

Immigration to West, Acculturation, and Disordered Eating Patterns

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Ia Shekriladze, 04.10.2017.

Abstract

BACKGROUND: Individual experience of migration and subsequent acculturation with a new culture is reported to be an important predictor of one's psychological wellbeing with some strategies considered healthier, while others associated with poorer outcomes. Eating Disorders (ED) are considered to be culturally influenced and acculturation to western culture has been linked with the increased risk of disordered eating. Though large number of Georgians are currently residing in western countries, studies examining their acculturation strategies and eating patterns are nonexistent.

AIMS: To examine the links between immigration, acculturation to western culture, and disordered eating through studying acculturation conditions, acculturation strategies, and eating patterns of Georgian females residing in United States of America (USA) and United Kingdom (UK); to examine inter-measure consistency of two acculturation measures.

METHODS: A quantitative study was conducted on 506 females: 253 living abroad (UK and USA), and 253 living in Georgia. Measures of disordered eating and acculturation included: Eating Disorder Examination Questionnaire (EDEQ), Vancouver Index of Acculturation (VIA), and East Asian Acculturation Measure (EAAM). Relevant demographic variables were also tracked.

RESULTS: Findings suggested that immigration/relocation to western country and acculturation to western culture was overall linked with slightly increased risk of disordered eating; and, while living in a western country, acculturation strategy of integration was associated with healthiest eating patterns, whereas strategies of separation and marginalization were associated with far poorer eating outcomes. Alternatively, no link was identified between mainstream culture orientation and eating psychopathology, whereas home-culture orientation was linked with more disordered eating. High inter-measure consistency was identified between EAAM and VIA. Yet, EAAM was more effective in measuring four acculturation strategies.

CONCLUSIONS: Prolonged residence in a western country irrespective of acculturation strategy is linked with slightly increased risk of disordered eating. This risk is significantly higher when an individual is not integrated into society of settlement. Thus, while living in a foreign western country, having weak mainstream-culture orientation appears to be a predictor of disordered eating.

Keywords: Immigration, acculturation, eating disorders

აბსტრაქტი

საკითხი: იმიგრაციის და ახალ კულტურასთან აკულტურაციის ინდივიდუალური გამოცდილება პიროვნების ფსიქოლოგიური კეთილდღეობის მნიშვნელოვან პრედიქტორად განიხილება. ამასთან, ზოგიერთი სტრატეგია მიიჩნევა უფრო ჯანსაღად, ხოლო ზოგიერთი კი ასოცირდება გაუარესებულ შედეგებთან. დღესდღეობით მიჩნეულია, რომ კულტურა გავლენას ახდენს კვებით აშლილობებზე, ხოლო დასავლურ კულტურასთან აკულტურაცია კავშირშია არაჯანსაღი კვების გაზრდილ რისკთან. მიუხედავად იმისა, რომ ქართველთა დიდი ნაწილი ამჟამად დასავლურ ქვეყნებში ცხოვრობს, მათი აკულტურაციის თავისებურებები და კვებითი პატერნები არ არის ნაკვლევი.

მიზნები: დასავლეთში იმიგრაციას, დასავლურ კულტურასთან აკულტურაციასა და არაჯანსაღ კვებით პატერნებს შორის კავშირის დადგენა ამერიკის შეერთებულ შტატებსა და დიდ ბრიტანეთში მცხოვრებ ქართველ ქალთა აკულტურაციის გარემოებების, აკულტურაციის სტრატეგიებისა და კვებითი მახასიათებლების შესწავლით; აკულტურაციის ორ საზომს შორის შესაბამისობის განსაზღვრა.

მეთოდი: რაოდენობრივი კვლევა ჩატარდა 506 რესპონდენტზე: მათგან 253 ცხოვრობდა საზღვარგარეთ და 253 - საქართველოში. გამოყენებული იყო კვებითი აშლილობის და აკულტურაციის შემდეგი საზომები: კვებითი აშლილობების საკვლევი კითხვარი (EDEQ), ვანკუვერის აკულტურაციის ინდექსი (VIA) და აღმოსავლეთ აზიელთა აკულტურაციის საზომი (EAAM). ასევე გამოკვლეულ იქნა რელევანტური დემოგრაფიული ცვლადები.

შედეგები: შედეგების თანახმად, დასავლურ ქვეყანაში ხანგრძლივი ცხოვრება და აკულტურაცია მცირედით ზრდის კვებითი აშლილობის რისკს. ამასთან, დასავლურ ქვეყანაში ცხოვრებისას ინტეგრაციის სტრატეგია ასოცირდება ყველაზე ჯანსაღ კვებით პატერნებთან, ხოლო სეპარაციისა და მარგინალიზაციის სტრატეგიები კი - ყველაზე ნაკლებად ჯანსაღ კვებით ტენდენციებთან. არაჯანსაღი კვება კავშირშია საწყისი

კულტურის ორიენტაციასთან და არა მასპინძელი კულტურის ორიენტაციასთან. მაღალი შესაბამისობა დადგინდა აკულტურაციის ორ საზომს შორის. თუმცა, EAAM-მა უკეთ გაზომა აკულტურაციის ოთხი სტრატეგია.

დასკვნები: დასავლურ ქვეყანაში ხანგრძლივი ცხოვრება აკულტურაციის სტრატეგიის მიუხედავად კავშირშია კვებითი აშლილობის მცირედ გაზრდილ რისკთან. აღნიშნული რისკი მნიშვნელოვნად მაღალია, როდესაც ადამიანი არ არის ინტეგრირებული ადგილობრივ საზოგადოებაში. ამგვარად, უცხო დასავლურ ქვეყანაში ცხოვრებისას მასპინძელი კულტურის სუსტი ორიენტაცია წარმოადგენს არაჯანსაღი კვებითი პატერნების პრედიქტორს.

ძირითადი საძიებო სიტყვები: იმიგრაცია, აკულტურაცია, კვებითი აშლილობები

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List of Abbreviations

ABOS: Anorectic behaviour observation scale for parents/spouse

AN: Anorexia nervosa

APA: American psychiatric association

ARFID: Avoidant/restrictive food intake disorder

BED: Binge eating disorder

BITE: Bulimic investigatory test, Edinburgh

BMI: Body mass index

BN: Bulimia nervosa

BSQ: Body shape questionnaire

BULIT/BULIT-R: Bulimia test/Bulimia test -revised

CFA: Confirmatory factor analysis

CFI: Comparative fit index

DSM-5: Diagnostic and statistical manual of mental disorders, 5th edition

DV: Dependent variable

EAAM: East Asian acculturation measure

EAT: Eating attitudes test

ED: Eating disorder

EDEQ: Eating disorder examination questionnaire

EDI: Eating disorder inventory

FBT: Family Based Treatment

ICD-10: International statistical classification of diseases and related health problems, 10th revision

IOM: International organization for migration

IV: Independent variable

LoR: Length of residence

M: Mean

MANOVA: Multivariate analysis of variance

MANCOVA: Multivariate analysis of covariance

MANTRA: Maudsley Anorexia Nervosa Treatment for Adults

Mdn: Median

MEBS: Minnesota eating behavior survey

OSED: Other specified eating disorder

PD: Purging disorder

RMSEA: Root mean square of approximation

RS: Restraint scale

SCOFF: Sick, control, one, fat, food questionnaire

SD: Standard deviation

SEM: Structural equation modeling

SPSS: Statistical package for the social sciences

SSRI: Selective serotonin reuptake inhibitors

SWSI: Shape and weight based self-esteem inventory

TFEQ-R: Three factor eating questionnaire cognitive restraint scale

TLI: Tucker-Lewis Index

UK: United Kingdom

USA: United States of America

VIA: Vancouver index of acculturation

WHO: World health organization

YBCEDS: Yale-Brown-Cornell eating disorder scale.

1. Introduction

Eating Disorders (ED) represent a spectrum of eating-related mental and behavioral disturbances that vary from self-imposed starvation to excessive overeating posing serious risks to individual's physical and emotional wellbeing. Traditionally believed to be affecting women of affluent societies, the prevalence of EDs is increasing not only in developed countries but also in cultures in which they previously were considered nonexistent (Keel & Klump, 2003; Mellor, Ricciardelli, McCabe, Yeow, & Hapidzal, 2009; Gordon, 2001; Rathner, 2001; Genders, Treasure, Fernandez-Aranda, & Tchanturia, 2008; Joja & Von Wietersheim, 2012; Joja, Nanu, & Von Wietersheim, 2015; Pilecki, Salapa, & Jozefik, 2016). While researchers are trying to find out more about the main causes, determinants, and risk and protective factors of disordered eating, it is recognized that EDs are culturally influenced (Stice, 2002; Rathner, 2001; American Psychiatric Association, 2013; Sussman & Truong, 2011; Smith, Dunne, & Pike, 2017; Agüera et al., 2017). In particular, disordered eating has been linked with both acculturative stress and imposition of western beauty standards of thinness (Di Nicola, 1990; Geller & Thomas, 1999; Davis & Katzman, 1999; Miller & Pumariega, 2001; Gordon, 2001; Rathner, 2001). The latter has been blamed for the increase in ED rates globally through direct exposure to western culture or via Media (Rathner, 2001; Becker, Burwell, Herzog, Hamburg, & Gilman, 2002; Keel et al., 2003; Mellor et al., 2009).

In the era of globalization, acculturation and its impact on physical or emotional wellbeing call for renewed interest going beyond the countries traditionally considered as immigrant societies. Located on the crossroads of Eastern Europe and Western Asia, with population less than 4 million, Georgia is considered a lower middle income country (World Bank, 2017). After regaining independence in 1990s, Georgia went through multiple wars and economic crises prompting large numbers of people, including internally displaced persons, leaving the country - some for permanent residency, others in search of economic prospects - mostly to neighboring Russia or western states. While demand is higher for female workers, it is estimated that about 1 million Georgians are working abroad (Hofmann & Buckley, 2012). Hence, bearing in mind the

ever-growing number of Georgians migrating/sojourning to/in the western countries over the last decades, the link between the culture change and behavioral health outcomes definitely seems worth exploring. On top of it, as Georgia is becoming more European embracing “western” values and standards, the incidence of EDs is growing locally¹ (Tchanturia, Troop, & Katzman, 2002; Genders, et al., 2008). Against the backdrop of these developments, studying the links between acculturation to western culture and disordered eating patterns among Georgians appears quite valuable.

1.1. Definition of Eating Disorders

According to the fifth edition of *Diagnostic and Statistical Manual (5th ed.; DSM-5)* of American Psychiatric Association (APA), eating disorders represent persistent disturbances in eating-related behavior manifested by distorted consumption of food that causes marked impairment in individual’s physical health or psychosocial functioning, can be chronic and cause life-threatening effects, including mortality (American Psychological Association, 2013).

Anorexia Nervosa (AN) and Bulimia Nervosa (BN) are most researched types of EDs characterized by both common and distinct symptoms and diagnostic features, and are most likely to be caused/maintained by the combination of biological, psychological, and sociocultural/environmental factors (Fairburn & Harrison, 2003; Jacobi, Hayward, De Zwaan, Kraemer, & Agras, 2004; Polivy & Herman, 2002; Castellini, Trisolini, & Ricca, 2014; Sadock, Sadock, & Ruiz, 2015; Herpertz et al., 2011; Treasure, 2012; Bulik, Kleiman, & Yilmaz, 2016). While AN implies significantly low body weight and BN does not, their shared characteristics include intense fear of gaining weight, episodes of binge eating accompanied by unhealthy compensatory behaviors to lose weight, and self-esteem overly influenced by body shape and weight. Far more common among females than males, EDs typically develop during adolescence or early adulthood

¹ Author’s note: local practitioners report that the request for relevant treatment options has significantly increased.

(American Psychological Association, 2013; Bruch, 1982; Sadock et al., 2015; Favaro, Caregato, Tenconi, Bosello, & Santonastaso, 2009; Treasure, 2012; Keski-Rahkonen & Mustelin, 2016).

Research has produced evidence of strong genetic predisposition of EDs (Klump, Miller, Keel, McGue, & Iacono, 2001; Collier & Treasure, 2004; Bulik, Sullivan, Wade, & Kendler, 2000; Klump, Suisman, Burt, McGue, & Iacono, 2009; Treasure, 2012; Treasure et al., 2015; Sadock et al., 2015; Bulik et al. 2016). Hormonal abnormalities and alterations in neurobiology (e.g. serotonin or dopamine imbalance) responsible for regulating hunger and satiety have been observed in the brains of individuals with EDs, which could perpetuate disordered eating and elevated anxiety (Hill, Peck, Wierenga, & Kaye, 2016; Kaye, Wierenga, Bailer, Simmons, & Bischoff-Grethe, 2013; Polivy & Herman, 2002; Sadock et al., 2015; Treasure et al., 2015). While genetic predisposition towards EDs has been established (Bulik et al., 2016), cross-cultural manifestation of eating psychopathology supports its increased association with cultures and occupations (e.g. modeling, ballet, or sports) in which thinness is highly rewarded (Becker et al., 2002; Keel et al., 2003; American Psychological Association, 2013; Sadock et al., 2015). Furthermore, studies have shown that ED behaviors are often preceded by interpersonal stress suggesting that they may represent maladaptive coping mechanisms to deal with anxiety associated with interpersonal difficulties (Engel et al., 2013). Thus, the knowledge about EDs is growing rapidly and their understanding, diagnostic features, treatment options, and conceptualization as a public health issue, are constantly evolving.

1.2. Definition of Acculturation

Acculturation as a complex and interdisciplinary phenomenon has been defined in multiple ways, all implying meeting of cultures and the subsequent changes in individuals or groups (Sam, 2006a; Berry, 2006). Although initially introduced as a group-level phenomenon, later acculturation was recognized to have an individual level domain and, beginning from the 1980s, attracted the

interest of psychologists, particularly in the countries with increased waves of immigrants, refugees or foreign sojourners (Berry, 2006; Sam, 2006a).

Psychological acculturation refers to the changes an individual experiences as a result of being exposed to other culture (Graves, 1967 as cited in Sam, 2006a). Evidence suggests that the process of acculturation is accompanied by an acculturative stress (Berry, 1970, 1990) – an individual's way of dealing with multiple changes, losses, and uncertainties - that, in turn, impacts his/her cultural orientations and psychosocial wellbeing (Berry, 1992; Berry, 2006; Ward & Kus, 2012; Ward & Geeraert, 2016). In line with this thinking, the way one acculturates to a new culture has much to do with one's physical and mental health outcomes. Furthermore, on the basis of empirical evidence, it has been suggested that once individuals are subjected to acculturation, engagement in both cultures leads to better outcomes compared to the engagement in one culture only, or engagement in either culture (Berry, 1992, 2006; Ward & Geeraert, 2016).

As of today, acculturation psychology encompasses a number of broad theoretical frameworks for conceptualizing and studying culture change, including but not limited to particular strategies and types of acculturation and acculturating individuals, various measures of acculturation, and methods for designing studies (Sam & Berry, 2006). With the increased waves of migration and refugees, acculturation research carries high public health potential for the wellbeing of acculturating individuals and communities, occupying a solid place in the fields of cross-cultural psychology and intercultural research (Sam & Berry, 2006).

1.3. Disordered Eating and Culture Change

Believed to be characteristic of the developed, industrialized, “western” societies, historically EDs have been primarily identified and studied in Western Europe and North America and their decedent cultures (e.g. Australia, New Zealand). Yet, by the end of 20th century the focus shifted to exploring EDs among immigrant populations in western countries as well as among non-western cultures. In accordance with new findings, multiple researchers suggested that certain

eating disturbances might take place when adapting to a new culture is accompanied by a serious stress thereby linking ED with culture change and acculturative stress (Di Nicola, 1990; Geller & Thomas, 1999; Davis & Katzman, 1999; Kempa & Thomas, 2000; Miller & Pumariega, 2001).

Many authors also suggested that the transmission of western values and beauty ideals contributed to the increased ED susceptibility (Davis & Katzman, 1999; Becker et al., 2002; Keel et al., 2003; Mellor et al., 2009; Keith, 2011; Nadaoka et al., 1996; Rathner, 2001) giving birth to westernization model of ED, while others argued that acculturative stress, per se, was responsible for the increased risk (Di Nicola, 1990; Geller & Thomas, 1999; Kempa & Thomas, 2000). Majority of studies, however, explored cultural change to western culture and the populations studied primarily encompassed immigrants settled in western countries. Subsequent studies examined the same issue in a broader perspective and argued against westernization theory as an oversimplification of a very complex and multifaceted phenomenon (Pike & Borovoy, 2004; Pike & Dunne, 2015; Smith et al., 2017).

Furthermore, as evidence suggested associations between the disordered eating and interpersonal difficulties, some researchers considered ED behaviors as maladaptive coping mechanism to deal with the negative affect, stress, and anxiety (Engel et al., 2013; Rosenbaum & White, 2013). Exposure to a new culture, especially in case of immigrants and refugees, is usually accompanied by heightened anxiety due to adjustment related stress and drastic changes in one's support network or ability to socialize. Within this context, it becomes clear why change of culture, per se, irrespective of its western or non-western origin/trajectory, might trigger disordered eating. Thus, on the one hand, research has produced substantial evidence of higher rates of eating difficulties in communities that embrace western culture or communities undergoing acculturation; on the other hand, it provided conceptual framework of why acculturative stress may increase the risk of EDs.

1.4. Research Outline

The main goal of the study is to explore the links between acculturation to western culture and the disordered eating patterns among Georgian women residing in the western countries. The research aims to answer several questions: first, whether or not residing in a foreign western country for a prolonged period of time and subsequent acculturation to a western culture increases the risk of EDs; second, whether or not the way one acculturates to a new culture effects one's eating patterns increasing/decreasing the risk of EDs; and, third, whether or not certain demographic or situational variables shape one's acculturation strategies thereby influencing eating patterns. In addition, because wide variety of instruments have been used for assessing acculturation, it was decided to use at least two well established acculturation measures to ensure its adequate assessment and examine inter-measure consistency.

The findings of the study presented in this thesis will hopefully contribute to the increased knowledge on the links between acculturation and disordered eating both locally and globally. While moving to the West has been largely admired and idealized in contemporary Georgian society, the findings have a potential to raise awareness about the characteristics including the risks and vulnerabilities associated with culture change as well as most favorable ways of pursuing it. At the same time, as such studies are scarce not only in Georgia but also in former Soviet countries and Eastern Europe, the findings will be valuable for international context producing regionally informed evidence. Eating disorders, acculturation, and the link between the two are more broadly examined in the following part of the thesis.

1.5. Structure of Thesis

The subsequent main part of the thesis consists of chapters 2 through 7. Chapter 2 represents a review of literature on eating disorders, culture change, and the link between them that encompasses an overview of main concepts, theories, measures and findings of variety of studies

on relevant topics. It also includes two publications by the candidate on the topic of eating disorders and culture change/acclimation to Western culture. Chapter 3 presents the study conducted within the frames of this thesis. Chapter 4 includes description of the study results, while chapter 5 offers analysis and interpretations of findings. Chapter 6 outlines limitations and strengths of the present study and lists further areas of research. Chapter 7 summarizes overall conclusions.

2. Literature Review

2.1. Overview of Eating Disorders

Eating disorders are persistent mental disturbances manifested by abnormal eating habits that significantly impair individual's physical and psychosocial wellbeing (American Psychological Association, 2013; Sadock et al., 2015; Castellini et al., 2014; Treasure, 2012; Treasure et al., 2015). Introduced in 1873 by Queen Victoria's personal physician, Sir William Gull, the term Anorexia has a Greek origin and means an absence of appetite (Sadock et al., 2015). The term Bulimia, introduced relatively later by British psychiatrist Gerald Russell (Russell, 1979), in Greek means ravenous hunger or the hunger of a bull (Herpertz et al., 2011), while the term Nervosa originates from Latin indicating the nervous (mental) roots of the disturbance (Sadock et al., 2015).

The first formal description of anorexia by a medical professional took place in England in 1686, when Dr. Richard Morton of London described his twenty-year-old patient comparing her to a skeleton (Engel, Staats Reiss, & Domneck, 2007). In 1873, Sir William Gull in England and Charles Lesague in France described the cases of young females characterized by physical symptoms like amenorrhea, bradycardia, low body temperature, and a loss of appetite (Tchanturia, unpublished, 2000; Engel et al., 2007; Pike & Dunne, 2015). A bit later, Charcot (1889) described a patient with pink ribbon who exhibited an intense fear of becoming fat as her mother, and Janet (1903) spoke about the symptom of unbeatable desire to be thin also describing the first clinical cases of bulimia of patients that developed binge eating after the periods of self-induced starvation (Tchanturia, unpublished, 2000; Engel et al., 2007).

Earlier historical evidence suggests occurrence of similar conditions, perhaps to a lesser degree, although not necessarily labelled as mental or behavioural disturbances. Binge eating, as well as dieting and purging, was a common practice for ancient Romans, Egyptians, and Persians (Engel et al., 2007). Princess Margaret of Hungary (1242-1271) allegedly died at the age of 28 due to the

prolonged fasting and low body weight (Tchanturia, unpublished, 2000). In fact, Holy Anorexia (Bell, 1985 as cited in Griffin & Berry, 2003) was regarded by medieval societies as a respected method to cleanse a woman's spirit (notable example is Saint Catherine of Siena) (Griffin & Berry, 2003; Engel et al., 2007). It was not until 1930s that medical professionals started regarding EDs as not entirely physical health issue but also psychological health issue (Bruch, 1982; Engel et al., 2007). Hilde Bruch's 1970s' book about EDs was instrumental in raising awareness on EDs and warning about their seriousness (Engel et al., 2007; Treasure, 2016).

Today, despite multiple commonalities and comorbidities with other mental illnesses, eating disorders are recognized as distinct phenomena that can cause life-threatening effects, including death (American Psychological Association, 2013; Klump, Bulik, Kaye, Treasure, & Tyson, 2009; Treasure, 2012; Herpertz et al., 2011; Treasure et al., 2015; Arcelus, Mitchell, Wales, & Nielsen, 2011). The tenth revision of International Classification of Diseases (ICD)-10 of the World Health Organization (WHO) includes a subgroup of eating disorders in the group of behavioral syndromes associated with psychological disturbances and physical factors. It lists categories of anorexia nervosa, atypical anorexia nervosa, bulimia nervosa, atypical bulimia nervosa, overeating associated with other psychological disturbances, vomiting associated with other psychological disturbances, and other eating disorders as well as eating disorder, unspecified (WHO, 2015) (see Appendix 1).

The *DSM-5* ED cluster represents a part of a group of Eating and Feeding Disorders (Pika and Rumination Disorder also encompassed) and includes Avoidant/Restrictive Food Intake Disorder (ARFID), Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder (BED), and Other Specified Eating Disorder (OSD) as well as eating disorder, unspecified (see Appendix 2).

Body mass index (BMI), defined as a person's weight in kilograms divided by the square of the person's height in meters - $\text{weight (kg)/height}^2 \text{ (m}^2\text{)}$ - is an established measure of determining appropriateness of body weight. According to the WHO, BMI below 18.5 kg/m^2 is considered underweight for adults, below 17 kg/m^2 corresponds to thinness, and BMI below 16 kg/m^2 implies severe thinness associated with serious health related risks (WHO, 2017; Murguia-Romero et al.,

2012). This vision is more or less shared by both ICD and *DSM* with the former setting a threshold at 17.5 kg/m² (WHO, 2015) and the latter at 17 kg/m² (American Psychological Association, 2013).

Table 2.1.1. *DSM-5* Diagnostic Criteria for Anorexia Nervosa

<i>Criterion</i>	<i>Description</i>
A	Restriction of energy intake relative to requirements and significantly low (less than minimally normal/required) body weight in the context of age, sex, physical health, and developmental trajectory
B	Intense fear of weight gain or becoming fat and/or persistently engaging in behaviors that prevent weight gain or lead to weight loss despite significantly low weight
C	Disturbances in perception of body shape/weight, excessive influence of body image on self-esteem, or persistent lack of recognition of significantly low weight

Restricting type: weight loss is achieved primarily through dieting, fasting, and/or excessive exercise

Binge-eating type: recurrent episodes of binge eating or purging (i.e., self-induced vomiting, laxative misuse, etc.) are present

Severity specifier: Mild: BMI \geq 17kg/ m² Moderate: BMI = 16-16.99 kg/ m²
 Severe: BMI = 15 - 15.99 kg/ m² Extreme: BMI < 15 kg/ m²

The main features of ARFID are: a persistent restriction of food intake resulting in significant weight loss or nutritional deficiency, dependence on enteral feeding or oral nutritional supplements, or marked interference in psychosocial functioning. AN entails restriction of food/energy intake leading to a significantly low body weight in the context of developmental trajectory and physical health, accompanied by the distorted perception of one’s body weight/shape, and an intense fear of (or persistent behavior preventing) gaining weight despite significantly low weight (see Table 2.1.1). BN is characterized with recurrent episodes of binge eating accompanied by a sense of loss of control over eating, repeated inappropriate compensatory behaviors (e.g. self-induced vomiting, using laxatives, etc.) to prevent weight gain, and self-

evaluation excessively driven by body shape/weight (see Table 2.1.2). BED is identical to BN except for inappropriate compensatory behaviors are absent. OSIED encompasses atypical AN, BN, and BED and, in addition, includes Purging Disorder (PD) during which there is recurrent purging behavior to influence weight or shape in the absence of binge eating. Out of the listed categories, in terms of severity and enduring consequences, AN takes a leading position followed by BN; hence, the review of the literature will primarily focus on these two conditions.

Table 2.1.2. DSM-5 Diagnostic Criteria for Bulimia Nervosa

<i>Criterion</i>	<i>Description</i>
A	Recurrent episodes of binge eating characterized by both: <ol style="list-style-type: none"> 1. Eating enormous amount of food in a discrete (e.g., 2-hours) period 2. A sense of losing control over eating during the period
B	Persistent engagement in inappropriate compensatory behaviors to prevent weight gain (e.g., self-induced vomiting, misuse of laxatives/other pills, enema, fasting/dieting or excessive exercise)
C	The episodes of binge eating and subsequent inappropriate compensatory behaviors occur at least once a week during 3 month
D	Excessive influence of body shape and weight on self-esteem
E	Disturbance does not take place exclusively during the episode of AN

Severity specifier:

- Mild: 1-3 episodes of inappropriate compensatory behaviors per week
- Moderate: 4-7 episodes of inappropriate compensatory behaviors per week
- Severe: 8-13 episodes of inappropriate compensatory behaviors per week
- Extreme: 14 and more episodes of inappropriate compensatory behaviors per week

With female-to-male ratio of 10:1 and lifetime prevalence of 1% in females, AN usually begins in adolescence and is reported to have a crude mortality rate of 5% per decade (American Psychological Association, 2013; Herpertz et al., 2011; Treasure, 2012; Treasure et al., 2015; Sadock et al., 2015). About one fourth of individuals fully recover, while others exhibit fluctuating pattern of recovery and relapse; yet, over 20% of individuals remain ill for life (American

Psychological Association, 2013; Hjern, Lindberg, & Lindbald, 2006; Berkman, Lohr, & Bulik, 2007; Sadock et al., 2015; Keski-Rahkonen & Mustelin, 2016).

Similarly, with female-to-male ratio of 10:1 but with higher lifetime prevalence of 5% in females, BN usually begins in adolescence or early adulthood and is reported to have a crude mortality rate of 2% per decade (American Psychological Association, 2013; Sadock et al., 2015; Herpertz et al., 2011; Arcelus et al., 2011; Treasure, 2012; Keski-Rahkonen & Mustelin, 2016). Based on European data, the incidence of anorexia appear stable, whereas bulimia is declining (Keski-Rahkonen & Mustelin, 2016). Individuals with BN typically are of normal weight or overweight. Some individuals suffer from chronic course, while others exhibit fluctuating pattern of recovery and relapse. Yet, for many others the symptoms diminish over the years (American Psychological Association, 2013; Sadock et al., 2015; Rosenvinge & Pettersen, 2015).

Due to significantly lower body weight, AN patients are easier to detect and, in most cases, are referred to professional help by their significant others; on the contrary, BN patients are difficult to identify as they appear in normal weight and engage in bingeing/purging privately. Their help-seeking rates, however, are much higher (Herpertz et al., 2011; Treasure, 2012; Treasure et al., 2015; Polivy & Herman, 2002). While AN primarily entails low levels of physical wellness, it may also be associated with impaired psychosocial functioning (Treasure, 2012; American Psychological Association, 2013). The diagnoses of EDs are highly intermingled, as all these conditions are thought to have the same underlying psychopathology, and individuals move between these diagnostic categories over time (Treasure, 2012; Hilbert et al., 2014; Bulik et al., 2016; Cooper & Grave, 2017; Anderluh, Tchanturia, Rabe-Hesketh, Collier, & Treasure, 2009; Castellini et al., 2014).

Heritability of AN and BN has been established with AN ranging between 0.48 to 0.74, and BN between 0.55-0.62 (Bulik et al., 2016). While genetic factors, high anxiety, and environmental stressors together contribute to the development of EDs (Polivy & Herman, 2002; Jacobi et al., 2004; Treasure, 2012), findings of the genetic research suggest that eating disorders share genetic

architecture with other psychiatric disorders with which high comorbidity had been observed (Bulik et al., 2016).

Comorbidity is over 60% with major depressive disorder and anxiety disorders (Rosenvinge & Pettersen, 2015; Sadock et al., 2015; Treasure et al., 2015; Keski-Rahkonen & Mustelin, 2016). Other common comorbidities include obsessive-compulsive disorder, social anxiety disorder (Rosenvinge & Pettersen, 2015; Sadock et al., 2015; American Psychological Association, 2013), bipolar disorder (Bulik et al., 2016) and personality disorders (Cassin & von Ransom, 2005; Friborg et al., 2014; Martinussen et al., 2017). Suicide risks are elevated during both AN and BN with rates reported for AN as 12 per 100 000 per year (American Psychological Association, 2013; Keski-Rahkonen & Mustelin, 2016). Commonalities between AN and autism spectrum disorders (ASD) have warranted special interest as certain shared characteristics and temperamental traits (e.g., rigidity, obsessive rituals, oversensitivity to food texture, etc.) are observed among individuals with these conditions (Zucker et al., 2007; Anderluh et al., 2009; Treasure et al., 2012; Westwood & Tchanturia, 2017).

The extensive research on disordered eating identified multiple biological, temperamental, and environmental risk factors that have been considered to carry prognostic value in terms of ED development (see Table 2.1.3). Authors distinguish key sociocultural, familial, and individual risk factors among which are gender, ethnicity, and childhood eating difficulties (Bruch, 1982; Polivy & Herman, 2002; Jacobi et al., 2004, Hilbert et al., 2014). The idealization of slimness imposed/exacerbated by Media or peer pressure is thought to be a major sociocultural risk factor, whereas familial influence encompasses insecure attachment and enmeshed, intrusive or emotionally neglectful family dynamics; individual risk factors include interpersonal difficulties, childhood overweight, experience of abuse, trauma, teasing/bullying or sexual abuse, negative self-image, depressed mood, anxiety, perfectionism, obsessive thoughts, body dissatisfaction in adolescence, and rigid thinking (Polivy & Herman, 2002; Jacobi et al., 2004; Treasure, 2012; Hilbert et al., 2014; Keski-Rahkonen & Mustelin, 2016).

Table 2.1.3. *DSM-5* Risk and Prognostic Factors of AN and BN

<i>Risk and Prognostic Factors</i>	<i>AN</i>	<i>BN</i>
Temperamental	Childhood anxiety disorders or obsessional traits	Childhood weight concerns, low self-esteem, depressive symptoms, and social anxiety
Environmental	Cultures, settings, and occupations in which thinness is valued and encouraged (e.g., modelling and athletics)	Internalization of a thin body ideal Childhood experience of sexual or physical abuse
Genetic and biological	Having a first-degree biological relative with ED, bipolar or depressive disorders A range of brain abnormalities	Having a first-degree biological relative with ED; childhood obesity and early pubertal maturation

EDs occurs across culturally and socially diverse populations, although they are most prevalent in post-industrialized, high-income countries such as the United States, Western Europe, Australia, New Zealand, and Japan, whereas their incidence in low-income and middle-income countries is not properly studied (American Psychological Association, 2013; Treasure et al., 2015). A preoccupation with slenderness, as a central feature of ED, is prevalent in cultures/societies in which food is abundant, whereas in cultures exposed to famine and poverty usually full-figured bodies are valued (Polivy & Herman, 2002).

