



Instituto Universitário de Lisboa

IUL - SCHOOL OF SOCIAL SCIENCES AND HUMANITIES

DEPARTMENT OF SOCIAL AND ORGANISATIONAL PSYCHOLOGY

Perceptions of Eating Disorders: Lay Causes and Intentions to Engage with People of Colour
Suffering from Eating Disorders

Ismat Ara Khan

Dissertation report submitted as a requirement for the conferral of Master in the Psychology of
Intercultural Relations

Supervisor:

Ph.D. Ricardo Borges Rodrigues, Invited Assistant Professor,
ISCTE-IUL

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Abstract

Eating disorders are highly stigmatized and underrepresent people of colour. To explore the perceived prevalence and intention to engage with White, Black and Asian sufferers of Anorexia Nervosa, Bulimia Nervosa, and Binge Eating Disorder, the perceptions of ethnically White and Asian participants were investigated. Study I used an online survey created to assess 237 participants' perceptions and intentions to engage with targets suffering from the three eating disorder subtypes. Results showed that participants associate eating disorders more with White targets and that the perceived prevalence of Anorexia Nervosa and Binge Eating Disorder is higher in females. Furthermore, the intention to engage with sufferers of eating disorder was informed by the ethnicity of the participant and not the target. An exploratory follow-up Study II used open-ended questions in an online survey to assess 65 participants' lay perceptions of the causes of eating disorders. Results showed that White participants reference Psychological/Emotional Problems as the most likely cause of EDs. Asian participants report Body Dissatisfaction and Eating, Biological Factors, and Sports and Health as likely causes instead. Results also revealed that female participants significantly associate eating disorders, especially Anorexia Nervosa and Bulimia Nervosa, with female targets. The paper concludes with the relevance of these results and suggestions for future research.

Keywords: Eating disorders, Mental illness, People of colour, Stigma, Causes of eating disorders.

PsycINFO Codes:

3020 Group & Interpersonal Processes

3260 Eating Disorders

3300 Health & Mental Health Treatment & Prevention

Resumo

Os transtornos alimentares são altamente estigmatizados e subrepresentam pessoas de cor. Para explorar a prevalência percebida e a intenção de interagir com as pessoas que sofrem de anorexia nervosa, bulimia nervosa e compulsão alimentar em alvos brancos, negros e asiáticos, as percepções de participantes etnicamente brancos e asiáticos foram investigadas. O estudo envolveu a aplicação de um questionário on-line criada para avaliar as percepções e intenções dos 237 participantes em engajar-se com alvos que sofrem dos três subtipos de transtornos alimentares. Os resultados mostraram que os participantes associam mais os transtornos alimentares aos alvos brancos e que a prevalência da anorexia nervosa e do transtorno da compulsão alimentar é maior no sexo feminino. Além disso, a intenção de envolver os portadores de transtorno alimentar foi informada pela etnia do participante e não pelo alvo. Um estudo exploratório de acompanhamento II utilizou perguntas abertas em uma pesquisa on-line para avaliar a percepção leiga de 65 participantes sobre as causas dos transtornos alimentares. Os resultados mostraram que os participantes brancos referiam problemas psicológicos / emocionais como a causa mais provável de disfunção erétil. Os participantes asiáticos relatam insatisfação corporal e alimentação, fatores biológicos e esportes e saúde como causas prováveis. Os resultados também revelaram que as mulheres participantes associam significativamente os transtornos alimentares, especialmente Anorexia Nervosa e Bulimia Nervosa, com alvos femininos. O artigo conclui com a relevância desses resultados e sugestões para pesquisas futuras.

Palavras-chave: Transtornos alimentares, Doença mental, Pessoas de cor, Estigma, Causas de transtornos alimentares.

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Contents

Acknowledgements	ii
Abstract	iii
INDEX OF ABBREVIATIONS	vii
INDEX OF FIGURES	viii
INDEX OF TABLES	ix
INTRODUCTION	1
CHAPTER I: THEORETICAL BACKGROUND.....	3
Definitions of Eating Disorders According to the DSM V	3
Diagnostic Features of Eating Disorders	3
Risk and Prognostic Factors	4
Incidence and Prevalence of Eating Disorders	6
Stigma	7
Causes	9
Perceived Prevalence: Gender and Ethnic Groups	10
Present Research: Goals and Hypotheses	12
CHAPTER II: METHODOLOGY AND EMPIRICAL EVIDENCE	14
Study I.....	14
Design and Participants	15
Instruments and Procedure	15
Results	18
Discussion.....	26
Study II	27
Design and Participants	27

Instruments and Procedure	28
Results	28
Discussion.....	33
CHAPTER V: GENERAL DISCUSSION	36
Limitations.....	41
Future Research	42
Conclusion	43
References.....	44
LIST OF APPENDICES	49
Appendix A: Questionnaire for Study I.....	49
Appendix B: Questionnaire for Study II.....	61
Appendix C: List of Tables	66
Table 1. Sample Responses for Each Coded Category (Study II).....	66
Table 2: Descriptive Statistics (Study I).....	67
Table 3: Correlations (Study I).....	68
Table 4. Results of the contrast for the difference between participants per cause(K Matrix). (Study II).....	69
Table 5. Univariate Test Results for the Differences between White and Asian Participants for Each Cause. (Study II)	70
Table 6. Results of the Contrast (K Matrix) for the Gender of the Target and the Gender of the Participant. (Study II)	71
Table 7. Univariate Test Results for The Gender of the Target and the Gender of the Participant. (Study II)	72
Table 8. Frequencies of Nationalities (Study I).....	73
Table 9. Frequencies of Nationalities (Study II)	74

