escobar, J. I. (1998). Immigration and mental health: Why are immigrants better off? *Archives of General Psychiatry, 55*, 781-782.

Fahy, T. A., Robinson, P. H., Russell, G. F., & Sheinman, B. (1988). Anorexia nervosa following torture in a young African woman. *British Journal of Psychiatry, 153*, 385-387.

Fairburn, C. G., Welch, S. L., Doll, H. A., Davies, B. A., & O'Connor, M. E. (1997). Risk factors for bulimia nervosa: A community-based case control study. *Archives of General Psychiatry, 54*, 509-517.

Fallon, P., & Wonderlich, S. A. (1997). Sexual abuse and other forms of trauma. In D. M. Garner, P. E. Garfinkel, & et al. (Eds.), *Handbook of treatment of eating disorders* (2nd ed., pp. 394-414). New York: Guilford Press.

Fedoroff, I. C., & McFarlane, T. (1998). Cultural aspects of eating disorders. In S. Kazarian & D. Evans (Eds.), *Cultural clinical psychology: Theory, research, and practice* (pp. 152-176). New York: Oxford University Press.

Feighner, J., Robins, E., Guze, S., & et al. (1972). Diagnostic criteria for use in psychiatric research. *Archives of General Psychiatry, 26*, 57-63.

Fichter, M. M., Weyerer, S., Sourdi, L., & Sourdi, Z. (1983). The epidemiology of anorexia nervosa: A comparison of Greek adolescents living in Germany and Greek adolescents

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living in Greece. In P. L. Darby & et al (Eds.), *Anorexia nervosa: Recent developments in research* (pp. 95-105). New York: Alan R. Liss.

Flaherty, J. A., Kohn, R., Levav, I., & Birz, S. (1988). Demoralization in Soviet-Jewish immigrants to the United States and Israel. *Comprehensive Psychiatry, 29*, 588-597.

Fox, S., & Schwartz, D. (2002). Social desirability and controllability in computerized and paper-and-pencil personality questionnaires [Electronic version]. *Computers in Human Behavior, 18*, 389-410.

Franko, D. L., & Herrera, I. (1997). Body image differences in Guatemalan-American and White college women. *Eating Disorders: The Journal of Treatment and Prevention, 5*, 119-127.

Franko, D. L., & Orosan-Weine, P. (1998). The prevention of eating disorders: Empirical, methodological, and conceptual considerations. *Clinical Psychology: Science and Practice, 5*, 459-477.

Furnham, A., & Adam-Saib, S. (2001). Abnormal eating attitudes and behaviours and perceived parental control: a study of white British and British-Asian school girls. *Social Psychiatry and Psychiatric Epidemiology, 36*, 462-470.

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

Furnham, A., & Husain, K. (1999). The role of conflict with parents in disordered eating among British Asian females. *Social Psychiatry and Psychiatric Epidemiology, 34*, 498-505.

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

Garner, D. M., & Garfinkel, P. E. (1979). The Eating Attitudes Test: an index of the symptoms of anorexia nervosa. *Psychological Medicine, 9*, 273-279.

Garner, D. M., & Garfinkel, P. E. (1980). Sociocultural factors in the development of anorexia nervosa. *Psychological Medicine, 10*, 647-656.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Garner, D. M., Garfinkel, P. E., Schwartz, D., & Thompson, M. (1980). Cultural expectations of thinness in women. *Psychological Reports, 47*, 483-491.

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

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

Gavaki, E. (1979). The Greek family in Canada: Continuity and change and the process of adjustment. *International Journal of Sociology and the Family, 9,* 1-16.

Ghaffarian, S. (1998). The acculturation of Iranian immigrants in the United States and the implications for mental health. *The Journal of Social Psychology, 138*, 645-654.

Ghuman, P. A. S. (1997). Assimilation or integration? A study of Asian adolescents. *Educational Research*, 39, 23-35.

Gil, A. G., & Vega, W. A. (1996). Two different worlds: Acculturation stress and adaption among Cuban and Nicaraguan families. *Journal of Social and Personal Relationships, 13*, 435-456.

Giordano, J., & McGoldrick, M. (1996). Italian families. In M. McGoldrick, J. Giordano, I, Pearce (Eds), *Ethnicity and family therapy* (pp. 567-582). (2nd Ed.). New York: Guilford.

Goldberg, D. P. (1972). *The detection of psychiatric illness by questionnaire*. London: Oxford University Press.

Goldberg, D. P., Gater, R., Sartorius, N., Ustun, T., Piccinelli, M., Gureje, O., Rutter, C. (1997). The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychological Medicine, 27,* 191-197.

Goldfarb, L. A., Dykens, E. M., & Gerrard, M. (1985). Goldfarb Fear of Fat Scale. *Journal of Personality Assessment, 49*, 329-332.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Gordon, R. A. (2001). Eating disorders East and West: A culture-bound syndrome unbound. In M. Nasser, M. Katzman, R, Gordon (Eds), *Eating disorders and cultures in transition* (pp. 1-16). New York: Taylor & Francis.

Gordon, K. H., Perez, M., & Joiner, T. E. (2002). The impact of racial stereotypes on eating disorder recognition. *International Journal of Eating Disorders, 32*, 219-224.

Graber, J. A., Brooks-Gunn, J., Paikoff, R. L., & Warren, M. P. (1994). Prediction of eating problems: An 8-year study of adolescent girls. *Developmental Psychology, 30*, 823-834.

Griffiths, R., Beumont, P., Russell, J., Schotte, D., Thornton, C., Touyz, S., & Varano, P. (1999). Sociocultural attitudes towards appearance in dieting disordered and nondieting disordered subjects. *European Eating Disorders Review, 7*, 193-203.

Guarnaccia, P. J., & Lopez, S. (1998). The mental health and adjustment of immigrant and refugee children. *Child and Adolescent Psychiatric Clinics of North America, 7*, 537-553.

Haddad, T., & Lam, L. (1994). The impact of migration on the sexual division of family work: A case study of Italian immigrant couples. *Journal of Comparative Family Studies, 25 (2)*, 167-181.

Harris, A. C., & Verven, R. (1996). The Greek-American Acculturation Scale: Development and validity. *Psychological Reports, 78,* 599-610.

Harris, A. C., & Verven, R. (1998). Acculturation as a determinant of Greek-American family values. *Psychological Reports, 83,* 1163-1172.

Heffernan, K. (1994). Sexual orientation as a factor in risk for binge eating and bulimia nervosa: a review. *International Journal of Eating Disorders, 16*, 335-347.

Heinberg, L. J., Thompson, J. K., & Stormer, S. (1995). Development and validation of the sociocultural attitudes towards appearance questionnaire. *International Journal of Eating Disorders, 17,* 81-89.

Hicks, R., Lalonde, R. N., & Pepler, D. (1993). Psychosocial considerations in the mental health of immigrant and refugee children. Cultural diversity: Voice, access, and involvement. *Canadian Journal of Community Mental Health, 12*, 71-87.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Holden, N. L., & Robinson, P. H. (1988). Anorexia nervosa and bulimia nervosa in British blacks. *British Journal of Psychiatry, 152*, 544-549.

Hopkins, B., Raja, S., Ruderman, A., & Tassava, S. (1997, August 18). *A review of risk factors for bulimia.* Paper presented at the American Psychological Association Convention, Chicago, IL.

Horenczyk, G. (1996). Migrant identities in conflict: Acculturation attitudes and perceived acculturation ideologies. G. Breakwell, & E. Lyons, (Eds). *Changing European identities: Social psychological analyses of social change. International series in social psychology.* (pp. 241-250). Woburn, MA, US: Butterworth-Heinemann.

Hurh, W. M., & Kim, K. C. (1990). Adaptation stages and mental health of Korean male immigrants in the United States. *International Migration Review, 24*, 456-479.

Iacovetta, F. (1991). Ordering in bulk: Canada's postwar immigration policy and the recruitment of contract workers from Italy. *Journal of American Ethnic History, 11,* 50-81.

Ierodiakonou, C. S. (1988). Adolescents' mental health and the Greek family: preventive aspects. *Journal of Adolescence, 11,* 11-19.

Ipsos-Reid (2002, December 10). *Internet use continued to climb in most markets: Web access not just routine, but essential, Ipsos-Ried study shows.* Retrieved March 13, 2003 from http://www.ipsos-reid.com/media/dsp_displaypr_us.cfm?id_to_view=1690.

Irving, L. M. (1990). Mirror images: Effects of the standard of beauty on the self- and body-esteem of women exhibiting varying levels of bulimic symptoms. *Journal of Social and Clinical Psychology, 9*, 230-242.

Jablensky, A., Marsella, A. J., Ekblad, S., Levi, L., & Jansson, B. (1992). The international conference on the mental health and well-being of the world's refugees and displaced persons, Stockholm, Sweden, 6-11 October, 1991. *Journal of Refugee Studies, 5*, 172-184.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Jayasuriya, L., Sang, D., & Fielding, A. (1992). *Ethnicity, immigration, and mental illness: A critical review of the Australian research* . Canberra: Australian Government Publishing Service.

Joiner,T. E., Heatherton, T. F., Rudd M., D., & Shmidt, N. (1997). Perfectionism, perceived weight status, and bulimic symptoms: Two studies testing a diathesis-stress model. *Journal of Abnormal Psychology, 106*, 145-153.

Kater, K. J., Rohwer, J., & Levine, M. P. (2001). An elementary school project for developing healthy body image and reducing risk factors for unhealthy and disordered eating. *Eating Disorders: the Journal of Treatment and Prevention, 8*, 3-16.