While the most challenging aspect of overcoming EDs is engaging the person in the process of illness management (Treasure, 2012), psychotherapy is considered the first-line treatment for eating disorders (Herpertz et al., 2011; Treasure, 2012; Sadock et al., 2015) with the focus of restoration of nutritional balance and reducing maintaining factors (Treasure, 2012). Crucial ingredients of ED management include psycho-education, involvement of family members and carers (as appropriate), and multidisciplinary and coordinated care (National Institute for Health and Clinical Excellence, 2017). Providing the experience of being listened to has been noted instrumental for the healing of individual with ED (Bruch, 1982). In line with this, techniques of

motivational interviewing and models of health behavior change as well as inclusion of carers in the treatment have been reported to be helpful in moving people towards recovery (Treasure, 2012).

Among various forms of psychotherapy for individuals with eating disorders, cognitive behavioral therapy has been best supported by the evidence (Fairburn, 2008; Fairburn, Cooper, & Shafran, 2003; Cooper & Fairburn, 2011; Shapiro et al., 2007; Fairburn, et al., 2013; Herpertz et al., 2011; Cooper & Bailey-Straebl, 2015; Sadock et al., 2015; National Institute for Health and Clinical Excellence, 2017). For adults with AN, Maudsley Anorexia Nervosa Treatment for Adults (MANTRA) has also been recommended (National Institute for Health and Clinical Excellence, 2017; Treasure et al., 2015), whereas for adolescents with AN, family based treatment (FBT) has been suggested (National Institute for Health and Clinical Excellence, 2004; Rhodes, Brown, & Madden, 2009; Coutourier, Kimber, & Szatmari, 2013; Cooper & Bailey-Straebl, 2015; Sadock et al., 2015). Finally, group version of cognitive behavioral therapy has also yielded promising results in reducing disordered eating (Grenon et al., 2017; Wade, Byrne, & Allen, 2017).

While outpatient treatment has been primarily offered to individuals with EDs particularly in cases of BN, inpatient treatment has been reported to be necessary for cases of AN with very low body weight and high risk category (Herpertz et al. 2011; Treasure, 2012; Sadock et al., 2015; Treasure, 2016). Though no medication has proven effective with AN, administration of selective serotonin reuptake inhibitors (SSRI), such as fluoxetine, has been suggested in some cases of BN treatment (Herpertz et al. 2011; Treasure, 2012; Sadock & et al., 2015; Treasure, 2016).

The incidence and prevalence of EDs in Georgia has not yet been duly examined, although a few important exploratory studies have been conducted (Tchanturia et al., 2002; Tchanturia, Katzman, Troop, & Treasure, 2002; Genders et al., 2008). The 2002 study of 245 Georgian women (non-clinical sample) suggested that about 5-7 % of individuals studied may have exhibited clinically significant BN and AN symptoms (Tchanturia et al., 2002). In addition, weight and shape driven self-esteem appeared significantly correlated with disordered eating. However, the overall degree to which Georgian women based their self-evaluation on weight and shape appeared lower in

comparison to western samples (Tchanturia et al., 2002). Another study also revealed that weight, shape and eating concerns were very common among Georgian women (Genders et al., 2008). Interestingly, evidence suggested that, as opposed to UK women, who are more likely to practice bingeing, Georgians engaged in purging behaviors. While family eating habits play powerful role in developing eating behaviors cross-culturally, early childhood restrictive feeding and parental dieting appeared to be significant risk factors of disordered eating among Georgians (Genders et al., 2008). Despite the absence of official statistics on the prevalence of EDs in Georgia, local mental health practitioners have been reporting increased demand for ED interventions over the last years (N. Meparishvili, K. Abdushelishvili, personal communication, June, 2017).

In order to achieve clinical diagnosis of eating disorders, robust measures such as semi structured interviews and self-report questionnaires are considered most reliable. The most recognized self-report ED measures used by mental health professionals are summarized in the next part.

2.2. Overview of Self-report ED Measures

Individuals' disordered eating patterns are being assessed by mental health professionals primarily through semi structured interviews and self-report questionnaires. As opposed to semi structured interviews that require clinical expertise, self-report questionnaires are cost-saving and easy to administer. However, they measure specific disordered eating patterns and do not offer diagnoses. Most assessment instruments examine core ED domains such as binge eating and unhealthy compensatory behaviors, dietary restraint, preoccupation with shape and weight, and determine individual's standing in relation to a particular domain (Anderson, Lundgren, Shapiro, & Paulosky, 2004). Below are listed most frequently used tools in the assessment of eating disorders.

Eating Attitudes Test (EAT) - (Garner & Garfinkel, 1979). The EAT is a 40-item self-report scale measuring AN-related symptoms. A score of > 30 suggests a possible eating disorder. The EAT has been modified into EAT-26. The two showed to be highly correlated, $r = 0.98$. With good test-

retest reliability, internal consistency, and concurrent validity with a number of other ED measures, EAT has been widely used in cross-cultural studies (Tchanturia, unpublished, 2000; Anderson et al., 2004; Gleaves, Pearson, Ambwani, & Morey, 2014).

Eating Disorder Inventory (EDI) - (Garner, Olmstead, & Polivy, 1983). The EDI (or EDI-I) is a 64-item 6-point Likert scale self-report tool designed to assess different cognitive and behavioral dimensions of AN and BN. Consisted of 8 subscales that are positively correlated, the first three measure food related behaviors and attitudes as well as weight and body image, while the remaining five subscales examine general psychological characteristics associated with eating disorders (e.g., low self-esteem, perfectionism, interpersonal distrusts, etc.). All subscales can be added to obtain an overall score. Subscale scores have been reported to be more clinically valuable than the overall score. Critics argue that the specificity of EDI is low, as it comes short in differentiating individuals with ED from those with other mental disorders (Tchanturia, unpublished, 2000; Clinical practice guidelines of Catalonia, 2008).

Bulimia Test/Bulimia Test -Revised (BULIT/BULIT-R) - (Smith and Thelen, 1984; Thelen, Farmer, Wonderlich, & Smith, 1991). BULIT-R is a 28-item questionnaire designed to measure symptoms of BN. It is a brief, easy to score, well-validated measure of BN symptoms which is considered very useful in clinical practice and progress evaluation (Anderson et al., 2004).

Eating Disorders Examination-questionnaire (EDEQ) - (Fairburn & Beglin, 1994, 2008). The EDEQ is a 28 or 36 item self-report questionnaire which consists of four main subscales (restraint, eating concern, weight concern, and shape concern) and global score, which is a mean of four subscale scores. The instrument has shown good psychometric properties - good internal consistency, $\alpha = 0.84$ and test-retest reliability, $r = 0.8$ - and has widely been used in assessing EDs (Fairburn & Beglin, 1994, 2008).

Anorectic Behaviour Observation Scale for parents/spouse (ABOS) - (Vandereycken, 1992). ABOS is a self-report questionnaire designed to gather information from family members on their children's AN/BN-related behaviors and attitudes. It has repeatedly demonstrated high sensitivity

and specificity in a sample of female students and is considered reliable in clinical assessment (Tchanturia, unpublished, 2000).

The Bulimic Investigatory Test, Edinburgh (BITE) - (Henderson & Freeman, 1987). BITE is a 33-item self-report measure to assess symptoms and severity of BN. A score of > 25 suggests a bulimic disorder (Tchanturia, unpublished, 2000; Clinical practice guidelines of Catalonia, 2008).

The Shape and Weight Based Self-esteem Inventory (SWSI) - (Galler, Johnston, & Madsen, 1997). SWSI is designed to measure the influence of shape and weight on individual's self-worth. The psychometric properties of SWSI have been established in adults and adolescent (Clinical practice guidelines of Catalonia, 2008).

Other ED measures include *Minnesota Eating Behavior Survey (MEBS)*, *Yale-Brown-Cornell Eating Disorder Scale (YBCEDS)*, *Body Shape Questionnaire (BSQ)*, *The Restraint Scale (RS)*, *Three Factor Eating Questionnaire Cognitive Restrain Scale (TFEQ-R)*, and *Sick, Control, One, Fat, Food questionnaire (SCOFF)* among others (Anderson et al., 2004; Tchanturia, unpublished, 2000).

Finally, when choosing an instrument, it is essential to consider the purpose and context of the assessment, population characteristics, and the psychometric properties of the tool (Anderson et al., 2004), as using well-validated, standardized, and culturally-sensitive measures for ED screening, assessment, and treatment is critical for generating evidence and advancing research. The measure of disordered eating for the study of present thesis was selected based on the above criteria.

2.3. Overview of Acculturation, Theories and Concepts

International Organization for Migration (IOM) defined acculturation as “the progressive adoption of elements of a foreign culture (ideas, values, norms, behavior, and institutions) by persons, groups or classes of a given culture.” (IOM, 2004, p.5). Immigrants, sojourners, refugees, ethnic minorities and native people represent the common populations undergoing acculturation. In acculturation psychology, acculturation is defined as changes in practices, values, and identities of an individual that stem from the prolonged first hand contact with another culture and effect his/her psychosocial wellbeing (Berry, 2006; Masgoret & Ward, 2006; Ward & Geeraert, 2016).

Beginning from the 1960s the field of cross-cultural psychology has been studying the issues related to how cultural context may shape human behavior and how the change of a culture may influence one’s functioning (Sam, 2006a; Berry, 2006). The notion of psychological acculturation originated the concept of acculturative stress as an individual’s response to culture change manifested by heightened levels of depression and anxiety stemming from the loss of original culture and uncertainty associated with the new culture (Berry, 1970, 2006; Berry, Kim, Minde, & Mok, 1987). Several acculturation models have been developed along with the corresponding acculturation measures and, to this date, the debate about which model reflects the acculturation process most comprehensively and which available tool measures it most accurately still continues (Flannery, Reise, & Yu, 2001; Kang, 2006).

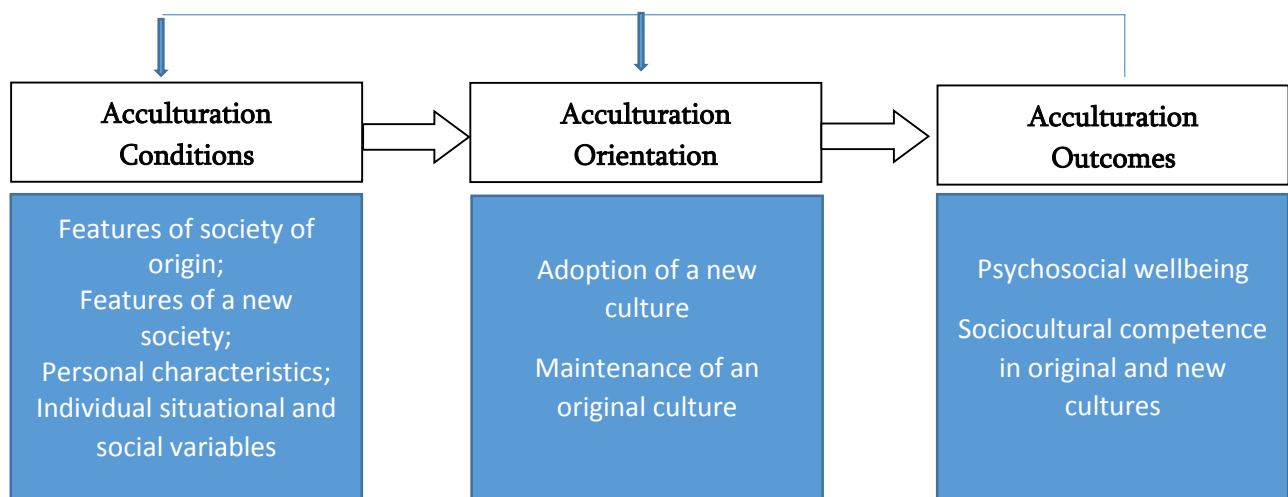
Directionality and dimensionality represent two fundamental issues in acculturation theory and research (Sam, 2006a; Kang, 2006; Ward & Geeraert, 2014). Some authors have suggested that acculturation is a unidirectional process, assuming that change takes place in one direction – from an original to a new culture - only, while others argued that it is a bidirectional process in which both cultures can undergo changes and have reciprocal influence on one another.

Dimensionality is closely related with directionality: similar to unidirectional model, unidimensional framework (also called assimilation or bipolar model) suggests that individuals

depart from their original culture as they embrace the new culture and corresponding new cultural identity. Bidimensional perspective, on the other hand, considers that acquisition of a new culture and maintenance of an original one are separate processes thereby allowing for two cultures/cultural identities to be mutually inclusive (Sam, 2006a; Berry, 2006; Kang, 2006; Celenk & Van de Vijver, 2011).

When conceptualizing and assessing the process and outcomes of acculturation, the entire framework of acculturation variables needs to be examined (Arends-Tóth & Van de Vijver, 2006). The framework of acculturation includes acculturation conditions, acculturation orientations, and acculturation outcomes (Arends-Tóth & Van de Vijver, 2006). Acculturation conditions involve characteristics of the society of origin as well as a society of settlement, individual situational and social variables; acculturation orientations encompass adoption of a new culture and maintenance of the culture of origin, whereas acculturation outcomes involve indicators of psychosocial wellbeing and sociocultural competence (see Figure 2.3.1).

Figure 2.3.1. Framework of Acculturation Variables (Arends-Tóth & Van de Vijver, 2006)



The characteristics of the society of origin and the society of settlement as well as cultural distance between them have been regarded as significant factors in acculturation framework shaping the extent/nature of acculturative stress (Berry, 2006; Arends-Tóth & Van Vijver, 2006; Ward & Geeraert, 2014). In particular, when it comes to the distance between the two cultures (how different they are in terms of language, traditions, religion, etc.), it has been suggested that the greater the distance, the higher the acculturative stress and the less positive is adaptation (Ward & Kennedy, 1994; Berry, 2006; Ward & Geeraert, 2016).

In addition, immigration motivation has been considered an important moderating factor of acculturative stress, based on which immigrants can be regarded as reactive or proactive with the former indicating on migration associated with negative factors (e.g. forced migration), while the latter – with more positive (e.g. search for better future) factors (Richmond, as cited in Berry, 2006). Other important individual-level variables, considered as moderating factors, include but are not limited to age, gender, education, language, religion, expectations, pre-acculturation status, and social support during acculturation (Berry, 2006).

Evidence suggests that older age of acculturation is associated with increased stress and poorer outcomes (Berry, 2006); female gender has also been linked with increased risk although this might be overgeneralization of findings of the studies conducted on populations in which gender roles substantially differ from the roles in western cultures (Berry, 2006). Across many studies higher education has been related to lower risks and associated with additional protective factors, such as, higher income and better socioeconomic status (Berry, 2006).

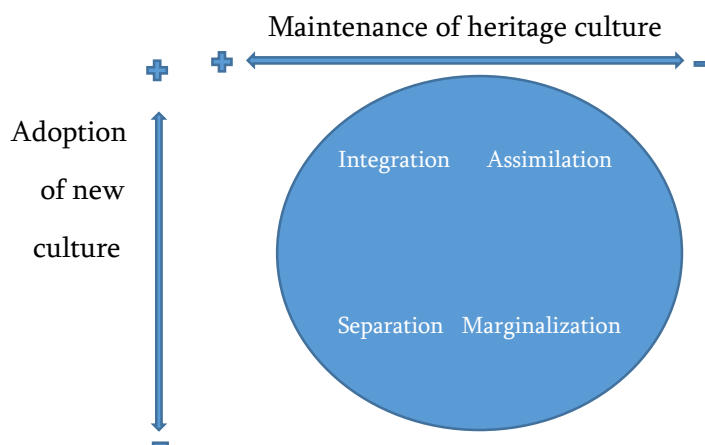
Pre-acculturation status is another important variable as acculturative stress may differ depending on what kind of loss of a status and, alternatively, gain of status one's migration implied (Berry, 2006). Obviously, individual's wellbeing depends on whether the migration or relocation to other country is temporary, permanent, or voluntary and whether an individual is legally present in a new country with proper documentation (Berry et al., 1987; Ward, 2008; Milfont, & Poortinga, 2017). As a rule, voluntary immigrants experience better mental health as opposed to refugees or asylum seekers.

Furthermore, while motivations and expectation (also called push/pull) have been suggested as notable factors by multiple authors, both high push motivation and high pull motivation have been linked with increased difficulties of psychological adaptation (Kim, as cited in Berry, 2006). In addition, variety of personality characteristics (e.g. locus of control, self-esteem, anxiety, etc.) of acculturating individuals have been examined as potentially important risk or protective factors (Kosic, 2006; Luytjers, Van der Zee, & Otten, 2006).

The above factors along with the characteristics of the society of settlement (e.g. multiculturalism, inclusive vs. discriminatory policies, etc.) have been argued to both moderate and mediate the acculturative stress (Berry, 2006).

Beginning from 1970s, John Berry, as one of the most prominent acculturation theorists, and his colleagues introduced a fourfold model of acculturation identifying four acculturation strategies that individuals might apply when exposed to culture change: assimilation - preference in adopting and maintaining only new cultural identify, separation – preference in maintaining only original cultural identity, integration – preference in both maintaining original and adopting new cultural identities, and marginalization – no interest in maintaining/adopting either cultural identity (Figure 2.3.2) (Berry, 1980, 1997; Berry, 2006; Sam, 2006a; Sam & Berry, 2010; Ward & Kus, 2012; Celenk & Van de Vijver, 2011). This typological approach provided easy to grasp theoretical framework and undoubtedly possessed conceptual advantages over the unidimensional model (Kang, 2006).

Figure 2.3.2. Berry’s Acculturation Strategies



According to Berry and associates (1997, 2006, 2007, 2010), there is substantial empirical evidence supporting that integration strategy is associated with the best adaptation outcomes (Berry, 2006; Sam & Berry 2010; Ward & Kus, 2012; Ward & Geeraert, 2016), while marginalization – with the poorest, and assimilation and separation – with intermediate outcomes. One of the speculations about why this might be the case is that integration implies two positive, marginalization – two negative, whereas assimilation and separation – one positive and one negative attitudes/identities (Berry, 2006).

Alternatively, several authors proposed the contextual model of acculturation arguing that there was no single universal acculturation strategy that worked for all, instead, different acculturation strategies worked better in different contexts (Birman, Tricket, & Vinokurov, 2002; Padilla & Perez, 2003; Schwartz & Zamboanga, 2008).

Finally, despite the abundance of acculturation research, longitudinal and comparative studies that cover multiple countries are scarce and more empirical evidence is needed to further advance conceptual framework (Sam & Berry, 2016; Ward & Geeraert, 2016; Ward et al., 2017).

Following the collapse of Soviet Union, Georgia underwent multiple crises that boosted the migration flows out of the country. Based on unofficial statistics, it is estimated that approximately 100 000 Georgians reside in the USA, and approximately 15 000 - in UK (Georgian Diaspora Study, Deutsche Gesellschaft für Internationale Zusammenarbeit, 2011). Among US Georgians, majority is believed to consist of irregular migrant women taking care of the elderly, while in UK irregular migrants are estimated to constitute up to 50% of the whole population of Georgians. It is also speculated that Georgian diasporas in UK and USA, similar to the one in Russia, have the largest intellectual potential (Georgian Diaspora Study, Deutsche Gesellschaft für Internationale Zusammenarbeit, 2011).

During the last decades, migratory flows of Georgia to other countries and particularly to the West have seen marked increase of women as primary migrants (Zurabishvili, Mestvirishvili, & Zurabishvili, in press). While one study on returned female migrants demonstrated that for them

migration was associated with favorable outcomes (e.g., personal growth and maturation, independence, sense of achievement) (Zurabishvili et al., in press), a case study on female labor migrants from a rural area of Georgia showed that migration was accompanied with psychological distress as most participants considered themselves victims of circumstances caused by the economic hardship (Zurabishvili & Zurabishvili, 2010). Thus, in spite of culture change and immigration being extremely relevant issues for Georgia, studies examining characteristics of Georgian immigrants/sojourners, especially their cultural orientations and outcomes of their psychosocial wellbeing, are scarce.

2.4. Overview of Acculturation Measures

Although it has been widely recognized that acculturation can significantly impact individual's wellbeing, no standardized measurement models or instruments have been developed (Ward et al., 2017; Sam & Berry, 2016). As a result, researchers often design their own acculturation tools consistent with the theoretical framework they embrace (unidirectional vs. bidirectional, unidimensional vs. bidimensional) (Sam & Berry, 2016). While proxy measures such as length of residence, language usage, and arrival age, have been commonly used as indicators of acculturation (Berry, 2006; Ward et al., 2017), the most widely used methodology is a self-report questionnaire (Arends-Toth & Van de Vijver, 2016). The two important aspects in which acculturation measures differ are dimensionality and domain-specificity (Arends-Toth & Van de Vijver, 2016).

Dimensionality refers to the principle according to which the core acculturation domain to be measured is cultural orientation towards both heritage and mainstream cultures. Domain-specificity, on the other hand, is based on the assumption that acculturation preferences and behaviors vary across life domains and contexts. For instance, one may seek assimilation at workplace but separation in private life (Celenk & Van de Vijver, 2011; Arends-Toth & Van de

Vijver, 2016). Therefore, domain-specific measures examine individual attitudes, behaviors and outcomes across life domains.

Measures consistent with the unidimensional model employ *one statement measurement method* that represents a bipolar scale with one pole corresponding to maintenance of heritage culture and the other pole - to adoption of a new culture (Arends-Toth & Van de Vijver, 2016). Due to the main shortcoming of unidimensional model of not recognizing orthogonality of cultural orientations, researchers favor bidimensional model (Ward et al., 2017). Consequently, a number of bidimensional measures, both typological and dimensional-oriented, also called *two-statement measurement* and *four-statement measurement* methods, have been developed (Arends-Toth & Van de Vijver, 2016; Kang, 2006).

Typological measures attempt to separately measure four acculturation types/modes (e.g., assimilation, integration, separation, marginalization), representing *four-statement measurement* method, whereas dimensional-oriented instruments use two dimensional scales to measure cultural orientation toward both heritage and new cultures thereby representing *two-statement measurement* method (Arends-Toth & Van de Vijver, 2016; Kang, 2006). Domain specific measures primarily encompass public and private domains (Arends-Toth & Van de Vijver, 2016).

The advantage of four-statement method is that such measures assess four acculturation strategies/types independently. However, because four acculturation strategies are based on attitudes towards two cultures, in some cases the items are inclined to be “double-barreled” and marginalization scale tends to include double negations, which may cause confusion from completion standpoint (Arends-Toth & Van de Vijver, 2016; Kang, 2006). In addition, while Berry’s theory had considerable merit, the critics argued that it was primarily based on attitudes as opposed to behaviors and the false assumption was made that the two would necessarily match (Kang, 2006; Ward & Kus, 2012). Due to these psychometric shortcomings, some researchers caution against the use of four-statement measurement approach in comparative studies (Ward et al., 2017).

Although studies showed that correlations between scales of bidimensional measures largely varied (Kang, 2006), several two-statement instruments, for instance, Vancouver Index of Acculturation (VIA) (Ryder, Alden, & Paulhus, 2000) and Acculturation Index (Ward & Rana-Deuba, 1999), have been regarded as most robust and flexible assessment tools (Ward et al., 2017; Kang, 2006). In addition to examining orientations towards heritage and mainstream cultures, these measures were able to classify individuals into the four acculturation strategies (Ward et al., 2017). In particular, strong orientation on both scales (to both cultures) corresponded to integration, weak orientation on both - corresponded to marginalization, while assimilation and separation implied strong orientation to one culture and weak orientation to another.

When it comes to the links between acculturation and mental health, the findings of a meta-analysis demonstrated significant associations between bidimensional (but not unidimensional) measures of acculturation and positive mental health that prompted the researchers to consider bidimensional measures to be superior in reflecting the magnitude of cultural influences (Ward et al., 2017). Furthermore, multiple authors regard the two-statement measurement methods most useful in assessing acculturation (Arends-Toth & Van de Vijver, 2006; Kang, 2006).

To date, there are dozens of tools designed to measure acculturation. Most of them have been developed for and tailored to the context of a specific group. In his catalog of acculturation measures, Taras (2008) included 59 instruments. According to Celenk and Van de Vijver (2011), majority (54%) of acculturation measures include a single scale tools and the remaining part (46%) consist of two or more subscale-measures (e.g., heritage and mainstream orientation subscales of VIA). As for the number of items, it varies from 2 to 39, with a big majority of measures containing fewer than 11 items (Celenk & Van de Vijver, 2011).

In spite of obvious need to systematize acculturation measurement methods, relatively little focus has been made on advancing methodical comparison (Arends-Toth & Van de Vijver, 2006). The overall trend is developing/using short measures that are focused on a specific group, which limits validity and generalizability of findings. Besides, most tools attempt to examine acculturation outcomes (primarily behavioral), whereas acculturation conditions and orientations are less

frequently explored. Overall, while majority of acculturation instruments show sufficient internal consistency, data on cross-cultural validity and applicability of the measures are limited (Celenk & Van de Vijver, 2011).

Consistent with the above account, a systematic review of multiple studies examining the links between acculturation and disordered eating patterns confirmed the limited focus on acculturation conditions along with the application of diverse acculturation measures, including proxy measures, thereby complicating the comparison of findings (Doris, e 2015; Shekriladze & Tchanturia, 2016). Finally, while bidimensional measures are considered superior to unidimensional measures, different instruments carry different merits depending on the context and population studied.

2.5. The Link between Eating Disorders, Culture and Culture Change

Systematic reviews of the literature on ED suggested that sociocultural factors significantly contribute to the development of disordered eating patterns among which the impact of acculturative stress and imposition of western ideal of thinness have been noted (Becker et al., 2002; Davis & Katzman, 1999; Rathner, 2001; Gordon, 2001; Doris et al., 2015).

At the same time, evidence suggests that patterns of disordered eating vary across different cultural groups and, in general, culture shapes how people experience their bodies and relate it to eating patterns (Sussman & Truong, 2011; Agüera et al., 2017). For instance, atypical - the so called non-fat-phobic - manifestation of AN has been reported in a variety of countries worldwide, both western and non-western (Becker et al., 2009). On the one hand, individuals from western countries have been reported to share similarities in manifestation of eating psychopathology, as opposed to individuals from non-western cultures (Agüera et al., 2017), on the other hand, even within one country, marked inter-cultural differences have been noted and certain ethnic/racial groups have been reported to be more prone to EDs than others; for instance, compared to white

or Asian Americans, African-Americans have shown lower eating pathology and lower tendency to internalize the thin beauty ideal (Wildes & Emery, 2001; Shaw, Ramirez, Trost, Randall, & Stice, 2004).

In line with this, some studies showed that the link between body dissatisfaction, self-esteem, and disordered eating varied in different groups (Sussman & Truong, 2011). Indian female adolescents with excessive weight loss exhibited preoccupations with dietary restraint, while body image concerns were not present (Khandelwal & Saxena, 1990). Compared to US women, Chinese women demonstrated lower body self-esteem as well as lower rates of EDs (Pan, 2000) and lower body image concerns (Agüera et al., 2017). Similarly, ED symptomatology and self-esteem was not found related among East Asian-Americans (Doan, as cited in Sussman, Truong, & Lim, 2007).

Some studies exploring eating psychopathology in cultures traditionally not associated with EDs found that those effected by disordered eating patterns were in the past subjected to culture change or western influence (Nasser, 1986; Katzman, Hermans, van Hoeken, & Hoek, 2004; Rathner, 2001; Gordon, 2001). For instance, comparison of the samples of London-based and Cairo-based Arab females revealed higher ED symptomatology among the British-Arabs (Nasser, 1986), whereas all young females exhibiting eating psychopathology on the island of Curacao appeared to have lived overseas in Europe or North America (Katzman et al., 2004), and almost 50% of Bulgarian girls showing disordered eating came from western-oriented private schools (Boyadjieva & Steinhausen, 1994; Rathner, 2001).

In addition, multiple other studies identified acculturation to a western culture as a potential risk factor in developing EDs (Kroon van Diest, Tartakovsky, Stachon, Pettit, & Perez, 2014; Geller & Thomas 1999, Cachelin, Phinney, Schug, & Striegel-Moore, 2006; Chamorro & Flores-Ortiz, 2000; Ball & Kenardy, 2002; Greenberg, Cwikel, & Mirsky, 2007). Some researchers linked it with early stages of immigration and lower levels of acculturation to a mainstream culture (Espan-Gonzalo et al., 2014; Jennings, Forbes, McDermott, Juniper, & Hulse, 2005), while others identified higher risks at later stages of immigration (Ball & Kenardy, 2002; Greenberg et al., 2007) or even among the first generations of immigrants who were born in a country of relocation (Chamorro & Flores-

Ortiz, 2000). Higher ED psychopathology among those with low mainstream-culture orientation was suggested to stem from the stress associated with not fitting in with the dominant culture (Jennings et al., 2005).

Thus, it has yet to be clarified what is the effect of immigration/acclimation to West on the eating patterns and to what extent does it contribute to the development of EDs. The following two publications with candidate's first authorship attempt to find some answers to this and other questions regarding the links between EDs and culture change and acculturation to western culture.

Incorporation of Published Articles

The thesis includes a systematic review that has been published in a peer reviewed journal and an article (chapter) published in an electronic encyclopedia of feeding and eating disorders. These publications have been incorporated into the thesis the way they appeared in the journals only with changed format to match the requirements of Ilia State University academic style. The references, tables, and charts of the published articles are not incorporated into the reference list and lists of tables and charts of the main thesis.

2.5.1 Article 1 - Is cultural change associated with eating disorders? A systematic review of the literature

Eating and Weight Disorders

Eat Weight Disord

DOI 10.1007/s40519-015-0189-9

Springer International Publishing Switzerland, 2015

Declaration of candidate's role in systematic review

The candidate shares first authorship with Eli Doris, research assistant to lead supervisor, Dr. Kate Tchanturia. Literature searches were conducted and agreement about inclusion was achieved jointly with Eli Doris through joint supervision. The candidate systematically reviewed and analyzed 25 articles, and wrote the results and discussion parts with interpretations made by candidate in conjunction with Dr. Tchanturia. Dr. Tchanturia provided overall supervision and guidance on the whole process of writing the article.

Is cultural change associated with eating disorders? A systematic review of the literature

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Abstract

BACKGROUND: There is debate as to whether the development of an eating disorder (ED) may be triggered by acculturation to Western culture. While there is evidence to suggest that acculturation to Western culture is associated with risk of having an ED, these findings are limited, vary significantly, and are sometimes conflicting.

AIMS: To review the literature and empirical data on the association between ED symptoms and acculturation in the context of Western culture.

METHODS: A systematic search of peer-reviewed publications using a combination of the keywords “Culture”, “Acculturation” and “Eating disorders” was first performed in August 2014 and updated in February 2015 with the following databases: PubMed and SCOPUS. Reference lists were also hand searched. In total the search provided more than 50 studies. Following screening (as stated in the PRISMA guidelines) of the titles and abstracts by inclusion and exclusion criteria and quality assessment of the full text, 25 studies were identified to be appropriate for the review. Articles were examined in relation to the findings, as well as the ED and acculturation measures used.

RESULTS: Eleven studies suggested considerable association between ED and culture change/acculturation. Six studies suggested little or no association between ED and culture change/acculturation. Eight studies did not primarily examine association, yet generated valuable insight. While there was relative consistency across studies in terms of the ED measures selected, measures of acculturation varied significantly.

CONCLUSIONS: The majority of the evidence reviewed here suggests that there is a substantial association between culture change and ED psychopathology. However, both greater and lesser acculturation have been identified as risk factors for the development of an ED, and this varies depending on the group studied as well as how acculturation and culture change are conceptualized and measured. Further research is warranted to form cross-culturally acceptable

definitions and measures of problematic eating, and healthy and high acculturation, in order to study the relationship between EDs and the process of acculturation to Western culture.

Keywords

Cross-cultural, systematic review, immigration, acculturation, eating disorders.