INDEX OF ABBREVIATIONS

AN: Anorexia Nervosa

BN: Bulimia Nervosa

BD: Binge Eating Disorder

ED: Eating Disorder

IE: Intention to Engage

LOC: Level of Contact

POC: People of Colour

INDEX OF FIGURES

- Figure 1. Vicious Cycle from Science of Eating Disorders research (Saren, 2012)
- Figure 2. Model Depicting the Relationship Between Variables
- Figure 3. Estimated Marginal Means of Eating Disorders and the Ethnicity of the Target
- Figure 4. Estimated Marginal Means of Eating Disorders and the Ethnicity of the Participant
- Figure 5. Estimated Marginal Means of the Gender of the Target and the Gender of the Participant
- Figure 6. Estimated Marginal Means of Eating Disorders and the Gender of the Target
- Figure 7. Estimated Marginal Means of Ethnicity of the Participant and Perceived Causes of Eating Disorders
- Figure 8. Estimated Marginal Means of the Gender of the Target and the Gender of the Participant
- Figure 9. Estimated Marginal Means of the Gender of the Target and Eating Disorders

INDEX OF TABLES

Table 1. Sample Responses for Each Coded Category.

INTRODUCTION

Mental illnesses are highly stigmatised across the globe and can often lead to treatment avoidance (Hackler, 2011) (Crisp, Gelder, Rix & Meltzer, 2000). Of these illnesses, some of the most widely discussed and negatively stereotyped are eating disorders (EDs); EDs are linked to substantial psychiatric comorbidities (Sonneville & Lipson, 2018) and since they affect all aspects of the organ system, failure to receive treatment on time can be quite life threatening (Sonneville & Lipson, 2018). Considering that EDs, specifically Anorexia Nervosa, have the highest mortality rate than any other mental illness, and that every 62 minutes at least one person dies as a direct result of an ED, the fact that research suggests that only 22% of people suffering from these disorders are receiving treatment should be a serious cause for concern (Swanson, Crow, Le Grange, Swendsen & Merikangas, 2011).

While there are several perspectives as to why EDs are stigmatised, research shows that the overall attitude towards them is negative; the public lacks adequate knowledge about them which leads to incorrect beliefs about the sufferers (Stewart, Keel & Schiavo, 2006) (Crisp, Gelder, Rix & Meltzer, 2000). The lay perspective regarding these disorders is that they are self-inflicted and a lifestyle choice (Morgan, 2014); In fact, one study found that 35% of their participants believed that individuals with EDs are personally responsible for their disorder (Crisp, Gelder, Rix, Meltzer & Rowlands, 2000). Thus, the sufferers are often blamed for their condition (Morgan, 2014) which is not only harmful to their well-being but also that of their loved ones (Stewart, Keel & Schiavo, 2006) (Crisp, Gelder, Rix & Meltzer, 2000). Such negative stereotypes may be one of the leading causes of many people not seeking help for their EDs as they often awaken feelings of embarrassment and stigmatisation (Dimitropoulos, 2008). Other possible reasons may include denial and confusion as to what their symptoms really are an indication of (Farrar, 2014).

Research on EDs in ethnic minorities is significantly limited (Gordon, Perez & Joiner, 2002). Studies carried out by entities such as The National Eating Disorder Association (NEDA) based in the United Kingdom show that People of Colour (POC) are rarely represented in studies conducted on EDs. They have also stated that it is often speculated that women from racial and ethnic minority groups do not develop EDs because their cultural identity provides a certain amount of protection against body dissatisfaction (Haidrani, 2017). It is important to note that

similar studies also show that POC have a prevalence rate comparable to that of White samples (Gordon et. al., 2002) and yet the notion that EDs are limited to White females prevails regardless (Gordon et. al., 2002). Hindering people's judgements, this then leads to POC suffering in silence and rarely seeking professional help for their disorders (Gordon et. al., 2002) (Dimitropoulos, 2008).

With regards to the causes of EDs, researchers find that there are often multiple contributing factors. Past studies have identified EDs as multifactorial illnesses involving interactions between psychological, sociocultural and biological factors as leading to their development (Striegel-Moore & Bulik, 2007). Thus, relevant research does exist in this field, however, it is important to investigate how ED sufferers, especially POC and males, are perceived and treated by people of different ethnicities. Therefore, it is considered important to explore the lay perceptions of the causes of EDs across ethnicities as such information can be beneficial in helping scholars determine the educational needs of the public and better target the missing gaps in their knowledge (Salafia et. al., 2015), as well as help with the development of culturally-sensitive approaches to the diagnosis and treatment of EDs.

The aim of this research is therefore to explore the public's lay beliefs and perceptions regarding the prevalence of EDs, their intentions to engage with them and perceived causes according to ethnicity and gender of both the targets and the participants. The three research goals to be addressed are as follows; the first goal, which will be addressed using Study I, is to describe the perceived prevalence of EDs in order to determine whether it is moderated by gender and ethnicity of both the target and participant. The second goal, which will also be inspected using Study I, is to examine the extent to which there is an association between the perceived prevalence of EDs among gender and ethnic groups (moderated by gender and ethnicity of the participant) and the intention to engage with sufferers of EDs. The third and final goal, which will be examined using Study II, is to explore peoples lay beliefs regarding the causes of EDs, to see if these beliefs change depending on the gender and the ethnicity of the target and participant. The first chapter of this dissertation addresses the definitions and theoretical background of the studies, the following chapter examines the methodology and empirical results of both Study I and Study II. The final chapter discusses the general findings of the studies and their contribution to the existing knowledge about lay people's perceptions of EDs, but also their limitations and areas that need to be addressed in future research.