Katzman, M. A., & Lee, S. (1997). Beyond body image: The integration of feminist and transcultural theories in the understanding of self starvation. *International Journal of Eating Disorders, 22*, 385-394.

Kerig, P. K., & Brown, C. A. (1996). *The Parent-Child Boundaries Scale.* Department of Psychology, Simon Fraser University.

Khavarpour, F., & Rissel, C. (1997). Mental health of Iranian migrants in Sydney. *Australian and New Zealand Journal of Psychiatry, 31*, 828-834.

Kiemle, G., Slade, P., Dewey, M. (1987). Factors associated with abnormal eating attitudes and behaviors: Screening individuals at risk of developing an eating disorder. *International Journal of Eating Disorders, 6,* 713-724.

Killen, J. D., Hayward, C., Wilson, D. M., Taylor, C. B., Hammer, L. D., Litt, I., Simmonds, B., & Haydel, F. (1994). Factors associated with eating disorder symptoms in a community sample of 6th and 7th grade girls. *International Journal of Eating Disorders, 15*, 357-367.

Killian, K. D. (1994). Fearing fat: A literature review of family systems understandings and treatments of anorexia and bulimia. *Family Relations, 43*, 311-318.

Kim, C., Laroche, M., & Tomiuk, M. A. (2001). A measure of acculturation for Italian Canadians: scale development and construct validation. *International Journal of Intercultural Relations, 25*, 607-637.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Knapp, H. & Kirk, S. (2003). Using pencil and paper, Internet and touch-tone phones for self-administered surveys: does methodology matter? [Electronic version] *Computers in Human Behavior, 19,* 117-134.

Koslowsky, M., Scheinberg, Z., Bleich, A., Mark, M., Apter, A., Danon, Y., & Solomon, Z. (1992). The factor structure and criterion validity of the short form of the Eating Attitudes Test. *Journal of Personality Assessment, 58*, 27-35.

Kope, T. M., & Sack, W. H. (1987). Anorexia nervosa in Southeast Asian refugees: A report on three cases. *Journal of the American Academy of Child and Adolescent Psychiatry, 26*, 795-797.

Kral, M. J. (1998). Suicide and the internalization of culture: Three questions. *Transcultural Psychiatry, 35*, 221-233.

Krishnan, A., & Berry, J. W. (1992). Acculturative stress and acculturation attitudes among Asian Indian immigrants in the United States. *Psychology and Developing Societies, 4*, 187-212.

Lacey, J. H., & Dolan, B. M. (1988). Bulimia in British blacks and Asians: A catchment study. *British Journal of Psychiatry, 15,* 273-279.

Lake, A., Staiger, P., & Glowinski, H. (2000). Effect of Western culture on women's attitudes to eating and perceptions of body shape. *International Journal of Eating Disorders, 27*, 83-89.

Lambert, W. E., Mermigis, L., & Taylor, D. M. (1986). Greek Canadians' attitudes toward own group and other Canadian ethnic groups: A test of the multiculturalism hypothesis. *Canadian Journal of Behavioural Sciences, 18,* 35-51.

Laroche, M., Kim, C., & Hui, M. K. (1997). A comparative investigation of dimensional structures of acculturation for Italian Canadians and Greek Canadians. *The Journal of Social Psychology, 137*, 317-331.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

le Grange, D., Telch, C., & Tibbs, J. (1998). Eating attitudes and behaviors in 1,435 South African Caucasian and Non-Caucasian college students. *American Journal of Psychiatry, 155*, 250-254.

Leung, C. (2001). The psychological adaptation of overseas and migrant students in Australia. *International Journal of Psychology, 36*, 251-259.

Leung, F., Geller, J., & Katzman, M. (1996). Issues and concerns associated with different risk models for eating disorders. *International Journal of Eating Disorders, 19,* 249-256.

Levine, M., & Piran, N. (2001). The prevention of eating disorders: Toward a participatory ecology of knowledge, action, and advocacy. In R. Striegel-Moore & L. Smolak (Eds.), *Eating disorders: Innovative directions in research and practice* (pp.233-253). Washington, DC: American Psychological Association.

London, M. (1986). Mental illness among immigrant minorities in the United Kingdom. *British Journal of Psychiatry, 149*, 265-273.

Lopez, E., Blix, G., & Blix, A. (1995). Body image of Latinas compared to body image of Non-Latina white women. *Health Values: The Journal of Health Behavior, Education and Promotion, 19,* 3-10.

Marcell, M., M., & Falls, A. L. (2001). Online data collection with special populations over the World Wide Web. *Down Syndrome: Research and Practice, 7,* 106-123. Abstract obtained from PSYCHINFO, 2001.

Marinangeli, P. (2001). Italian culture and its impact on addiction. In S. Straussner (Ed.), *Ethnocultural factors in substance abuse treatment* (pp. 216-233). New York: Guilford.

Marjoribanks, K. (1986). Australian families and adolescents' aspirations: A follow-up analysis. *Journal of Comparative Family Studies, 17*, 333-348.

Mavreas, V., Bebbington, P., & Der, G. (1989). The structure and validity of acculturation. *Social Psychiatry and Psychiatric Epidemiology,* 24, 233-240.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

McKelvey, R. S., & Webb, J. A. (1996). Premigratory expectations and postmigratory mental health symptoms in Vietnamese Amerasians. *Journal of the American Academy of Child and Adolescent Psychiatry, 35*, 240-245.

Mehta, S. (1998). Relationship between acculturation and mental health for Asian Indian immigrants in the United States. *Genetic, Social, and General Psychology Monographs, 124*, 61-78.

Mildred, H., Paxton, S. J., & Wertheim, E. H. (1995). Risk factors for eating disorders in Greek- and Anglo-Australian adolescent girls. *International Journal of Eating Disorders, 17,* 91-96.

Minuchin, S., Rosman, B., & Baker, L. (1978). *Psychosomatic families: Anorexia nervosa in context.* Cambridge, MA: Harvard University Press.

Moos, R. H., & Moos, B. S. (1986). *Family Environment Scale manual* (2nd ed.). Palo Alto: Consulting Psychologists Press.

MPI Research Group. (1969). *Maudsley Personality Inventory.* Tokyo: Seishin-Shobo.

Mumford, D. B. (1993). Eating disorders in different cultures. *International Review of Psychiatry, 5,* 109-114.

Mumford, D. B., Whitehouse, A. M., & Choudry, I. Y. (1992). Survey of eating disorders in English-medium schools in Lahore, Pakistan. *International Journal of Eating Disorders, 11,* 173-184.

Mumford, D. B., Whitehouse, A. M., & Platts, M. (1991). Sociocultural correlates of eating disorders among Asian schoolgirls in Bradford. *British Journal of Psychiatry, 158,* 222-228.

Munroe-Blum, H., Boyle, M. H., Offord, D. R., & Kates, N. (1989). Immigrant children: Psychiatric disorder, school performance, and service utilization. *American Journal of Orthopsychiatry, 59,* 510-520.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Nasser, M. (1986). Comparative study of the prevalence of abnormal eating attitudes among Arab female students of both London and Cairo universities. *Psychological Medicine, 16,* 621-625.

Nasser, M. (1988). Eating disorders: the cultural dimension. *Social Psychiatry and Psychiatric Epidemiology, 23,* 184-187.

Nicholson, B. L. (1997). The influence of pre-emigration and post-migration stressors on mental health: A study of Southeast Asian refugees. *Social Work Research, 2,* 19-31.

Nua Internet Surveys (2003, February). *Global Net population increases.* Retrieved March 7, 2003, from http://www.nua.ie/surveys/?f+VS&art_id=90.

Offner, D., Thompson, A., & Herzog, D. (1997, August). *Eating disorders: Family environment and outcome.* Paper presented at the annual convention of the American Psychological Association, Chicago, IL.

Olson, D. H.; Portner, J., & Lavee, Y. (1985). *Family Adaptability and Cohesion Scale: FACES III.* Minneapolis, MN: Life Innovations.

Patton, G. C., Johnson-Sabine, E., Wood, K., Mann, A. H., & Wakeling, A. (1990). Abnormal eating attitudes in London schoolgirls - a prospective epidemiological study: outcome at twelve-month follow-up. *Psychological Medicine, 20,* 383-394.

Pawliuk, N., Grizenko, N., Chap, Y. A., Gantous, P., Mathew, J., & Nguyen, D. (1996). Acculturation style and psychological functioning in children of immigrants. *American Journal of Orthopsychiatry, 66,* 111-121.

Paxton, S. J., Schutz, H. K., Wertheim, E. H., & Muir, S. L. (1999). Friendship clique and peer influences on body image concerns, dietary restraint, extreme weight-loss behaviors, and binge eating in adolescent girls. *Journal of Abnormal Psychology, 108,* 255-266.

Paxton, S. J., Wertheim, E. H., Gibbons, K., Szmukler, G. I., Hillier, L., & Petrovich, J. (1991). Body image satisfaction, dieting beliefs and weight loss behaviors in adolescent girls and boys. *Journal of Youth and Adolescence, 20,* 361-379.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Perin (2001). The immigrant: Actor or outcast. In R. Perin & F. Sturino (Eds.), *Arrangiarsi: The Italian immigration experience in Canada* (pp. 9-35). Montreal: Guernica Editions.

Pettit, F. A. (1999). Exploring the use of the World Wide Web as a psychology data collection tool [Electronic version]. *Computers in Human Behavior, 15*, 67-71.