Introduction

Eating disorders (EDs) have multiple risk and maintenance factors. There are various guidelines and seminal articles urging further research and treatment developments in the field. Throughout the last two decades, biological and genetic research in the ED field has flourished, leading to an improved understanding of aetiology and potential targets for treatment. Unfortunately, research studies investigating the social aspects of EDs, including the needs of patients from international communities outside of Western Europe and North America, have been scarce.

Acculturation has primarily been defined as “the process of psychosocial change that occurs when a group or individual acquires the cultural values, language, norms, and behaviours of dominant society” (Wildes et al., 2001; p. 524). The aim of this paper is to provide a systematic review of the literature from the last two decades, summarising evidence regarding whether culture change, either as a result of immigration and acculturation or changes within a culture, leads to elevated levels of ED symptoms and increased risk of developing an ED. Specifically, we will endeavor to examine the impact of Western culture on the occurrence of EDs. The rationale for this is that fashionable emphasis on slenderness and conflicting expectations that lead to extreme identity confusion in young women have long been identified as critical factors in the development of eating disorders (Bruch, 1978); and furthermore, have been associated with the increased prevalence of eating disorders in Western cultures (Gordon, 2001).

Since their inception, ED classification systems within the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association) have routinely undergone revision. The most recent version of the DSM (5) has modified the criteria for ED diagnoses such that they are more relaxed and inclusive. This may stem from the difficulties in identifying steady cross-cultural patterns of EDs, and stresses the importance of further research regarding the epidemiology and cross-cultural presentation of disordered eating.

For a long time, Anorexia Nervosa (AN) and Bulimia Nervosa (BN) were considered disorders characteristic of ‘Western’ women as the first studies were primarily based on North American

and Western European data. However, studies carried out during the last few decades in Asia, Africa, and Eastern European countries have changed this perspective. In the 1990s several studies demonstrated that the incidence of EDs among young Asian women who had immigrated to the United States or Western Europe was considerably higher than was previously thought (Davis & Katzman, 1999). According to DiNicola (1990), AN develops when there is a high level of stress associated with cultural assimilation; this point was also emphasised by Geller and Thomas (1999).

At present, multiple authors believe that culture change is a key factor associated with the development of EDs. Miller and Pumariega (2001) reviewed evidence of EDs among Western and ethnic minority groups. They examined the role of cultural change in the development of disordered eating and suggested that culture change, such as via immigration, may be associated with increased vulnerability to EDs. In a qualitative study of young Czech female au-pairs living abroad (Pavlova et al., 2008) it was found that sojourning abroad and the associated loneliness were significant factors in developing an ED.

In this systematic review, we were interested in exploring the current thinking and empirical data on the association between ED symptoms and acculturation, particularly in the context of Western culture. For this purpose we focused predominantly on research articles published since the year 2000.

Methods

This review follows the PRISMA statement for reporting systematic reviews and meta-analyses (Liberati et al., 2009). The following electronic databases were used to identify relevant papers for inclusion in this review: PubMed and SCOPUS. A preliminary search was conducted in August 2014 and this was subsequently updated in February 2015.

A broad search was first run on the literature using the terms “Culture”, “Acculturation” and “Eating disorders” (including “Anorexia” and “Bulimia”). The search was conducted by three

researchers (ED, IS and KT) seeking published studies on the basis of the following inclusion criteria:

- A sample of greater than 10 participants
- Measures of acculturation or ethnic identity
- Measures of eating disorder symptoms
- Published in English peer reviewed journals

Results from these searches were merged for higher reliability. Following the initial identification of relevant published articles, all citations were then obtained. Further relevant references cited in the retrieved papers were pursued.

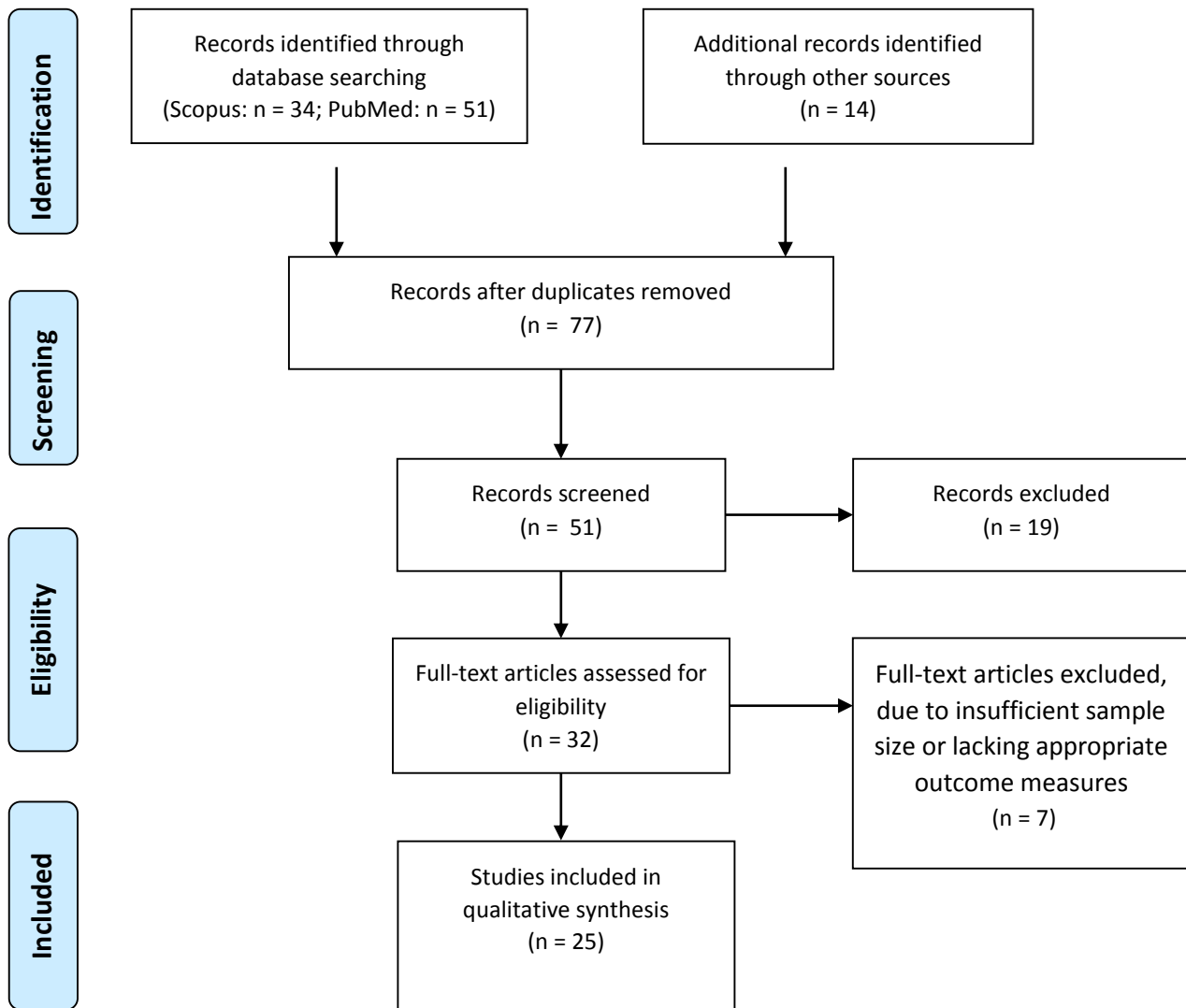
For the purposes of this review we selected research articles that primarily looked at the influence of adjusting to a different culture with Western ideals, which encompassed the adjustment of individuals as well as the adjustment of communities in a broader sense, going beyond individual experiences of cultural change and capturing factors like biculturalism and immigrant generational status. Some of the studies reviewed compared ED prevalence between the immigrant group and corresponding ethnic group residing in their original non-Western countries, which, to a certain degree, also touched the issue of ED development in non-Western countries. In addition, a few studies examined the impact of Western culture within a non-Western country, on the development of ED pathology. We excluded studies examining the differences in ED pathology between ethnic groups within a given country and where culture change or the effects of westernization are not considered.

Furthermore, we have not included studies that investigated more general eating behaviours or attitudes towards weight or shape, as the focus of this review is on *disordered* eating with a focus on weight reduction (i.e. AN and BN). Thus, we also excluded papers reporting on binge eating disorder.

Results

We have reviewed 25 articles reporting on studies that attempted to identify links between EDs or disordered eating patterns on the one hand, and acculturation and culture change on the other (a PRISMA consort diagram is presented in Figure 1 and Table 1 contains the reviewed studies with their relevant details). The majority of the publications were found in eating disorder-specific journals, most commonly the International Journal of Eating Disorders, while others were found in more general psychology journals.

Figure 1. Consort diagram detailing the study selection process.



Based on the findings produced by the studies (Table 1), these articles can be divided into three categories: those that examine the relationship between EDs and culture change/acclulturation and (A) suggest considerable association between EDs and culture change/acclulturation; (B) suggest little or no association between EDs and culture change/acclulturation; (C) do not primarily discuss the association between EDs and culture change/acclulturation, yet generate valuable insight on the subject. The studies reviewed varied in terms of the methodologies used to measure the degree of acculturation and the presentation of disordered eating patterns. In this regard, more consistency was observed in assessing ED symptomatology than in identifying the degree or extent of acculturation/culture change.

Considerable association between EDs, acculturation and culture change

Multiple authors (Cachelin et al., 2006; Chamorro & Flores-Ortiz, 2000) have pointed out the role of embracing Anglo-cultural orientation in the development of disordered eating among Mexican Americans. According to Chamorro and Flores-Ortiz (2000), the increased orientation towards Anglo-American culture among Mexican American women in the US was related to the development of EDs ($N = 139$ adult females; mean age = 29.1; 57.6% had been in the US since birth; 36% - first-generation; 37.4% - second generation); furthermore, their findings suggested that second-generation immigrants were at higher risk of developing EDs as they exhibited both the most disordered eating patterns and the highest degrees of acculturation. Cachelin and colleagues (2006) reported a similar pattern with regard to the influence of culture on the development of EDs; however, they found no relationship between the presence of EDs and generational status ($N = 188$ adult females; aged 18-48; 79 with eating disorders and 109 controls).

Furthermore, Ball and Kenardy (2002) identified a positive association between the length of time spent by immigrant women in Australia and the presence of weight-related values and behaviours similar to those of Australian-born women ($N = 14,779$ adult females; aged 18-23; a community sample randomly selected from the national healthcare database). Consistent with these findings, a study from Israel (Greenberg et al., 2007) revealed that native-born Israeli and veteran immigrant women were more likely to exhibit ED symptoms than were women who had

immigrated more recently ($N = 499$ higher education students; 281 females, 218 males; aged 18–24 with mean age = 23; 216 Israeli natives, 153 three years or fewer immigrants and 130 veteran immigrants).

On the other hand, findings from a study conducted in Spain by Esteban-Gonzalo and collaborators (2014) found a greater risk of EDs in adolescent female immigrants living in Spain for fewer than six years compared to the risk in female natives and female immigrants living in the country for more than 6 years ($N = 2,077$ adolescents; 1,052 females, 1,025 males; aged 13–17); thereby suggesting that lengthier residence, or greater acculturation, is a protective factor against the development of EDs in adolescents (it should be noted, however, that 80% of the immigrant population in this study represented immigrants from Latin American countries who are native Spanish-speakers). Similarly, a study carried out in Australia by Jennings and colleagues (2005) revealed that less acculturated Asian adolescent females aged 14–17 exhibited greater ED psychopathology than those who were more acculturated ($N = 42$ non-clinical adolescent girls; aged 14–17; 17 Asian and 25 Caucasian). This led to the authors concluding that ED psychopathology may be the result of an individual's attempt to identify with two different cultures and that the decreased rates of illness over time may be explained by the fact that the less acculturated group is still adjusting to the dominant culture, while the more acculturated group is more at ease.

Interestingly, while studying the effect of acculturation on body image and risk of ED among various groups (Eastern European, Chinese and Afro-Caribbean) of immigrant women in the United States, Sussman and collaborators (2007) found that long-term acculturation over generations was associated with increasingly negative health consequences for women of Eastern European descent and increasingly positive outcomes for women of Chinese and Afro-Caribbean descent ($N = 353$ female undergraduate students; aged 18–67 with mean age = 23.7; 187 first generation with 46 Chinese, 88 Afro-Caribbean and 53 Eastern-European heritage; 36 second generation with 15 Chinese, 15 Afro-Caribbean and 6 Eastern-European heritage; 130 third+ generation with 84 European-American and 46 African-American heritage). In other words,

acculturation was found to be a risk factor only among women of Eastern–European descent, who also, compared to the women of Afro-Caribbean descent, were more likely to adapt to an American identity. Thus, the authors concluded that ethnicity had a discernible moderating effect on the impact of acculturation on risks for an ED.

Little or no association between EDs, acculturation and culture change

Some authors (Soh et al., 2007; Fitcher et al., 2005) have suggested that eating concerns are not associated with acculturation to Western culture. A study by Soh et al. (2007) on eating concerns among North European and East Asian (Chinese, Vietnamese, Korean and Singaporean) women with and without an ED in Australia and Singapore found that women with an ED had similar levels of psychopathology across the cultural groups and eating concerns were not associated with cultural group overall or acculturation to Western culture ($N = 154$ adult females; aged 14–38; with and without an ED; born in Australia or migrated to Australia by the age of 12).

Another study exploring disordered eating and degree of acculturation among Asian and Caucasian adolescent girls in Australia (Jennings et al., 2007) found no significant differences between the racial groups or between the more acculturated and less acculturated Asian girls, thus suggesting that the level of acculturation does not modify susceptibility for developing an ED ($N = 240$ adolescent females; aged 18–24; 130 Asian and 110 Caucasian). Consistent with these findings, Abdollahi and Mann (2001) reported that acculturation to Western norms did not appear to be related to symptoms of disordered eating in Iranian women in Iran and America ($N = 104$ female students; 59 Iranian living in Tehran and 45 of Iranian decent living in Los Angeles).

Valuable insight into the association between EDs, acculturation and culture change

A study on the development of eating pathology in Chinese-Australian women (Humphry & Ricciardelli, 2004) examined the relationship between acculturation and eating pathology and found both similarities and differences between the more acculturated and less acculturated groups: specifically, those who reported the highest levels of eating pathology were acculturated

women who perceived higher levels of pressure from their fathers and best male friends to lose weight, and traditional women who experienced higher levels of parental care ($N = 81$ Chinese-Australian women with a mean age of 28.6). Another study (Barry & Garner, 2001) on Asian immigrants found that acculturation was related to only certain facets of eating concerns, thereby emphasizing the importance of assessing the psychologically relevant facets of culture versus the global construct of westernization ($N = 150$, 75 males, 57 females; non-clinical East-Asian immigrants). A qualitative exploration of young Czech au-pairs (Pavlova et al., 2008) generated valuable insight on how the individual conditions, such as feelings of boredom and isolation, of women temporarily residing in a foreign country (not immigrants) may exacerbate acculturative stress and ED risks (six semi-structured interviews with adult females with an ED and history of sojourning abroad, aged 20-27, and seven first-person internet testimonies analyzed).

Discussion

The aim of this study was to synthesize the literature from the last two decades on the association between ED symptoms and acculturation, particularly in the context of Western culture. The majority of the evidence reviewed here suggests that there is a notable association between culture change and ED psychopathology. Interestingly, while some studies have found that greater acculturation is associated with increased susceptibility to developing an ED, others have identified that less acculturated individuals are more vulnerable to EDs. Furthermore, the nature of the association appears to be largely dependent upon the group studied, and how acculturation and culture change are defined, conceptualized and measured.

Examination of the methodologies utilised by the studies included in this review showed that measures of acculturation varied significantly both conceptually and architecturally, which may in part explain the inconsistencies in findings. While a few studies used Length of Residence (LoR) as a measure of acculturation, most studies utilized uni-dimensional or bi-dimensional models. Uni-dimensional measures of acculturation place individuals on a linear continuum of identities ranging from exclusively heritage oriented to exclusively mainstream oriented, while bi-dimensional models treat cultural maintenance and adoption as two distinct dimensions, thereby allowing for the possibility of having two or neither cultural identities (Kang, 2006; Celenk & Van de Vijver, 2011).

Berry and colleagues (cited Kang, 2006) identified four types of acculturation style: integration (interest in maintaining both cultural identities); assimilation (interest in maintaining only mainstream cultural identity); separation (interest in maintaining only original cultural identity); and marginalization (little interest in maintaining either cultural identity). According to Berry (2007), while there are individual differences in how people experience acculturation, those pursuing the integration strategy generally experience less stress and achieve superior adaptation outcomes. This suggests that healthy acculturation is contingent on maintaining two cultural identities.

If we rely upon this theory and assume that the healthiest style of acculturation is through integration, then studies using uni-dimensional models which identify individuals as being “more acculturated” may mean that they are either more assimilated or more integrated. For instance, the two aforementioned studies on Mexican Americans (Chamorro & Flores-Ortiz, 2000; Cachalin et al., 2006) which produced somewhat conflicting findings about the same group with regards to generational status and ED, employed different measures of acculturation: while the former utilized a uni-dimensional measure (the Acculturation Rating Scale for Mexican Americans, which differentiates between five levels of acculturation from Very Mexican to Very Anglicized), the latter used a bi-dimensional measure (the Acculturation Rating Scale for Mexican-Americans – II). It is clear that in linear, or uni-dimensional, measures, “assimilated” individuals would most likely score highly, whereas “integrated” individuals would not. This demonstrates the distinction between “healthy acculturation” and “high acculturation”, and the inconsistencies stemming from different measures of acculturation utilized by different researchers, which might partly explain the conflicting findings in this review.

Another important point is that when referring to acculturation, many researchers have applied the term in reference to Western culture; whereas change from Western to non-Western culture, to our knowledge, has not been studied in relation to ED psychopathology. While many authors have argued that increased exposure to Western culture may facilitate the development of EDs, it is quite possible that culture change per se, and not just acculturation to Western culture, is a contributing factor. Besides, researchers need to be clear and consistent in how they define “Western” and “non-Western”. Furthermore, the proximity (perhaps both geographical and cultural) between origin and host cultures also seems to be an important factor to consider. In their study on immigrants in Madrid, Esteban-Gonzalo and colleagues (2014) that found a greater risk of EDs in adolescent female immigrants living in Spain for fewer than six years compared to the risk in female natives and female immigrants living in the country for more than 6 years. However, 80% of the immigrants studied happened to be from Latin American countries and, therefore, native Spanish-speakers, which limits the generalizability of these findings.

Considering the heterogeneity of our findings, it seems important that future studies track and differentiate certain key demographic factors which significantly influence how people experience culture change. None of the studies reviewed here examined the importance of immigrant characteristics such as voluntary versus forced immigration, immigration with family versus alone, or legal versus illegal immigration. These factors are likely to interact with acculturative stress and are therefore highly relevant for the first, and perhaps subsequent, generations of immigrants. Furthermore, these findings highlight the importance of forming a cross-culturally acceptable definition of the term 'ethnicity'. For instance, in the study by Sussman and collaborators (2007), 'Eastern-European' is presented as an ethnicity although it pertains to a region with more than twenty different ethnicities.

Overall, the variety of findings discussed in this systematic review clearly indicates that researchers need to separate out the different domains of acculturation and examine more precisely how they are each related to certain facets of eating concerns. It seems critical to explore the process of culture change/being exposed to a dominant foreign culture, and carefully define the stage at which the individual is at a given time. It also appears important to explore the situation in which he/she is at a given moment, and examine associated adjustment stress and mental health risks. Assessing how the individual is coping with being torn between two cultures seems crucial, and inter-cultural proximity may also be a factor to consider.

In conclusion, further research is warranted in order to: (a) explore the presentation of disordered eating in different cultures and form cross-culturally acceptable definitions and measures of problematic eating; (b) examine the various facets of culture change and refine the definitions of healthy and high acculturation; (c) study and generate valuable findings on the relationship between EDs and the process of acculturation to Western culture; and (d) most importantly, inform professional communities, policy makers and the general public on the risks and coping skills associated with culture change and acculturation.

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Table 1. Table detailing the research articles identified which examine the association between culture change/acculturation and eating disorder symptoms, according to the criteria outlined in the Method section.

#	Cat ego ry	Author(s)/Title/ Date	N	Measures of ED symptoms	Measures of acculturation/ ethnic identity	Summary of the findings
1	A	Katzman, Hermans, van Hoeken & Hoek (2004) <i>Not your “typical island woman”: Anorexia nervosa is reported only in subcultures in Curacao</i>	12	The Eating Disorder Inventory (EDI) The Eating Attitudes Test (EAT)-26 The Binge Inventory Test, Edinburgh (BITE) Questionnaire for Eating and Weight Problems-revised (QEWPB-R)	The Cross Cultural Questionnaire (CCQ)	Explored cases of anorexia nervosa among a population from a Caribbean island. Quantitative and qualitative measures were taken and focus groups were held with controls. Case studies highlighted the impact of culture changes on the development of EDs.
2	A	Cachelin, Veisel, Barzegarnazari & Striegel-Moore (2000) <i>Disordered eating, acculturation, and treatment-seeking in a community sample of Hispanic, Asian, black and white women</i>	236	The Eating Disorder Examination (EDE)	Questions devised by the authors	Examined disordered eating, acculturation, and treatment-seeking in a community sample of Hispanic, Asian, Black, and White women; found that more acculturated individuals were more likely to have eating problems, and among the ED group, less acculturated individuals were less likely to have received treatment.
3	A	Perez, Voelz, Petit et al. (2002) <i>The role of acculturative stress and body dissatisfaction in predicting bulimic symptomatology across ethnic groups</i>	118	The Eating Disorder Inventory (EDI) The Stunkard Body Figure Scale (BFS)	The Societal, Attitudinal, Familial and Environmental Acculturative Stress Scale (SAFE)	The findings from this study suggest that the combination of acculturation stress and body dissatisfaction may render minority women more vulnerable to bulimic symptoms; whereas the absence of acculturation stress

						among minority women may buffer them against bulimic symptoms, even in the presence of body dissatisfaction.
4	A	Esteban-Gonzalo, Viega, Gomez-Martinez, et al. (2014) <i>Length of residence and risk of eating disorders in immigrant adolescents living in Madrid; the AFINOS study</i>	2077	The SCOFF Eating Disorders Questionnaire	Length of residence (LOR)	Compared the risk of having an ED between immigrant and native adolescents living in Madrid; measured the influence of length of residence on the risk of immigrants.
5	A	Sussman, Truong & Lim (2007) <i>Who experiences "America the Beautiful"? Ethnicity moderating the effect of acculturation on body image and risks for eating disorders among immigrant women</i>	353	The Eating Attitudes Test (EAT)-26 The Body Esteem Scale (BES) The Body Parts Satisfaction Scale (BPSS)	Ward's Acculturation Index (WAI)	A cross-sectional study exploring how ethnicity and acculturation can affect body attitudes and risk of EDs. Found that high acculturation was associated with worsened health outcomes with eastern-European immigrant women and better outcomes with Afro-Caribbean and Chinese. Pointed out ethnicity is a moderating factor.
6	A	Cachelin, Phinney, Schug & Striegel-Moore (2006) <i>Acculturation and Eating Disorders in a Mexican American Community Sample</i>	188	The Eating Disorder Examination (EDE)	The Acculturation Rating Scale for Mexican Americans II (ARSMA-II) The Multigroup Ethnic Identity Measure (MEIM)	Investigated acculturation and EDs by examining the role of ethnic identity and utilizing a bi-dimensional perspective toward two cultures; pointed out the role of Anglo cultural orientation in the development of ED.
7	A	Jennings, Forbes, Mc Dermott, Juniper & Hulse (2005)	42	The Eating Attitudes Test (EAT)-26	The Acculturation Index	Investigated the relationship between acculturation and the attitudes and

		<i>Acculturation and eating disorders in Asian and Caucasian Australian adolescent girls</i>		The Eating Disorder Inventory II (EDI-2) The EDI-Symptom Checklist (EDI-SC)		psychopathology of ED among Asian girls; identified unhealthier eating attitudes and psychopathology toward eating among the less acculturated.
8	A	Ball & Kenardy (2002) <i>Body weight, body image, and eating behaviours: Relationships with ethnicity and acculturation in a community sample of young Australian women</i>	14779	The Eating Disorder Examination Screening Version (EDE-S) Likert scales measuring body weight dissatisfaction and dieting	Length of residence (LoR)	Investigated associations between ethnicity, acculturation status and risk factors for ED; identified risk factors for ED across a range of ethnic groups and positive association between the length of time spent in Australia and weight-related values and behaviours similar to those of Australian-born women.
9	A	Chamorro & Flores-Ortiz (2000) <i>Acculturation and disordered eating patterns among Mexican American women</i>	139	The Eating Attitudes Test (EAT)-26	The Acculturation Rating Scale for Mexican Americans (ARSMA)	Found that second-generation Mexican American women endorsed the most disordered eating patterns and the highest degrees of concurrent acculturation, out of the five generations studied.
10	A	Greenberg, Cwikel & Mirsky (2007) <i>Cultural correlates of eating attitudes: a comparison between native-born and immigrant university students in Israel</i>	499	The Eating Attitudes Test (EAT)-26	Length of residence (Lo TFEQ-R R)	Explored the association between exposure to Western culture and attitudes toward abnormal eating behaviours and attitudes. Findings showed that Israeli and veteran immigrant women had significantly higher positive scores compared with new immigrant women. Suggested rapid cultural effects in attitudes toward EDs and proportion of obesity.

11	A	Mussap (2009) <i>Acculturation, body image, and eating behaviours in Muslim-Australian women</i>	101	The Eating Disorder Examination Questionnaire (EDE-Q) The Questionnaire of Eating and Weight Patterns-Revised (QEWP-R)	The Vancouver Index of Acculturation (VIA) The Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-3)	The relationship between western acculturation, body dissatisfaction, and eating behaviours was examined in a sample of Muslim-Australian women. Significant positive relationships between mainstream identification and the measures of body dissatisfaction and disordered eating that were mediated by thin-ideal internalization were identified, as well as significant negative relationships between heritage identification and the measures of body dissatisfaction and disordered eating that were mediated by self-esteem.
12	B	Abdollahi & Mann (2001) <i>Eating Disorder Symptoms and Body Image Concerns in Iran: Comparisons between Iranian Women in Iran and in America</i>	104	The Eating Disorder Examination Questionnaire (EDE-Q)	Length of residence (LOR) Likert scales devised by the authors	Reported that neither exposure to Western media nor acculturation to western norms appeared to be related to symptoms of disordered eating and body image concerns in this sample.
13	B	Tsai, Curbow & Heinberg (2003) <i>Sociocultural and developmental influences on body dissatisfaction and disordered eating attitudes and behaviors of Asian women</i>	645	The Eating Attitudes Test (EAT)-26 The Eating Disorder Inventory (EDI)	The Taiwanese Ethnic Identity Scale (TEIS)	Examined the influence of sociocultural and developmental factors on body dissatisfaction and disordered eating attitudes and behaviours in two Asian populations: Taiwanese-American women undergoing acculturating changes and Taiwanese women undergoing

						modernizing changes. Contrary to the initial hypothesis, body dissatisfaction rates and disordered eating attitudes and behaviours were found to be significantly higher in the Taiwanese group.
14	B	Jennings, Forbes, McDermott & Hulse (2007) <i>Acculturation and eating disorders in Asian and Caucasian Australian university students</i>	240	The Eating Attitudes Test (EAT)-26 The Eating Disorder Inventory II (EDI-2) The EDI-Symptom Checklist (EDI-SC)	The Acculturation Index	This study suggests that Asian and Caucasian university students in Western Australia are equally susceptible to EDs, and that the level of acculturation does not modify the susceptibility of Asian students for EDs.
15	B	Soh, Touyz, Dobbins, et al. (2007) <i>Restraint and eating concern in North European and East Asian women with and without eating disorders in Australia and Singapore</i>	154	The Eating Disorder Examination Questionnaire (EDE-Q)	The Vancouver Index of Acculturation (VIA)	Found that eating concern was not associated with cultural group overall or acculturation to Western culture. Concludes that in eating disorder psychopathology, the specific symptom of eating concern may transcend cultural influences.
16	B	Iyer & Haslam (2003) <i>Body image and eating disturbance among South Asian-American women: The role of racial teasing</i>	122	The Eating Attitudes Test (EAT)-26 The Body Shape Questionnaire (BSQ)	The Multigroup Measure of Ethnic Identity (MEIM) The Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA)	Among a sample of college women of South Asian descent, it was found that a history of hurtful racial teasing, but not acculturation or ethnic disidentification, was associated with disturbed eating and body image, even after controlling for distress, self-esteem, and body mass.
17	B	Lake, Staiger & Glowinski (2000)	140	The Eating Attitudes Test (EAT)	The Ethnic Identity Scale	Western acculturated Hong Kong-born

		<i>Effect of Western culture on women's attitudes to eating and perceptions of body shape</i>		The Figure Rating Scale (FRS)	(EIS)	subjects reported significantly lower levels of negative attitudes toward eating and dissatisfaction with body shape than the Australian-born subjects, whereas the more traditional Hong Kong-born subjects reported equivalent scores.
18	C	Jackson, Keel & Lee (2006) <i>Trans-cultural Comparison of Disordered Eating in Korean Women</i>	1140	The Eating Attitudes Test (EAT)-26	The Suinn-Lew Asian Self-Identity Acculturation Scale (SL-ASIA)	Supported the importance of native cultural factors in the development of eating disorders in non-Western contexts.
19	C	Yamamiya, Shroff & Thompson (2008) <i>The Tripartite Influence Model of Body Image and Eating Disturbance: A Replication with a Japanese Sample</i>	289	The Eating Disorder Inventory II (EDI-2) The Eating Attitudes Test (EAT)-26	The Sociocultural Attitudes Towards Appearance Questionnaire-3 (SATAQ-3)	Suggested that the sociocultural variables found to influence body image and eating disturbances in Japan are similar to those observed in US samples.
20	C	Humphry & Ricciardelli (2004) <i>The development of eating pathology in Chinese- Australian women: acculturation versus culture clash</i>	81	The Eating Attitudes Test (EAT)-26	The Ethnic Identity Scale (EIS) The Perceived Sociocultural Influences on Body Image and Body Change Questionnaire (PSIQ)	Examined the influence of acculturation versus culture clash on the development of eating pathology in Chinese-Australian women; suggested both similarities and differences between the risk factors that correlate with eating pathology.
21	C	Barry & Garner (2001) <i>Eating concerns in East Asian immigrants: relationships between acculturation, self-construal, ethnic identity, gender,</i>	150	The Eating Attitudes Test (EAT)-26	The East Asian Acculturation Measure (EAAM) The East Asian Ethnic Identity Scale (EAEIS) The Self-Construal Scale	Culturally relevant variables, namely acculturation, self-construal and ethnic identity, were related to only certain facets of eating concerns in a group of East Asian immigrants. The findings

		<i>psychological functioning and eating concerns</i>			(SCS)	suggest the importance of assessing discrete, psychologically-relevant facets of culture rather than more global constructs such as westernization when examining eating concerns in immigrant populations.
22	C	Sánchez-Johnsen, Hogan, Wilkens & Fitzgibbon (2008) <i>Correlates of problematic eating behaviors in less acculturated Latinas</i>	349	The Questionnaire of Eating and Weight Patterns-Revised (QEWP-R) The Figure Rating Scale (FRS)	The Short Acculturation Scale (SAS)	In a group of less acculturated Latina women, it was found that those with high depression scores were 16 times more likely to be assigned to the EDNOS-BN group than were women with lower depression scores.
23	C	Gordon, Castro, Sitnikov & Holm-Denoma (2010) <i>Cultural Body Shape Ideals and Eating Disorder Symptoms Among White, Latina, and Black College Women</i>	276	The Eating Disorder Inventory (EDI) The Stunkard Body Figure Scale (BFS)	The Stephenson Multigroup Acculturation Scale (SMAS) The Societal, Attitudinal, Familial and Environmental Acculturative Stress Scale (SAFE)	This study examined relationships between body image, ED symptoms, and acculturation-relevant variables among a sample of white, black and Latina college women. Higher levels of acculturative stress, but not acculturation, were associated with ED symptoms among Black women and Latinas.
24	C	Chan & Glynn Owens (2006) <i>Perfectionism and eating disorder symptomatology in Chinese immigrants: Mediating and moderating effects of ethnic identity and acculturation</i>	301	The Eating Disorder Inventory (EDI)	The Multigroup Ethnic Identity Measure (MEIM)	Among a sample of Chinese immigrants, strong positive evaluation of other ethnic groups together with high perfectionism predicted lower body dissatisfaction and drive for thinness, whereas the opposite was true for a more negative evaluation of other groups and high

						perfectionism. A strong sense of belonging and attachment towards the Chinese culture and valuing other ethnic groups were found to mediate the relationship between perfectionism and ED symptoms, predicting a lower sense of interpersonal distrust.
25	C	Pavlova, Uher & Papezova (2008) <i>It Would Not Have Happened to me at Home: Qualitative Exploration of Sojourns Abroad and Eating Disorders in Young Czech Women</i>	13	The Eating Disorder Examination Questionnaire (EDE-Q) Semi-structured in-depth interviews and internet testimonies.	Questions devised by the authors	Explored associations between sojourns abroad and the onset and course of ED; identified trajectories relating ED to sojourns abroad; suggested to estimate the importance of the identified ED trajectories in an epidemiological study.