CHAPTER I: THEORETICAL BACKGROUND

This main purpose of this chapter is to delve into the available literature on the documented prevalence and causes of EDs, and the lay beliefs and perceived prevalence concerning the causes of EDs, especially with regards to POC and male sufferers. Thus far, the literature on EDs displays an uneasy balance between the studies that represent POC and male populations in comparison to those that do. This chapter ends with addressing the hypotheses, the relevance and implication towards this topic.

Definitions of Eating Disorders According to the DSM V

EDs are characterised by persistent disordered eating habits and concern or distress about body image. As stated by Fairburn & Harrison (2003) “They are of great interest to the public, of perplexity to researchers, and a challenge to clinicians”. The EDs of relevance to this paper are Anorexia Nervosa, Bulimia Nervosa and Binge Eating Disorder. Until the late 1970s, EDs had not emerged as a serious problem and to this date, research seems to be far from truly understanding its etiology. The following explores the current available literature on their etiology and development as indicated in the Diagnostic and Statistical Manual (DSM V).

Diagnostic Features of Eating Disorders

According to the Diagnostic and Statistical Manual DSM V (2013), Anorexia Nervosa involves three essential features; (1) intense fear of gaining weight or persistent behaviour that interferes with weight gain, something that does not fade away even as weight decreases (2) persistent energy intake restriction and (3) a disturbance in self-perceived weight or body shape (American Psychiatric Association, 2013).

Some people suffering from Anorexia Nervosa feel globally overweight, however, others realise that they are thin but feel that certain parts of their body are “too fat”. An Anorexic individual maintains a BMI that is below average for their age, sex, and overall physical health. This can range from 16-16.99 kg/m² to <15kg/m² (American Psychiatric Association, 2013). The individuals that are brought to the attention of professionals often end up there due to family members. If these individuals seek help on their own, it is often due to distress over “the somatic and psychological sequelae of starvation” (American Psychiatric Association, 2013).

Anorexia Nervosa and Bulimia Nervosa overlap on one core psychopathology in both male and female sufferers whereby patients over-evaluate their weight and shape (Fairburn &

Harrison, 2003). However, the primary feature that distinguishes Bulimia Nervosa from Anorexia Nervosa is that the attempts to restrict food consumption are accompanied by repeated bingeing and purging episodes. The combination of the undereating and binge eating leads to a typically average bodyweight, providing another obvious characteristic that is different from Anorexia Nervosa (Fairburn & Harrison, 2003).

The three essential features of Bulimia Nervosa are: (1) recurrent episodes of binge eating, (2) recurrent inappropriate compensatory behaviours, such as purging, to prevent weight gain, (3) self-evaluation that is unduly influenced by body image and weight (American Psychiatric Association, 2013). These bingeing and purging behaviours must occur at least one per week for three months on average for the individual to qualify for a diagnosis (American Psychiatric Association, 2013). A bingeing episode is defined as consuming a large amount of food in a short period of time, one that most individuals would not consume under similar circumstances. This must be accompanied by a sense of lack of control and an inability to stop oneself from eating once started. Often, individuals binge on food that they would otherwise avoid (American Psychiatric Association, 2013). These episodes often end once the individual is uncomfortably full and is accompanied by feelings of shame, hence they occur in secret (American Psychiatric Association, 2013). In some cases, the individual with Bulimia Nervosa sees vomiting as a goal in itself and binges in order to vomit or will vomit after eating a small amount of food (American Psychiatric Association, 2013).

Binge Eating Disorder is at the opposite end of the spectrum from Anorexia Nervosa and Bulimia Nervosa as it is characterised by insatiable cravings that cause sufferers to eat large amounts of food that go beyond merely overeating (American Psychiatric Association, 2013) which eventually leads to weight gain. The DSM V states that the main feature of Binge Eating Disorder is recurrent episodes of binge eating that occur at least once a week for three months on average (American Psychiatric Association, 2013). This is accompanied by marked distress and a sense of lack of control (American Psychiatric Association, 2013). However, some individuals with Binge Eating Disorder show that these bingeing episodes are no longer accompanied by feeling of loss of control but rather a more generalised pattern of uncontrolled eating (American Psychiatric Association, 2013).

Risk and Prognostic Factors

Most literature does not fully explain how these disorders develop, however, the DSM V lists the following factors that contribute to the development of EDs:

Firstly, temperamental factors are linked to the development of these disorders. For Anorexia Nervosa, individuals that display obsessional traits in childhood or those that develop anxiety disorders at some point in their youth are at an increased risk of developing the disorder (American Psychiatric Association, 2013). With regards to Bulimia Nervosa, the DSM V indicates that low self-esteem, social anxiety disorder, weight concerns, an overanxious disorder of childhood and depressive symptoms are linked to an increased risk of developing the disorder (American Psychiatric Association, 2013).