Ponizovsky, A., Ginath, Y., Durst, R., Wondimeneh, S., Safro, S., Minuchin-Itzigson, S., & Ritsner, M. (1998). Psychological distress among Ethiopian and Russian Jewish immigrants to Israel: A cross-cultural study. *International Journal of Social Psychiatry, 44,* 35-45.

Pope, H., Hudson, J., & Yurgelun, D. (1984). Prevalence of anorexia nervosa and bulimia in three student populations. *International Journal of Eating Disorders, 3,* 45-51.

Pope, H. G., & Hudson, J. I. (1992). Is childhood sexual abuse a risk factor for bulimia nervosa? *American Journal of Psychiatry, 149,* 455-463.

Prince, R. (1983). Is anorexia nervosa a culture-bound syndrome? *Transcultural Psychiatry Research Review, 20,* 299-300.

Prouty, A. M., Protinsky, H. O., & Canady, D. (2002). College women: Eating behaviors and help-seeking preferences. *Adolescence, 37*, 353-363.

Quartaro, G. K., & Spier, T. E. (2002). We'd like to ask you some questions, but we have to find you first: Internet-based study of lesbian clients in therapy with lesbian feminist therapists. *Journal of Technology in Human Services, 19,* 109-118.

Ramirez, B. (1989). *The Italians in Canada*. Ottawa: Canadian Historical Society.

Rosenberg, M. (1965). *Society and the adolescent self-image.* Princeton, NJ: Princeton University Press.

Rosenthal, D. A., Bell, R., Demetriou, A., & Efklides, A. (1989). From collectivism to individualism? The acculturation of Greek immigrants in Australia. *International Journal of Psychology, 24,* 57-71.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Rowa, K., & Kerig, P. K. (1999, June). *Enmeshment versus cohesion in anorexia: distinct constructs?* Poster session presented at the Annual convention of the Canadian Psychological Association, Halifax, Nova Scotia.

Rowa, K., Kerig, P.K., & Geller, J. (2001). The family and anorexia: Examining parent-child boundary problems. *European Eating Disorders Review, 9*, 97-114.

Rudmin, F.W. & Ahmadzadeh, V. (2001). Psychometric critique of acculturation psychology: The case of Iranian migrants in Norway. *Scandinavian Journal of Psychology, 42*, 41-56.

Rumbaut, R. G. (1994). The crucible within: Ethnic identity, self-esteem, and segmented assimilation among children of immigrants. *International Migration Review, 28,* 748-794.

Russell, G. F. M. (1979). Bulimia nervosa: an ominous variant of anorexia nervosa. *Psychological Medicine, 9,* 429-449.

Ryder, A. G., Alden, L. E., & Paulhus, D. L. (1999, August). *Cultural identities in transition: A comparison of two acculturation models.* Poster session presented at the annual Meeting of the American Psychological Association, Boston, MA.

Ryder, A. G., Alden, L. E., & Paulhus, D. L. (2000). Is acculturation unidimensional or bidimensional? A head-to-head comparison in the prediction of personality, self-identity, and adjustment. *Journal of Personality and Social Psychology, 79,* 49-65.

Sayegh, L., & Lasry, J. (1993). Immigrants' adaptation in Canada: Assimilation, acculturation, and orthogonal cultural identification. *Canadian-Psychology, 34*, 98-109.

Scheinberg, Z., Koslowsky, M., Bleich, A., Mark, M., Apter, A., Danon, Y., Solomon, Z., & Babur, I. (1993). Sensitivity, specificity, and positive predictive value as measures of prediction accuracy: The case of the EAT-26. *Educational and Psychological Measurement, 53,* 831-839.

Schmidt, U., Hodes, M., & Treasure, J. (1992). Early onset bulimia nervosa: who is at risk? A retrospective case-control study. *Psychological Medicine, 22*, 623-628.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Schmitz, P. (1992). Acculturation styles and health. In S. Iwawaki,& Y. Kashima (Eds.), *Innovations in cross-cultural psychology* (pp. 360-370). Bristol, PA:Swets & Zeitlinger Publishers.

Sharir, I. (2002). Chinese immigrant youth in Vancouver, Canada: An examination of acculturation, adjustment, and intergenerational conflict. (Doctoral dissertation, University of Windsor, 2002). *Dissertation Abstracts International, 63*, 2075.

Shisslak, C. M., Crago, M., & Estes, L. S. (1995). The spectrum of eating disturbances. *International Journal of Eating Disorders, 18,* 209-219.

Shisslak, C. M., Crago, M., Gray, N., Estes, L. S., McKnight, K., Parnaby, O. G.,Sharpe, T., S., B., Killen, J., & Taylor, C. B. (1998). The McKnight Foundation prospective study of risk factors for the development of eating disorders. In W. Vandereycken & G. Noordenbos (Eds.), *The prevention of eating disorders* (pp. 57-74). London: The Athlone Press.

Siefen, G., Kirkcaldy, B. D., Athanasou, J. A., & Peponis, M. (1996). The self-image of Greek, Greek-migrant and German adolescents. *Social Psychiatry and Psychiatric Epidemiology, 31,* 241-247.

Silber, T. J. (1986). Anorexia nervosa in blacks and Hispanics. *International Journal of Eating Disorders, 5,* 121-128.

Silver, R., Holman, E. A., McIntosh, D. N., Poulin, M., & Gil, R. V. (2002). Nationwide longitudinal study of psychological responses to September 11. *JAMA: Journal of the American Medical Association, 288,* 1235-1244. Abstract obtained from PSYCHINFO, 2002.

Simoes, M. (1991). Practical annotations for dealing with the mental health of migrants. *European Journal of Psychiatry, 5,* 141-146.

Slade, P., Butler, N., & Newton, T. (1989). A short note on the relationship between the Setting Conditions for Anorexia Nervosa Scale (SCANS) and the Eysenck Personality Questionnaire (EPQ). *Personality and Individual Differences, 10,* 801-802.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Slade, P., Dewey, M., Kiemle, G., & Newton, T. (1990). Update on SCANS: A screening instrument for identifying individuals at risk of developing an eating disorder. *International Journal of Eating Disorders, 9,* 583-584.

Slade, P., Dewey, M. E., Newton, T., Brodie, D., & Kiemle, G. (1990). Development and preliminary validation of the Body Satisfaction Scale (BSS). *Psychology and Health, 4,* 213-220.

Slade, P., & Dewey, M. (1986). Development and preliminary validation of SCANS: A screening instrument for identifying individuals at risk of developing anorexia and bulimia nervosa. *International Journal of Eating Disorders, 5,* 517-538.

Smolak, L., Levine, M. P., & Schermer, F. (1998). Lessons from lessons: An evaluation of an elementary school prevention program. In W. Vandereycken & G. Noordenbos (Eds.), *The prevention of eating disorders* (pp. 137-172). London: The Althone Press.

Smolak, L., & Striegel-Moore, R. H. (2001). Challenging the myth of the golden girl: Ethnicity and eating disorders. In R. Striegel-Moore & L. Smolak (Eds.), *Eating disorders: Innovative directions in research and practice* (pp. 111-132). Washington, DC: American Psychological Association.

Stack, S. (1981). Comparative analysis of immigration and suicide. *Psychological Reports, 49,* 509-510.

Stanton, J. M. (1998). An empirical assessment of data collection using the Internet. *Personnel Psychology, 51*, 709-725.

Statistics Canada. (1998). *Annual Demographic Statistics* (91-213). Ottawa: Statistics Canada.

Steiner, H., & Lock, J. (1998). Anorexia nervosa and bulimia nervosa in children and adolescents: A review of the past 10 years. *Journal of the American Academy of Child and Adolescent Psychiatry, 37,* 352-359.

Stice, E. (2001). Risk factors for eating pathology: Recent advances and future directions. In R. Striegel-Moore & L. Smolak (Eds.), *Eating disorders: Innovative directions in research and practice* (pp.51-73). Washington, DC: American Psychological Association.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Striegel-Moore, R. H., Silberstein, L. R., & Rodin, J. (1986). Toward an understanding of risk factors for bulimia. *American Psychologist, 41,* 246 - 263.

Striegel-Moore, R. H., & Steiner-Adair, C. (1998). Primary prevention of eating disorders: Further considerations from a feminist perspective. In W.Vandereycken & G. Noordenbos (Eds.), *The prevention of eating disorders* (pp. 1-22). London: The Athlone Press.

Stuart, G. W., Klimidis, S., & Minas, I. H. (1998). The treated prevalence of mental disorder amongst immigrants and the Australian-born: Community and primary-care rates. *International Journal of Social Psychiatry, 44,* 22-34.

Stunkard, A. J., Sorensen, T. I., & Schlusinger, F. (1980). Use of the Danish Adoption Register for the study of obesity and thinness. In S. Kety (Ed.), *The genetics of neurological and psychiatric disorders* (pp. 115-120). New York: Raven Press.

Sundquist, J. (1995). Ethnicity, social class and health: A population-based study on the influence of social factors on self-reported illness in 223 Latin American refugees, 333 Finnish and 126 South European labour migrants and 841 Swedish controls. *Social Science and Medicine, 40,* 777-787.

Szmukler, G. I., & Patton, G. (1995). Sociocultural models of eating disorders. In G. Szmukler, C. Dare, & J. Treasure (Eds.), *Handbook of eating disorders: Theory, treatment and research* (pp. 177-192). New York: Wiley & Sons.

Tabachnick, B. G., & Fidell, L. S. (1989). *Using Multivariate Statistics* (2nd ed.). New York: Harper Collins.

Tamjid, M., & Furnham, A. (2001). A cross-cultural study of parental conflict and eating disorders in a non-clinical sample. *International Journal of Social Psychiatry, 47*, 24-36.