N=number of the participants in the study; A= studies showing considerable association between eating disorders and culture change/acclturation; B = studies showing little or no association between eating disorders and culture change/acclturation; C = studies that do not primarily discuss the association between eating disorders and culture change/acclturation, yet generate valuable insight on the subject.

2.5.2. Article 2 - Acculturation to Western Culture in the Context of Eating Disorders

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Declaration of candidate's role in the article

The candidate is the first author of the article. The candidate independently performed literature searches and wrote the article under the guidance of Dr. Tchanturia.

Encyclopedia chapter

Acculturation to Western Culture in the context of eating disorders

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Definition: Studies focused on comparative analysis of eating and weight patterns between Western and non-Western cultures as well as studies on minority and immigrant populations in Western countries have produced considerable evidence suggesting that acculturating to a Western culture increases the risk of eating disorders (ED). Imposition of Western values and thin beauty ideals have also been proposed to be one of the key factors contributing to the increased risk of ED, as studies have consistently shown the impact of Western/Westernized media on changing body image ideals and identified corresponding alterations in eating habits and weight and shape standards of local populations. These studies, however, have also fallen short in: (a) developing operational definitions of “Western”, “Westernization” and acculturation; (b) unduly assuming that the thin beauty ideals are attributed to only “Western” culture, and (c) differentiating “Westernization” from phenomena such as industrialization and globalization. Thus, inconsistency in measurement and lack of clear operational definitions have led to somewhat conflicting findings in the literature. Consequently, the question still remains: are eating disorders home grown or imported from the West?

Historical Background

Historically ED were recognized in Western countries as primarily affecting wealthy, educated, white women. Previously considered non-existent, Japan was one of the first “non-Western” countries to recognize ED in the 1970s, and the incidence of ED has been gradually increasing in countries of Eastern Europe, Middle East, South East Asia and Oceania as well as among minority

populations of Western countries. Multiple studies have suggested that acculturation to Western culture and exposure to Western ideals of beauty may trigger ED. Some studies conducted in non-Western countries exploring ED patterns among local female populations identified higher eating psychopathology among more “Westernized” girls and young women.

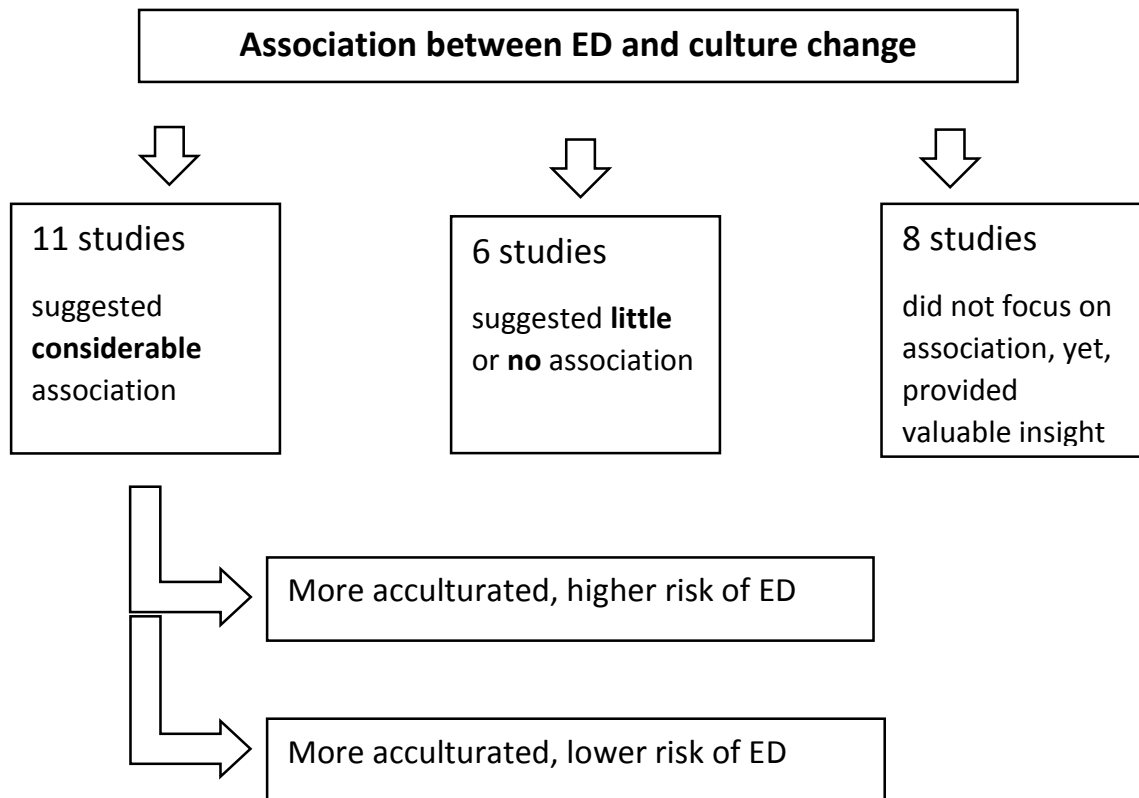
Acculturation has been defined as the process by which an individual adopts the beliefs, attitudes, language and behaviours of the dominant culture. This process is often accompanied by acculturative stress that is characterized by lowered mental health status, feelings of marginality and identity confusion, and heightened physical health symptoms. Some researchers conceptualized and measured acculturation as a uni-dimensional construct implying that with gaining new cultural identity an individual gives up the original one, while others have suggested it is a bi-dimensional concept potentially leading to bi-culturalism and identity confusion. With increasing awareness of migration related issues and an increased focus on culturally sensitive approaches, there is currently a drive to explore the links between ED and acculturation to Western culture, particularly the potential moderating effects of acculturation and its impact on ED symptomatology; although research to date has been methodologically weak.

Current Knowledge

To date studies exploring the link between ED and acculturation to Western culture have produced substantial evidence suggesting an increase in eating psychopathology with an increase in exposure (primarily) to Western cultures. However, within these studies findings are contradictory; with some associating higher levels of acculturation to Western cultures with increased risk of disordered eating, and others reporting lower levels significantly correlating with susceptibility to ED development. Notwithstanding several findings of little or no link between ED and acculturation to West, indeed some studies have identified higher ED psychopathology in culture of origin compared to the same immigrant groups. Findings appear diverse and conflicting (see Figure 1) and many studies fail to sufficiently examine key socio-cultural and demographic factors that may significantly impact one’s experience of culture change (e.g.

immigration status, marital status, financial status, migrating alone or with family members, community ties, etc.).

Figure 1. ED and Acculturation to the Western Culture – Summary of Findings of Systematic Review of 25 Studies



Interestingly, studies focusing on the links between ED symptomatology, Westernization and globalization have suggested an increased risk of ED through the greater imposition of Western “pursuit of thinness”. This has been suggested in several cross-cultural studies conducted in Pakistan and India reporting that Westernized youth were at greater risk of developing ED; and may explain the rise in ED in Asian and other societies over the past decade. One potential contributor to this rise could be the role of mass media in the promotion of unhealthy trends of certain ideals or standards, perhaps most well demonstrated is the case of the introduction of

television in the 1990s in Fiji. Reports suggested the rate of disordered eating first emerged and then increased amongst the local population who historically did not embrace the beauty ideal of a thin female body.

However, cross-cultural findings (from India, Tibet and Korea) have been inconsistent and/or contradictory, challenging the Westernization theory. Some studies have suggested other contributory factors, for example the role of cultural and historical contexts in describing and explaining eating psychopathology. Increases in ED rates in Asian countries, for example, have been linked with industrialization and urbanization due to economic growth which has resulted in complex cultural transformations. Changes in eating habits may therefore be a by-product of ongoing processes rather than Westernization. However, delineating causality here is difficult as a nations' economic growth, including industrialization, economic development and Westernization are complex interrelating factors.

Current Controversies

Whilst the increase in ED among “non-Western” cultures have been attributed to the acculturation to - and/or increased exposure to - Western culture and Westernization, limited studies have focused on distinguishing economic growth and urbanization from Westernization and little or no interest has been paid to studying the impact of acculturation to non-Western cultures.

Furthermore, inconsistent use and measurement of the concept of acculturation has left studies open to criticism and allowed for poor cross-study comparison. Whilst most researchers applied the concept referring to immigrant populations, in multiple USA studies the term has also been applied to native-born and native speaking minority groups such as African-Americans or Native-Americans. Inconsistency in measuring acculturation was evidenced by an ongoing study on Georgian immigrants residing in UK and USA in which both twofold and fourfold acculturation

measures were used with the same subjects. The findings demonstrated that twofold measures fell short in capturing bi-culturalism and cultural identify confusion.

Controversy has also been noted around the broad, stereotypical and inaccurate usage of terms such as 'Eastern-European' or 'Asian' ethnicity/heritage, applied primarily to US immigrants. For instance, the term 'Asian' has been applied to immigrants from the world's largest continent of Asia that encompasses hundreds of countries/ethnicities from Middle East to Indonesia, potentially ignoring the cultural diversity that exists within this continent. The same criticism can be said to apply to the term 'West' and 'Western' often used in scientific discussions to describe north-Western European and their decedent Anglo-Saxon cultures (North American, Australian) but not to all Western European countries not to mention countries in Eastern Europe or Middle East who represent the geographical West for countries located in the East.

Another notable issue is the difference between cultures in terms of individualism-collectivism, particularly as most people migrate from collectivistic countries to individualistic ones which may, by itself, exacerbate cultural discrepancy and accompanied acculturative stress. One might also argue that 'individualistic' or 'collectivistic' are not necessarily binary categories and they in fact exist on a continuum. Therefore, every so called Western country may not necessarily stand on the same point of individualism and neither will every so called non-Western country stand on the same point of collectivism. The collectivism-individualism conflict can also be dependent on urban versus rural setting as it is reported that in most individualistic cultures people tend to be more "collectivistic" in small towns and villages and no matter how collectivistic or individualistic the culture is people tend to be more "individualistic" in megalopolises.

Further research is required concerning the "thin beauty ideal", which although largely believed to be a product of Western culture, has been identified historically in some non-Western cultures (sometimes even thinner than in West).

Another area for further exploration is the degree to which specific cultural and societal factors, as well as the factors relevant to immigration shape the manifestation of ED symptomatology, contribute to the way individual experiences acculturative stress and influence the risk of ED. It has yet to be determined what the key risk and protective factors are for individuals subjected to acculturation to the Western culture or acculturation to any culture and whether Westernization per se holds any bearing in the growing numbers of ED cases in non-Western countries. Additionally, the application of ED measurement criteria in international research remains controversial as it is entirely and solely based on Western understanding of what constitutes disordered eating.

Future Directions

Against the backdrop of growing rates of ED in non-Western countries, the growing number of individuals from minority backgrounds seeking ED treatment in Western countries and ever increasing waves of migration, the links between disordered eating and cultural changes and acculturation to Western cultures is becoming more important than ever. On the one hand, in developed countries ED programs serving culturally and linguistically diverse populations need to ensure competence in culturally congruent manifestation and treatment of eating psychopathology. On the other hand, immigration and social inclusion policies need to reflect findings generated by studies on immigrant populations. This calls for more research with increased consistency in: (a) defining and measuring disordered eating in a culturally competent way; (b) defining and measuring acculturation and Westernization; (c) targeting and tracking important potentially moderating sociocultural and demographic variables; and (d) differentiating Westernization from industrialization, urbanization, and globalization.

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2.5.3. Summary of Contemporary Perspectives

Contemporary perspectives on the links between EDs and culture change/acclulturation to West are quite diverse with studies producing mixed results and some populations reported to be more vulnerable than others (Doris et al., 2015, Shekriladze & Tchanturia, 2016). While the risk of disordered eating has been linked with various stages (early vs. late) of acculturation, different factors were suggested to be responsible for increased susceptibility: in cases of higher risk associated with early stages, acculturative stress was primarily thought to be a contributing factor (Perez, Voelz, Pettit, & Joiner, 2002; Jennings et al., 2005; Pavlova et al., 2008; Esteban-Gonzalo et al., 2014), while in cases of ED psychopathology linked with later stages of immigration – adoption of western values and beauty standards, among others, was held responsible (Cachelin et al., 2000; Ball & Kenardy, 2002; Greenberg et al., 2007; Mussap, 2009). Moreover, an attempt to lead bicultural lifestyle (being torn between two cultures) was speculated to account for an increased ED susceptibility among first-generation immigrants (Chamorro & Flores-Ortiz, 2000).

The findings also vary depending on the cultural groups examined. For instance, multiple studies on various Asian groups suggested that overall moving to western countries as well as adopting western values represented risk factors for Asian women for the development of EDs (Sussman & Truong, 2011). In a study of Chinese women from Hong Kong, that adopted western standards of beauty, and Chinese women from mainland (Lee & Lee, 2000), women from Hong Kong appeared to have lower BMI, yet greater body dissatisfaction, and greater ED symptomatology. Similarly, in a study on Pakistani population (Mujtaba & Furnham, 2001), British-Pakistani females demonstrated higher vulnerability of developing EDs than Pakistani females.

Other studies, however, produced opposite results (Sussman & Truong, 2011): acculturation was not related to ED symptomatology among East Asian immigrants (Barry & Garner, 2001), Chinese-American women (Pan, 2000), East Asian Australians (Soh, Touyz, & Surgenor, 2006), and Singaporean Chinese women (Soh et al., 2007). Comparison of Iranian women residing in Iran and USA also did not show any relationship between disordered eating and acculturation, on the

one hand, or exposure to Western culture, on the other (Abdollahi & Mann, 2001). In line with this, another comparative study by Rubin, Gluck, Knoll, Lorence, and Geliebter (2008) identified no marked differences in eating psychopathology between the samples from US, France, and India.

Yet, some other studies showed that compared to white Americans, immigrants from Africa and Caribbean exhibited higher body satisfaction, less preoccupation with weight concern, and lower prevalence of EDs, whereas evidence on immigrants from Central and South America was equivocal (Gordon, 2001; Sussman & Truong, 2011). Studies on immigrants from Eastern Europe were limited, yet generated mixed results: higher ED vulnerability was linked with both veteran immigrants (Greenberg et al. 2007, Sussman et al., 2007) and newly relocated sojourners (Pavlova et al., 2008).

Studies on native populations from Caribbean, Eastern Europeans and Middle Easterners are scarce, yet diverse. By the end of previous century, Nasser (1986, 1994) reported the emergence of disordered eating and pursuit for thinness in Egypt - a culture with traditional preference of full-bodied females. Similarly, beginning from 1990s many post-socialist countries (e.g. Poland, Bulgaria, Hungary, and Romania) reported increased incidence of EDs in respective cultures (Boyadjeva & Steinhausen, 1994; Rathner, 2001; Gordon, 2001; Steinhausen, Boyadjeva, Griogoroiu-Serbanescu, & Neumarker, 2003; Tölgyes & Nemessury, 2004; Joja & Von Wietersheim, 2012; Joja et al., 2015; Pilecki et al., 2016). As noted by Makino, Tsuboi, and Dennerstein (2004), overall the prevalence of eating disorders in non-western countries has been lower than in western countries, yet reported to be increasing. Thus, the evolving face of EDs calls for a renewed understanding of the role of culture in both the emergence and prevalence of eating psychopathology worldwide (Pike, Hoek, & Dunne, 2001).

According to Westernization hypothesis, increased exposure to western world contributed to the rise in ED prevalence globally (Keith, 2011; Sepulveda & Calado, 2012; Rathner, 2001). This line of thinking was highly supported by the findings of 2002 study of newly emerged cases of EDs on the island of Fiji following the introduction of television (Backer et al., 2002). Available evidence

suggested significant role of mass media in body image and ED development prompting the debate over whether the relationship between them was causal or correlational (Sepulveda & Calado, 2012). While the meta-analysis of 25 experimental studies (Groesz, Levine, & Murnen, 2002) confirmed that the exposure to thin media images increased the rates of body dissatisfaction, the majority of evidence was based on correlational research (Sepulveda & Calado, 2012).

Critics of Westernization hypothesis, however, argued that this theory ignored unique cultural factors, which may independently prompt disordered eating (Smith et al., 2017). The example of Japan's spark in EDs despite its remarkable cultural difference from West (Pike & Borovoy, 2004; Pike & Dunne, 2015) has been noted as an argument against Westernization model along with the evidence of studies demonstrating equal or higher ED psychopathology among some native populations compared to corresponding ethnic groups living in western countries (Koreans vs. Korean-Americans, Iranians vs. Iranian-Americans, etc.) (Smith et al., 2017).

Several studies demonstrated the role of urbanization and industrialization in the rise of EDs globally (Pike & Borovoy, 2004; Pike, Hoek, Dunne, 2014; Pike & Dunne, 2015; Soh, Touyz, Surgenor, 2006; Smith et al., 2017). Countries with increasing ED rates in 1980s and 1990s, such as Singapore, Argentina, Hong Kong and Chile all went through industrialization and development of market economy (Gordon, 2001; Pike et al., 2014; Pike & Dunne, 2015). Urbanization and modernization resulted not only in altered lifestyle, including dietary changes, growth of fast food industry, and corresponding rise in population BMI, but also in transition of gender roles and beauty ideals (Pike et al., 2014; Smith et al., 2017). The incidence of EDs in many countries has gone up along with the increased education and employment rates of women (Gordon, 2001; Smith et al., 2017).

Hence, multiple authors think that the role of industrialization, modernization and urbanization in prompting changes of beauty ideals and other factors contributing to the rise of EDs among cultures traditionally valuing full-figured bodies is as big, if not more, as the contribution of western media through imposing these standards. Yet, because the onset of these three primarily took place in western countries, they have been closely associated and sometimes unduly equated

with western cultures and “westernization” (Pike et al., 2014; Pike & Dunne, 2015; Smith et al., 2017).

Moreover, the impact of acculturation to non-western cultures has not attracted sufficient scholarly attention so that ample evidence is generated to differentiate between the various types of culture change including acculturation from non-western to western versus from western to non-western cultures, or other combinations respectively (Doris et al., 2015; Shekriladze & Tchanturia, 2016). Variations in applying acculturation measures (e.g. proxy measures, unidimensional or bidimensional measures, etc.) as well as inconsistent operational definitions of the notions of ‘acculturation’, ‘westernization’, ‘Western’, ‘Asian’, ‘Eastern European’, and so on have also contributed to the complexity and convolution of available evidence (Pike & Borovoy, 2004; Pike & Dunne, 2015; Doris et al., 2015; Shekriladze & Tchanturia, 2016).

While non-western samples have not been studied sufficiently it might be premature to generalize the global nature of low incidence rates of EDs outside of western cultures. Although cross-cultural manifestation of disordered eating might vary substantially, diagnostic considerations utilized by modern mental health professionals are based on the western understanding of eating abnormalities and, to some extent, premise of valuing thinness. In line with this, the need for culture-sensitive and culture-specific diagnostic criteria and assessment tools becomes pressing (Kempa & Thomas, 2000; Reyes-Rodriguez, Baucom, & Bulik, 2014; Agüera et al., 2017).

As rates of immigration, globalization, and industrialization go up, multiple researchers are shifting their understanding of EDs from culture-bound to culture-transition phenomena (Sussman & Truong, 2011). Despite the abundance of the existing research, more studies using culturally-sensitive ED measures are warranted to further advance the knowledge on the links between disordered eating and acculturation to the western or any culture, on the one hand, and the differential impact of industrialization and urbanization on ED susceptibility, on the other (Shekriladze & Tchanturia, 2016; Agüera et al., 2017).

3. Study

3.1. Introduction - Research Questions

The main goal of the study was to identify the links between the acculturation to the western culture and disordered eating patterns.

Note: The present study examined Georgians residing in the United States of America (USA) and United Kingdom (UK); therefore, the term western for the purposes of this study pertains to American and British cultures only.

The **first** question of the study was: does the prolonged residence in a western country increase the risk of ED symptomatology?

Independent variable: living in a western country

Dependent variable: eating patterns/disordered eating patterns

The **second** question of the study was: does the strategy/type of acculturation to western culture impact disordered eating patterns? Under acculturation strategies/types, four types of acculturation (Berry et al., 1989) – *Integration, Assimilation, Separation, and Marginalization* – were implied.

Independent variable: strategy/type of acculturation

Dependent variable: eating patterns/disordered eating patterns

The **third** question of the study was: do acculturation strategies/types serve as moderating factors between certain demographic and situational variables and ED patterns?

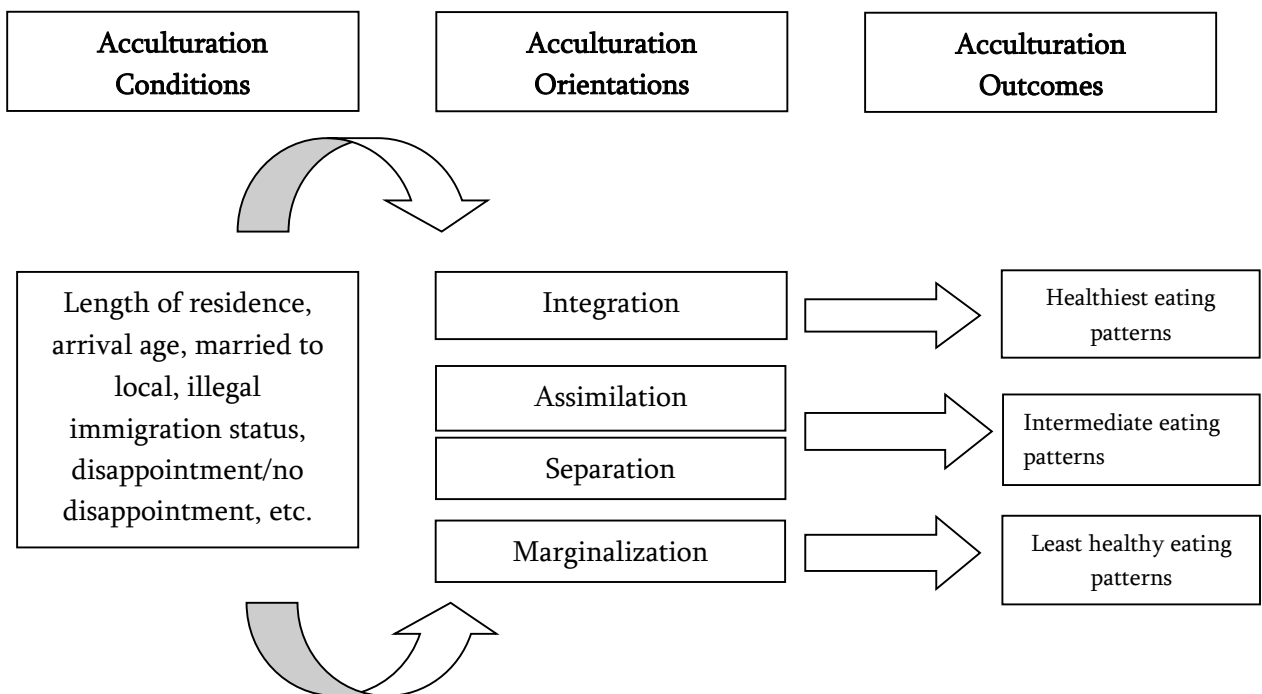
Independent variable: length of residence, arrival age, education, financial status, being married to a representative of the mainstream culture, experience of illegal immigration, expectations towards new country met/unmet, and so forth.

Dependent variable: eating patterns/disordered eating patterns

Moderating variable: type of acculturation

Model to be assessed (see Figure 3.1.1):

Figure 3.1.1. Acculturation Conditions - Orientations - Outcomes



And, the **forth** question of the study was: do the selected twofold and fourfold measures of acculturation equally measure the differences between the acculturation strategies?

3.2. Main Hypotheses

The study aimed at testing the following four hypotheses:

1. Prolonged residence in a western country increases the risk of eating disorders.
2. The strategy/type of acculturation (integration, assimilation, separation, marginalization) with the mainstream culture has influence on the risk of eating disorders; more specifically, integration is associated with lowest risk/healthiest outcomes, marginalization – with the highest risk/the least healthy outcomes, and assimilation and separation – with intermediate outcomes.
3. Acculturation strategy/type serves as a moderating factor between certain demographic/situational variables (e.g. prolonged residence, early arrival age, experience of being married to a local, absence of illegal immigration status, and absence of disappointment in a new country, etc.) and ED patterns.
4. East Asian Acculturation Measure (EAAM), as a fourfold measure of acculturation, better captures the differences between the types of acculturation (assimilation, integration, separation, marginalization) and corresponding ED patterns than Vancouver Index of Acculturation (VIA), as a twofold measure of acculturation (mainstream culture oriented vs. home culture oriented).

3.3. Method

The study was quantitative and employed a quasi-experimental design.

3.3.1. Sample and procedure

In total, 506 individuals participated in the study. The participants represented the groups of Georgian females aged 18-55 residing in UK, USA and Georgia. There were 253 women residing in UK and USA, and 253 – in Georgia.

Experimental group: Two hundred fifty three (253) Georgian females aged 18-55 residing in UK and USA for longer than 6 months were studied. Out of 253, 105 lived in UK and 148 - in USA.

Control group: Georgian females aged 18-55 living in Georgia (253) were studied.

Inclusion Criteria: The following 7 inclusion criteria had to be met for experimental group, and 5 - for control group in order for an individual to participate in the study (see Table 3.3.1.1):

Table 3.3.1.1. Inclusion Criteria

Inclusion Criteria for Research Participants	
<i>Experimental Group</i>	<i>Control Group</i>
1. Female	1. Female
2. Aged 18-55	2. Aged 18-55
3. Ethnically Georgian	3. Ethnically Georgian
4. Currently resides in UK or USA	4. Native language is Georgian
5. Has been residing in UK or USA for at least 6 months	5. Has never lived outside of Georgia (apart from short-term visits)
6. Born and raised in Georgia	
7. Native language is/was Georgian	

Studying experimental group proceeded studying control group and the composition of control group, as a matched group, was tailored to the age distribution of the experimental group (see Table 3.3.1.2). In particular, the data on 345 control group sample was gathered out of which 92 entries were removed and 253 remained with almost identical age group distribution.

Table 3.3.1.2. Distribution of Participants by Age Categories

<i>Age group</i>	<i>Experimental Group</i>	<i>% of age Experimental Group</i>	<i>Control Group</i>	<i>% of age Control Group</i>	<i>Total</i>
50+	49	19.37	46	18.18	95
40-49	103	40.71	104	41.11	207
30-39	79	31.23	80	31.62	159
20-29	17	6.72	18	7.11	35
18-19	5	1.98	5	1.98	10
Total	253		253		506
<i>Mean Age</i>					40.83
<i>SD</i>					8.47

Participant demographics varied in terms of highest education degree obtained, marital status and employment status (see Table 3.3.1.3). It should be noted that overwhelming majority (90.5%) of participants reported having university degrees, which is characteristic to Georgian sample.

Table 3.3.1.3. Descriptive Data of Participant Demographics

<i>Marital Status</i>	<i>%</i>	<i>Highest Education obtained</i>	<i>%</i>	<i>Employment status</i>	<i>%</i>
Married	62.6	Incomplete high school	0.2	Full time	58.8
Single	19.4	High school degree	1.6	Part-time	13
Divorced	13.6	Vocational degree	3.0	Self-employed	10.3
Widow	4.0	Incomplete university	4.7	Housewife/ Household manager	9.6
Other	0.4	University degree	67.8	Student	4.5
		More than one university degree	22.7 ²	unemployed	3.8

² 11% was missing in control group

Additional demographic and situational variables with respect to acculturation conditions have been tracked for the experimental group only, which are discussed in subsequent part.

Selection method was combination of convenience sampling and snowball sampling. Since no unified database of Georgians residing in USA or UK existed, it was impossible to perform probability sampling.

Ethical approval for the study was granted by Ilia State University Research Ethics Committee (ref. R/045-15) (see Appendix 3 for ethical approval letter).

Electronic version of study questionnaire was created and distributed among Georgians living in US and UK through personal and other contacts via electronic means of communication. People residing in respective countries were asked to circulate the study link among their acquaintances. In addition, respective embassies, communities, and diaspora unions/units were reached and asked to distribute the link. Overall, extensive search was performed to locate corresponding communities, groups, individuals, and electronic venues for posting and distributing the study link. Mail-outs were performed to Society of British Georgians, Georgian embassy in UK, Society of US-Georgians, and so on. Social media was widely used. The survey was anonymous to encourage participation of individuals with illegal immigration status.

Similar strategy of recruitment was used for the control group participants: electronic link was created and circulated among diverse groups through social media as well as personal contacts, with snowball method widely used, and with an emphasis to locate women as close as possible to experimental group composition in terms of age.

Survey for the experimental group consisted of four sections: (1) demographic/other - 19 questions, (2) VIA - 18 questions, (3) EAAM – 28 questions, and (4) EDEQ – 36 questions. It took approximately 20 minutes to complete. Survey for the control group consisted of two sections only: (1) demographic – 6 questions and (2) EDEQ – 36 questions. It took about 7 minutes to complete. In both cases, instructions specified inclusion criteria. Each criterion was formulated as

a question at the beginning of the survey and it was specified that only those who answer “yes” to ALL the participation criteria questions, should continue.

The data for experimental group were gathered between June, 2016 – April, 2017; the data for control group (matched group) were gathered between April, 2016 – May, 2017. Entries of 20 individuals were dismissed due to not fully meeting inclusion criteria. Additionally, five duplicates and several entries with inconsistent responses, in total 4% of the sample, were taken out of the database.

3.3.2. Measures

The study was carried out using electronically self-administered survey which, for the experimental group, comprised of four parts including three instruments. Part 1 represented 19 questions on demographic data and other important immigration/sojourning related variables developed by the candidate. Parts 2, 3, and 4 encompassed acculturation and ED measures.

Demographic variables:

Demographic variables controlled for both immigrant/sojourn and non-immigrant populations included age, marital status, highest education achieved, employment status, height, and weight.

For immigrant/sojourn sample, data on additional potentially valuable variables were gathered. These variables included: length of residence in a new country, total length of residence outside of home country, age of moving to a new country, current household composition, social history of moving to a new country (alone, with family), living situation upon arrival in a new country (lived alone, with family, with strangers, etc.), current type of residence (urban/rural), type of residence at home country (urban/ rural), current financial status, history of being married to a representative of a mainstream culture, history of having illegal immigration status, and plan of returning to home country. In addition, there was a question about whether or not the new

country met individual's expectations (with answers: *much worse than expected, worse than expected, more or less what I expected, better than expected, much better than expected*) and another 7-point Likert scale question on the perceived distance/proximity between the home country and host country (from *extremely different* to *extremely similar*).

Consistent with the hypothesis 3, variables such as length of residence, education, cultural distance, and expectations were reported to be important factors in adjustment by various prominent acculturation researchers (Berry, 1970, 1997, 2006; Ward & Kennedy, 1992; Magoret & Ward, 2006; Kopic, 2006). Besides, according to Arends-Toth & Van de Vijver (2006), the framework of the assessment of psychological acculturation suggests that situational and individual factors of acculturation (acculturation conditions) impact both home-country and new-country orientations (acculturation orientations), which, in turn, effect psychosocial wellbeing (acculturation outcomes) (see Figure 2.3.1. Framework of Acculturation Variables).