Secondly, Genetic and Physiological factors are also key in the development of EDs. There is a higher chance of developing Anorexia Nervosa among first-degree biological relatives of individuals with the disorder. Concordance rates of this disorder in monozygotic twins are also significantly higher than those for dizygotic twins (American Psychiatric Association, 2013). Several brain abnormalities have also been found in patients suffering from Anorexia Nervosa using fMRI's and PET scans (American Psychiatric Association, 2013). However, the extent to which these findings reflect changes linked to malnutrition versus primary abnormalities associated with Anorexia Nervosa is unclear (American Psychiatric Association, 2013). For Bulimia Nervosa, the indicated risk factors are early pubertal maturation and childhood obesity (American Psychiatric Association, 2013). There is an indication of familial transmission and genetic vulnerabilities being present in the development of the disorder (American Psychiatric Association, 2013). According to DSM V, Binge Eating Disorder seems to run in families, which may be an indication of addictive gene influences, and is the only risk factor indicated for this disorder (American Psychiatric Association, 2013).

With regards to environmental factors, the association between the prevalence of Anorexia Nervosa based on historical and cross-cultural variability is supported with cultures in which thinness is valued (American Psychiatric Association, 2013). An increased risk is also associated with occupations that promote thin ideals, such as modelling and certain athletics (American Psychiatric Association, 2013) such as ballet and gymnastics. For Bulimia Nervosa, the "internalization of a thin body ideal" (American Psychiatric Association, 2013) is linked to a higher chance of developing weight concerns, which then increases the risk for the development of the disorder (American Psychiatric Association, 2013). Individuals who have suffered from physical abuse or childhood sexual abuse are also at a risk of developing the disorder (American Psychiatric Association, 2013).

Lastly, course modifiers are risk factors only indicated for Bulimia Nervosa; A worse long-term outcome of the disorder is predicted by the severity of the psychiatric comorbidity (American Psychiatric Association, 2013).

Incidence and Prevalence of Eating Disorders

The incidence and prevalence of Anorexia Nervosa and Bulimia Nervosa have increased over the past couple of decades, one significant reason for this is likely the awareness and reporting of these disorders (Polivy and Herman, 2002). One area of serious concern is the age of onset for each ED as they often start during adolescence or young adulthood (American Psychiatric Association, 2013).

According to the fifth edition of the DSM (DSM V) Anorexia Nervosa is far less common in males than females, with clinical populations often reflecting a 10:1 female to male ratio (American Psychiatric Association, 2013). Though the causes of Anorexia Nervosa are unknown, it is often associated with a significantly stressful life event (American Psychiatric Association, 2013). The crude mortality rate (CMR) for Anorexia Nervosa is approximately 5% per decade with death often resulting from medical complications associated with the ED or from suicide. Suicide risks associated with Anorexia Nervosa are quite high with reported rates ranging from 12 per 100,000 each year (American Psychiatric Association, 2013).

It is also reported that Anorexia Nervosa is present in several culturally diverse populations although there is a cross-cultural variation in its incidence rate (American Psychiatric Association, 2013). According to the DSM V, it is most prevalent in “post-industrialised, high-income countries” (American Psychiatric Association, 2013) such as Australia, the United States, Japan, New Zealand and several European countries. Its incidence rate in low- and middle-income countries is quite uncertain; it has however been reported to exist in non-White populations, the low incidence in these populations may reflect an ascertainment bias, an error in selecting individuals for a sample such that they are not representative of the relevant population ("APA Dictionary of Psychology", 2018), and that the presentation of weight concerns among individuals with EDs varies significantly in the cross-cultural context (American Psychiatric Association, 2013).

With regards to the prevalence of Bulimia Nervosa, DSM V indicates that it is more common among young females than males with a 10:1 female-to-male ratio (American Psychiatric Association, 2013). The CMR for Bulimia Nervosa is nearly 2% per decade and the suicide risk is quite elevated with this disorder (American Psychiatric Association, 2013). It has

been reported in most industrialised countries with clinical studies reporting Whites as the main sufferers of this disorder, however it also occurs in other ethnic groups with an incidence rate that is comparable to the estimates from the White samples (American Psychiatric Association, 2013).

The female to male ratio of Binge Eating Disorder is not as skewed as it is for Bulimia Nervosa and Anorexia Nervosa with approximately 40% of individuals suffering from Binge Eating Disorder being males (American Psychiatric Association, 2013). With regards to ethnicity, Binge Eating Disorder is reported as being just as prevalent in non-White populations as it has been reported for White females (American Psychiatric Association, 2013). It is also common in adolescents and young adults, however those that seek treatment are usually older than individuals with Anorexia Nervosa or Bulimia Nervosa who seek treatment (American Psychiatric Association, 2013). It also seems to occur mostly in industrialized countries (American Psychiatric Association, 2013).

Based on the information provided, a lay person will see a higher prevalence in females compared to males and little to no difference between the prevalence of EDs among ethnic groups, at least for female sufferers. If we consider this information as unbiased and accurate, we would expect an attribution of EDs to the female gender, regardless of the ethnicity of the target. However, there are reasons to believe that there might be no difference or a more reduced one between the prevalence between females and males as many males often do not seek help for their EDs until their condition is very severe (Strother, Lemberg, Stanford & Turberville, 2013), hence based on this, the perception might be inaccurate.