Tastsoglou, E., & Stubos, G. (1992). The Greek immigrant family in the United States and Canada: The transition from an "institutional" to a "relational" form (1945-1970). *International Migration, 30,* 155-174.

Thomas, B., Leeseberg-Stamler, L., Lafreniere, K., & Dumala, R. (2000). The Internet: An effective tool for nursing research with women. *Computers in Nursing, 18*, 13-18.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Thomas, C. S., & Lindenthal, J. J. (1990). Migration and mental health among the peoples of the Caribbean, 1948-1980. *International Journal of Mental Health, 18*, 92-102.

Thomas, J. P., & Szmukler, G. I. (1985). Anorexia nervosa in patients of Afro-Caribbean extraction. *British Journal of Psychiatry, 146*, 653-656.

Timimi, S. B. (1995). Adolescence in immigrant Arab families. *Psychotherapy, 32*, 141-149.

Toriola, A. L., Dolan, B. M., Evans, C., & Adetimole, O. (1996). Weight satisfaction of Nigerian women in Nigeria and Britain: Inter-generational and cross-cultural influences. *European Eating Disorders Review, 4,* 84-94.

Treasure, J., & Holland, A. (1995). Genetic factors in eating disorders. In G. Szmukler, C. Dare, & J. Treasure (Eds.), *Handbook of eating disorders: Theory, treatment and research* (pp. 65-81). New York: John Wiley & Sons.

Triandis, H.C. (1997). Where is culture in the acculturation model? *Applied Psychology: An International Review, 46*, 55-58.

Triandis, H.C., Kashima, E., Shimada, E., & Villereal, M. (1988). Acculturation indices as a means of confirming cultural differences. *International Journal of Psychology, 21*, 43-70.

Tsemberis, S. J., & Orfanos, S. D. (1996). Greek families. In M. McGoldrick, J. Giordano, & J. K. Pearce (Eds.), *Ethnicity and family therapy* (pp. 517-529). New York: Guilford Press.

Wakeling, A. (1996). Epidemiology of anorexia nervosa. *Psychiatry Research, 62,* 3-9.

Ward, C. (1997). Cultural learning, acculturative stress, and psychopathology: Three perspectives on acculturation. *Applied Psychology: An International Review, 46*, 58-62.

Ward, C., Bochner, S., & Furnham, A. (2001). *The psychology of culture shock.* (2nd Ed.). Philadelphia: Taylor and Francis.

Weible, R. & Wallace, J. (1998). Cyber research: the impact of the Internet on data collection. *Marketing Research, 10*, 18-24.

Wichstrøm, L., Skogen, K., & Øia, T. (1994). Social and cultural factors related to eating problems among adolescents in Norway. *Journal of Adolescence, 17,* 471-482.

Reproduced with permission of the copyright owner. Further reproduction prohibited without permission.

Wonderlich, S. A., Brewerton, T. D., Jocic, Z., Dansky, B. S., & Abbott, D. W. (1997). Relationship of childhood sexual abuse and eating disorders. *Journal of the American Academy of Child and Adolescent Psychiatry, 36,* 107-115.

Ying, Y.W. (1999). Strengthening intergenerational/intercultural ties in migrant families: A new intervention for parents. *Journal of Community Psychology, 27,* 89-96.

Yoffie, A. J. (1998). The "sampling dilemma" is no different on-line. *Marketing News, 32*, 16.

Zigmond, A. S., & Snaith, R. P. (1983). The hospital anxiety and depression scale. *Acta Psychiatra Scandanavia, 67,* 361-370.

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APPENDIX A

Risk Factors for Eating Disorders and Disordered Eating

As our knowledge of eating disorders has progressed, many researchers in the field have shifted their focus from prevalence and incidence studies to prevention and treatment outcome studies. Our theoretical understanding of the etiology of eating disorders and prevention programs is based primarily on the research that identifies variables associated with the development of eating disorders. Once risk factors are established they can be used in the identification of high-risk groups and in the development of prevention programs (Shisslak et al., 1998).

Although researchers who study risk factors for eating disorders vary widely in their theoretical orientations, there is consensus on a number of issues in the field. For example, there is agreement that the etiology of eating disorders is multifactorial (Fedoroff & McFarlane, 1998; Leung, Geller, & Katzman, 1996; Smolak et al., 1998; Striegel-Moore & Steiner-Adair, 1998). Most etiological models of eating disorders include biological, personality, familial, and sociocultural variables. There is also consensus among researchers in the field that risk factors for eating disorders include both general risk factors (associated with many different disorders) and specific risk factors (associated only with risk for eating disorders) (Striegel-Moore & Steiner-Adair, 1998). There is also agreement that the developmental context of the individual is important (Shisslak, Crago, & Estes, 1995; Striegel-Moore & Steiner-Adair, 1998) and that risk is cumulative in nature, such that the more risk factors present increases the probability of developing an eating disorder (Striegel-Moore & Steiner-Adair, 1998).

In this brief overview of the literature on the correlates and risk factors for eating disorders and disordered eating, the variables that have received some empirical attention within the biological, individual, familial, and sociocultural domains are reviewed. This is not meant to be an exhaustive review of the literature or a summary of all risk factors identified, but rather it is meant to highlight the primary variables that have received empirical attention. As in other literature areas, authors have used the term 'risk factor' variably and often for variables that have

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only been established as correlates of eating pathology. Thus when 'risk factor' is used in this review it does not imply causality has been established for a variable unless specifically noted.

Biological Risk Factors

Genetic variables. Two common methods employed to determine a genetic contribution in the etiology of a disorder are family studies and twin studies. Family studies are used to determine if there are higher prevalence rates for a particular disorder among relatives of an individual with the disorder than in the general population. Twin studies are used to compare concordance rates between monozygotic (identical) and dizygotic (fraternal) twins in an effort to delineate shared family environment from a genetic contribution (Treasure & Holland, 1995).

In a review of family studies of eating disorders, the authors found an increased rate of eating disorders among first degree relatives of either individuals with anorexia or bulimia in all studies reviewed (Treasure & Holland, 1995). This family association is so strong that female relatives of an individual with anorexia are ten times more likely to develop an eating disorder than individuals in the general population (Treasure & Holland, 1995). It has therefore been concluded that having a female relative with an eating disorder is a risk factor for anorexia (Striegel-Moore and Steiner-Adair, 1998) and bulimia (Fairburn, Welch, Doll, Davies, & O'Connor, 1997).

Parental psychopathology has also been found to be a risk factor for anorexia (Striegel-Moore and Steiner-Adair, 1998) and may be a risk for bulimia, but its role as an indication of genetic risk remains unclear (Hopkins, Raja, Ruderman, & Tassava, 1997). Although family studies are necessary to determine if a trait has a genetic contribution, they alone are not sufficient to provide evidence of a genetic risk. Twin and adoption studies are necessary to delineate inherited factors and shared family environment (Treasure & Holland, 1995).

Twin studies of eating disorders have been difficult to do because disorders that are rare, such as anorexia, limit the size of the sample and incur selection bias (Treasure & Holland, 1995). However, reviews of the twin studies that have been conducted have found that monozygotic twins have a higher concordance rate for anorexia than dizygotic twins (Striegel-

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Moore, Silberstein, & Rodin, 1986; Treasure & Holland, 1995) and bulimia (Hopkins et al., 1997; Treasure & Holland, 1995), thereby suggesting that genetic factors contribute to both disorders. There is also some evidence to suggest that genetic factors may be more relevant in the development of anorexia than bulimia (Treasure & Holland, 1995).

Neurochemical. Some researchers have postulated that there is a chemical vulnerability to developing an eating disorder. This vulnerability may be expressed in terms of neurochemical and neuroendocrinal abnormalities that have been found among individuals with eating disorders (Steiner & Lock, 1998). However, it has been difficult to find evidence that these abnormalities exist prior to the onset of the disorders. Without proof that these neurochemical abnormalities exist prior to the development of the disorder, it is possible that these abnormalities are secondary to food restriction or a result of other bodily changes during starvation. These alternative explanations have received some support in the finding that weight gain and/or refeeding usually returns neurochemical levels to normal (Leung et al., 1996; Steiner & Lock, 1998).

Individual Risk Factors

Demographic variables. In a review of risk factors for bulimia, the variables of being young and a woman were the only demographic variables found to increase risk for bulimia. The role of socioeconomic status and ethnicity remain unclear (Hopkins et al., 1997). High parental education has also been associated with an increased risk for the development of anorexia (Striegel-Moore and Steiner-Adair, 1998).

Life events. Stressful life events have received relatively little research attention in the role that they play in the development of eating disorders. However, they are often cited as a trigger or precipitating factor for the onset of the disorders among individuals already at high risk (Smolak et al., 1998).

Developmental variables. Adolescence has been highlighted as a time when many risk factors for eating disorders are increased, due to physical changes (e.g., increased body fat) and psychological (e.g., the tasks of achieving a new sense of self, establishing dating relationships)

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(Striegel-Moore et al., 1986). Theorists believe that during adolescence, discontent over weight and body shape begins (Striegel-Moore et al., 1986).

Puberty has been studied repeatedly as a developmental risk factor. For example, in a two year prospective study of 7th through 10th grade girls, eating problems developed as a response to changes from puberty. Those girls who felt the most negative about their bodies during puberty were the ones who were at highest risk for developing eating pathology (Attie & Brooks-Gunn, 1989). Several studies have found that early maturation is a risk factor for eating disorders (Fairburn et al., 1997; Killen et al., 1994). However, the role of early puberty as a risk factor remains controversial (Franko & Orosan-Weine, 1998; Shisslak et al., 1998). Risk may have less to do with younger onset of puberty and more to do with associated factors such as early dating (Shisslak et al., 1998). Teasing by peers during adolescence (Attie & Brooks-Gunn, 1989) and having peers who diet have also have been associated with an increased risk for eating disorders (Paxton et al., 1999; Shisslak et al., 1998).