The remaining three parts of an electronic survey included one ED measure and two acculturation measures. EDEQ (see Appendix 4) was selected as a measure of disordered eating patterns as it has been recognized as a gold standard self-report measure with excellent psychometric properties (Fairburn & Beglin, 1994, 2008; Anderson et al. 2004) and available in Georgian (Genders et al., 2008). To measure acculturation, because literature on relevant studies revealed limited consistency in measures used, it was decided to utilize both twofold and fourfold measures of acculturation in order to ensure the accuracy of measurement and also explore inter-measure consistency.

Eating Disorder Examination Questionnaire (EDEQ) (Fairburn, & Beglin, 1994, 2008) is a widely used tool for measuring cognitive and behavioral features of ED. It is a 36-item self-report measure that assesses individual's experiences within the last 28 days with answers on a 7-point scale from 0 to 6 in which 0 corresponds to never/no day and 6 corresponds to every day (e.g.: *"Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight?"*). It has scores of four subscales - dietary restraint, eating concern, shape concern and weight concern - and a global score that range from 0 to 6 respectively. Restriction subscale

involves questions about person's attempts to restrict eating (e.g.: "*have you tried to exclude from your diet any foods that you like in order to influence your shape or weight?*"); eating concern subscale questions address eating habits/attitudes (e.g.: "*how concerned have you been about other people seeing you eat?*"); shape concern subscale involves questions on attitudes and habits about shape (e.g.: "*have you definitely wanted your stomach to be flat?*") and weight concern subscale questions encompass weight related attitudes and habits (e.g.: "*have you had a strong desire to lose weight?*"); global score represents the mean of all subscale scores. The measure has shown good psychometric properties (Fairburn & Beglin, 1994, 2008; Anderson et al. 2004).

Vancouver Index of Acculturation (VIA) (Ryder et al., 2000; Paulhus, 2013; Georgian translation Shekrladze, I., 2015) is a two-dimensional self-report measure of acculturation with 20 statements with 7-point Likert scale (e.g.: "*I enjoy social activities with typical American people*") that measures mainstream culture orientation and home culture orientation. With demonstrated good psychometric properties, VIA has been regarded as one of the most robust and flexible assessment tools of acculturation (Ward et al., 2017; Kang, 2006)

East Asian Acculturation Measure (EAAM) (Barry, 2001, Georgian translation Shekrladze, I., 2015) is a four-dimensional self-report measure of acculturation with 29 statements on a 7-point Likert scale (e.g.: "*at home I usually speak English*") which measures the degrees of assimilation, separation, integration and marginalization on corresponding four subscales. Cronbach's alpha (by subscale) equals to .77/.76/.74/.85 respectively (Barry, 2001; Taras, 2008).

As systematic review of the literature on the links between the acculturation and ED revealed marked inconsistencies across studies in conceptualizing and measuring acculturation and culture change, it was decided to utilize both twofold and fourfold measures of acculturation with the same subjects to be able to cross-compare their results.

Out of multiple acculturation measures, VIA and EAAM were selected based on: (a) reports on VIA as one of the most robust and flexible measures of acculturation (Ward et al., 2017) with high orthogonality, $r_s = 0.09$ (Kang, 2006), and EAAM being typological tool with decent psychometric

properties (Cronbach's alpha by subscale .77/.76/.74/.85) and having been used in various similar studies (Barry, 2001; Barry & Garner, 2001; Barry & Grilo, 2002); and, (b) the descriptive and straightforward nature of the statements of both self-report measures and corresponding simplicity of scale scoring able to minimize potential confusion during e-surveys. On top of it, despite being twofold measure, VIA was reported to succeed in classifying individuals into the four acculturation types/strategies: strong orientation on both scales (to both cultures) corresponded to integration, weak orientation on both – indicated marginalization, while strong orientation on one scale and weak on another corresponded to assimilation or separation (Ward et al., 2017).

Both measures were translated from English into Georgian by candidate. It was back translated by another bilingual researcher. Questionnaires were checked carefully for the consistency with the original versions. The author of EAAM was informed and consulted throughout the process.

In addition, because neither EAAM nor VIA offered any way to attribute an individual to one out of four acculturation strategies/types or one out of two cultural orientations, for each participant two additional variables - *dominant type of acculturation* and *dominant cultural orientation* - were introduced, the former representing the type of acculturation that earned the highest score among four acculturation subscales, while the latter corresponding to cultural orientation that earned higher score between the two cultural-orientation subscales. Introduction of these new variables was useful for checking associations between nominal scale demographic/situational variables and acculturation strategies/orientations as well as for cross-comparison of dominant acculturation strategies and cultural orientations; however, its limitation included that the differences between the two/four subscale scores (in many cases they were negligible, in other cases they were considerable) of a single participant were not taken into consideration.

For the control group, e-survey comprised of only limited number of demographic questions (age, marital status, employment status, highest education obtained, height and weight) and EDEQ.

3.3.3. Validation

EDEQ has previously been validated and used in Georgia by Tchanturia, K. (Genders, Treasure, Fernández-Aranda, & Tchanturia, 2008).

During the initial stage, both acculturation measures went through the validation process starting from translation/back translation and followed by statistical analysis. In particular, Confirmatory Factor Analysis (CFA) was conducted (Structural Equation Modeling [SEM], in MPLUS software) as a result of which both were slightly modified (see Georgian versions of VIA and EAAM in Appendix 5 and 6).

VIA consisted of 20 questions measuring two factors - home culture and mainstream (new) culture orientations (Ryder, et al., 2000). After performing CFA, 18 questions remained in Georgian version, and questions 1 (about mainstream culture orientation) and 2 (about home culture orientation) were taken out due to the low loadings. Correlations between the initial and modified versions of the measure with respect to home country orientation were $r = 0.99$, $p < 0.01$, and with respect to mainstream culture orientation, $r = 0.99$, $p < 0.01$ (Javakhishvili et al., 2016).

EAAM consisted of 29 questions measuring four factors – assimilation, separation, integration, and marginalization (Barry, 2001). In Georgian version, 28 questions remained. Question 27 of assimilation scale was taken out due to the low loading. Question 6 came up as a reverse coded question that gave bad model fit in CFA, and, therefore, was reworded. Correlations between the initial and modified versions of the measure was $r = 0.98$ $p < 0.01$. Fit indices for these two measures are given in Table 3.3.3.1 (Javakhishvili et al., 2016).

Table 3.3.3.1. Results of Confirmatory Factor Analysis of Acculturation Measures

<i>Measure</i>	χ^2	<i>df</i>	<i>p</i>	<i>RMSEA Estimate</i>	<i>CFI</i>	<i>TLI</i>
Vancouver Index of Acculturation	466.94	158	0.000	0.10	0.83	0.79
East Asian Acculturation Measure	690.09	316	0.000	0.07	0.81	0.79

As for internal consistency of validated acculturation measures, cronbach's alpha of VIA amounted to 0.86 for home culture orientation subscale and 0.86 for mainstream culture orientation subscale. In case of EAAM, it equaled to 0.78 for assimilation subscale, 0.73 for separation subscale, 0.64 for integration subscale, and 0.82 for marginalization subscale.

3.3.4. Statistical Analysis

Data was analyzed using the statistical package IBM SPSS version 21.00 including PROCESS macro for SPSS.

4. Results

Apart from demographic variables of both immigrant/sojourn and Georgian samples discussed earlier (see Table 3.3.1.3), multiple other, potentially important, variables have been tracked for experimental group participants in order to explore the links between these variables and acculturation outcomes, on the one hand, and ED outcomes, on the other. Relevant for hypothesis 2 and hypothesis 3, these variables were utilized as covariates or, as part of acculturation conditions, treated as independent variables.

4.1. Demographic profile of experimental group

Individual/situational variables identified for experimental group only included: (1) age at which person moved to a new country; (2) total lengths of residence in a new country; (3) current household composition; (4) household composition upon arrival; (5) financial status; (6) experience of being married to a representative of mainstream culture; (7) plan of returning home; (8) experience of illegal immigration status; (9) the extent to which new country met individual's expectations; and (10) perceived proximity/distance between the home culture and new culture (see Tables 4.1.1 & 4.1.2).

The immigrant/sojourn group mostly consisted of not newly relocated adult females who moved to a western country in their late twenties and had been residing there for a decade. More than a quarter of women reported having an experience of being married to a British/American man, while one fifth reported experience of an illegal immigration status (see Table 4.1.1).

The USA and UK groups were sufficiently homogeneous in terms of distribution of participant age and other basic demographics (marital status, education) allowing to be treated as a unified group of immigrants/sojourners.

Table 4.1.1. Experimental Group Demographics 1

<i>Variables</i>	<i>M</i>	<i>Mdn</i>	<i>SD</i>	<i>Minimum</i>	<i>Maximum</i>	<i>N</i>
Age of Arrival	29.43	29	7.47	10	54	
Length of Residence	11.56	12	6.30	0.6	25	
Married to British/American						67 (26.5%)
Illegal Immigration Status						50 (20%)

Approximately half (47.3%) of the experimental group participants reported having normal/average financial status, and about the same number (49%) reported the new country had met their expectations. Participants differed depending on their plans to stay in UK/USA or return back to home country. In spite of 11-12 years of average length of stay, one fifth (21%) reported plans to return to Georgia, whereas about 27% reported plans to stay in UK/USA (see Table 4.1.2).

Table 4.1.2. Experimental Group Demographics 2

<i>Current household composition</i>	<i>%</i>	<i>Household composition upon arrival</i>	<i>%</i>	<i>Expectations to a new country</i>	<i>%</i>	<i>Plan of return</i>	<i>%</i>	<i>Financial status</i>	<i>%</i>
Alone in a flat/house	11.50	With family	53.40	Much worse than expected	4.70	No	17.40	Not enough to meet basic needs	3.60
With family	74.70	With friends/relatives	17.40	Worse than expected	11.10	More than yes	9.50	Enough to meet basic needs	13.80
Alone in a dorm	2.00	With acquaint	4.30	More or less the same	49	More yes than no	6.30	Normal	47.40
With friends	10.30	With strangers	12.60	Better than expected	20.60	Yes	15.40	Good	32.80
In a shelter/temp. place	0.00	Alone	10.30	Much better	10.30	Unclear	22.10	Excellent	2.40
Other	1.60	Other	2.00	Unclear	4.30	Hard to answer	21.30		

As far as perceived cultural proximity/distance was concerned, the overwhelming majority (80%) of participants identified a new culture as different from the home culture, among which the highest percentage (39%) belonged to *extremely different*, 21% - to *moderately different*, and another 20% - to just *different*. Comparing UK and USA groups in this respect yielded no inter-group differences whatsoever, meaning that both UK and USA were considered markedly different in spite of UK's relative geographical proximity.

4.2. Findings

4.2.1. Hypothesis 1

When it comes to testing hypothesis that moving to a western country can increase the risk of eating disorders, the differences between the experimental group and control group with respect to ED patterns should emerge. The statistical hypothesis, thus, was formulated as follows: the mean score for ED patterns differs for immigrant and nonimmigrant groups. ED patterns were measured by 5 scores – *dietary restriction* subscale, *eating concern* subscale, *shape concern* subscale, *weight concern* subscale, and *global* score.

To examine differences between groups residing in Georgia and UK/USA with respect to five dependent variables (ED measures), a one-way between-groups Multivariate Analysis of Variance (MANOVA) was used (Pallant, 2016). As mentioned earlier, USA and UK groups were homogeneous in terms of major demographics and were unified into immigrant/sojourner group. Comparison between the USA, UK, and Georgia groups or, alternatively, between the USA and UK groups, did not represent the aim of this thesis.

Comparisons of experimental and control groups using multiple variance showed significant differences between the EDEQ restriction scale scores and EDEQ eating concern scale scores of immigrant/sojourner and non-immigrant samples, $F(1, 504) = 6.27, p = 0.013$, partial $\eta^2 = 0.012$ and $F(1, 504) = 4.03, p = 0.045$, partial $\eta^2 = 0.008$, respectively. In particular, restriction score was significantly higher among experimental group, while eating concern score was significantly higher among control group (see Figure 4.2.1.1 and Table 4.2.1.2).

Figure 4.2.1.1. EDEQ Scores of Immigrant/Sojourn and Non-immigrant Samples

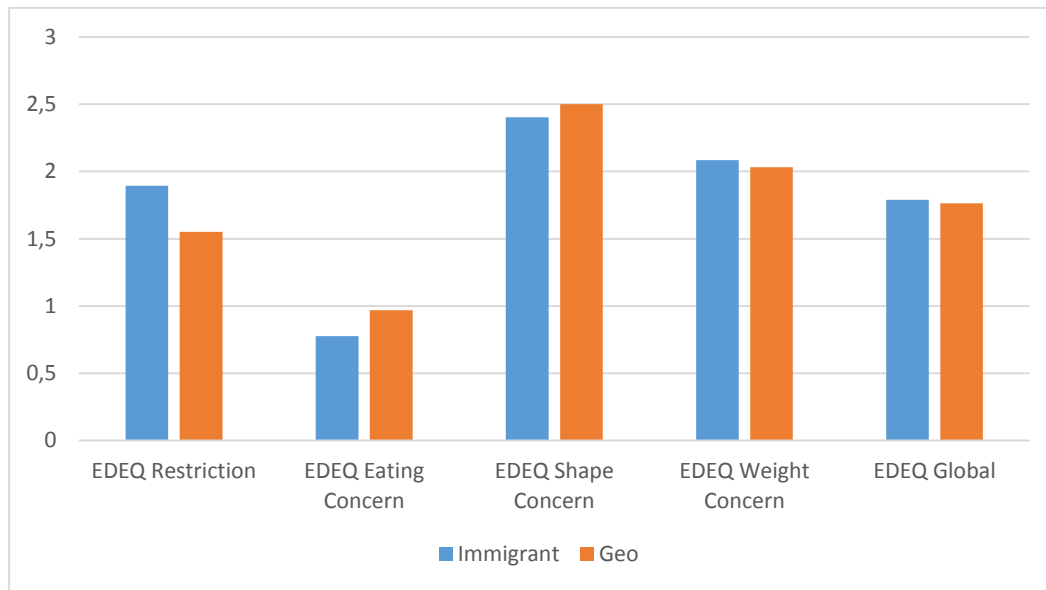


Table 4.2.1.2. EDEQ Scores of Experimental and Control Groups

<i>EDEQ scores</i>	<i>Group ID</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>MANOVA</i>		<i>Partial η²</i>
					<i>F</i>	<i>P</i>	
EDEQ	Immigrant	1.89	1.59	253	6.27	0.013	0.01
Restriction score	Geo	1.55	1.50	253			
EDEQ	Immigrant	0.78	1.06	253	4.03	0.045	0.01
Eating concern score	Geo	0.97	1.10	253			
EDEQ	Immigrant	2.40	1.68	253	0.43	0.512	0.00
Shape concern score	Geo	2.50	1.61	253			
EDEQ	Immigrant	2.08	1.61	253	0.15	0.703	0.00
Weight concern score	Geo	2.03	1.56	253			
EDEQ Global score	Immigrant	1.79	1.27	253	0.06	0.804	0.00
	Geo	1.76	1.19	253			

To ensure equivalence of groups, data on certain control variables were collected. Age had already been controlled during sampling. Out of other possible confounding variables, BMI appeared to be significantly correlated with all EDEQ subscales (see Table 4.2.1.3).

Table 4.2.1.3. Correlations between EDEQ Scores and BMI, BMI Descriptives

<i>EDEQ outcomes</i>	<i>BMI</i>	<i>N</i>	<i>Group</i>	<i>BMI</i>		
				<i>M</i>	<i>SD</i>	<i>N</i>
EDEQ restriction	0.27***	501	Geo	24.941	5.440	250
EDEQ eating concern	0.39***	501				
EDEQ shape concern	0.55***	501	Immigrant/	24.121	4.716	251
EDEQ weight concern	0.50***	501	sojourn			
EDEQ global	0.51***	501				

*** $p < 0.001$.

Before checking links between BMI and the five Dependent Variable (DV) scores, the linearity of their relationship was checked. This concern was raised because very high and very low scores of BMI equally indicate problem condition, so, in a way its relation to eating patterns might be nonlinear. However, the descriptive data showed that: (a) there were very few extremely underweight participants in both groups, and (b) they mostly did not show problem condition in terms of eating patterns. Hence, there was a linear connection between BMI and DV scores.

Thus, multivariate analysis of covariance (MANCOVA) was run. After adjusting scores through adding BMI as a covariate in MANCOVA, there was no significant difference between the two groups in scores with respect to *eating concern*, $F(1, 498) = 2.45$, $p = 0.118$, partial $\eta^2 = 0.01$, whereas the difference in *dietary restriction* became stronger, $F(1, 498) = 7.53$, $p = 0.006$, partial $\eta^2 = 0.02$.

Thus, hypothesis 1 was partially confirmed as moving to western countries for a prolonged period appeared to represent a risk factor for only one out of five EDEQ subscales - restriction of food intake.

4.2.2. Hypothesis 2

Hypothesis 2 suggested that for immigrant/sojourn population, the strategy/type of acculturation with the mainstream culture influenced the risk of EDs. The statistical hypothesis, thus, was formulated as follows: higher scores of integration are associated with lowest ED scores; higher scores of marginalization are associated with the highest ED scores, whereas higher scores on separation and assimilation are associated with intermediate ED scores. Acculturation type was measured by 4 scores – integration subscale, assimilation subscale, separation subscale, and marginalization subscale, while ED patterns were measured by 5 scores - restriction subscale, eating concern subscale, shape concern subscale, weight concern subscale, and global score. In addition, cultural orientations were measured by two subscales – home-culture orientation and mainstream-culture orientation.

First, bivariate correlations between the types of acculturation and EDEQ scores were checked, which showed that marginalization and separation appeared in strong statistically significant positive correlations with eating concern, shape concern, weight concern, and global scores, whereas integration appeared in mild statistically significant negative correlations with eating concern and shape concern outcomes (see Table 4.2.2.1). No significant correlations were identified between restriction concern and any EAAM type of acculturation, on the one hand, and between assimilation and any EDEQ score, on the other.

Table 4.2.2.1. Correlations between EAAM Acculturation Scores and EDEQ Outcomes

<i>EDEQ outcomes</i>	<i>Marginalization</i>	<i>Separation</i>	<i>Integration</i>	<i>Assimilation</i>
EDEQ eating concern	0.30***	0.30***	-0.14*	0.06
EDEQ shape concern	0.26***	0.27***	-0.16*	-0.04
EDEQ weight concern	0.24***	0.28***	-0.07	0.01
EDEQ global	0.26***	0.27***	0.30	0.02

*** $p < 0.001$, * $p < 0.05$; $N = 253$.

Thus, correlations were statistically significant (positive) between separation and marginalization and most EDEQ scores, and to lesser degree yet still significant (negative) between integration and eating concern, and shape concern outcomes, thereby suggesting that integration was associated with healthiest outcomes, while marginalization and separation - with least healthy ones.

Regression analysis was further performed to check the hypothesis. No collinearity was diagnosed between the acculturation types. Based on regression analysis, similar to correlation analysis, separation and marginalization appeared significantly linked with EDEQ eating concern, shape concern, weight concern, and global scores (see Table 4.2.2.2). Interestingly, separation produced slightly higher associations with poorer EDEQ outcomes than marginalization. However, no significant associations were identified between integration and eating and shape concern scores.

Table 4.2.2.2. Regression on EAAM Acculturation Scores and EDEQ Outcomes

<i>EDEQ outcomes</i>	<i>Separation</i>		<i>Marginalization</i>		<i>R</i> ²
	β	<i>t</i>	β	<i>t</i>	
EDEQ eating concern	0.22***	3.38	0.22***	3.38	0.13
EDEQ shape concern	0.20**	3.08	0.18**	2.63	0.11
EDEQ weight concern	0.24***	3.67	0.18**	2.71	0.11
EDEQ global	0.22***	3.37	0.21**	3.09	0.11

*** $p < 0.001$, ** $p < 0.01$; $N = 253$.

Thus, regression analysis further proved that two types of acculturation – separation and marginalization – can be considered predictors of less healthy eating patterns on four out of five subscales of EDEQ thereby partially proving the hypothesis.

As acculturation was measured by two instruments, the associations between EDEQ scores and VIA results – mainstream-culture and home-culture orientation outcomes - were checked as well. Hence, bivariate correlations between VIA scores and EDEQ scores were checked. It appeared that, similar to EAAM separation and marginalization subscales, home culture orientation subscale scores showed statistically significant positive correlations with EDEQ eating concern, shape concern, weight concern and global scores. Also, similar to EAAM integration subscale scores, mainstream culture orientation scores were found in statistically significant negative correlation with EDEQ eating concern and shape concern scores (see Table 4.2.2.3), and no correlations were identified between EDEQ restriction concern scores and any type of cultural orientation.

Table 4.2.2.3. Correlations between VIA Cultural Orientation Scores and EDEQ Outcomes

<i>EDEQ outcomes</i>	Home culture orientation	Mainstream culture orientation
EDEQ eating concern	0.192**	-0.123*
EDEQ shape concern	0.216***	-0.134*
EDEQ weight concern	0.250***	-0.119
EDEQ global	0.213***	-0.100

*** $p < 0.001$, * $p < 0.05$; $N = 253$.

After diagnosing no collinearity between home culture orientation and mainstream culture orientation subscales, regression analysis was performed. Similar to findings of correlation analysis, it showed statistically significant links between home culture-orientation and eating concern, shape concern, weight concern and global scores (see Table 4.2.2.4). Interestingly, when it came to mainstream culture orientation, regression analysis showed relatively higher predicting value of weight concern subscale as well, while correlation analysis showed statistically significant associations with only two – eating concern and shape concern – subscales (weight concern came a bit over the verge).

Table 4.2.2.4. Regression on VIA Cultural Orientation Scores and EDEQ Outcomes

<i>EDEQ outcomes</i>	<i>Home culture orientation</i>		<i>Mainstream culture orientation</i>		R^2
	β	t	β	t	
EDEQ eating concern	0.19**	3.12	-0.12*	-2.01	0.05
EDEQ shape concern	0.22***	3.54	-0.14*	-2.21	0.06
EDEQ weight concern	0.25***	4.12	-0.12*	-1.98	0.08
EDEQ global	0.21***	3.48	-0.10	-1.65	0.06

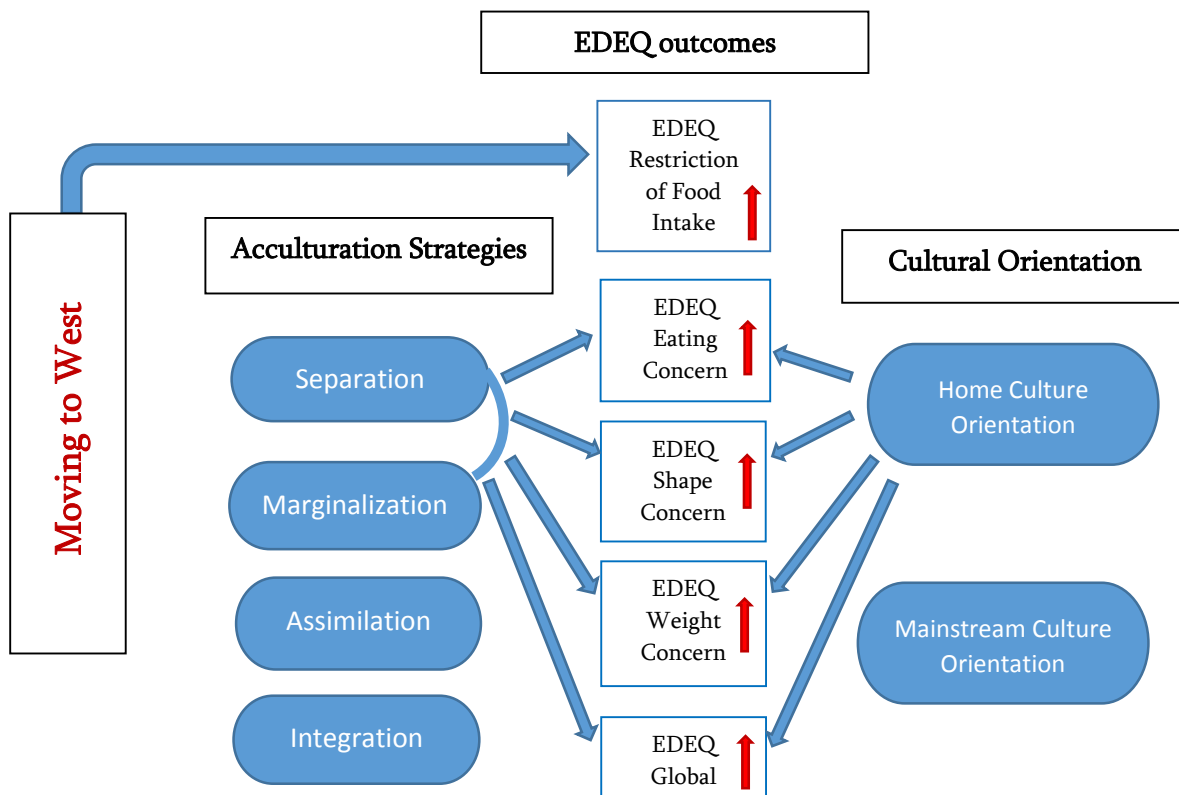
*** $p < 0.001$, ** $p < 0.01$ * $p < 0.05$; $N = 253$.

Thus, based on regression analysis home culture orientation can be considered a predictor of less healthy eating patterns on four out of five subscales of EDEQ. These results appeared consistent with EAAM results.

Hence, in the present study, consistent with Berry’s theory (Berry, 1997, 2006), integration was associated with the healthiest outcomes, however, separation was associated with equally least healthy (or even slightly poorer) outcomes as marginalization, while assimilation came very close to integration producing no links with disordered eating.

To summarize the results of hypotheses 1 and 2, moving to a western country, irrespective of acculturation types, appeared to increase the risk of restriction of food intake, whereas while living in a western country, acculturation strategies of separation and marginalization as well as home-culture orientation were associated with more disordered eating patterns - higher eating concern, shape concern, weight concern and global scores of EDEQ (see Figure 4.2.2.5).

Figure 4.2.2.5. Link between Moving to West and Individual’s Disordered Eating Patterns



4.2.3. Hypothesis 3

Hypothesis 3 suggested that, consistent with the framework of assessment of psychological acculturation (Arends-Toth & Van de Vijver, 2006), strategies/types of acculturation played moderating role between certain individual and situational variables (acculturation conditions) and acculturation outcomes, in this case, ED patterns. These acculturation conditions among others included: length of residence, arrival age, being married to a local, experience of illegal immigration status, plan of returning home, and the degree to which expectations to a new country were met.

To check the hypothesis, first, correlations/associations between demographic/situational variables, acculturation strategies/types, and ED scores were checked. Only variables yielding noteworthy links with either acculturation strategies or eating patterns will be discussed below.

Length of residence was found in statistically significant positive correlation with integration, $r = 0.26$ $p = 0.000$ and statistically significant negative correlation with separation, $r = -0.20$ $p = 0.001$, whereas age of arrival was significantly negatively correlated with both assimilation, $r = -0.20$ $p = 0.002$ and integration, $r = -0.24$ $p = 0.000$. None of them, however, had any statistically significant connection with EDEQ outcomes and, therefore, in spite of their apparent input in shaping one's acculturation type, their impact as IV on ED patterns was rejected.

Concerning associations between other demographic variables that belonged to nominal/ordinal scale (married to local, illegal immigration status, expectations unmet/met upon arrival, plan of returning home) and types of acculturation, on the one hand, and DV - EDEQ outcomes, on the other, first, DVs were turned into nominal scale variables. Hence, for each ED score, a categorical variable was created with 0 corresponding to any score below or equal to median and 1 corresponding to any score above median.

Crosstabulations between multiple categorical variables that constituted acculturation conditions and ED scores converted into below-median and above-median categories showed noteworthy links between four variables – experience of illegal immigration status, plan of returning home,

experience of being married to a local, and expectations to a new country – and ED scores (see Table 4.2.3.1).

Table 4.2.3.1. Demographic Variables and EDEQ Scores

Has been illegal	EDEQ Restriction		EDEQ Eating		EDEQ Shape		EDEQ Weight		EDEQ Global	
	Below median	Above Median	Below median	Above median	Below median	Above median	Below median	Above median	Below median	Above median
No	98	105	129	74	113	90	102	101	103	100
Yes	20	30	24	26	19	31	24	26	18	32
χ^2	<i>1.10, p = 0.293</i>		<i>4.06, p = 0.044</i>		<i>5.02, p = 0.025</i>		<i>0.08, p = 0.776</i>		<i>3.49, p = 0.062</i>	
Plans of Returning Home	EDEQ Restriction		EDEQ Eating		EDEQ Shape		EDEQ Weight		EDEQ Global	
	Below median	Above median	Below median	Above median	Below median	Above median	Below median	Above median	Below median	Above median
No	18	26	28	16	27	17	25	19	23	21
More no	14	10	12	12	10	14	10	14	11	13
Yes	4	12	5	11	4	12	5	11	3	13
More yes	21	18	28	11	22	17	20	19	21	18
Unclear	25	31	35	21	28	28	27	29	25	31
Hard to answer	27	27	32	22	28	26	27	27	28	26
Other	9	11	13	7	13	7	12	8	10	10
χ^2	<i>6.08, p = 0.414</i>		<i>9.39, p = 0.153</i>		<i>8.99, p = 0.174</i>		<i>4.63, p = 0.592</i>		<i>6.99, p = 0.322</i>	
Has been married to local	EDEQ Restriction		EDEQ Eating		EDEQ Shape		EDEQ Weight		EDEQ Global	
	Below median	Above median	Below median	Above median	Below median	Above median	Below median	Above median	Below median	Above median
No	80	106	103	83	89	97	86	100	80	106
Yes	38	29	50	17	43	24	40	27	41	26
χ^2	<i>3.73, p = 0.054</i>		<i>7.64, p = 0.006</i>		<i>5.26, p = 0.022</i>		<i>3.57, p = 0.059</i>		<i>6.03, p = 0.011</i>	
Expectations met or not	EDEQ Restriction		EDEQ Eating		EDEQ Shape		EDEQ Weight		EDEQ Global	
	Below median	Above median	Below median	Above median	Below median	Above median	Below median	Above median	Below median	Above median
Not at all	5	7	6	6	5	7	6	6	6	6
Not	15	13	14	14	12	16	12	16	13	15
Basically yes	60	64	77	47	61	63	62	62	56	68
Exceeded	20	32	30	22	32	20	27	25	24	28
Vastly exceeded	13	13	20	6	15	11	15	11	16	10
χ^2	<i>2.33, p = 0.801</i>		<i>5.25, p = 0.387</i>		<i>4.67, p = 0.457</i>		<i>2.08, p = 0.838</i>		<i>2.61, p = 0.759</i>	

In particular, individuals with the experience of illegal immigration status and individuals with the definite plan to return home, unanimously showed far more above-median than below-median scores on all ED subscales. Within-group comparison of individuals that had been illegal showed that the differences between those with below-median scores and those with above-median scores are statistically significant with respect to EDEQ eating concern score, $\chi^2 = 4.06$, $p = 0.044$ and shape concern score, $\chi^2 = 5.02$, $p = 0.025$ and, close to be significant for global score, $\chi^2 = 3.49$, $p = 0.062$. Relevant to eating and weight issues, individuals with the experience of being undocumented showed far higher rates (52%) of out-of-normal BMI than individuals without such an experience (35%), $\chi^2 = 6.143$, $p = 0.046$.

Concerning individual's plan to return home, overall, this variable did not yield statistically significant associations. However, one category only - individuals with definite plan to return to home country - generated substantial within-group differences (at least twice as much) between those with below-median and those with above-median scores for all ED subscale scores. Similarly, the extent to which expectations to a new country were met, as such, did not produce statistically significant associations. Yet, one category – vastly exceeded – generated higher numbers of below-median rates on four out of five subscales.