Stigma

The stigmatisation of EDs increases isolation, contributes to a decline in their quality of life, reduces self-esteem, and robs sufferers of their dignity. More importantly, it acts as a barrier between sufferers disclosing their problem to others seeking professional help for their disorder (Dimitropoulos, 2008). There has been very little research into the stigma held by the public regarding People of Colour suffering from EDs, however one study showed that when it came of African and Hispanic American women, EDs were grossly under-identified (Gordon, Perez and Joiner, 2002). Fear of stigmatisation of EDs forms a barrier to treatment-seeking and can lead to the longer duration of an ED and greater symptomatology. Studies have also shown that there is a common belief that African American women are largely protected from ED formation as their culture accepts larger body types (Gordon et al., 2006). Despite the differences in cultural views,

these women are frequently exposed to the same ideals of thinness as White women, thus they frequently adopt mainstream ideals of being thin as more beautiful (Gordon et al., 2006). This can lead to low self-esteem and body dissatisfaction, two factors that have been frequently associated with EDs (Gordon et al., 2006).

The most impactful stigmatisation that afflicts women from minority groups suffering from EDs is by clinicians as they often underdiagnose and thus frequently undertreat them (Cachelin, Rebeck, Veisel & Moore, 2001). Studies show that clinicians as many can be reluctant to diagnose EDs in non-White individuals (Gordon et al., 2006) and treat ED symptoms as some may see the problem as an indication of a weak personality (Doley et. al., 2016). Research by Memon et. al. (2016) also found that some participants felt they had received different or inadequate treatment due to their minority status, their skin colour and their country of origin (Memon et. al., 2016). One key study carried out on the impact of client race on clinician detection of EDs showed that clinicians may have race-based stereotypes about EDs that could hinder their detection of symptoms in African-American girls (Gordon et al., 2006). In this study, 91 read one of 3 case vignettes that described the disturbed eating patterns of a fictional girl (Gordon et al., 2006). These vignettes varied only with regards to the girl's indicated ethnicity. They found that clinicians recognized ED symptoms to a lesser degree in African Americans rather than Caucasians or Hispanics in the case vignettes provided to them. The authors attributed this to possibly be a result of racial stereotypes about African American girls being invulnerable to EDs (Gordon et al., 2006). Thus, they state that when symptoms of EDs are present, clinicians may in fact underestimate the severity of an eating problem in an African American patient (Gordon et al., 2006).

This stigmatization is however not solely an occurrence in the clinical world. According to an article by Gordon, Perez & Joiner (2002), a passage describing a girl exhibiting ED symptoms to a sample of 160 undergraduate students¹ resulted in them being far likely to recognize these symptoms as a sign of an ED when the ethnicity of the girl was indicated as White rather than Hispanic or Black. This can be related to the vicious cycle shown in *Figure 1*. This dynamic depicted has affected a great deal of prior research (Saren, 2012) as EDs are assumed to affect only certain homogenous groups, typically White females. Since this is the

¹ This is a small sample, so the results cannot be generalised, however it does indicate that this phenomenon exists in a quantifiable manner.

norm of our current society and media, medical professionals and clinicians are unlikely to identify EDs in non-stereotypical people, as those mentioned previously, and similarly these people are unlikely to view their behaviour as an ED, thereby creating a health disparity around treatment accessibility (Saren, 2012).

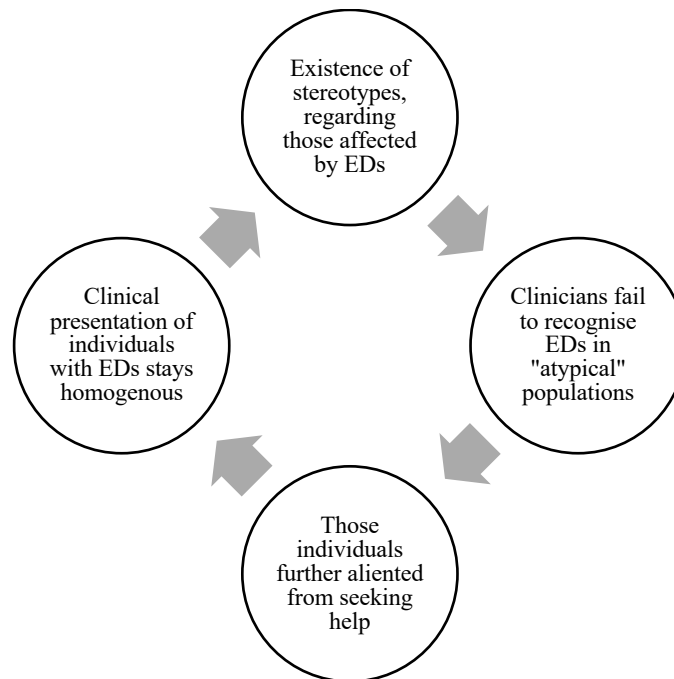


Figure 1. Vicious Cycle from Science of Eating Disorders research (Saren, 2012).

Causes

Previous sections explored the factors that are believed to be the causes of EDs based on scientific research, however, for the research at hand, it is also deemed important to tackle what the general public believes causes them. A qualitative study carried out to examine the lay perceptions regarding the causes of EDs in a Midwestern U.S. city by Salafia, Jones, Haugen & Schaefer (2015) found that participants with EDs highly endorsed social, psychological and emotional problems as the primary causes of EDs, with media/culture ideals and biology being least endorsed. Participants without EDs attributed the media/culture ideals and psychological/emotional problems as their main causes, with less endorsements towards traumatic life events and sports/health categories. Both groups differed when it came to the endorsement of the media, whereas the participants without EDs overly attributed media as a primary cause of EDs, people with EDs underestimated the impact the media has on the

development of EDs (Salafia et. al., 2015). These results suggest that lay people's beliefs about EDs may include the notion that they are caused by multiple factors.