Sexual abuse. Sexual abuse has received a great deal of attention as a possible risk factor in the development of eating disorders (Eisler, 1995; Fallon & Wonderlich, 1997). Overall, results suggest that around 30% of individuals with eating disorders have been sexually abused as children, which is similar to the rates found in the general population (Conners & Morse, 1993; Eisler, 1995). The role that sexual abuse plays in the development of eating disorders remains controversial; results are inconclusive and often contradictory (Conners & Morse, 1993; Fallon & Wonderlich, 1997; Hopkins et al., 1997). Inconclusive findings appear to be due to methodological issues including diverse definitions of abuse, measurement problems and the use of different samples (Conners & Morse, 1993; Eisler, 1995). Despite these caveats, some reviewers do conclude that childhood sexual abuse may be a nonspecific risk factor for bulimia (Fallon & Wonderlich, 1997), particularly when there is comorbidity (Wonderlich, Brewerton, Jocic, Dansky, & Abbott, 1997), and that childhood sexual abuse is more strongly associated with bulimia than anorexia (Wonderlich et al., 1997). However, even reviewers of the literature

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disagree on the conclusions that can be drawn from the available literature; earlier reviews found no support for increased risk due to childhood sexual abuse (Pope & Hudson, 1992).

Dieting. Prevalence studies have found alarmingly high rates of dieting among adolescent girls. For example, in one study approximately 65% of adolescent girls in the United States reported that they have dieted to lose weight and that they feel too fat (Shisslak et al., 1998). Dieting has consistently been identified as a risk factor for the development of abnormal eating attitudes and behaviours (Shisslak et al., 1998) and is often viewed as a precursor to the development of eating disorders (Franko & Orosan-Weine, 1998). For example, a history of chronic dieting is a risk factor for bulimia (Hopkins et al., 1997; Striegel-Moore et al., 1986) as individuals are likely to encounter repeated failures to lose the weight and may be tempted to try alternative weight loss strategies including harmful ones such as purging. There is also some evidence that the strict regulation and restriction of food during dieting may be an important risk factor for bingeing (Striegel-Moore et al., 1986). In one prospective study, individuals who dieted were eight times more likely to develop an eating disorder (Patton, Johnson-Sabine, Wood, Mann, & Wakeling, 1990). However, others argue that dieting may not be a causative risk factor, but rather the first sign of an eating disorder process (Szmukler & Patton, 1995). Moreover, researchers question the high number of adolescents who diet and do not go on to develop eating disorders. To understand why only some dieters progress to developing eating pathology, researchers have turned to the study of personality factors and psychological functioning.

Personality variables. Aspects of personality that have been identified as risk factors for anorexia include high neuroticsm (Walters & Kendler, 1996; as cited in Striegel-Moore & Steiner-Adair, 1998) obsessional personality traits, compliance, and social inhibition (Shisslak et al., 1998). Perfectionism has also been identified as a risk factor for anorexia (Shisslak et al., 1998). Personality traits identified as risk factors for bulimia include avoidance of conflict, desire for social approval, impulsivity and difficulty asserting needs (Shisslak et al., 1998; Steiner & Lock, 1998). Although these personality factors have been associated with eating disorders, Shisslak and colleagues (1998) caution against assuming that they play a causal role in the development

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of eating disorders. This is because many of these factors have not been studied in longitudinal prospective designs; it is unclear if they occur prior to the development of an eating disorder or as a result of the eating disorder.

Psychological functioning. Psychological functioning and psychological symptoms have also been studied as another source of possible risk factors. For example, affective instability and negative emotionality have been proposed as risk factors for eating disorders (Shisslak et al., 1998; Striegel-Moore et al., 1986). A higher number of psychiatric symptoms have been found among dieters who later progress to eating pathology (Patton et al., 1990). General dissatisfaction with one's life or loss of control of one's life in combination with perfectionist tendencies have also been found to differentiate between individuals with eating disorders and controls and have predictive utility (Franko & Orosan-Weibe, 1998).

Many researchers have also found a relationship between low self-esteem and high scores on eating disorder measures and negative attitudes towards the body (Shisslak et al., 1998). Self-esteem has been identified as a correlate of anorexia (Striegel-Moore and Steiner-Adair, 1998) and of bulimia (Fairburn et al., 1997).

Leung and colleagues (1996) have categorized studies of psychological functioning and symptoms into studies that are not eating disorder symptom-related risks (which study general psychological functioning and symptoms as described above) and those that study symptom-related risks (symptoms of eating disorders). Some of the symptom-related risk factors that have been identified include binge and purging behaviours (Shisslak et al., 1998), weight concerns such as fear of weight gain and worry over weight and body shape (Killen et al., 1994) and body dissatisfaction (Killen et al., 1994). The results of these studies suggest that individuals reporting some eating pathology symptoms are at elevated risk for developing an eating disorder (Leung et al., 1996).

However, a problem identified with the symptom-related risk approach is understanding whether these risk factors are in fact a vulnerability or whether the beginning of the disorder is present and being observed (Franko & Orosan-Weine, 1998; Leung et al., 1996). This becomes

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an important issue in terms of designing interventions. If symptom-related factors are expressing a vulnerability to developing an eating disorder then prevention is appropriate. However, if these factors are actually the signs of an eating disorder in its early stages, then the intervention that should be used is treatment, and prevention strategies may not be strong enough to help (Franko & Orosan-Weine, 1998).

Familial Risk Factors

Family environment has been frequently identified as having an important role in the etiology of eating disorders, although empirical support for some theoretical constructs has been limited and often inconsistent (Eisler, 1995).

Family structure and environment. Although originally thought to be a risk factor, parental loss or separation in the family does not seem to be associated with the development of eating disorders (Eisler, 1995). Maternal obesity has been identified to be more likely among families of bulimics than anorexics or controls (Franko & Orosan-Weine, 1998). However, it is unclear if this finding is related to a genetic vulnerability or familial environment. Maternal attitudes towards weight may also be associated with eating pathology among their daughters which has some researchers pointing to modeling of behaviour as a possible mechanism of development of eating pathology among adolescent girls (Franko & Orosan-Weine, 1998).

Family functioning. Family systems theorists, particularly structural family therapists, have posited that there are characteristic features of the functioning of eating disorder families. These four characteristics are enmeshment, overprotectiveness, rigidity, and lack of conflict resolution (Minuchin, Rosman, & Baker, 1978). Enmeshment, which describes a family that is extremely close with blurred subsystem boundaries, has been frequently assessed in families with anorexia, with mixed, inconstant results (Rowa & Kerig, 1999). However, recent work has called into question the common practice in most studies of measuring enmeshment using a cohesion scale, as they may be different constructs. This has been supported by the finding that when enmeshment is measured separately, anorexics report more boundary problems with parents than controls (Rowa & Kerig, 1999).

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Some studies have demonstrated that eating disordered families have increased parental discord and family conflict, difficulty expressing emotions, and less adaptability than families of controls (Fairburn et al., 1997; Graber, Brooks-Gunn, Paikoff, & Warren, 1994; Hopkins et al., 1997; Killian, 1994; Schmidt, Hodes, & Treasure, 1992). When families of anorexics and bulimics are compared, anorexic families appear more organized and controlled, whereas families of bulimics are more chaotic and critical and conflicted (Steiner & Lock, 1998). When eating disordered families are compared to a normative sample of distressed families, two factors, low emotional expressiveness and higher achievement orientation, differentiated the two samples (Offner, Thompson, & Herzog, 1997).

There doesn't appear to be any particular type of eating disorder family pattern that is invariably associated with eating pathology (Eisler, 1995; Killian, 1994). There is a great deal of variability in family functioning across families of both anorexics and bulimics. Moreover, Eisler argues that the differences that do emerge in the literature may be nonspecific and may be found in any family dealing with a serious chronic illness of a child or a result of normal developmental changes. Without longitudinal prospective work this alternative explanation remains viable.

Sociocultural Risk Factors

The role that our society and culture plays in the development of eating disorders has received a great deal of attention. Many theorists and researchers identify the emphasis on female thinness in Western culture as an important factor involved in the development of eating disorders (e.g., Striegel-Moore et al., 1986). Striegel-Moore and colleagues propose that Western society is involved in the development of eating disorders by portraying the thin ideal, and by demonstrating how to lose weight through dieting and other behaviours. However, the role culture plays in the development of eating disorders is hard to study and few researchers have tested this directly (Franko & Orosan-Weine, 1998). Researchers have attempted to demonstrate the influence of culture and Western values in the development of eating disorders through less direct approaches including sociohistorical analyses, media studies, studies of subgroups within our culture, and cross-cultural analyses.

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Sociohistorical analyses. Sociohistorical analyses have documented the correspondence over time between the increasingly thin ideal body image in our society and the increase in prevalence of eating disorders. Many postulate an important connection between the two, although some authors caution that the increase in rates of eating disorders may also be due to increased awareness and detection (Fedoroff & McFarlane, 1998). An example of a sociohistorical analysis is a frequently cited study by Garner, Garfinkel, Schwartz, and Thompson (1980), which details the increasingly thinner Miss America contestants and Playboy centerfolds over a twenty year period.