On the other hand, experience of being married to a local has unanimously produced significantly higher numbers of below-median rates, as opposed to above-median rates, showing statistically significant associations with most subscale scores (see Table 4.2.3.1).

Next, crosstabulations between these variables and dominant acculturation types (e.g. assimilation, integration, separation, and marginalization) as well as dominant cultural orientations (e.g. home-culture orientation, mainstream-culture orientation) were generated with an emphasis on two apparently prognostic variables – experience of illegal immigration status and experience of being married to a local (see Table 4.2.3.2).

Table 4.2.3.2. Demographic Variables and Dominant Acculturation Type/Orientation

Has been illegal	Dominant Acculturation Type				Dominant Cultural Orientation		
	Integration	Assimilation	Separation	Marginalization	Mainstream culture	Home culture	Equal
No	162	7	23	10	83	108	12
Yes	40	3	6	1	23	25	2
χ^2	<i>1.71, p = 0.788</i>				<i>0.59, p = 0.743</i>		
Has been married to local	Dominant Acculturation Type				Dominant Cultural Orientation		
	Integration	Assimilation	Separation	Marginalization	Mainstream culture	Home culture	Equal
No	143	6	28	8	66	110	10
Yes	59	4	1	3	40	23	4
χ^2	<i>9.98, p = 0.041</i>				<i>12.70, p = 0.002</i>		

While the experience of illegal immigration did not produce statistically significant associations with acculturation types/orientations, experience of being married to a local, yielded statistically significant associations with both dominant type of acculturation $\chi^2 = 9.98, p = 0.041$ and dominant cultural orientation $\chi^2 = 12.70, p = 0.002$ (see Table 4.2.3.2). Inter-cultural marriage was far more common among individuals with stronger mainstream-culture orientation than those with stronger home-culture orientation (37% vs. 17%), whereas with respect to acculturation types, separation constituted only one case, while assimilation entailed highest percentage (40%) of cases.

The degree to which expectations to a new country were met/unmet appeared significantly linked with dominant cultural orientation, $\chi^2 = 27.33, p = 0.002$: expectations being exceeded by new country was far more common among individuals with stronger mainstream-culture orientation, while disappointment with the new country was far more common among individuals with stronger home-culture orientation. Similarly, statistically significant associations were identified between the variables - plan to return home - and dominant cultural orientation, $\chi^2 = 34.64, p = 0.001$, on the one hand, and dominant acculturation type, $\chi^2 = 44.81, p = 0.006$, on the other.

Mainstream-culture orientation was linked with the plan to remain in the current country (40% vs. 15% planning to return), while home-country orientation was associated with the plan to return to home country (28% vs. 12% planning to remain). Regarding acculturation strategies, no individual with dominant acculturation strategy of assimilation reported a plan to return, while very few cases (only one definite and another probable) of planning to remain in a current country were marked by individuals with dominant acculturation strategy of separation.

Thus, out of demographic/situational variables only one – experience of being married to a local – appeared to have statistically meaningful associations with both acculturation orientations/strategies and ED outcomes. Going back to the framework of acculturation conditions in which, consistent with our hypothesis, demographic and situational variables are represented as independent variables shaping cultural orientations and thereby influencing one's wellbeing, the model with *marriage to a representative of mainstream culture* as an independent variable and acculturation strategy/orientation as a moderating variable was checked through moderation analysis by PROCESS macro.

Moderating analysis, however, did not yield results confirming significant interaction between experience of being married to mainstream culture representative and acculturation strategy to further influence on ED scores. Since there are multiple IVs and DVs, each IV and each DV along with moderating variable has been entered individually in PROCESS and interaction between variables in none of the combinations turned out to be significant. For illustration purposes, below see (Table 4.2.3.3) the output of one of the interactions showing that only separation, as acculturation style, significantly affects EDEQ global score, while neither marital status, nor the interaction of marital status with separation has a significant effect on the dependent variable.

Table 4.2.3.3. Moderating Analysis

	<i>Coef</i>	<i>se</i>	<i>t</i>	<i>p</i>	<i>LLCI</i>	<i>ULCI</i>
constant	1.0895	.2604	4.1836	.0000	.5766	1.6024
Married	-.6578	.5318	-1.2368	.2173	-1.7052	.3896
Local						
EAAMS	.2384	.0723	3.2976	.0011	.0960	.3807
Int_1	.1761	.1856	.9488	.3437	-.1895	.5417

Hence, hypothesis 3 was rejected. It did, nevertheless, generate very interesting findings in relation with noteworthy acculturation conditions that call for further exploration.

4.2.4. Hypothesis 4

Hypothesis 4 suggested that EAAM, as a fourfold measure of acculturation, better measured the intricate differences between the types of acculturation and corresponding EDEQ outcomes than VIA, as a twofold measure of acculturation.

First, bivariate correlations between VIA scores and EAAM scores were checked. Statistically significant correlations were identified between all EAAM subscale scores and VIA Mainstream culture orientation scores, with assimilation and integration having positive, and separation and marginalization having negative correlations. Similarly, statistically significant correlations were found between EAAM assimilation and separation outcomes and VIA home culture orientation outcomes, with assimilation having negative and separation having positive correlations (see Table 4.2.4.1). Thus, outcomes of the two acculturation measures appeared consistent with one another, however, while VIA appeared very effective in measuring assimilation and separation, it did not seem as effective in assessing integration and marginalization.

Table 4.2.4.1. Correlations between VIA and EAAM Acculturation Scores

<i>EAAM types</i>	<i>Mainstream culture orientation</i>	<i>Home culture orientation</i>
EAAM Assimilation	0.33***	-0.376***
EAAM Separation	-0.44***	0.482***
EAAM Integration	0.48***	0.088
EAAM Marginalization	-0.24***	-0.055

*** $p < 0.001$; $N = 253$.

Besides, as mentioned earlier, because EAAM offered no single indicator which would place an individual in one out of four acculturation strategies/types, one more variable - dominant type of

acculturation – was introduced and, based on the highest score among four acculturation subscales, one of the types of acculturation was assigned to each participant. According to this new variable, out of 253 participants, 203 (80 %) were integrated, 10 (4%) – assimilated, 29 (11.5%) – separated, and 11 (4.3%) – marginalized. These results appeared in line with studies reporting marginalization being very rare (Ward & Geeraert, 2016), whereas integration representing overall strategy for most people after spending substantial number of years in another culture (Ward & Kus, 2012; Berry & Hou, 2014; Ho, 1995).

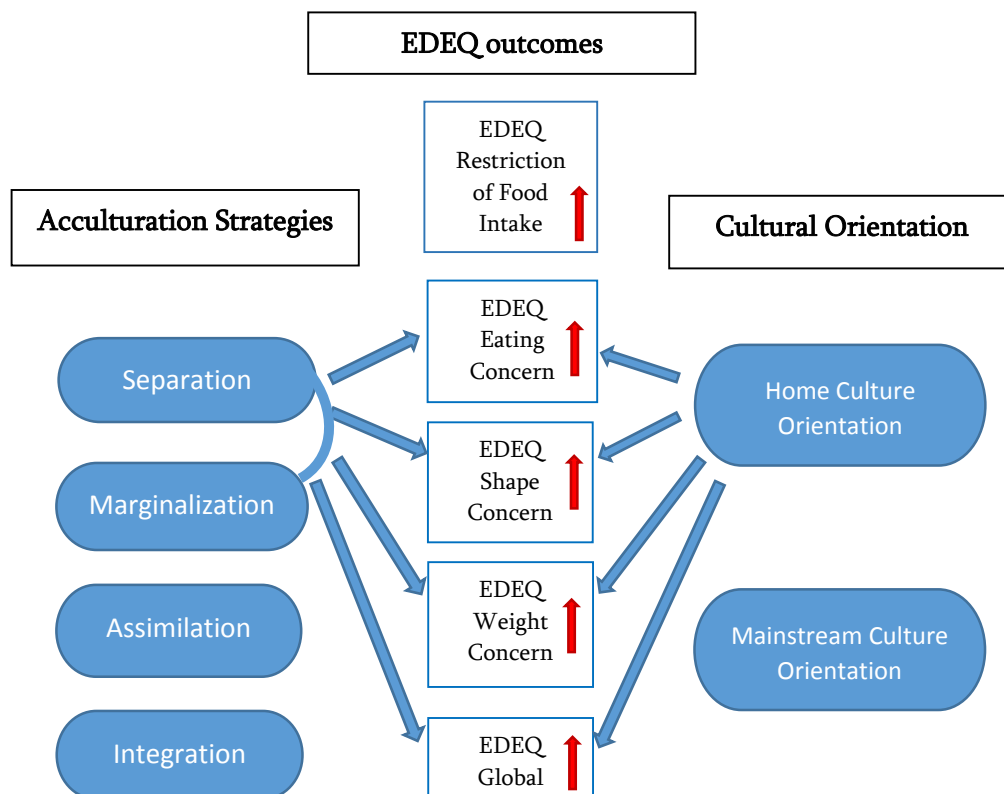
Similar to EAAM, VIA consisted of two subscales and did not offer a way placing an individual into one of two categories. Hence, again, a new variable - dominant cultural orientation - was introduced and, based on the higher score among the two cultural orientation subscales, one of the types of cultural orientation was assigned to each participant. According to this new variable, out of 253 participants, 106 (41.9 %) were mainstream culture oriented, 133 (52.6%) – home culture oriented, and 14 (5.5%) – scored equally on both subscales. Again, in both cases (with EAAM and VIA), introduction of a new - dominant type/orientation - variables had limitations as the differences between the two/four scores (in some cases they were negligible, in others - sizable) were not taken into consideration.

Next, participants' outcomes on these two new variables were compared (see Table 4.2.4.2), which confirmed that VIA had difficulties in distinguishing between the four types of acculturation. Going back to correlation analysis, which in case of EAAM showed statistically significant negative correlations between integration and eating concern and shape concern subscale scores, and no valuable associations between assimilation and any subscale scores thereby distinguishing integration from assimilation and emphasizing its healthier nature, it can be stated that overall, as a measure, EAAM is more accurate than VIA in capturing intricate differences between the acculturation strategies of immigrants/sojourns and corresponding predictors. On the other hand, VIA's both subscale scores demonstrated high consistency with EAAM outcomes and appeared to have high predicting value.

Table 4.2.4.2. Dominant Acculturation Strategy/Type vs. Dominant Cultural Orientation

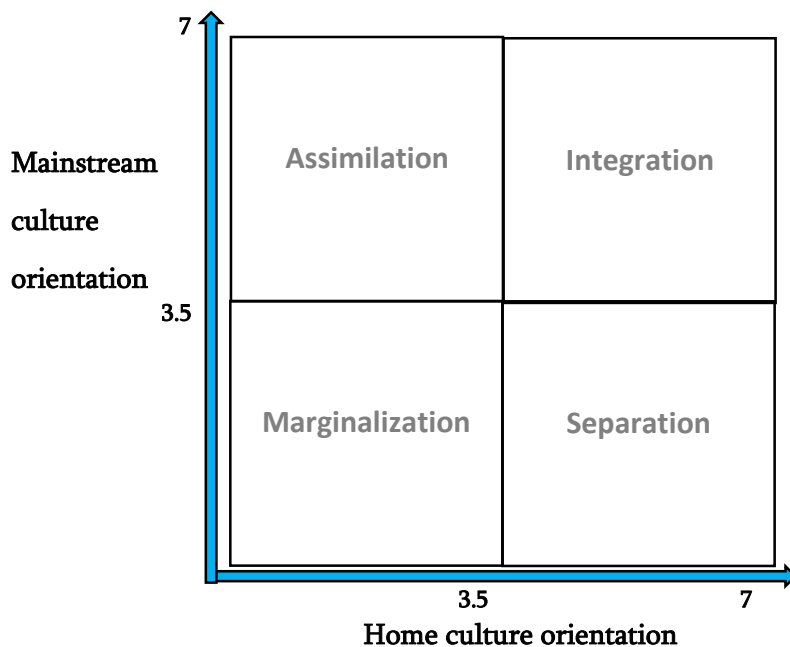
<i>VIA cultural orientation</i>	<i>EAAM Acculturation strategy/type</i>				<i>N</i>
	Integration	Assimilation	Separation	Marginalization	
Mainstream culture orientation	95	7	3	1	106
Home culture orientation	95	3	26	9	133
Equal 50/50	13			1	14
N	203	10	29	11	253

Figure 4.2.4.3. Acculturation Strategies, Cultural Orientations, and ED Outcomes



Nevertheless, even though VIA could not differentiate between four strategies of acculturation in the present study, it has been reported (Ward et al., 2017) to succeed in doing so: strong orientation on both scales (to both cultures) corresponding to integration, weak orientation on both – indicating marginalization, while strong orientation on one scale and weak on another implying assimilation or separation (see Chart 4.2.4.4).

Chart 4.2.4.4. Cultural Orientations and Acculturation Strategies



Thus, the findings revealed high inter-measure consistency between EAAM and VIA in measuring individuals' cultural orientations/attitudes with both instruments demonstrating certain advantages. While both measures generated similarly high predicting values, EAAM proved to be more sensitive in differentiating between the four strategies of acculturation, instrumental in identifying number of risk/protective factors associated with these strategies. VIA, however, showed a potential of becoming an efficient and shorter measure of four strategies of acculturation provided that a valid and effective mechanism of transforming its two scores into four strategies is established.

5. Discussion

The study produced diverse and stimulating findings in regards with all the research questions and hypotheses. Because hypotheses 1, 2, and 3 addressed the same key topic - the links between disordered eating and culture change, the results obtained within the frames of each of these hypothesis will be discussed conjointly, whereas the findings concerning hypothesis 4 will be addressed separately.

5.1. Culture Change and Disordered Eating

Evidence from Research

The research about immigrant mental health has progressed during the last decades of 20th century and acculturation and its links with psychological wellbeing have become particularly explored. While longitudinal studies have suggested a critical role of acculturative stress in the course of immigrants' mental health (Ward & Geeraert, 2016), much research focused on depression and schizophrenia as most disabling mental disorders (Sam, 2006b). As far back as in the 1930s, Ødegaard (as cited in Sam, 2006b) identified higher incidence rates of schizophrenia among Norwegian-American immigrants compared to native Norwegians. Similar findings were produced in other studies showing somewhat higher rates of schizophrenia among immigrant populations as opposed to natives, including first and second-generation immigrants (Cantor-Graaf, Pedersen, McNeil, & Mortensen, 2003; Cochrane & Bal, 1987; Selten, Slaets, & Kahn, 1997; Sam, 2006b). While depression rates were not found markedly different in some studies (Noh, Speechley, Kaspar, & Wu, 1992; Sam, 2006b), in others immigrants exhibited significantly lower mood levels than natives (Gonzalez, Haan, & Hinton, 2001). These findings prompted researchers to suggest that culture change posed certain risks for one's psychological wellbeing.

The link between culture change and eating disorders has attracted researchers' interest towards the end of 20th century when the rise of EDs in Western Europe and North America was described as modern epidemic (Gordon, 2001). Since disordered eating primarily affected newly industrialized nations, it was argued that female identity conflict subsequent to these changes

represented the underlying issue and EDs were believed to be culture-bound syndromes (Gordon, 2001). As EDs started emerging in non-western countries, researchers focused on examining their incidence and prevalence outside of western world and among immigrant/minority populations. Cases of EDs in South America appeared very low primarily affecting elite groups exposed to North American and European influence (Gordon, 2001). Consistent with these findings, the study on the island of Curacao revealed that AN was not identified among majority black population, while those who presented anorexic symptoms were all of mixed race, educated, had lived overseas and were torn between modern and traditional island cultures (Katzman et al., 2004; Hoek et al., 2005).

Countries that saw rapid increase in EDs in 1980s and 1990s, such as Chile, Mexico, Argentina, Hong Kong and Singapore all underwent drastic changes in terms of urbanization and development of market economy (Gordon, 2001). Former Eastern Bloc countries to some extent also became a venue for ED development after the lifting of Iron Curtain and beginning from 1990s, EDs have emerged as one of the fastest growing mental disorders in Poland, also reported in East Germany, Hungary, Bulgaria and Romania (Boyadieva & Steinhausen, 1994; Pilecki et al., 2016; Rathner, 2001; Tölgyes & Nemessury, 2004; Joja & Von Wietersheim, 2012; Joja et al., 2015; Steinhausen et al., 2015).

A systematic review of studies on ED and acculturation suggested that the link between disordered eating and culture change was noteworthy (Doris et al., 2015). However, as measures of acculturation widely varied across studies, the findings were mixed some studies associating increased eating psychopathology with greater levels/late stages of acculturation, while others linking it with lower levels/earlier stages of acculturation (Doris et al., 2015). The increased presence of disordered eating at early stages of immigration was primarily attributed to the acculturative stress, while its association with later stages of immigration was mainly explained by the internalization of western values and standards (Geller and Thomas 1999, Cachelin et al. 2000; Chamorro & Flores-Ortiz, 2000; Ball & Kenardy, 2002; Greenberg et al., 2007). The diversity of evidence in this regard suggested that the impact of acculturative stress at early phases and the

influence of internalization of western ideals at later ones are not mutually exclusive and, at different points, many other factors might come into play as well.

As many authors consider acculturation a complex and dynamic process, new promising lines of research have progressed. Yet, study samples have been extremely diverse with respect to societies of origin, generational status, and other characteristics (Ward & Geeraert, 2016), making it challenging to cross-compare findings. While the debate still continues over the role of culture change with respect to disordered eating, more evidence of longitudinal and multi-group/cultural studies is needed to advance theory and research.

Present Study

In the present study, while hypothesis 1 suggested that prolonged residence in a western country would increase the risk of disordered eating, hypothesis 2 proposed that individuals with integration strategy of acculturation would be associated with the healthiest ED patterns and individuals with marginalization strategy of acculturation - with the least healthy outcomes, whereas individuals with assimilation and separation strategies of acculturation would produce intermediate outcomes. In addition, hypothesis 3 suggested that certain situational and demographic variables would shape individual's cultural orientation/acculturation strategy which, in turn, impact their eating patterns.

To summarize, the study results showed that: (hypothesis 1) for Georgian women, moving to western countries for a prolonged period of time slightly increased the risk of disordered eating affecting only restriction of food intake; (hypothesis 2) acculturation strategies were found to be substantially linked with eating patterns: namely, separation and marginalization strategies significantly correlated with more disordered eating based on EDEQ eating concern, shape concern, weight concern and global scores; more specifically, the integration strategy of acculturation appeared linked with healthiest outcomes, and separation and marginalization strategies of acculturation – with least healthy outcomes, with separation linked with slightly poorer outcomes than marginalization; (hypothesis 3) multiple demographic and situational

variables appeared noteworthy in relation to either eating patterns or acculturation styles, among which an experience of being married to the representative of mainstream culture was linked with both more favorable ED outcomes and acculturation strategies.

Elaboration on Findings

The findings of hypothesis 1 and hypothesis 2 somewhat complement each other: on the one hand, the only dependent variable among five ED scores that showed statistically significant difference between immigrant/sojourn and native groups was dietary restriction. On the other hand, when looking at within group differences of immigrants/sojourners with respect to the links between acculturation strategies and DVs, the only dependent variable with which no statistically significant association was established was restriction of food intake. In other words, while significant difference between immigrants/sojourners and natives was revealed only in relation to dietary restriction score, significant differences between the four strategies of acculturation of immigrants/sojourners were established with respect to all the EDEQ scores but restriction. This suggests that, restriction risk is increased for all immigrants/sojourners irrespective of their acculturation strategy or cultural orientation thereby representing a common risk factor, and further confirms the findings of hypothesis 1.

Based on the findings, the impact of prolonged residence in a western country (UK and USA) on elevated eating disorder features of Georgian women is minimal as opposed to some other findings of cross-cultural studies. Before exploring the possible reasons for minimal impact, important points need to be made in relation to the sample and its comparison to other samples typically examined in similar studies.

First of all, the average Length of Residence (LoR) of the study sample was 11-12 years. Thus, it is important to take into consideration that studied participants to a lesser degree included newly relocated people, and to a larger degree - relatively veteran immigrants, most of whom, by the time of the study had gone through different stages of adjustment and acculturation. As evidence suggests, LoR is one of the strongest predictors of how immigrants acculturate and adapt (Berry &

Hou, 2014). A study on immigrant youth (Berry, Phinney, Sam, & Vedder, 2006) suggested that integration was the most common strategy, and the mainstream-culture orientation increased with LoR. Thus, multiple studies have shown that most people integrate after certain period of time (Ho, 1995; Ward & Kus, 2012; Berry & Hou, 2014), while acculturative stress and “culture shock” are highest during the initial periods of firsthand contact with another culture (Oberg, as cited in Berry, 2006; Ward, 1997; Berry, 1997, 2006).

In this sample, however, only 6.7 % of participants was residing in a foreign western country for the period of up to 5 years (4% - for the period of up to 2 years), while majority of studied individuals had been there for many years (mode of LoR was 8 years) and had presumably adjusted one way or another. In addition, the inclusion criteria of our study specified that an individual had to be present in a new country for at least 6 months to exclude acute stages of adjustment associated stress. Had there been different composition of participant length of residence, the outcomes might have been different as well. Therefore, it would not be entirely accurate to assume that generally the impact of moving to a western country and corresponding acculturative stress on Georgian women is small effecting only restriction of food intake.

Although the findings did not show noteworthy relationship between length of residence and ED outcomes, the tendency for correlations was to be negative (negative scores were generated for three ED outcomes) indicative of a tendency of increased risks at earlier stages of immigration presumably due to acculturative stress, and LoR was significantly correlated with integration and mainstream-culture orientation outcomes, $r = 0.26, p = 0.000$; $r = 0.20, p = 0.001$. Integration and mainstream-culture orientation, in turn, were both substantially correlated with more favorable ED outcomes: correlations were negative and statistically significant on two ED subscales between ED outcomes and integration, $r = -0.14, p = 0.02$; $r = -0.16, p = 0.021$ or mainstream-culture orientation, $r = -0.12, p = 0.050$; $r = -0.13, p = 0.033$. Thus, a smaller impact of moving to a western country on individual’s eating patterns might partly be explained by small portion of relatively newly relocated individuals in the sample.

Second, Georgians are white Christian Europeans and publicly they are mostly perceived as representatives of dominant/mainstream culture, which gives them a considerable advantage over some other immigrant groups that have been popularly studied in acculturation psychology (e.g. Chinese, Africans, East Asians, Latin Americans studied in western countries). According to Nguyen (2006), when immigrants acculturate to the USA, they become not just “Americans,” but also “minorities;” this, however, does not apply to non-Hispanic Whites (Nguyen, 2006). In light with these findings, the study on Malai sojourners in UK that examined the links between disordered eating and perceived discrimination found that greater perceived discrimination was significantly associated with increased risk of eating disorders (Swami, 2016). As Georgians are not generally associated with minority groups in respective countries, it is possible for their acculturative stress to be relatively lighter compared to the acculturative stress of some other minority groups.

Relevant to the topic of acculturation outcomes is the distance between the host and home cultures. Variety of evidence suggests that the higher the distance between home and host cultures, the stronger the acculturative stress and the poorer the wellbeing outcomes (Ward & Kennedy, 1993; Berry, 2006; Ward & Geeraert, 2016). Culture encompasses what constitutes esthetic ideals. Georgians do not belong to the category of nations that traditionally admire plumpness in a female beauty. Slender body and pale skin of a woman has been admired by Georgian poets from medieval centuries. One of the most celebrated ode to female beauty by prominent 18th century Georgian poet Besiki admires slimness of his beloved comparing her to a poplar-tree and praising her crystal neck, thin fingers and slender waist (აღვავო, ყელსა ბროლისა, თითნი თლილნი, ზარიფსა წელსა). Therefore, as the slender beauty ideal is already in place, the impact of “internalization of western beauty standards” may not apply to Georgian sample to the same degree as it may apply to some other groups. This once again indicates on its relative cultural proximity to contemporary western world presumably leading to lowered risks of EDs otherwise attributed to the influence of imposition of new cultural standards.

The proximity/distance notion encompasses how an individual experiences himself/herself in relation to a new culture, and how new culture experiences an individual in relation to the established standards (including but not limited to code of conduct, dress code, standards of personal hygiene, etc.) and context. These two domains significantly contribute to the interaction between a newcomer and representatives of a new culture. Greater cultural distance entails the necessity for greater cultural transformation, and it is believed that vast discrepancies prompt culture clash and negative intergroup attitudes leading to poorer adaptation (Berry, 2006; Ward & Geeraert, 2016). In line with this, multiple studies suggested that the greater the cultural distance, the harder to achieve mutual acceptance between the groups (van Oudenhoven, 2006; Ward & Geeraert, 2016). Thus, the greater the cultural distance the higher the individual acculturative stress and the need for culture shedding and culture learning, on the one hand, and, the lower the acceptance from side of dominant group, on the other, which further exacerbates already elevated acculturative stress. Relevant to this issue, the findings of the study on Malai sojourners in UK examining the links between disordered eating and perceived cultural distance showed that the degree of learning required by an individual to “fit in” in a new culture appeared to higher the risk of eating disorders. (Swami, 2016).

While perceived cultural distance was measured in the present study, the majority of participants stated that the new culture was markedly different from the original culture. Nevertheless, in a broader cross-cultural perspective, one might speculate that although different as a group - Georgians – still stand culturally closer (white and Christian) to western cultures than other racially and religiously diverse groups (e.g. East Asians, Polynesians, Africans) and, therefore, corresponding negative, individual-level effects of acculturative stress stemming from marked cultural distance might be less substantial than in cases of more dissimilar groups (that have been largely studied). Besides, as opposed to those groups, Georgians are more likely to gain sympathy from mainstream society in a shorter period (as they do not stand out), and are less likely to be subjected to stigmatization and discrimination associated with racial and religious minorities. All this, in turn, presumably contribute to their higher levels of integration and healthier eating patterns.

Third, in general, for the majority of Georgians, moving to a western country like the USA and UK is more or less a preferred choice. Even those who report being unhappy about leaving their homeland, reside in a foreign country because of substantial economic (or other) advantages. Furthermore, for majority, it is something they aspire to or even invest considerable amount of money in (e.g. to obtain a visa, or permanent residence card, etc.) to be able to relocate and continue residing in a given country. In short, as a rule, moving to the USA/UK not only tends to be individuals' choice, but it tends to be their preferred choice.

In line with this, many authors have pointed out, that motivation is an important moderating factor of acculturative stress and wellbeing outcomes (Richmond as cited in Berry, 2006; Ward, 2006) and immigrants are classified as reactive or proactive, the former associated with negative circumstances of relocation to a new country, while the latter associated with positive aspects of immigration and more favorable adjustment outcomes. Within the framework of this perspective, Georgian sample is comprised of mostly proactive individuals and, therefore, their outcomes are more likely to be favorable.

In addition, incidence of forced migration or migration associated with major traumatic events and cataclysms from Georgia within the last decades is very limited. Thus, refugees or asylum seekers, whose health and mental health conditions tend to be generally poorer are not represented among Georgian sample, which may also contribute to their better wellbeing (in this case ED) outcomes.

Another important issue is the preexisting differences between the experimental and control groups stemming from the study design. Many authors have spoken about individual differences between those who embark on the exciting yet challenging road of immigration and those who stay in their home countries (Ward, 2013; Berry, 2006; Kopic, 2006). This discussion is particularly relevant to Georgian context which, as noted earlier, is free from the flows of forced migration. From countries effected by major wars and disasters, everybody tries to escape irrespective of individual differences (e.g. migratory flows of European Jews around World War 2, current migratory flows of Syrian refugees). But when it comes to countries from which immigration is

not a matter of survival, it is believed that people with certain characteristics tend to relocate to a larger degree. Evidence suggests that individuals who want to emigrate tend to have a stronger achievement motivation than individuals who prefer to stay in their home countries (Boneva & Hanson Frieze, 2001; van Oudenhoven; 2006).

Besides, immigration/sojourning experience itself, apart from being associated with multiple challenges, creates opportunities for individuals to grow and thrive (Ward, 1997; Masgoret & Ward, 2006). As a recent study on returned Georgian female migrants showed, the favorable outcomes associated with immigration reported by the participants included emotional maturation, sense of achievement, and independence, among others (Zurabishvili et al., in press). Another example of immigration associated gains is the well-known Immigrant Paradox – the counterintuitive finding in epidemiology and public health that in spite of multiple vulnerabilities, immigrants often do better than their US-born peers on a variety of adaptation indices, including health and psychosocial functioning (Nguyen, 2006).

While these individual, personal, and situational differences may contribute to the wellbeing outcomes one way or another, they generally are not thoroughly examined by cross-cultural studies and homogeneity of the groups compared (immigrants vs. natives) cannot be achieved. Likewise, the experimental and control groups of this study are not homogeneous in this regard: while experimental group is comprised of individuals experienced in “starting from scratch” and “building own life” in a foreign country, the control group consisted of individuals never having this kind of experience. Therefore, overall typical temperamental and personality characteristics, motivations, ambitions, aspirations of the two groups as well as levels of emotional maturation and life experiences (living in at least two cultural and linguistic contexts vs. only one cultural and linguistic context), not to mention multilingualism, may vary. This particular discrepancy, however, cannot be considered as a limitation of the study as it applies to all the studies comparing immigrant/sojourn and native populations.

Thus, to summarize, the findings suggest that prolonged residence in western countries yielded small negative impact on eating patterns of Georgian women. Variety of factors, such as, longer

length of residence, voluntary immigration, being white and Christian, and less dramatic distance between cultures compared to other groups are speculated to have played protective functions making the process of acculturation smoother and less stressful. Most of these variables have been linked with higher levels of integration and better wellbeing outcomes in other studies (Richmond as cited in Berry, 2006; Ward, 2006; Ward & Geeraert, 2016). As mentioned earlier, within the frames of this thesis, definition of the term “western” is limited by USA and UK only.

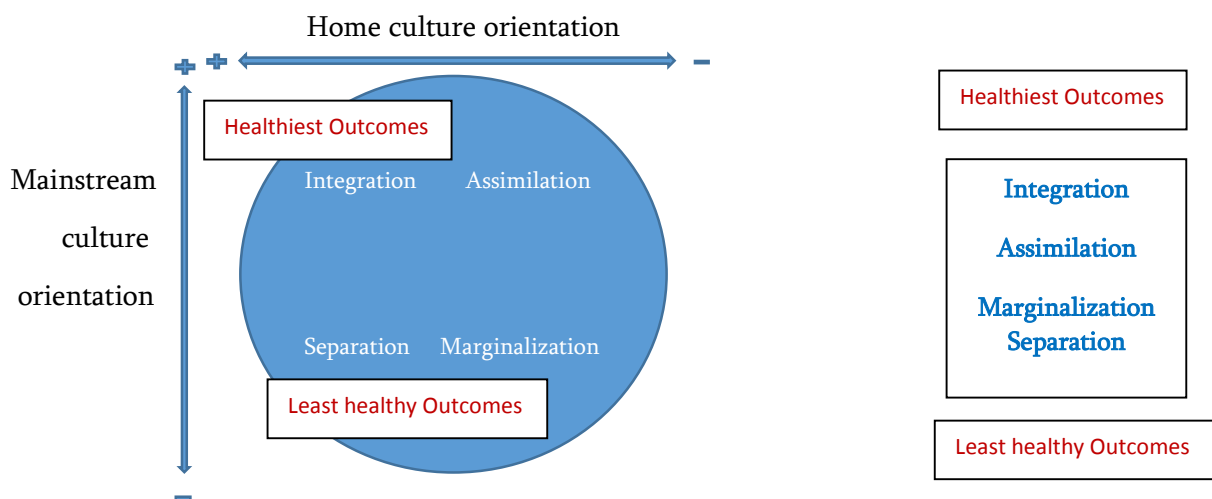
Concerning the links between acculturation strategies/cultural orientations and eating patterns, the findings of the study unanimously (measured by both tools) demonstrated that strong mainstream-culture orientation irrespective of the strength of home-culture orientation was associated with healthier outcomes, while weak mainstream-culture orientation irrespective of the strength of home-culture orientation was associated with poorer outcomes (see Figure 5.1.2.).