A qualitative analysis carried out by Pettersen, Björk & Råstam (2014) also touches on the multifactorial character of EDs. It indicated that males (previously suffering from EDs) perceived the causes of the onset of their EDs as part of one of the following categories: the first was self-dissatisfaction which included "high achievements and demands", "low self-esteem" and "body dissatisfaction". The second category, family environment, involved "difficulty in family interaction and communication" and "excessive expectations from family members". The last category was stressful events outside the family, which included "societal ideals", "bullying, bad situation at school" and "moving to new places/separation from friends" (Wallin, Pettersen, Björk, & Råstam, 2014).

Perceived Prevalence: Gender and Ethnic Groups

There is a common notion that ED's only affect White females, which can leave both males and POC feeling like outcasts. This conclusion might result from the public learning from the results of clinical studies with samples that are disproportionately White (Cachelin, Rebeck, Veisel & Moore, 2001). However, studies carried out in communities show that EDs do exist among minority groups and that the frequency of their occurrence is not unlike that reported for the White populations (Cachelin, et. al., 2001). Thus, it can be assumed that either these people from minority groups do not seek treatment, or that they do and do not receive an accurate diagnosis (Cachelin et. al., 2001). It can also be assumed that the differential behaviour of health professionals and clinicians towards minority groups seeking treatment for EDs as one study conducted by Becker et. al (2003) showed that they were less likely than Caucasians to be asked about ED symptoms and referred for further treatment. These findings were robust even after controlling for the severity of the ED symptoms (Gordon et. al., 2006).

A possibility that the symptoms of EDs differ among patients of different ethnic backgrounds also exists, which could lead to further confusion regarding the existence or severity of their disorders (Tareen et. al., 2005). Studies conducted in countries such as India show that women suffering from EDs do not necessarily exhibit the typical signs of their disorder, as those exhibited by females in western cultures (Tareen et. al., 2005). A study conducted by Tareen et. al. (2005) on Caucasian and South-Asian girls with low weight in the United Kingdom versus those from India, Pakistan and Bangladesh showed that South-Asian women exhibited less signs of weight preoccupation, fat phobia and engaged in less activities

such as exercise to control weight, they did however show more signs of a loss of appetite. Both South-Asian and Caucasian women showed signs of perfectionism, depressive symptoms and body image disturbances. (Abraham et al., 2015). These differences in the symptoms of ED's, such as the lack of fat phobia, may be one of the reasons why many Asian women do not frequently get diagnosed with ED's by their clinicians (Gordon et al., 2006).

The presence of social stigma against EDs in cultural contexts must also be taken into consideration. It is also often found that people suffering from EDs feel inclined to deny or hide their condition, a behaviour that is commonly seen in individuals specifically suffering from Anorexia Nervosa. A study conducted by Becker et al. (2004) found that participants with disordered eating did not want to seek medical help because they did not want others to know about their condition. (Becker et al., 2004). Similarly, Memon, Taylor, Mohebati, Sundin, Cooper, Scanlon & Visser (2016) found that POC might be reluctant to seek help as mental illnesses are often seen as socially unacceptable topics of discussion. Sufferers are thus reluctant to acknowledge or openly discuss their symptoms due to this social stigma (Memon et. al., 2016). In some cases, a mental health diagnosis could ostracize not only the sufferer, but their whole family and therefore affect their standing in the community, so the consequences for seeking treatment in such cultural contexts can be dire (Memon et. al., 2016). These notions held by POC do seem valid as a study conducted by the UK Office for National Statistics in 2003 found that 35% of participants said people with EDs "could pull themselves together" and that 33% of participants felt that people with EDs "feel different from us" (Crisp, 2005).

With regards to males suffering from EDs, Strother, Lemberg, Stanford and Turberville (2013) stated that male sufferers are underdiagnosed, undertreated, and misunderstood. This is worrisome since NEDA has stated that at least 800,000 men have suffered from BN at some point in their lives, and up to 20% of people who are diagnosed with EDs are male. The stereotype that EDs are female disorders is so strong that doctors are less likely to diagnose a male with an ED than a female (Khan, 2015). Studies show that men, especially from the gay and transgender communities are no strangers to EDs, in fact there is a higher prevalence of EDs amongst men from these communities in comparison to heterosexual men (Feldman & Meyer, 2007). Male models in the fashion industry also suffer from EDs because of severe body image issues. One anonymous former male model stated that since everyone pays so much attention to females with EDs, by the time they notice that a male has an ED, his problem has already become severe (Jarema, 2014). EDs are also prevalent in male athletes that compete in aesthetic

sports (gymnastics, swimming, bodybuilding) and weight-class sports (horseracing, wrestling, rowing); by 33% (Bonci, 2010) and 38% of male college athletes were found to be at risk for Bulimia Nervosa (“The National Center on Addiction and Substance Abuse”, 2003). Considering these facts, the both White and non-White males are left feeling isolated, leading to a further misrepresentation of POC. Therefore, it is crucial to conduct further research into males and EDs to increase awareness, improve the treatment being provided to them and their chances of recovery.