Media studies. The media's portrayals of our society's thin ideal has been one aspect of the sociocultural influence on eating disorders that has been identified as a risk factor for eating disorders (Shisslak et al., 1998). For example, one study demonstrated that exposure to media (television and magazines) has both direct and indirect effects on scores obtained on an eating disorder measure (Stice, Schupack-Neuber, Shaw, & Stein, 1994; as cited in Franko & Orosan-Weine, 1998). Other researchers have found that exposure to thin models is related to lower self-evaluations (Irving, 1990). Some researchers have found that the internalization of the thin ideal may act as a mediating variable that increases the risk associated with media exposure (Heinberg, Thompson, & Stromer, 1995).

Subgroups. The influence of the thin ideal on eating pathology has also been supported through the study of eating pathology among particular subgroups of individuals that are in an environment considered to have an increased emphasis on appearance or weight. Subgroups that have been studied include gymnasts, dancers, and models. There is evidence of higher rates of eating disorders among these groups (Franko & Orosan-Weine, 1998; Striegel-Moore et al., 1986). However, there is some debate regarding the environment's role as a risk factor, as there are conflicting results regarding the maintenance of eating pathology after leaving a particular environment (Franko & Orosan-Weine, 1998). Homosexual men have also been studied as another subgroup where the subculture emphasizes appearance and weight. There is some evidence that they may also be at increased risk for bulimia (Striegel-Moore et al., 1986)

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and other forms of eating pathology (Fedoroff & McFarlane, 1998; Heffernan, 1994) although most of the samples have been small. The results of studies of the relationship between bulimia and sports with an emphasis on weight have also been inconclusive (Hopkins et al., 1997).

Although the studies of subgroups suggest an environmental role in eating pathology, the majority of eating disorder individuals do not come from these subgroups (Leung et al., 1996). There also exists the possibility that those who may be predisposed to developing eating problems select these careers or environments (Fedoroff & McFarlane, 1998). The methodological and conceptual problems identified highlight the difficulty of studying and understanding the role that environmental factors play in the development of eating disorders (Franko & Orosan-Weine, 1998; Leung et al., 1996) .

Cross-cultural studies. Researchers who study eating disorders from a cross-cultural perspective have identified acculturation and Westernization as risk factors for eating disorders, among minority groups within Western countries (e.g., Crago, Shisslak, & Estes, 1996), within countries undergoing rapid Westernization (e.g., Abou-Saleh, Younis, & Karim, 1998), and among immigrant populations (e.g., Dolan, 1991). Yet, there is much debate as to whether mechanisms of risk are related to assimilation of the Western " thin ideal" or whether other processes are involved, such as culture clash or intergenerational conflict (e.g., Mumford, 1993). A second related issue in this area is that there is no clear definition of Westernization or a study of what components may be important (e.g., Western values, modernization, urbanization, consumerism, changing roles of women and families, etc.). A more thorough review of the cross-cultural literature on eating disorders and discussion of these competing assertions will be covered in more detail in the following sections of this review. Despite these issues, most authors conclude that the literature suggests that sociocultural factors play an important role in the development of eating disorders in Western and Industrialized cultures (Fedoroff & McFarlane, 1998; Striegel-Moore et al., 1986).

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Summary and Conclusions

There is evidence to suggest that risk factors of eating pathology include biological, individual, familial, and sociocultural variables. There are some etiological models that incorporate many of these variables and propose possible interactions and mechanisms (Smolak et al., 1998). However, we are still far from having definitive evidence in support of etiological models. Overall, based on their review of the risk factor literature on eating disorders, Leung and colleagues (1996) conclude that the research area is still in its "formative years" (p. 254).

Although we are beginning to compile evidence for the association of certain variables with the development of eating disorders we are still far from clarifying their causal role. Terms such as risk and protective factors are frequently used inaccurately by including many variables that have been identified as correlates only (Smolak et al., 1998). There is a call for greater specificity and precision in the use of these terms as they have different meanings and important implications for the accumulation of knowledge and prevention programming (Franko & Orosan-Weine, 1998). Most reviewers in the field are also calling for the use of more prospective designs to determine causality (Fedoroff & McFarlane, 1998; Hopkins et al., 1997; Leung et al., 1996; Shisslak et al., 1995; Smolak et al., 1998).

The majority of studies have focused on only one or two variables independently. Research examining how variables interact is necessary to understand risk for eating disorders (Hopkins et al., 1997; Leung et al., 1996). Testing some of the models that have already been proposed (Shisslak et al., 1995; Smolak et al., 1998) and using more complex multivariate designs (Leung et al., 1996) are some approaches that have been suggested.

The over reliance on clinical samples has also been criticized as it may bias the results and limit the external validity of the findings (Campbell, 1995). Use of community samples would help to determine normative information on the development of eating behaviour and specific protective factors for different developmental stages (Steiner & Lock, 1998), as there is relatively little known about protective factors (Smolak et al., 1998) or resilience (Franko & Orosan-Weine, 1998).

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Finally, many researchers argue that the utility of the risk factor literature for developing prevention programs is limited in some areas (such as genetic and symptom-based studies), whereas other areas of focus (such as non symptom-related psychological risk factor studies) are more useful in prevention work (Leung et al., 1996).

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APPENDIX B

E-mail Request for Participants to Complete Web-based Questionnaire Package

Hello,

My name is Gabrielle Geller and I am a graduate student from the University of Windsor. I am conducting a survey of Greek women's experiences as part of my dissertation research (which has received ethics approval through the University of Windsor). The purpose of the survey is to explore how women adapt to growing up in two different cultures and the influences of North American culture on women. It is a web-based survey that takes approximately 40 minutes to complete.

I was wondering if you would be willing to help me. I am asking for help from you because the Greek community in Windsor is quite small. Do you have any members on line who may be interested in participating in this survey? I have an e-mail request kind of like this one that explains what the study is about and the web page address. If you would like to check out the web page yourself (and for more information about the survey) please click on the following address: -
http://web4.uwindsor.ca/users/g/geller/greekwomen.nsf/Consent+form?OpenForm

My survey is not designed to collect e-mail addresses and anonymity will be assured at all times. The responses are submitted directly over the internet ensuring anonymity (i.e., this is not an e-mail data collection method).

If this seems OK to you could I possibly send your members the e-mail request for my study (or send you a copy to forward to them)? If you would like more information before deciding please feel free to contact me at geller@uwindsor.ca.

Thanks for considering my request. I look forward to hearing from you.

Sincerely,

Gabrielle Geller, M.A.
University of Windsor

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APPENDIX C

Web-based Data Collection: Rationale and Empirical Support

There are over half a billion people who have Internet access around the world (Nua Internet Surveys, 2003). Along with being an open forum for information, marketing and e-commerce, the Internet has also become a place for research and data collection. The Internet has been used for research for some time in the areas of marketing and health, and more recently in psychology. For example, Epstein, Klinkenberg, Wiley and McKinley (2001) refer to the American Psychological Society web page, which displays a substantial list of current psychological research projects on the Internet. The list includes investigations in many areas within psychology, including clinical psychology, experimental, personality, sensation and perception and social psychology.

This discussion will review some of the benefits and drawbacks of using Internet research for psychological investigations, as well as describe the procedures used in the current investigation. This discussion will be limited to research that involves the use of questionnaires that have been modified to be used on the Internet (i.e., it will not cover e-mail surveys or interactive-computer investigations).

Benefits

Web-based data collection has been described as convenient and cost-effective (e.g., Edmondson, 1997; Thomas et al., 2000; Weible & Wallace, 1998). No paper is used and postage is not needed (Pettit, 1999). Therefore, this medium is both environmentally friendly and cost saving. Paper-and-pencil forms that are mailed out have been found to be three times slower than web-forms in generating responses, four times more expensive to prepare, and three times more costly to code and analyze than web-based questionnaires (Weible & Wallace, 1998). Moreover, very little effort is needed on the part of the investigator once the questionnaire has been constructed on the web. The participants can fill out the questionnaire at their convenience (both in terms of time and place) and it allows for automatic transfer of the data entered into an analyzable data file (Pettit, 1999; Davis, 1999).

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In addition to the convenience and efficiency of Internet data collection, a larger range of samples can be obtained online than with traditional mediums. For example, it is easier to obtain very large samples on the Internet (e.g., Silver, Holman, McIntosh, Poulin & Gil, 2002) and samples that have been traditionally difficult and costly to obtain due their low numbers and/or because they are scattered geographically (Yoffie, 1998). Samples that can now be reached include, for example, lesbian clients of lesbian feminist therapists (Quartaro & Spier, 2002), families with Down syndrome or Williams syndrome members (Marcell & Falls, 2001), or individuals who are housebound due to agoraphobia or other conditions.

In addition to the wider range of samples available, web-based data collection has been noted for better quality data. For example, it appears that in most cases when anonymity is not guaranteed, Internet administration increases self-disclosure of participants (Davis, 1999). Data derived from web-based questionnaires have also been described as "cleaner" than paper-and pencil surveys. First, missing data can be reduced substantially with newer computer programs that can stop submission unless all responses are entered (Stanton, 1998). Out of range scores can also be reduced by menu or button options that limit response options (Pettit, 1999). Moreover, there is no chance for data entry errors to be made as the investigator does not have to input data into a data set (Pettit, 1999; Stanton, 1998).

Drawbacks

Despite these benefits, some researchers have expressed concern regarding Internet samples not being representative (Pettit, 1999). Some are concerned that there may be a self-selection bias for online samples, although this can occur with any investigation that requests volunteers (Yoffie, 1998). Secondly, investigators note that online samples are limited to participants with computers and Internet access (Thomas et al., 2000) who tend to have higher education and incomes (Pettit, 1999). This will change, however, as the percentage of the population who use the Internet increases (Edmondson, 1997; Pettit, 1999). In an annual survey of Internet trends, 72% of Americans and 62% of Canadians reported that they had gone online at least once in the last 30 days. These rates have increased substantially over the last few years and are predicted to continue to increase (Ipsos-Reid, 2002).