Measuring acculturation with two instruments was especially helpful in building bigger picture. In particular, on the one hand, strong home-culture orientation of VIA, and separation and marginalization strategies of acculturation of EAAM were linked with the least healthy ED outcomes. On the other hand, correlations between VIA home-culture orientation and EAAM separation and marginalization scales were very high suggesting that they were measuring same tendencies. This was confirmed by cross-comparing participants’ dominant acculturation strategies and dominant cultural orientations (see Table 4.2.4.2.), which showed that individuals with dominant acculturation strategies of separation and marginalization exhibited stronger home-culture orientation than mainstream-culture orientation. In contrast, integration that also entails high home-culture orientation was associated with healthiest outcomes (being negatively correlated with a few ED scores), whereas individuals with dominant acculturation strategy of integration were split 50/50 between those showing higher mainstream or higher home-culture orientations.

Thus, it is not a strength of home-culture orientation that represents a key common feature of separation and marginalization strategies, but rather a weakness of mainstream-culture orientation. The latter, therefore, in case of present sample, appears to predict poorer ED

outcomes. In other words, although statistical analysis identified strong home-culture orientation (as measured by VIA) as a predictor of unhealthier eating patterns, in a bigger perspective it looks like the weak mainstream-culture orientation is to be blamed. To summarize, with respect to disordered eating, findings suggested strong mainstream-culture orientation to be a protective factor, while weak mainstream-culture orientation to be a risk factor.

Figure 5.1.2. Cultural Orientations, Acculturation Strategies and ED Outcomes



These findings were consistent with the evidence suggesting that integration strategy of acculturation was associated with better adjustment outcomes and marginalization with poorer ones (Berry, 2006; Ward & Kus, 2012; Ward & Geeraert, 2016), as well as the findings of a meta-analysis on acculturation and mental health showing that orientation to mainstream culture was linked with favorable adjustment outcomes (Birman et al., 2002; Kang, 2006) and lower levels of depressive and anxiety symptoms (Ward et al., 2017), whereas orientations to both heritage and mainstream cultures were positively related to satisfaction with life and positive affect (Ward et al., 2017).

Unlike Berry's model though, in the sample of present study, separation showed at least as poor as and even somewhat poorer outcomes than marginalization, whereas assimilation was associated with far better outcomes than separation, and was not at all linked with disordered eating patterns on any subscale. Similar to our findings though, in 2014 study on 7000 Canadian immigrants, Berry and Hou (2014) found that both integration and assimilation strategies were linked with the highest scores of life satisfaction, while separation and marginalization were equally associated with significantly lower scores. Contrary to present findings, however, the same study showed that mental health scores were equally high for integration and separation, and equally low for assimilation and marginalization (Berry & Hou, 2014). While marginalization is generally regarded the least healthy strategy of acculturation, the reasons why in the present study separation appeared equally unhealthy (and even slightly less favorable than marginalization) might be context specific.

First of all, going back to the average length of residence of the sample, the group studied comprised of women relocated to western countries on average about 11-12 years earlier. While separation strategy is a natural reaction on culture change at the initial stages of acculturation, one might speculate that after that many years it might be indicative of much more serious internal or external difficulties of adjustment. In fact, our findings confirmed that separation is more common at early stages of relocation to a new country as significant negative correlation, $r(253) = -0.200, p = 0.001$ was established between LoR and separation subscale scores, whereas similar relationship was not identified between LoR and marginalization strategy.

In contrast to separation, marginalization as a condition that implies cultural identity confusion, might be more natural after spending substantial period of time away from one's home country as opposed to early stages of relocation. Many immigrants note that they no longer know who they are, Georgian or British/American. Moreover, after so many years of living in a foreign country, assimilation may turn into another conventional and authentic acculturation strategy and, as demonstrated by our findings, linked with favorable outcomes.

Therefore, it might be argued that acculturation is indeed a dynamic process (Ward & Geeraert, 2016; Padilla & Perez, 2003), and it is time and stage-specific which strategy of acculturation is healthiest for a particular individual. Thus, in a sample of present study, separation might logically be expected not to differ from marginalization, whereas assimilation might be expected to outweigh both marginalization and separation in terms of healthier outcomes.

Second, as some researchers argue, different acculturation strategies might work in different contexts (Birman et al., 2002; Schwartz & Zamboanga, 2008) as context-specific characteristics may determine which acculturation strategy is most favorable. For instance, in dictatorial societies marginalization might as well be the best possible option. Likewise, separation might be quite realistic and even externally driven option for representatives of cultures/nations with big diaspora communities in the societies of settlement. For instance, for a Chinese who moved to the US and lives in San Francisco Chinatown, or for a Russian who lives in Brighton beach, Brooklyn or a Pakistani who lives in London borough of Redbridge, not to mention US Latino populations who have huge Spanish-speaking communities, separation might be much healthier option even after several years from immigrating than for a Georgian who does not enjoy that kind of community ties.

Hence, for Georgians, who are relatively few and scattered in the US and UK and do not have big diaspora communities, to carry on separation strategy after years of living in a foreign country may quite realistically entail unhealthier tendencies than having a confused identity, that is marginalization, which, as opposed to separation, does not entail high level of homesickness and corresponding distress, and focus on the past (living by past).

The findings of the study suggested that the degree to which expectations to a new country were met/unmet appeared significantly linked with dominant cultural orientation: expectations being exceeded by new country was far more common among individuals with stronger mainstream-culture orientation, while disappointment with the new country was far more common among individuals with stronger home-culture orientation.

Similarly, mainstream-culture orientation was linked with the plan to remain in the current country (40% vs. 15% planning to return), while home-country orientation was associated with the plan to return to home country (28% vs. 12% planning to remain). Individuals with dominant acculturation strategy of assimilation did not express a plan to return to home country, while individuals with dominant acculturation strategy of separation rarely reported a plan to stay in a new country. Based on these findings, people with strong separation strategy do not see themselves in the country in which they currently live and their life seems to lack 'here and now' focus. This presumably effects their sense of satisfaction with the life (which was not studied in present study) and worsens their wellbeing outcomes (in this case ED scores).

Thus, to summarize, the findings confirmed that out of four acculturation strategies, integration was associated with healthiest eating patterns, while separation and marginalization were associated with the least healthy patterns. It also showed that weak mainstream-culture orientation was a predictor of disordered eating, while strong mainstream-culture orientation represented a protective factor, thereby emphasizing critical value of mainstream-culture orientation in healthy eating patterns (and potentially better immigrant wellbeing).

Further Considerations

As a general comment, measures of acculturation strategies or cultural-orientations perhaps should also examine certain external conditions and individual features, as participants' acculturation attitudes might be accounted for those characteristics. For instance, an exchange student who ended up in a small town settled primarily by representatives of mainstream culture may not have any other option but assimilation while in reality may be longing for the contact with representatives of his/her culture. Similarly, a person living in an ethnically populated community because of cost-efficiency or some other external reasons, may primarily socialize with representatives of his/her home culture while in reality may be longing for the contact with the mainstream culture.

As for marginalization, as the items of the instrument imply that people with high marginalization scores have limited willingness to socialize/have contact with the representatives of either home or mainstream cultures, it seems important to examine one's pre-immigration socialization status to differentiate between personality traits and acculturation impact. Otherwise, individuals with generally reclusive personalities and less developed social skills with no friends even in their home countries might be considered marginalized and their detached and solitary lifestyle might be attributed to the impact of acculturation.

The present study demonstrated that certain variables (acculturation conditions) participate in shaping one's acculturation strategies or eating patterns, and some may be linked with both cultural orientation and eating behaviors and attitudes. Consistent with other evidence, in the present study length of residence and early arrival age in a new country have been correlated with higher levels of integration and mainstream-culture orientation. They, however, were not linked with eating patterns. Experience of illegal immigration was associated with poorer eating patterns and higher BMI, yet was not linked with acculturation strategies. Whether or not individual's expectations were met by a host country was connected with the cultural orientation they formed: those who were disappointed, revealed stronger home-country orientation, while those whose expectations were exceeded, demonstrated stronger mainstream-culture orientation. Experience of marriage to a representative of mainstream culture showed associations with both favorable eating patterns and integration/mainstream-culture orientation outcomes: all ED scores of participants with the experience of inter-cultural marriage were substantially lower than ED scores of those not having an experience of being married to a local.

Thus, the findings confirmed that a variety of acculturation conditions are intermingled with how people adjust to new cultures and how their psychosocial functioning proceeds. Therefore, determining the impact of culture change on individuals/groups' wellbeing requires a comprehensive approach which, apart from measuring acculturation attitudes/behaviors and wellbeing outcomes, addresses major acculturation conditions.

On top of it, such characteristics of both original culture and new culture as popularity of fast-food industries, access to quality food, typical dietary ingredients, mealtime traditions, and so forth, may also impact eating patterns and BMI independently. For instance, although not examined by the present study, typical meal ingredients and mealtime traditions of British/Americans might be different from Georgian, yet still not as drastically dissimilar compared to ingredients and traditions of Africans or South-Asians whose climatic conditions vastly differ (for the most part) from the ones of UK and US resulting in exposure to and inclusion of totally different, atypical to western world, vegetable and animal cultures in their daily diet.

Other extremely important variables that substantially determine adjustment to a new culture and shape cultural orientation, not examined by the present study, are a command of a language of a host country, and characteristics of society of settlement.

Since English is the most preferred foreign language globally and is taught and spoken in many countries, not to mention increased exposure to English via internet and globalized media, people moving to English-speaking countries tend to have at least basic command of language. A large number of acculturation studies on disordered eating are conducted primarily on groups of immigrants/sojourners residing in English-speaking countries and command of the language of a host country is often used as a proxy measure of acculturation. An ongoing study of Georgian immigrants residing in Portugal revealed that the process of their integration into mainstream culture evolved very slowly mainly due to not knowing the local language (Pirtskhalava, in press). In this sense, Georgians moving to the USA and UK presumably tend to be in a better position than Georgians moving to other western countries like Portugal, and their adjustment indicators might also differ.

In addition, the societies of settlements vary widely depending on their migration policies and programming. Countries like Canada, New Zealand, and United States have been reported to be much more immigrant-friendly and easier to integrate than others (van Oudenhoven, 2006). In particular, immigrants in Canada, thanks to the country's clear pluralist policy, have been noted to be the most successfully integrated showing strongest identification with the host society and

smallest numbers of marginalization (van Oudenhoven, 2006). Integration has been reported to be the most preferred mode of adaptation for major immigrant groups in UK as well (Robinson, 2006).

Most nations, however, tend to favor an assimilation perspective, according to which immigrants are expected to abandon their cultural and linguistic identities and embrace the ones of the mainstream society. Based on numerous studies, assimilation ideology is favored among many nations including Germany, the Netherlands, France, Slovakia, and Israel (van Oudenhoven, 2006; Phalet & Kasic, 2006). Although multiple research suggested that integration is associated with the most favorable wellbeing outcomes even in assimilationist countries, it also showed that overall people integrate to a larger degree and show better outcomes in countries with integrationist ideology (van Oudenhoven, 2006).

In line with the above matter, integration rates of Georgian immigrants might differ in different western countries depending on the policies and other characteristics of respective countries. While in the present study integration rates appeared significantly high (integration was identified as dominant acculturation strategy for approximately 80 % of participants), integration of Georgian immigrants in Portugal was reported to be low, as majority of them did not feel they belonged to Portuguese society and kept practicing the same lifestyle they had in Georgia not trying to embrace traditions and behaviors of the mainstream culture (Pirtskhalava, in press).

Hence, the cases of the USA and UK as societies of settlement might be different from other countries in many ways (from one another as well) and, therefore, while formulating interpretations, it is important to avoid generalizations to all “western” world, especially when the characteristics of the society of settlement have not been duly explored.

Besides, as Georgian diaspora study by Deutsche Gesellschaft für Internationale Zusammenarbeit (2011) reported, Georgian immigrant groups vary depending on the country of settlement and those residing in UK, USA, and Russia are believed to have highest intellectual potential. Thus,

preexisting discrepancies between the characteristics of the immigrant/sojourn groups relocating to specific countries represent another argument against overgeneralizations.

As the flow of immigrants from Europe to other regions of the world has been light (Sussmann & Truong, 2011), the studies on European immigrants are limited as well (van Oudenhoven, 2006). Beginning from 1960s since the development of acculturation psychology the only waves of European immigration came from Eastern Europe after the collapse of socialist block and Soviet Union (van Oudenhoven, 2006). There are only a handful of studies that encompass these populations and, hence, the evidence on the adjustment characteristics of Eastern Europeans and former Soviet groups, not to mention their eating habits, is limited to allow researchers to cross-compare findings.

Summary

To summarize, the findings of the present study suggested that for Georgian women, moving to western countries minimally increased the risk of disordered eating, and while living in western countries, lack of integration in mainstream culture/low mainstream-culture orientation was associated with poorer eating patterns. The findings also suggested that acculturation to a western culture is a very complex and multifaceted phenomenon affected by a number of factors (acculturation conditions) including length of residence, arrival age, individual expectations, and the marital links with the mainstream society. Generalization of the findings on all western countries has been cautioned against.

5.2. Two Measures of Acculturation

Concerning hypothesis 4 that examined the differences between the two measures of acculturation – VIA, representing a twofold measure and EAAM, representing a fourfold measure – the results revealed high inter-measure consistency in measuring assimilation and separation, yet lower consistency in measuring integration and marginalization strategies. Therefore, as hypothesized, acculturation strategies were better identified by EAAM.

In addition, utilizing two measures of acculturation was beneficial for the analysis of findings. Had data been gathered by VIA only, the conclusion might have been made about high home-culture orientation being exclusively a predictor of poorer outcomes, whereas cross-comparison of EAAM and VIA scores was instrumental in identifying principal role of one's mainstream culture orientation with respect to healthy eating patterns. In other words, it appeared that low mainstream culture orientation, and not as much high home-culture orientation, was linked with unhealthier eating patterns.

On the other hand, VIA, as a twofold measure of acculturation that measures individual's home-culture and mainstream-culture orientations, has been reported to be effective in identifying four types of acculturation (Ward et al., 2017) in the following way: high scores of both subscales corresponds to integration, low scores on both subscales correspond to marginalization, while strong orientation on one subscale, and weak - on another, correspond to separation and assimilation (see Chart 4.2.2.5). This kind of analysis of VIA data was not envisaged within the frames of this thesis. It can, nonetheless, become a topic of further analysis and publications.

Furthermore, while EAAM appeared to adequately measure the subscales of four acculturation strategies, perhaps the best usage of this instrument would be creating individual profiles based on the four subscale scores. This issue calls for additional analysis and can become a topic of subsequent publication. In the end, both instruments demonstrated considerable merits and in the future can be used in relevant studies.

6. Limitations, Strengths, and Areas for Further Studies

6.1. Limitations

The study limitations included sampling related limitation and procedure related limitation. The main limitation was sampling bias due to the impossibility of probability-sample that limits the generalizability of the findings. Other sample related limitations included: (a) potential difficulties to reach assimilated or marginalized individuals that further distorts already biased sample; (b) potential exclusion of computer illiterate individuals or those without access to internet; and (c) differences in education level between research and control groups that was not possible to avoid. Namely, 35% of experimental group participants had received higher education both in Georgia and in a new country and therefore were holding more than one university degrees obtained in more than one linguistic contexts. Since inclusion criteria for the control group specified that the person should not have had an experience of living outside of Georgia, the inequality with respect to this variable was impossible to mitigate.

Besides, the study was not free from the limitations associated with conducting e-survey. In spite of straightforward and user-friendly instructions, the possibility of misunderstanding and improper completion/typos remains.

Furthermore, the lengths of the survey and its topics generally influence the response rate especially if they are of a sensitive nature or concern attitudes/facts (Fan & Yan, 2010). Therefore, the possibility of people not completing the study discouraged either by the lengths of it or the nature of the questions asked remains, which can further increase the bias.

In addition, since snowball sampling was extensively used, it was difficult to properly calculate response rate. It should be noted, however, that the response rate was considerably heightened through individual contacts and follow-up communication with people residing in respective

countries (in many cases, participants would themselves report to contacting person that they completed the study and passed it on to other eligible candidates).

Other limitations encompassed very low number of individuals aged 18-25 in the sample and limited focus on several important acculturation variables, such as command of a language of a host country, motivation of relocation, pre-immigration status, ties with Georgian community and characteristics of the society of settlement (e.g. discriminatory attitudes, food industries, etc.).

6.2. Strengths

To our knowledge, the present study examined the largest sample of Georgian immigrants/sojourners studied to date in the field of psychology. It represented the first study ever conducted on acculturation strategies and cultural orientations of Georgian immigrants/sojourners, and a study with largest Georgian sample on eating patterns.

The merits of the study included measuring acculturation with two distinct instruments – VIA and EAAM - which, in turn, resulted in: (a) translation, validation and adaptation of two acculturation measures that can be used by other researchers on Georgian samples; (b) establishing high inter-measure consistency between VIA and EAAM, meaning that in the future the findings obtained by these acculturation measures can be cross-compared, and (c) generating more reliable acculturation outcomes as measured by two instruments.

Another merit of the research entailed studying immigrant/sojourn population in two different countries with relatively similar cultures. While it did not represent the aim of present thesis, further comparisons can be made between the USA and UK groups to examine country-specific contexts and their links with acculturation strategies and eating patterns, and to bring more light on diversity, similarities, and differences within the English-speaking western world.

The richness of data collected also deserves an acknowledgement. Topics for further analysis and subsequent publications on the basis of the existing data include but are not limited to: (a) thorough examination and cross-comparison of ED and acculturation outcomes of Georgian immigrants/sojourners in USA and UK; (b) thorough examination and cross-comparison of eating patterns of USA, UK, and Georgia groups; (c) the links between the variety of acculturation conditions and acculturation strategies/cultural orientations; (d) EAAM cluster analysis; and (e) establishing an effective and valid mechanism of transforming VIA scores into four acculturation strategies.

Carrying out the research in an electronic survey mode also created certain advantages. Electronic surveys are widely used for collecting data from large and geographically scattered samples in an efficient and timely manner. Another recognized advantage is efficiency in collecting data on sensitive topics in a confidential manner (Sutherland, Amar, & Laughon, 2013; Fan & Yan, 2010; Fricker & Schnolau, 2002). Other advantages may include timeliness, data quality and low cost. A good survey design generally tends to reduce all types of errors, including coverage, sampling, and measurement errors and item nonresponse, and can increase honesty of responses, especially for questions of a sensitive nature (Fricker & Schnolau, 2002).

Therefore, an electronic mode of our study created advantages in terms of: (a) reaching many people scattered in remote countries, which otherwise would not have been possible, and (b) increasing honesty about sensitive topics such as weight, diet, eating habits, and weight-gain/loss related questions as well as experience of illegal immigration status. Although there is a possibility of some participants not reporting their illegal immigration status, anonymous e-survey mode presumably minimized the cases of non-reporting.

6.3. Areas for Further Studies

Since sample of the present study entailed mostly veteran immigrants, it would be valuable to examine disordered eating patterns and other mental health outcomes among relatively newly relocated individuals and cross-compare their outcomes with the findings of veteran immigrants/sojourners. Also, more diversity in terms of age and education is definitely worth exploring. As the onset of EDs usually takes place in adolescence and young adulthood, immigrant youth who generally show high longing to fit in with a mainstream society, and their eating behaviors and attitudes seem particularly important to examine.

Studying acculturation strategies and cultural orientations pinpointed the areas for further exploration and advancement. Examining acculturation/adaptation and psychosocial wellbeing outcomes of Georgians residing in different western or non-western countries along with characteristics of the corresponding societies of settlement, not explored in the present study, call for a greater interest.

7. Conclusions

Finally, the present study was the first study that examined large groups of Georgian immigrant/sojourner women residing in two different western countries and Georgian women residing in Georgia with the goal of studying their eating patterns and exploring immigrant/sojourner acculturation strategies and cultural orientations. The significant new knowledge that was accumulated as a result of the present study includes several important closes outlined below.

First of all, the findings suggested that there are some risks associated with immigration/relocation even to the aspired western world and these risks increase under certain circumstances (when due to variety of reasons an individual does not sufficiently embrace a new culture). Second, it reiterated the importance of being integrated into society of settlement and questioned the equal value of sense of belonging to one's home culture at later stages of immigration/sojourn with respect to healthy eating patterns. Third, it reconfirmed that the most favorable strategy of acculturation is integration, yet it challenged the established viewpoint on other strategies, particularly regarding separation and assimilation, bringing new perspective on the process of acculturation with respect to time-specificity and context-specificity. And last but not least, it drew attention to crucial role of variety of acculturation conditions (e.g. characteristics of society of origin, characteristics of society of settlement, individual, personal, situational characteristics) in how individuals adjust and acculturate, and cautioned against the generalizability of findings.

8. References

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9. Tables and Figures

Table 3.3.1.1. Inclusion Criteria

<i>Inclusion Criteria for Research Participants</i>	
Experimental Group	Control Group
9. Female	7. Female
10. Aged 18-55	8. Aged 18-55
11. Ethnically Georgian	9. Ethnically Georgian
12. Currently resides in UK or USA	10. Native language is Georgian
13. Has been residing in UK or USA for at least 6 months	11. Has never lived outside of Georgia (apart from short-term visits)
14. Born and raised in Georgia	
15. Native language is/was Georgian	

Table 3.3.1.2. Distribution of Participants by Age Categories

<i>Age group</i>	<i>Experimental Group</i>	<i>% of age Experimental Group</i>	<i>Control Group</i>	<i>% of age Control Group</i>	<i>Total</i>
50+	49	19.37	46	18.18	95
40-49	103	40.71	104	41.11	207
30-39	79	31.23	80	31.62	159
20-29	17	6.72	18	7.11	35
18-19	5	1.98	5	1.98	10
Total	253		253		506
<i>Mean Age</i>					40.83
<i>SD</i>					8.47

Table 3.3.1.3. Descriptive Data of Participant Demographics

<i>Marital Status</i>	<i>%</i>	<i>Highest Education obtained</i>	<i>%</i>	<i>Employment status</i>	<i>%</i>
Married	62.6	Incomplete high school	0.2	Full time	58.8
Single	19.4	High school degree	1.6	Part-time	13
Divorced	13.6	Vocational Degree	3.0	Self-employed	10.3
Widow	4.0	Incomplete university	4.7	Housewife/ Household manager	9.6
Other	0.4	University degree	67.8	Student	4.5
		More than one university degree ³	22.7	unemployed	3.8

Table 3.3.3.1. Result of Confirmatory Factor Analysis of Acculturation Measures

<i>Measure</i>	χ^2	<i>df</i>	<i>p</i>	<i>RMSEA Estimate</i>	<i>CFI</i>	<i>TLI</i>
Vancouver Index of Acculturation	466.94	158	0.000	0.10	0.83	0.79
East Asian Acculturation Measure	690.09	316	0.000	0.07	0.81	0.79

³ 11% was missing in control group

Table 4.1.1. Experimental Group Demographics 1

<i>Variables</i>	<i>M</i>	<i>Mdn</i>	<i>SD</i>	<i>Minimum</i>	<i>Maximum</i>	<i>N</i>
Age of Arrival	29.43	29	7.47	10	54	
Length of Residence	11.56	12	6.30	0.6	25	
Married to British/American Illegal Immigration Status						67 (26.5%) 50 (20%)

Table 4.1.2. Experimental Group Demographics 2

<i>Current household composition</i>	<i>%</i>	<i>Household composition upon arrival</i>	<i>%</i>	<i>Expectations to a new country</i>	<i>%</i>	<i>Plan of return</i>	<i>%</i>	<i>Financial status</i>	<i>%</i>
Alone in a flat/house	11.50	With family	53.40	Much worse than expected	4.70	No	17.40	Not enough to meet basic needs	3.60
With family	74.70	With friends/relatives	17.40	Worse than expected	11.10	More no than yes	9.50	Enough to meet basic needs	13.80
Alone in a dorm	2.00	With acquaint	4.30	More or less the same	49	More yes than no	6.30	Normal	47.40
With friends	10.30	With strangers	12.60	Better than expected	20.60	Yes	15.40	Good	32.80
In a shelter/temp. place	0.00	Alone	10.30	Much better	10.30	Unclear	22.10	Excellent	2.40
Other	1.60	Other	2.00	Unclear	4.30	Hard to answer	21.30		

Figure 4.2.1.1. EDEQ Scores of Immigrant/Sojourn and Non-immigrant Samples

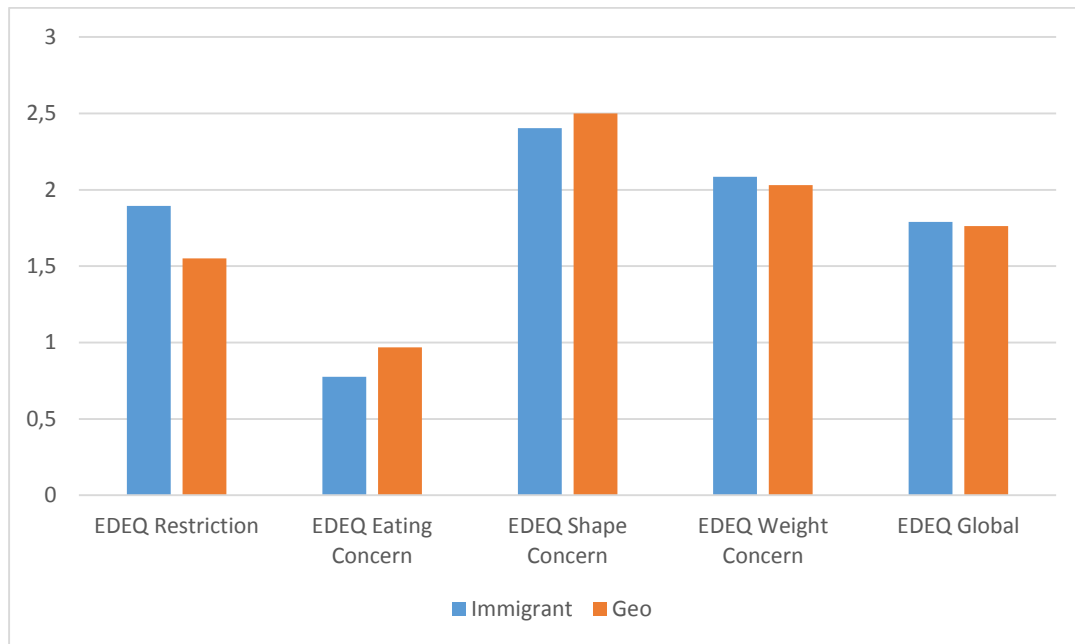


Table 4.2.1.2. EDEQ Scores of Experimental and Control Groups

<i>EDEQ scores</i>	<i>Group ID</i>	<i>M</i>	<i>SD</i>	<i>N</i>	<i>MANOVA</i>		<i>Partial η²</i>
					<i>F</i>	<i>p</i>	
EDEQ Restriction score	Immigrant	1.89	1.59	253	6.27	0.013	0.01
	Geo	1.55	1.50	253			
EDEQ Eating concern score	Immigrant	0.78	1.06	253	4.03	0.045	0.01
	Geo	0.97	1.10	253			
EDEQ Shape concern score	Immigrant	2.40	1.68	253	0.43	0.512	0.00
	Geo	2.50	1.61	253			
EDEQ Weight concern score	Immigrant	2.08	1.61	253	0.15	0.703	0.00
	Geo	2.03	1.56	253			
EDEQ Global score	Immigrant	1.79	1.27	253	0.06	0.804	0.00
	Geo	1.76	1.19	253			

Table 4.2.1.3. Correlations between EDEQ Scores and BMI, BMI Descriptives

<i>EDEQ outcomes</i>	<i>BMI</i>	<i>N</i>	<i>Group</i>	<i>BMI</i>		
				<i>M</i>	<i>SD</i>	<i>N</i>
EDEQ restriction	0.27***	501	Geo	24.941	5.440	250
EDEQ eating concern	0.39***	501	Immigrant/ sojourn	24.121	4.716	251
EDEQ shape concern	0.55***	501				
EDEQ weight concern	0.50***	501				
EDEQ global	0.51***	501				

*** $p < 0.001$.

Table 4.2.2.1. Correlations between EAAM Acculturation Scores and EDEQ Outcomes

<i>EDEQ outcomes</i>	<i>Marginalization</i>	<i>Separation</i>	<i>Integration</i>	<i>Assimilation</i>
EDEQ eating concern	0.30***	0.30***	-0.14*	0.06
EDEQ shape concern	0.26***	0.27***	-0.16*	-0.04
EDEQ weight concern	0.24***	0.28***	-0.07	0.01
EDEQ global	0.26***	0.27***	0.30	0.02

*** $p < 0.001$, * $p < 0.05$; $N = 253$.

Table 4.2.2.2. Regression on EAAM Acculturation Scores and EDEQ Outcomes

<i>EDEQ outcomes</i>		<i>Separation</i>		<i>Marginalization</i>		<i>R²</i>
		β	<i>t</i>	β	<i>t</i>	
EDEQ eating concern		0.22***	3.38	0.22***	3.38	0.13
EDEQ shape concern		0.20**	3.08	0.18**	2.63	0.11
EDEQ weight concern		0.24***	3.67	0.18**	2.71	0.11
EDEQ global		0.22***	3.37	0.21**	3.09	0.11

*** $p < 0.001$, ** $p < 0.01$; $N = 253$.

Table 4.2.2.3. Correlations between VIA Cultural Orientation Scores and EDEQ Outcomes

<i>EDEQ outcomes</i>	<i>Home culture orientation</i>	<i>Mainstream culture orientation</i>
EDEQ eating concern	0.192**	-0.123*
EDEQ shape concern	0.216***	-0.134*
EDEQ weight concern	0.250***	-0.119
EDEQ global	0.213***	-0.100

*** $p < 0.001$, * $p < 0.05$; $N = 253$.

Table 4.2.2.4. Regression on VIA Cultural Orientation Scores and EDEQ Outcomes

<i>EDEQ outcomes</i>		<i>Home culture orientation</i>		<i>Mainstream culture orientation</i>		<i>R²</i>
		β	<i>t</i>	β	<i>t</i>	
EDEQ eating concern	eating	0.19**	3.12	-0.12*	-2.01	0.05
EDEQ shape concern	shape	0.22***	3.54	-0.14*	-2.21	0.06
EDEQ weight concern	weight	0.25***	4.12	-0.12*	-1.98	0.08
EDEQ global		0.21***	3.48	-0.10	-1.65	0.06

*** $p < 0.001$, ** $p < 0.01$ * $p < 0.05$; $N = 253$.

Figure 4.2.2.5. Link between Moving to West and Individual's Disordered Eating Patterns