Present Research: Goals and Hypotheses

Taking the literature review into account, the primary purpose of this research is to explore the public’s lay beliefs and perceptions of EDs and their causes according to ethnicity and gender of perceivers and targets, focusing primarily on Anorexia Nervosa, Bulimia Nervosa and Binge Eating Disorder. To investigate this, three major research goals must be explored. The first research goal, which will be investigated through Study I, is to describe the perceived prevalence of EDs in order to determine whether it is moderated by gender and ethnicity (of both the target and the participant). Based on the results of the studies conducted by Cachelin, Rebeck, Veisel & Moore (2001), Gordon, Perez and Joiner (2002) and Gordon et al. (2006), it is hypothesised that participants will associate EDs more with White targets (H1) (*see figure 2 for model depicting relationship between the variables*). Based on the review of papers by Strother, Lemberg, Stanford & Turberville (2013) and Bonci (2010) it is also hypothesised that participants will show an association of ED’s more with females than males (H2). The second goal, which will also be investigated using Study I, is to investigate the extent to which there is an association between perceived prevalence of EDs among gender and ethnic groups (moderated by gender and ethnicity of the participant) and the intention to engage with sufferers of EDs. It is predicted that participants’ intention to engage with EDs will be more likely the more they associate those disorders with White targets compared to POC (H3). The roles of these moderating variables will be explored in this study to determine whether they have an effect on the participants perceptions based on their group membership. The third and final goal, which will be examined using Study II, is to explore peoples lay beliefs regarding the causes of EDs, to see if these beliefs change depending on the gender and the ethnicity of the target and participant. The results of this study can be used in in helping scholars determine the educational needs of the public and help design culturally-sensitive approaches to the diagnosis and treatment of EDs.

It is hoped that by conducting research that examines how individuals from different ethnicities perceive and in turn, stigmatize those suffering from EDs by displaying their intention to engage with them, potential areas of improvement in clinical and educational settings will be brought to light. Focusing on how this differs across ethnicity and gender will provide a more inclusive understanding of the perceived prevalence and intentions to engage with ED sufferers. There is already a great deal of literature on the stigma surrounding EDs, however the variables examined in this study (i.e. ethnicities and genders of both participants and sufferers) will help illuminate the beliefs and perceptions that contribute to the stigmatization of EDs across genders and ethnicities, a niche of research that has currently not been explored fully.

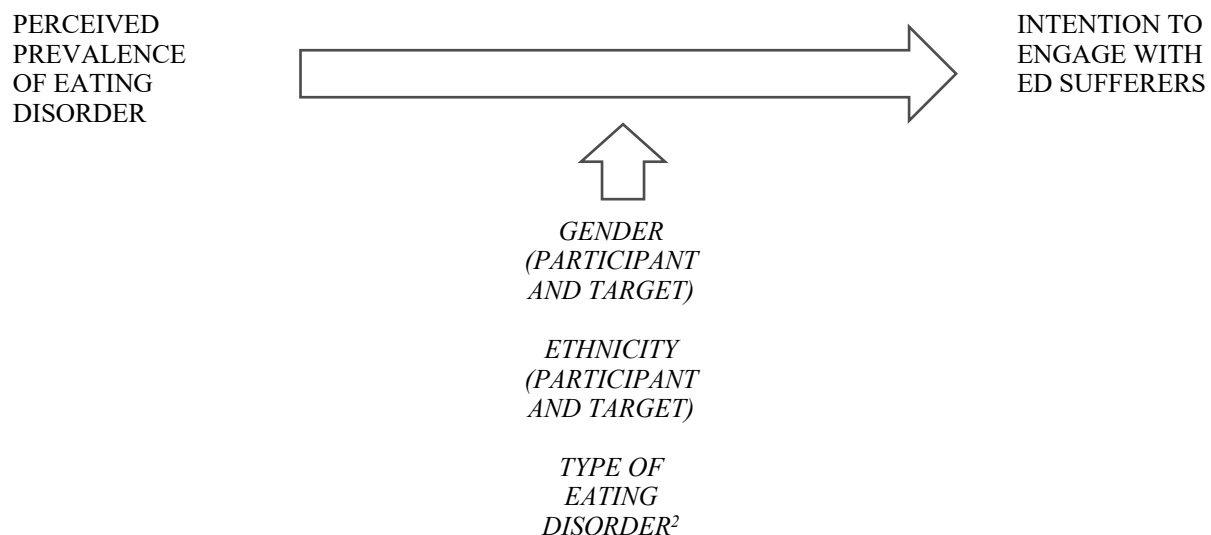


Figure 2. Model Depicting the Relationship Between Variables.

² Namely Anorexia Nervosa, Bulimia Nervosa or Binge Eating Disorder.

CHAPTER II: METHODOLOGY AND EMPIRICAL EVIDENCE

This chapter discusses the two studies conducted to assess the public's lay beliefs and perceptions of EDs and their causes according to gender and ethnicity. More specifically, Study I investigates the perceptions held by participants regarding the prevalence of EDs, particularly in POC of both genders, and the resulting intention to engage with their sufferers. Based on the results of the studies conducted by Cachelin, Rebeck, Veisel & Moore (2001), Gordon, Perez and Joiner (2002) and Gordon et al. (2006), it is hypothesised that participants will associate EDs more with White targets (H1) and females than males (H2). It is also predicted that participants' intention to engage with EDs is more likely the more they associate those disorders with White targets compared to POC (H3). Since literature investigating this could not be found, it is deemed important to test this hypothesis and examine the roles of the moderating variables (ethnicity and gender of both the target and participant) to determine whether they have an effect on the participants' perceptions based on their group membership. This section is then followed by an exploratory qualitative Study II that addresses participants' perceived causes of EDs, and the effects that gender and ethnicity of both the targets and the participants may have on their perception.