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Concerns have also been raised regarding the kind of data generated from web-based questionnaires. These concerns focus on whether the data from online questionnaires are equivalent to the data obtained from traditional paper-and-pencil measures. This question has been frequently studied and the vast majority of investigators have found support for the equivalence of the data derived from these two mediums (e.g., Cronk & West, 2002; Knapp & Kirk, 2003; Epstein et al., 2001). Moreover, no differences between the two mediums have been found on measures of participants' perceived control, trust, candor, and social desirability (Fox & Schwartz, 2002). In addition, the psychometric properties of measures, such as internal consistency coefficients (Davis, 1999) or factor structure and correlations between subscales (Stanton, 1998) have been found to be equivalent.

A third set of concerns about online data pertains to data contamination and tampering. There is the possibility of multiple submissions by the same individual (Thomas et al., 2000) or the possibility of an individual deleting data files. Both of these possibilities can be reduced through newer web data collection programs. The first possibility can be discouraged with programs that clear item responses after submission. The second possibility can be prevented with computer programs that create security for databases by allowing the investigator to control who has access to data files.

The Current Investigation

In the current investigation web-based questionnaires were used after repeated attempts to obtain a larger number of participants through traditional paper-and-pencil mail-outs were unsuccessful. With the help of Richard Dumala, of the University of Windsor IT services, the questionnaire package was transformed into a web format on University of Windsor web pages. Lotus Notes Web Page software was used.

After construction of the online questionnaire package it was pilot tested, and feedback regarding formatting errors was provided. For example, instructions that referred to "writing" in one's responses or "circling" the responses were changed after pilot testing. The final questionnaire package included the following web pages: The consent form (with decline and accept buttons), a thank you page if participants chose to decline, the questionnaires (with a

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submit button after the last questionnaire) and a thank you and feedback page after the questionnaire was submitted.

When comparisons were made between the respondents who completed web-based questionnaires and those who completed hard copy versions, no differences were found on any demographic or primary variables in the study. This finding is consistent with research that has demonstrated the equivalence of data collection means (e.g., Cronk & West, 2002; Knapp & Kirk, 2003; Epstein et al., 2001). Unlike most of the research in the area, however, the current investigation's web-based questionnaires had more missing data (two cases which had more than 20% of the responses missing were deleted). There were also some redundant responses (the respondents had submitted their completed questionnaires more than once). This was due to the omission of security measures during the planning and designing phases of the current investigation, which are now readily available with most computer programs.

Conclusions

Most investigators in the field have concluded that the benefits of web-based questionnaires outweigh the costs (e.g., Pettit, 1999). Moreover, there are many examples in the literature that Internet research is becoming more accepted as a viable medium for data collection. For example, a large multi-stage survey of factors associated with psychological outcomes following the September 11th terrorist attacks used web-based questionnaires. The investigators were able to survey over 2, 700 participants and published their study in the Journal of the American Medical Association (JAMA; Silver et al., 2002). The increasing popularity and acceptability of online data collection can also be seen in a proliferation of programs and businesses that help or oversee the creation and maintenance of web-based data collection. As Internet access continues to grow, so will improvements to Internet research; in the samples available online, in the sophistication of available web page designs, and in the security and reliability of the data collected.

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APPENDIX D

Informed Consent Form

University Participant Consent Form

I am a Psychology graduate student from the University of Windsor. The purpose of this study is to explore how Greek immigrant women adapt to North American culture, and to assess the family background and eating behaviours and attitudes of Greek Canadian women.

If you decide to participate in this study, it will take approximately 60 minutes of your time. You will be requested to fill out questionnaires, involving a background information sheet, questions regarding how you see yourself and your family, and how you view your culture and that of North American society. Finally, you will be asked questions regarding your eating attitudes and behaviours. At any point, if you have any questions regarding the study please feel free to ask me.

Your participation is voluntary and you may withdraw from the study at any time. Your grades will not be affected in any way. Your answers will be anonymous and will only be presented in summary form. If you wish you may contact the Chairperson of the Ethics Committee (Dr. Doug Shore) at the University of Windsor, Department of Psychology - (519) 253-4232.

If you have any questions please contact me (519) 252-2365, or my thesis supervisor, Dr. Cheryl Thomas (Department of Psychology - (519)253 - 4232, Ext. 2252). Once the study has been completed, you may receive a copy of the study results if you wish, by leaving your name and address on a sign-up sheet after completing the questionnaires or by contacting me. Thank you for your cooperation.

Please read the following paragraph:

I, ... (name of participant), have read the description of the study and understand its purpose. I understand that my answers will be kept confidential and that my name will not be associated with my answers. I voluntarily consent to participate.

Signature................................... Date..

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APPENDIX E

Feedback Sheet

Thank you for your participation!

When this study is completed information about the results will be made available to you. It will be mailed to you, if you leave your name and address on the sign-up sheet. If you should have any questions or concerns in the meantime, please feel free to contact me, Gabrielle Geller (at 519-252-2365).

If you know of a few Greek women who may be interested in participating in this study, the enclosed cards have information regarding the study and a phone number they can contact to find out more information or to participate in this study.

Sometimes people find that while completing a research project, they have concerns about themselves or others they care about. If you find yourself in this situation, please contact one of the agencies listed below.

Phone Numbers to call:

Distress Centre for Windsor & Essex County	256-5000
University of Windsor:	
Psychological Services Centre	973-7012
Student Health Services	973-7002
Bulimia Anorexia Nervosa Association (BANA)	969-2112
Windsor Women Working With Immigrant Women	973-5588

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APPENDIX F

Demographic Questionnaire

1. Age _____ 2. Height (in feet)_____ 3. Current Weight (in pounds)_______

4. How many years of education have you had? ________________

(for example, up to grade 7 = 7 years; 3rd year of university = 15 years; post-graduate = > 16)

5. What is your postal code? ________________

6. Where was your mother born? _________________

(state/province; country)

7. Where was your father born? _________________

(state/province; country)

8. Where were you born?________________________

(state/province; country)

9. What year did your family move to Canada? _______________

10. If you were born outside of Canada,
how old were you when you came to Canada to live? ___________ years old

11. What was the first language you spoke at home?____________________

12. Is your father

Unemployed [] Disabled []

Working [] Retired []

If he is working, what is his job?______________

13. Is your mother

Unemployed [] Disabled []

Working [] Retired []

If she is working, what is her job?________________

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APPENDIX G

Parental-Child Boundaries Scale (PBS)

PBS (Mothers)

These are statements about different things that mothers do. Think of your mother and decide if this is something she usually does (5), often does (4), sometimes does (3), rarely does (2), or never does (1).

	Never	Rarely	Sometimes	Often	Usually
1. My mother would look through my personal stuff even if I asked her not to.	1	2	3	4	5
2. When my mother needs someone to talk to, she turns to me.	1	2	3	4	5
3. My mother and I know each other's thoughts and feelings.	1	2	3	4	5
4. My mother tells me very personal things about her life.	1	2	3	4	5
5. I take care of things around my house, as if I were the parent.	1	2	3	4	5
6. I make my mother upset, just like my father does.	1	2	3	4	5
7. When my mother is upset about something, she also gets upset with me.	1	2	3	4	5
8. I feel like my mother is the child and I am the parent.	1	2	3	4	5
9. My mother doesn't like it if I keep anything private from her.	1	2	3	4	5
10. It is up to me to make sure my mother is happy.	1	2	3	4	5
11. My mother wants me to think and feel the same as her.	1	2	3	4	5
12. My mother and I are so much alike that we're almost like two halves of the same person.	1	2	3	4	5
13. When my mother gets mad she says I'm just like my father.	1	2	3	4	5
14. My mother asks me very personal questions about things that I don't want to tell her.	1	2	3	4	5
15. My mother treats me the same way she treats my father.	1	2	3	4	5
16. My mother thinks that it is important for me to know about her problems.	1	2	3	4	5
17. My mother needs to know everything I think and feel.	1	2	3	4	5
18. My mother talks to me about her worries.	1	2	3	4	5
19. My mother needs me to take care of her.	1	2	3	4	5
20. My mother asks too many questions about what me and my friends do and talk about.	1	2	3	4	5
21. My mother wants me to be happy and carefree even if she has worries and problems.	1	2	3	4	5
22. My mother feels the same way about me as she does about my father.	1	2	3	4	5
23. My mother looks through my personal belongings without asking me.	1	2	3	4	5

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	Never	Rarely	Sometimes	Often	Usually
24. When my mother is angry with my father, she also gets angry with me.	1	2	3	4	5
25. When my mother is having a rough day, she needs to talk to me about her worries.	1	2	3	4	5
26. My mother expects me to be just like her.	1	2	3	4	5
27. My mother tells me not to worry about her problems.	1	2	3	4	5
28. My mother makes me feel bad if I disagree with her.	1	2	3	4	5
29. My mother talks with me about things that are not really appropriate for a parent to discuss with her child.	1	2	3	4	5
30. My mother wishes I didn't act so much like my father.	1	2	3	4	5
31. It is my responsibility to make sure my mother is happy.	1	2	3	4	5
32. My mother thinks she knows how I am feeling better than I do.	1	2	3	4	5
33. I take care of my mother.	1	2	3	4	5
34. My mother would rather spend time with me than with her adult friends.	1	2	3	4	5
35. If my mother is feeling badly it is my responsibility to cheer her up.	1	2	3	4	5

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PBS (Fathers)

These are statements about different things that fathers do. Think of your father and decide if this is something he usually does (5), often does (4), sometimes does (3), rarely does (2), or never does (1).