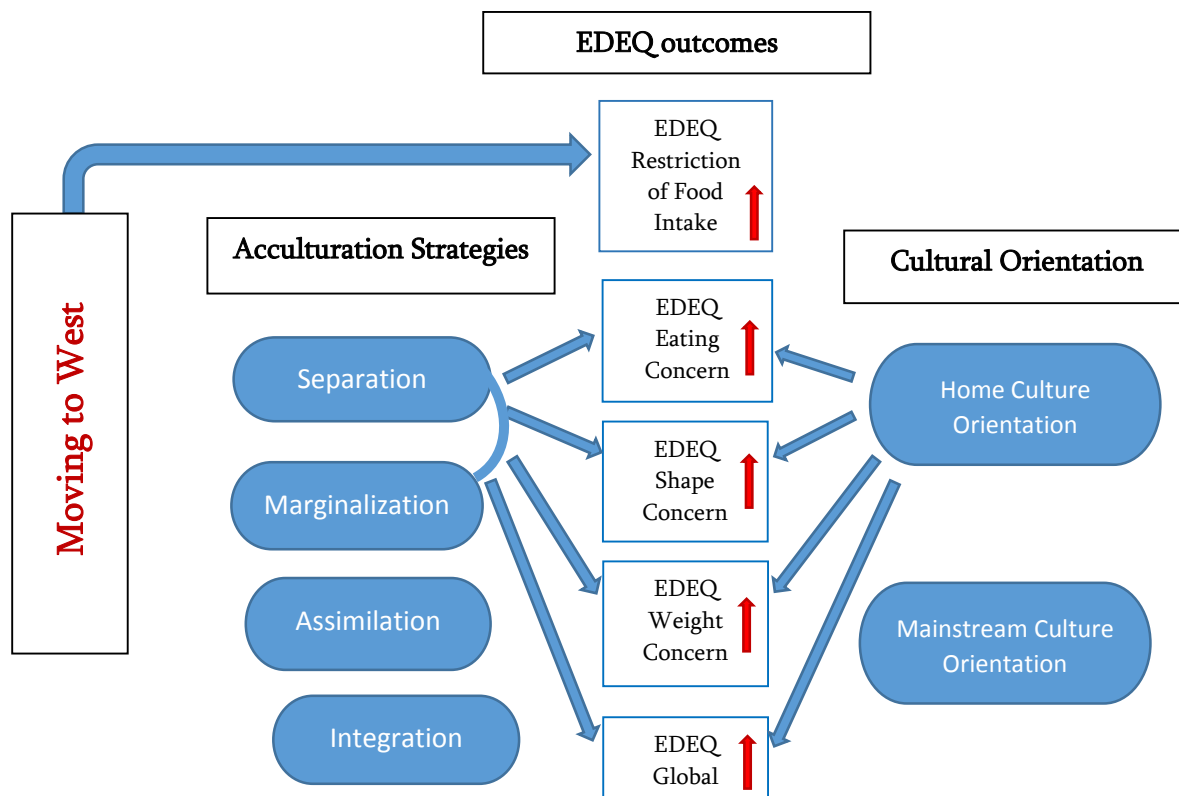


Table 4.2.3.1. Demographic Variables and EDEQ Scores

Has been illegal	EDEQ Restriction		EDEQ Eating		EDEQ Shape		EDEQ Weight		EDEQ Global	
	Below median	Above Median	Below median	Above median	Below median	Above median	Below median	Above median	Below median	Above median
No	98	105	129	74	113	90	102	101	103	100
Yes	20	30	24	26	19	31	24	26	18	32
χ^2	<i>1.10, p = 0.293</i>		<i>4.06, p = 0.044</i>		<i>5.02, p = 0.025</i>		<i>0.08, p = 0.776</i>		<i>3.49, p = 0.062</i>	
Plans of Returnin g Home	EDEQ Restriction		EDEQ Eating		EDEQ Shape		EDEQ Weight		EDEQ Global	
	Below median	Above median	Below median	Above median	Below median	Above median	Below median	Above median	Below median	Above median
No	18	26	28	16	27	17	25	19	23	21
More no	14	10	12	12	10	14	10	14	11	13
Yes	4	12	5	11	4	12	5	11	3	13
More yes	21	18	28	11	22	17	20	19	21	18
Unclear	25	31	35	21	28	28	27	29	25	31
Hard to answer	27	27	32	22	28	26	27	27	28	26
Other	9	11	13	7	13	7	12	8	10	10
χ^2	<i>6.08, p = 0.414</i>		<i>9.39, p = 0.153</i>		<i>8.99, p = 0.174</i>		<i>4.63, p = 0.592</i>		<i>6.99, p = 0.322</i>	
Has been married to local	EDEQ Restriction		EDEQ Eating		EDEQ Shape		EDEQ Weight		EDEQ Global	
	Below median	Above median	Below median	Above median	Below median	Above median	Below median	Above median	Below median	Above median
No	80	106	103	83	89	97	86	100	80	106
Yes	38	29	50	17	43	24	40	27	41	26
χ^2	<i>3.73, p = 0.054</i>		<i>7.64, p = 0.006</i>		<i>5.26, p = 0.022</i>		<i>3.57, p = 0.059</i>		<i>6.03, p = 0.011</i>	
Expectat ions met or not	EDEQ Restriction		EDEQ Eating		EDEQ Shape		EDEQ Weight		EDEQ Global	
	Below median	Above median	Below median	Above median	Below median	Above median	Below median	Above median	Below median	Above median
Not at all	5	7	6	6	5	7	6	6	6	6
Not	15	13	14	14	12	16	12	16	13	15
Basically yes	60	64	77	47	61	63	62	62	56	68
Exceeded	20	32	30	22	32	20	27	25	24	28
Vastly exceeded	13	13	20	6	15	11	15	11	16	10
χ^2	<i>2.33, p = 0.801</i>		<i>5.25, p = 0.387</i>		<i>4.67, p = 0.457</i>		<i>2.08, p = 0.838</i>		<i>2.61, p = 0.759</i>	

Table 4.2.3.2. Demographic Variables and Dominant Acculturation Type/Orientation

Has been illegal	Dominant Acculturation Type				Dominant Cultural Orientation		
	Integration	Assimilation	Separation	Marginalization	mainstream culture	home culture	Equal
no	162	7	23	10	83	108	12
yes	40	3	6	1	23	25	2
χ^2	<i>1.713, p=.788</i>				<i>.593, p=.743</i>		
Has been married to local	Dominant Acculturation Type				Dominant Cultural Orientation		
	Integration	Assimilation	Separation	Marginalization	mainstream culture	home culture	Equal
no	143	6	28	8	66	110	10
yes	59	4	1	3	40	23	4
χ^2	<i>9.976, p = .041</i>				<i>12.695, p=.002</i>		

Table 4.2.3.3. Moderating Analysis

	<i>Coef</i>	<i>se</i>	<i>t</i>	<i>p</i>	<i>LLCI</i>	<i>ULCI</i>
constant	1.0895	.2604	4.1836	.0000	.5766	1.6024
Married	-.6578	.5318	-1.2368	.2173	-1.7052	.3896
Local						
EAAMS	.2384	.0723	3.2976	.0011	.0960	.3807
Int_1	.1761	.1856	.9488	.3437	-.1895	.5417

Table 4.2.4.1. Correlations between VIA and EAAM Acculturation Scores

<i>EAAM types</i>	<i>Mainstream culture orientation</i>	<i>Home culture orientation</i>
EAAM Assimilation	0.33***	-0.376***
EAAM Separation	-0.44***	0.482***
EAAM Integration	0.48***	0.088
EAAM Marginalization	-0.24***	-0.055

*** $p < 0.001$; $N = 253$.

Table 4.2.4.2. Dominant Acculturation Strategy/Type vs. Dominant Cultural Orientation

<i>VIA Cultural orientation</i>	<i>EAAM Acculturation strategy/type</i>				<i>N</i>
	Integration	Assimilation	Separation	Marginalization	
Mainstream culture orientation	95	7	3	1	106
Home culture orientation	95	3	26	9	133
Equal 50/50	13			1	14
<i>N</i>	203	10	29	11	253

Figure 4.2.4.3. Acculturation Strategies, Cultural Orientations, and ED Outcomes

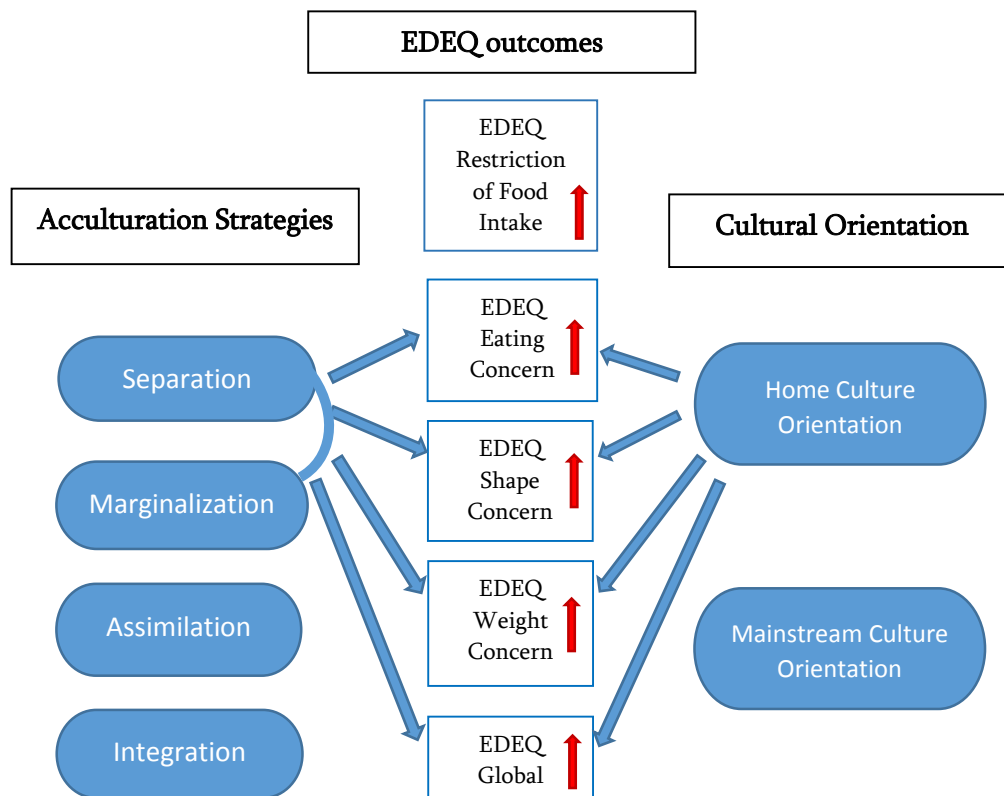


Chart 4.2.4.4. Cultural Orientations and Acculturation Strategies

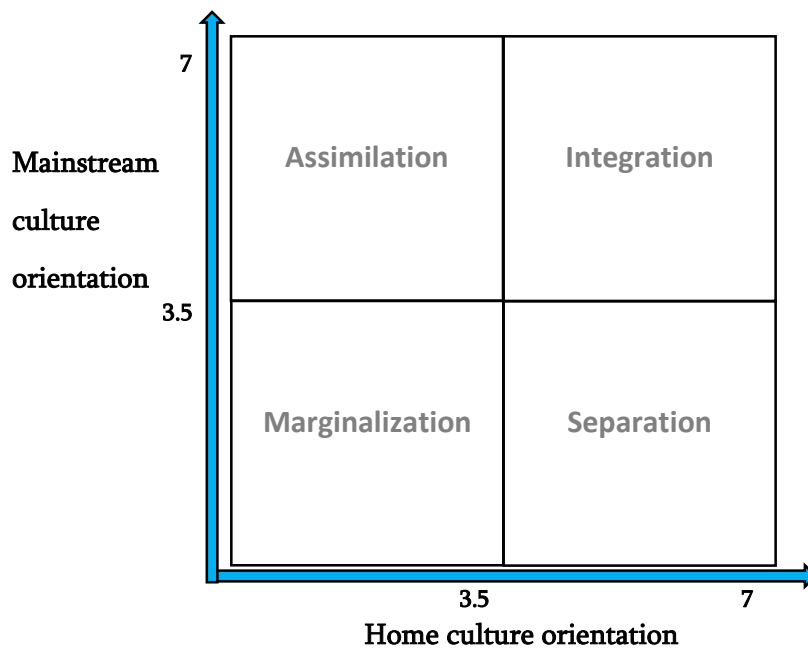
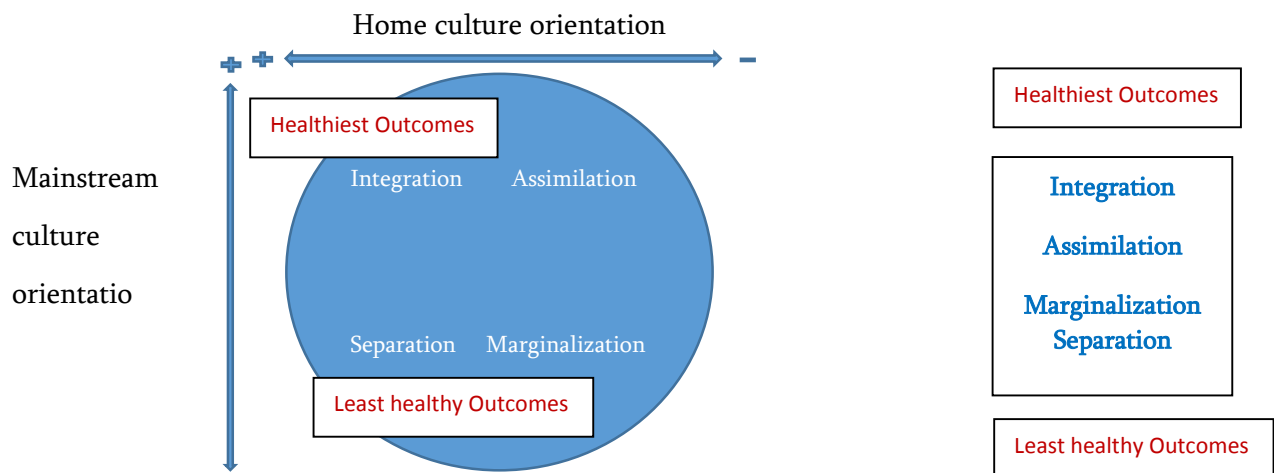


Figure 5.1.2. Cultural Orientations, Acculturation Strategies and ED Outcomes



10. Appendices

Appendix 1. ICD-10 Diagnostic Criteria of Eating Disorders

The International Statistical Classification of Diseases and Related Health Problems, tenth revision - ICD-10

The World Health Organisation defines eating disorders under the ICD-10. Under the ICD-10, the following are recognised as eating disorders: Anorexia Nervosa; Bulimia Nervosa; Overeating Associated with Other Psychological Disturbances; Vomiting Associated with Other Psychological Disturbances; Other Eating Disorders and Eating Disorders, Unspecified.

Anorexia nervosa

A disorder characterized by deliberate weight loss, induced and sustained by the patient. It occurs most commonly in adolescent girls and young women, but adolescent boys and young men may also be affected, as may children approaching puberty and older women up to the menopause. The disorder is associated with a specific psychopathology whereby a dread of fatness and flabbiness of body contour persists as an intrusive overvalued idea, and the patients impose a low weight threshold on themselves. There is usually undernutrition of varying severity with secondary endocrine and metabolic changes and disturbances of bodily function. The symptoms include restricted dietary choice, excessive exercise, induced vomiting and purgation, and use of appetite suppressants and diuretics.

Atypical anorexia nervosa

Disorders that fulfil some of the features of anorexia nervosa but in which the overall clinical picture does not justify that diagnosis. For instance, one of the key symptoms, such as amenorrhoea or marked dread of being fat, may be absent in the presence of marked weight loss and weight-reducing behaviour. This diagnosis should not be made in the presence of known physical disorders associated with weight loss.

Bulimia nervosa

A syndrome characterized by repeated bouts of overeating and an excessive preoccupation with the control of body weight, leading to a pattern of overeating followed by vomiting or use of purgatives. This disorder shares many psychological features with anorexia nervosa, including an overconcern with body shape and weight. Repeated vomiting is likely to give rise to disturbances of body electrolytes and physical complications. There is often, but not always, a history of an earlier episode of anorexia nervosa, the interval ranging from a few months to several years.

Atypical bulimia nervosa

Disorders that fulfil some of the features of bulimia nervosa, but in which the overall clinical picture does not justify that diagnosis. For instance, there may be recurrent bouts of overeating and overuse of purgatives without significant weight change, or the typical overconcern about body shape and weight may be absent.

Overeating associated with other psychological disturbances

Overeating due to stressful events, such as bereavement, accident, childbirth, and so on.

Psychogenic overeating

Vomiting associated with other psychological disturbances

Repeated vomiting that occurs in dissociative disorders and hypochondriacal disorder, and that is not solely due to conditions classified outside this chapter. This subcategory may also be used in addition to excessive vomiting in pregnancy, when emotional factors are predominant in the causation of recurrent nausea and vomiting in pregnancy.

Other eating disorders

Pica in adults

Psychogenic loss of appetite

Eating disorder, unspecified

Anorexia Nervosa

According to the ICD-10 criteria, for a definite diagnosis of Anorexia Nervosa, all the following are required:

- Body weight is maintained at least 15% below that expected (either lost or never achieved), or Body Mass Index (BMI) is 17.5 or less. Pre-pubertal patients may show failure to make the expected weight gain during the period of growth.
- The weight loss is self-induced by avoidance of 'fattening foods' and one or more of the following: self-induced vomiting; self-induced purging; excessive exercise; use of appetite suppressants and/or diuretics.
- There is body-image distortion in the form of a specific psychopathology whereby a dread of fatness persists as an intrusive, overvalued idea and the patient imposes a low weight threshold on himself/herself.
- There is endocrine disorder, manifesting in women as loss of periods (amenorrhoea) and in men as a loss of sexual interest and potency.
- If onset is pre-pubertal, the sequence of pubertal events is delayed or even arrested (growth ceases; in girls the breasts do not develop and the onset of periods is delayed; in boys the genitals remain juvenile). With recovery, puberty is often completed normally, but the menarche is late.

Bulimia Nervosa

According to the ICD-10 criteria, for a definite diagnosis of BN, all the following are required:

- There is a persistent preoccupation with eating, and an irresistible craving for food; the patient succumbs to episodes of overeating in which large amounts of food are consumed in short periods of time.
- The patient attempts to counteract the 'fattening' effects of food by purging, starving and other strategies.
- The psychopathology consists of a morbid dread of fatness and the patient sets herself or himself a sharply defined weight threshold, well below the weight that constitutes the optimum or healthy weight in the opinion of the physician. There is often, but not always, a history of an earlier episode of anorexia nervosa, the interval between the two disorders ranging from a few months to several years.

Appendix 2. DSM-5 Diagnostic Criteria of Eating Disorders

Anorexia Nervosa

According to the DSM-5 criteria, for diagnosis of Anorexia Nervosa a person must display:

- Persistent restriction of energy intake leading to significantly low body weight (in context of what is minimally expected for age, sex, developmental trajectory, and physical health).
- Either an intense fear of gaining weight or of becoming fat, or persistent behavior that interferes with weight gain (even though significantly low weight).
- Disturbance in the way one's body weight or shape is experienced, undue influence of body shape and weight on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight.

Subtypes:

Restricting type

Binge-eating/purging type

Bulimia Nervosa

According to the DSM-5 criteria, for diagnosis of Bulimia Nervosa a person must display:

- Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:
 - Eating, in a discrete period of time (e.g. within any 2-hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances.
 - A sense of lack of control over eating during the episode (e.g. a feeling that one cannot stop eating or control what or how much one is eating).

- Recurrent inappropriate compensatory behavior in order to prevent weight gain, such as self-induced vomiting, misuse of laxatives, diuretics, or other medications, fasting, or excessive exercise.
- The binge eating and inappropriate compensatory behaviors both occur, on average, at least once a week for three months.
- Self-evaluation is unduly influenced by body shape and weight.
- The disturbance does not occur exclusively during episodes of Anorexia Nervosa.

Binge Eating Disorder

According to the DSM-5 criteria, to be diagnosed as having Binge Eating Disorder a person must display:

- Recurrent episodes of binge eating. An episode of binge eating is characterized by both of the following:
 - Eating, in a discrete period of time (e.g. within any 2-hour period), an amount of food that is definitely larger than most people would eat during a similar period of time and under similar circumstances.
 - A sense of lack of control over eating during the episode (e.g. a feeling that one cannot stop eating or control what or how much one is eating).
- The binge eating episodes are associated with three or more of the following:
 - eating much more rapidly than normal
 - eating until feeling uncomfortably full
 - eating large amounts of food when not feeling physically hungry
 - eating alone because of feeling embarrassed by how much one is eating
 - feeling disgusted with oneself, depressed or very guilty afterward
- Marked distress regarding binge eating is present
- Binge eating occurs, on average, at least once a week for three months

- Binge eating not associated with the recurrent use of inappropriate compensatory behaviors as in Bulimia Nervosa and does not occur exclusively during the course of Bulimia Nervosa, or Anorexia Nervosa methods to compensate for overeating, such as self-induced vomiting.

Avoidant/Restrictive Food Intake Disorder (ARFID)

According to the DSM-5 criteria, for diagnosis of ARFID a person must display:

- An Eating or Feeding disturbance as manifested by persistent failure to meet appropriate nutritional and/or energy needs associated with one (or more) of the following:
 1. Significant loss of weight (or failure to achieve expected weight gain or faltering growth in children).
 2. Significant nutritional deficiency
 3. Dependence on enteral feeding or oral nutritional supplements
 4. Marked interference with psychosocial functioning
- The behavior is not better explained by lack of available food or by an associated culturally sanctioned practice.
- The behavior does not occur exclusively during the course of anorexia nervosa or bulimia nervosa, and there is no evidence of a disturbance in the way one's body weight or shape is experienced.
- The eating disturbance is not attributed to a medical condition, or better explained by another mental health disorder. When it does occur in the presence of another condition/disorder, the behavior exceeds what is usually associated, and warrants additional clinical attention.

Other Specified Feeding or Eating Disorder (OSFED)

According to the DSM-5 criteria, for diagnosis of OSFED a person must present with a feeding or eating behaviors that cause clinically significant distress and impairment in areas of functioning, but do not meet the full criteria for any of the other feeding and eating disorders:

- *Atypical Anorexia Nervosa*: All criteria are met, except despite significant weight loss, the individual's weight is within or above the normal range.
- *Binge Eating Disorder* (of low frequency and/or limited duration): All of the criteria for BED are met, except at a lower frequency and/or for less than three months.
- *Bulimia Nervosa* (of low frequency and/or limited duration): All of the criteria for Bulimia Nervosa are met, except that the binge eating and inappropriate compensatory behavior occurs at a lower frequency and/or for less than three months.
- *Purging Disorder*: Recurrent purging behavior to influence weight or shape in the absence of binge eating
- *Night Eating Syndrome*: Recurrent episodes of night eating. Eating after awakening from sleep, or by excessive food consumption after the evening meal. The behavior is not better explained by environmental influences or social norms. The behavior causes significant distress/impairment. The behavior is not better explained by another mental health disorder (e.g. BED).

Unspecified Feeding or Eating Disorder (UFED)

According to the DSM-5 criteria this category applies to where behaviors cause clinically significant distress/impairment of functioning, but do not meet the full criteria of any of the Feeding or Eating Disorder criteria. This category may be used by clinicians where a clinician chooses not to specify why criteria are not met, including presentations where there may be insufficient information to make a more specific diagnosis (e.g. in emergency room settings).

Appendix 3. Ethical Approval Letter

To: Ia Shekriladze
Doctoral student
Interdisciplinary Doctoral Program
School of Arts and Sciences
Ilia State University

R/045-15
2.10.2015

Ms. Shekriladze:

In response to your request (03-11563/15) we would like to let you know that Ilia State University ethical committee of research projects has reviewed your research project 'Immigration to West, acculturation and disordered eating patterns' and decided that it meets the standards of research ethics.

Members of Ilia State University ethical committee of research projects:

Nata Meparishvili (signed), Associate Professor of School of Arts and Sciences

Ivane Abiatari (signed), Associate Professor of School of Natural Sciences and Engineering

Natia Kopaliani (signed), Professor of School of Natural Sciences and Engineering

Nikoloz Oniani (signed), Associate Professor of School of Natural Sciences and Engineering

Nino Patariaia (signed), Associate Professor of School of Business

Stamped (Ilia State University)

Appendix 4. Eating Disorder Examination Questionnaire (EDEQ)

The following questions are concerned with the past four weeks only (28 days). Please read each question carefully and tick the appropriate box. Please answer all the questions.

On how many days out of the past 28 days...	No days	1-5 days	6-12 days	13-15 days	16-22 days	23-27 days	Every day
1. Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight?	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
2. Have you gone for long periods of time (8 hours or more) without eating anything in order to influence your shape or weight?	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
3. Have you <u>tried</u> to avoid eating foods which you like in order to influence your shape or weight?	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
4. Have you tried to follow definite rules regarding your eating in order to influence your shape or weight; for example, a calorie limit, a set amount of food, or rules about what or when you should eat?	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
5. Have you wanted your stomach to be empty?	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
6. Has thinking about food or its calorie content made it much more difficult to concentrate on things you're interested in; for example,	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>

read, watch TV or follow a conversation?

- | | | | | | | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| 7. Have you been afraid of losing control over eating? | 0
<input type="checkbox"/> | 1
<input type="checkbox"/> | 2
<input type="checkbox"/> | 3
<input type="checkbox"/> | 4
<input type="checkbox"/> | 5
<input type="checkbox"/> | 6
<input type="checkbox"/> |
| 8. Have you had episodes of binge eating? | 0
<input type="checkbox"/> | 1
<input type="checkbox"/> | 2
<input type="checkbox"/> | 3
<input type="checkbox"/> | 4
<input type="checkbox"/> | 5
<input type="checkbox"/> | 6
<input type="checkbox"/> |
| 9. Have you eaten in secret? (Do not count binges) | 0
<input type="checkbox"/> | 1
<input type="checkbox"/> | 2
<input type="checkbox"/> | 3
<input type="checkbox"/> | 4
<input type="checkbox"/> | 5
<input type="checkbox"/> | 6
<input type="checkbox"/> |
| On how many days out of the past 28 days... | No days | 1-5 days | 6-12 days | 13-15 days | 16-22 days | 23-27 days | Every day |
| 10. Have you definitely wanted your stomach to be flat? | 0
<input type="checkbox"/> | 1
<input type="checkbox"/> | 2
<input type="checkbox"/> | 3
<input type="checkbox"/> | 4
<input type="checkbox"/> | 5
<input type="checkbox"/> | 6
<input type="checkbox"/> |
| 11. Has thinking about shape or weight made it more difficult to concentrate on things you are interested in; e.g., read, watch TV or follow a conversation? | 0
<input type="checkbox"/> | 1
<input type="checkbox"/> | 2
<input type="checkbox"/> | 3
<input type="checkbox"/> | 4
<input type="checkbox"/> | 5
<input type="checkbox"/> | 6
<input type="checkbox"/> |
| 12. Have you had a definite fear that you might gain weight or become fat? | 0
<input type="checkbox"/> | 1
<input type="checkbox"/> | 2
<input type="checkbox"/> | 3
<input type="checkbox"/> | 4
<input type="checkbox"/> | 5
<input type="checkbox"/> | 6
<input type="checkbox"/> |
| 13. Have you felt fat? | 0
<input type="checkbox"/> | 1
<input type="checkbox"/> | 2
<input type="checkbox"/> | 3
<input type="checkbox"/> | 4
<input type="checkbox"/> | 5
<input type="checkbox"/> | 6
<input type="checkbox"/> |
| 14. Have you had a strong desire to lose weight? | 0
<input type="checkbox"/> | 1
<input type="checkbox"/> | 2
<input type="checkbox"/> | 3
<input type="checkbox"/> | 4
<input type="checkbox"/> | 5
<input type="checkbox"/> | 6
<input type="checkbox"/> |

Over the past 4 weeks (28 days)	None of the times	A few of the times	Less than ½ the time	Half the time	More than ½ the time	Most of the time	Every time
15. On what proportion of times that you have eaten have you <u>felt guilty</u> because of the effect on your shape or weight? (Do not count binges)	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	3 <input type="checkbox"/>	4 <input type="checkbox"/>	5 <input type="checkbox"/>	6 <input type="checkbox"/>
16. Have there been any times when you have felt that you have eaten what other people would regard as an unusually large amount of food given the circumstances?		0 <input type="checkbox"/> No			1 <input type="checkbox"/> Yes		
17. How many such episodes have you had over the past four weeks?		<input type="text"/>					
18. During how many of these episodes of overeating did you have a sense of having lost control over your eating?		<input type="text"/>					
19. Have you had other episodes of eating in which you have had a sense of having lost control and eaten too much, but have <u>not</u> eaten an unusually large amount of food given the circumstances?		0 <input type="checkbox"/> No			1 <input type="checkbox"/> Yes		
20. How many such episodes have you had over the past four weeks?		<input type="text"/>					

21. Have you made yourself sick (vomit) as a means of controlling your shape or weight? 0

No 1

Yes
22. How many times have you done this over the past four weeks?
23. Have you taken laxatives as a means of controlling your shape or weight? 0

No 1

Yes
24. How many times have you done this over the past four weeks?
25. Have you taken diuretics (water tablets) as a means of controlling your shape or weight? 0

No 1

Yes
26. How many times have you done this over the past four weeks?
27. Have you exercised hard as a means of controlling your shape or weight? 0

No 1

Yes
28. How many times have you done this over the past four weeks?

Over the past 4 weeks (28 days)	Not at all		Slightly		Moderately		Marked
	0	1	2	3	4	5	6
29. Has your weight influenced how you think about (judge) yourself as a person?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
30. Has your shape influenced how you think about (judge) yourself as a person?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
31. How much would it upset you if you had to weigh yourself once a week for the next four weeks?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
32. How dissatisfied have you felt about your weight?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
33. How dissatisfied have you felt about your shape?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
34. How concerned have you been about other people seeing you eat?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
35. How uncomfortable have you felt seeing your body; e.g., in shop window reflections, while undressing or taking a shower?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
36. How uncomfortable have you felt about others seeing your body; for example, in communal changing rooms, when swimming or wearing tight clothes?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Appendix 5. Vancouver Index of Acculturation (VIA) – Modified Georgian Version

Please circle one of the numbers to the right of each question to indicate your degree of agreement or disagreement.

1 = STRONGLY DISAGREE	4 = DON'T AGREE OR	5 = AGREE SOMEWHAT
2 = DISAGREE	DISAGREE	6 = AGREE
3 = SOMEWHAT DISAGREE		7 = STRONGLY AGREE

1. I would be willing to marry a Georgian.
2. I would be willing to marry an American/British.
3. I enjoy social activities with Georgians.
4. I enjoy social activities with typical American/ British people.
5. I am comfortable interacting with Georgians.
6. I am comfortable interacting with Americans/British.
7. I enjoy Georgian entertainment (e.g. movies, music).
8. I enjoy American/British entertainment (e.g. movies, music).
9. I often behave in ways that are typical of Georgians.
10. I often behave in ways that are typically American/British.
11. It is important for me to maintain or develop Georgian cultural practices.
12. It is important for me to maintain or develop American/British cultural practices.
13. I believe in Georgian cultural values.
14. I believe in mainstream American/British values.
15. I enjoy Georgian jokes and humor.
16. I enjoy American/British jokes and humor.
17. I am interested in having Georgian friends.
18. I am interested in having American/British friends.

Appendix 6. East Asian Acculturation Measure (EAAM) – Modified Georgian Version

Below are listed a number of statements. For each statement, write the appropriate number (1-7) listed below to indicate your level of agreement or disagreement. Some of the statements are worded positively and others are worded negatively.

1 = STRONGLY DISAGREE	4 = DON'T AGREE OR	5 = AGREE SOMEWHAT
2 = DISAGREE	DISAGREE	6 = AGREE
3 = SOMEWHAT DISAGREE		7 = STRONGLY AGREE

1. I write better in English than in Georgian.
2. Most of the music I listen to is Georgian.
3. I tell jokes both in English and in Georgian.
4. Generally, I find it difficult to socialize with anybody, Georgian or American/British.
5. When I am in my apartment/house, I typically speak English.
6. My closest friends are American/British.
7. I think as well in English as I do in Georgian.
8. I sometimes feel that neither Americans/British nor Georgians like me.
9. If I were asked to write poetry, I would prefer to write it in English.
10. I prefer going to social gatherings where most of the people are Georgian.
11. I have both American/British and Georgian friends.
12. There are times when I think no one understands me.
13. I get along better with Americans/British than Georgians.
14. I feel that Georgians treat me as an equal more so than Americans/British do.
15. I feel that both Georgians and Americans/British value me.
16. I sometimes find it hard to communicate with people.
17. I feel that Americans/British understand me better than Georgians do.
18. I would prefer to go out on a date with a Georgian than with an American/British.
19. I feel very comfortable around both Americans/British and Georgians.

20. I sometimes find it hard to make friends.
21. I find it easier to communicate my feelings to Americans/British than to Georgians.
22. I feel more relaxed when I am with a Georgian than when I am with an American/British.
23. Sometimes I feel that Georgians and Americans/British do not accept me.
24. I feel more comfortable socializing with Americans/British than I do with Georgians.
25. Georgians should not date non-Georgians.
26. Sometimes I find it hard to trust both Americans/British and Georgians.
27. I find that both Georgians and Americans/British often have difficulty understanding me.
28. I find that I do not feel comfortable when I am with other people.