	Never	Rarely	Sometimes	Often	Usually
1. My father would look through my personal stuff even if I asked him not to.	1	2	3	4	5
2. When my father needs someone to talk to, he turns to me.	1	2	3	4	5
3. My father and I know each other's thoughts and feelings.	1	2	3	4	5
4. My father tells me very personal things about his life.	1	2	3	4	5
5. I take care of things around my house, as if I were the parent.	1	2	3	4	5
6. I make my father upset, just like my mother does.	1	2	3	4	5
7. When my father is upset about something, he also gets upset with me.	1	2	3	4	5
8. I feel like my father is the child and I am the parent.	1	2	3	4	5
9. My father doesn't like it if I keep anything private from him.	1	2	3	4	5
10. It is up to me to make sure my father is happy.	1	2	3	4	5
11. My father wants me to think and feel the same as him.	1	2	3	4	5
12. My father and I are so much alike that we're almost like two halves of the same person.	1	2	3	4	5
13. When my father gets mad he says I'm just like my mother.	1	2	3	4	5
14. My father asks me very personal questions about things that I don't want to tell him.	1	2	3	4	5
15. My father treats me the same way he treats my mother.	1	2	3	4	5
16. My mother thinks that it is important for me to know about her problems.	1	2	3	4	5
17. My father needs to know everything I think and feel.	1	2	3	4	5
18. My father talks to me about his worries.	1	2	3	4	5
19. My father needs me to take care of him.	1	2	3	4	5
20. My father asks too many questions about what me and my friends do and talk about.	1	2	3	4	5
21. My father wants me to be happy and carefree even if he has worries and problems.	1	2	3	4	5
22. My father feels the same way about me as he does about my mother.	1	2	3	4	5
23. My father looks through my personal belongings without asking me.	1	2	3	4	5
24. When my father is angry with my mother, he also gets angry with me.	1	2	3	4	5

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	Never	Rarely	Sometimes	Often	Usually
25. When my father is having a rough day, he needs to talk to me about his worries.	1	2	3	4	5
26. My father expects me to be just like him.	1	2	3	4	5
27. My father tells me not to worry about his problems.	1	2	3	4	5
28. My father makes me feel bad if I disagree with him.	1	2	3	4	5
29. My father talks with me about things that are not really appropriate for a parent to discuss with his child.	1	2	3	4	5
30. My father wishes I didn't act so much like my mother.	1	2	3	4	5
31. It is my responsibility to make sure my father is happy.	1	2	3	4	5
32. My father thinks he knows how I am feeling better than I do.	1	2	3	4	5
33. I take care of my father.	1	2	3	4	5
34. My father would rather spend time with me than with his adult friends.	1	2	3	4	5
35. If my father is feeling badly it is my responsibility to cheer him up.	1	2	3	4	5

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APPENDIX H

Vancouver Index of Acculturation (VIA)

Please answer each question as carefully as possible by circling one of the numbers to the right of each question to indicate your degree of agreement or disagreement.

Many of these questions will refer to your heritage culture, meaning the culture that has influenced you most (other than North American culture). This may be the culture of your birth, the culture in which you have been raised, or another culture that forms part of your background. If there are several such cultures, pick the one that has influenced you most (e.g., Irish, Chinese, Mexican). If you do not feel that you have been influenced by any other culture, please try to identify a culture that may have had an impact on previous generations of your family.

Please write your heritage culture in the space provided: ______________________

1. I often participate in my heritage cultural traditions. 1 2 3 4 5 6 7 8 9

2. I often participate in mainstream North American cultural traditions. 1 2 3 4 5 6 7 8 9

3. I would be willing to marry a person from my heritage culture. 1 2 3 4 5 6 7 8 9

4. I would be willing to marry a North American person. 1 2 3 4 5 6 7 8 9

5. I enjoy social activities with people from the same heritage culture as myself. 1 2 3 4 5 6 7 8 9

6. I enjoy social activities with typical North American people. 1 2 3 4 5 6 7 8 9

7. I am comfortable interacting with people of the same heritage culture as myself. 1 2 3 4 5 6 7 8 9

8. I am comfortable interacting with typical North American people. 1 2 3 4 5 6 7 8 9

9. I enjoy entertainment (e.g., movies, music) from my heritage culture. 1 2 3 4 5 6 7 8 9

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	Disagree								Agree
10. I enjoy North American entertainment (e.g., movies, music).	1	2	3	4	5	6	7	8	9
11.I often behave in ways that are typical of my heritage culture.	1	2	3	4	5	6	7	8	9
12. I often behave in ways that are "typically North American".	1	2	3	4	5	6	7	8	9
13.It is important for me to maintain or develop the practices of my heritage culture.	1	2	3	4	5	6	7	8	9
14. It is important for me to maintain or develop North American cultural practices.	1	2	3	4	5	6	7	8	9
15. I believe in the values of my heritage culture.	1	2	3	4	5	6	7	8	9
16. I believe in mainstream North American values.	1	2	3	4	5	6	7	8	9
17. I enjoy the jokes and humor of my heritage culture.	1	2	3	4	5	6	7	8	9
18. I enjoy typical North American jokes and humor.	1	2	3	4	5	6	7	8	9
19. I am interested in having friends from my heritage culture.	1	2	3	4	5	6	7	8	9
20. I am interested in having North American friends.	1	2	3	4	5	6	7	8	9

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APPENDIX I

Tables of Participants' Parents Birthplaces

Birth Place of Mother	Frequency
Argos, Greece	1
Arkadia, Greece	1
Asporia, Greece	1
Athens, Greece	2
Barie, Italy	1
Belgrade, Yugoslavia	1
Buenes Aries, Argentinia	1
Bulgaria	1
Calabria, Italy	4
Campobasso, Italy	1
Canada	1
Cassino, Italy	1
England	1
Epirus, Ioanninna, Greece	1
Famagousta, Cyprus	1
Florina (keli) Greec	1
France	1
Fruili Venezia Guili, Italy	1
Fthiotida, Greece	1
Germany	1
Greece	6
Hania; Greece	1
Harrow, Ontario	1
Holland	1
Ilia, Greece	1
Illinois, USA	1
Istanbul, Turkey	1
Italy	14
Kalamata, Greece	1
Korissos, Greece	1
Kozani, Macedonia, Greece	1
Lakonias, Sparta, Greece	1
Lamia, Greece	2
Limassol, Cyprus	1
Mania, Crete, Greece	1
Megalopoli, Greece	1
Metamorphase, Greece	1
Michigan, USA	3
Montreal, Quebec	1
Nova Scotia	1
Ontario, Canada	14
Patras, Greece	2
Peloponese, Greece	2
Quebec, Canada	1
Raino, Italy	1
Rhodes, Greece	1
Rome, Italy	1
Sicily, Italy	5
Sitohori, Serres, Gr	1
Sparta, Greece	2
Thessaloniki, Greece	1
Trapani, Italy	1
Venato, Italy	1
Venice, Italy	1
Windsor, Ontario	10
Yugoslavia	1

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Birth Place of Father	Frequency
?	1
Abruzzi, Italy	1
Argos, Greece	2
Arkadia, Greece	1
Asporia, Greece	1
Aspropirho, Attici, Greece	1
Athens, Greece	4
Barcelona, Spain	1
Beirut, Lenbanon	1
Bouf, Greece	1
Caira, Italy	1
Calabria, Italy	7
Campobasso, Italy	1
Canada	1
Casterotoria, Italy	1
Cipprano, Italy	1
Cosenza, Italy	1
Cyprus	1
Delphi, Greece	1
Domegge, Italy	1
Epiros; Greece	1
Florina (vevi), Greece	1
Frosinone, Italy	4
Fruili venezia gulia, Italy	1
Fthiotida, Greece	1
Genova, Italy	1
Greece	8
Hamilton, Canada	2
Istanbul, Turkey	1
Italy	24
Kalamata, Greece	1
Kastoria, Greece	1
Lakonias, Sparta, Greece	1
Lamia, Greece	3
Latina, Italy	1
Lazio, Italy	1
Lesvos, Greece	1
Limassol, Cyprus	1
Megalopoli, Greece	1
Michigan, USA	1
Molise, Italy	1
Montreal, Quebec	1
Palermo, Italy	1
Patra, Greece	1
Peloponese,Greece	2
Picinisco, Italy	1
Poland	1
Rhodes, Greece	1
Rome, Italy	3
Sfakia, Crete, Greece	1
Sicily, Italy	5
South Italy	1
Sparta, Peloponese, Greece	1
St. Ippolio, Italy	1
Thessali, Greece	1
Thessaloniki, Greece	1
Trapani, Italy	1

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VITA AUCTORIS

Gavriela Geller was born in Winnipeg, Manitoba. Due to her parents' nomadic tendencies she attended many different high schools and graduated from Mossenson High School, Hod Hasharon, Israel in 1989. She attended the University of Manitoba, where she was granted an Honours BA in Psychology in 1993. She obtained her MA at the University of Windsor in 1996 and is currently a Ph.D. candidate in the adult clinical psychology program at the University of Windsor, after completing a year of clinical internship at SUNY Upstate Medical University, Syracuse, New York. Gavriela has returned to Winnipeg and has been working as an Assistant Professor and Counsellor at the Student Counselling and Career Centre, University of Manitoba.

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