Study I

Study I gathered data on the perceived prevalence of EDs and participant's intentions to engage with people suffering from them using case vignettes, and instruments such as the Level of Previous Contact with EDs (Level of Contact Report), the Intention to Engage (Social Distance Scale), and a Perceived Body Image Scale. The aim of this study was to test the previously mentioned hypotheses (H1, H2 and H3) and to determine whether the results are moderated by the gender and ethnicity of both participants and targets (sufferers). The first research goal was to describe the perceived prevalence of EDs to determine whether it is moderated by gender and ethnicity (of both the target and the participant). The second goal was to examine the extent to which there is an association between perceived prevalence of EDs among gender and ethnic groups (moderated by gender and ethnicity of the participant) and the social-psychological outcome variables including stereotypes, level of contact, and perceived body image of people with EDs.

Design and Participants

An experimental 3 (ED's: AN, BN, BD) x 3 (Target's ethnicities: White, Black, Asian) x 6 (Participant's ethnicities: White, Black, Asian, Latino, Arab, Other) design and a 3 (EDs: AN, BN, BD) x 2 (Target's genders: Male, Female) x 2 (Participant's genders: Male, Female) design were initially to be used via an online survey created on Qualtrics to assess participants' perceived prevalence of ED's and intentions to engage with individuals suffering from the three ED subtypes. An opportunity sampling with snowballing of 300 male and female participants from around the globe was used to gather participants for the study, however after the evaluation of the missing data, only 238 of these participants were used in the study, focusing only on ethnically White and Asian participants; therefore, the Black, Latino, Arab and Other conditions were not part of the analysis. Overall, there were 190 White ($M= 1.00$, $SD= 0.000$) and 52 Asian ($M= 3.00$ $SD= 0.000$) participants. Of these participants, 178 were females and 59 were males, and their ages ranged from 18 to 62 years ($M= 24.46$, $SD= 6.901$). Participants were also excluded from the sample based on their response to the "I have an ED" variable in the Level of Contact scale.

Instruments and Procedure

The survey was shared on social media to attempt to expose it to an ethnically and culturally diverse sample pool. Participants were also provided by ISCTE's LAPSO program. All participants were informed that the study explored the perceptions of people suffering from ED's and were informed of the anonymity of their responses, thus taking measures to ensure that the responses were as honest as possible. With regards to the organization of the survey, after agreeing to the informed consent and filling in the demographic section, the participants were presented with the ED Scenarios that measured participants' perceived prevalence of EDs, followed by the Level of Contact Report, and the Perceived Body Image Scale. The participants were then debriefed before completing the survey (*see Appendix A for questionnaire*). The survey was divided into five sections comprising of the demographic information, the case vignettes depicting each ED and three the different scales (Level of Previous Contact with EDs, Perceived Body Image, and the Intention to Engage).

Demographic Information

The first section of the survey was used to gather data on the participants age, ethnicity, nationality and gender.

ED Scenarios - Perceived Prevalence of EDs towards Ethnic and Gender Groups

Participants were presented with the within-subjects variable of ED subtypes whereby they were asked to read three fictional vignettes that described cases of people suffering from Anorexia Nervosa, Bulimia Nervosa and Binge Eating Disorder. Using a 5-point Likert scale (1=very unlikely, 2=somewhat unlikely, 3=likely, 4=somewhat likely, 5=very likely) the participants were asked two questions following the vignettes. Firstly, they were asked “describe what your feeling is that the person in described above is one of the following (Male, Female, Other)” for each ED condition. The participants were then asked “describe what your feeling is that the person described above is one of the following (White, Black, Asian, Other [Specified by the participant])” for each ED condition (*see Appendix A*). In the vignette descriptions, attention was not directed towards gender or ethnicity and the scenarios were designed to be easily understandable and of equal complexity and word length. The case vignettes used in the study were as follows:

Vignette 1: “M recently visited their physician to complain about fatigue and sleeplessness that has been on-going for 6 months. The doctor notes that M is noticeably quite weak and is wearing an oversized, baggy t-shirt. M often complains about their weight and follows the obsessive rule of only eating food that is green in colour. M’s mother is concerned for her child because M suffers from mood swings, low self-esteem and impaired school performance.” (*Anorexia Nervosa*)

Vignette 2: “J frequently undergoes weight fluctuations and often complains about an obsession with eating and weight. J has tried unsuccessfully to lose weight and often become so hungry that J overeats to the point of throwing up. J suffers from low self-esteem, mood swings, guilt and depression. J is focused on muscle gain and fat loss and often feels quite lonely due to self-imposed isolation and a reluctance to develop close relationships.” (*Bulimia Nervosa*)

Vignette 3: “W often eats excessive amounts of food even when they are not hungry in order to avoid thinking about the problems they are having at work. W reports that they have never engaged in activities such as self-induced vomiting or the use of laxatives but does participate in repetitive diets and fasts. W often eats in secret, fears the disapproval of others and is overly sensitive to references about weight or appearance.” (*Binge Eating Disorder*)

Level of Previous Contact with EDs

This section involved the Level of Contact Report (adapted from Holmes et al., 1999) which assessed the degree of contact that the participants had had with individuals suffering from

ED's. A within-subjects design was used, and the participants were asked to select "yes" or "no" to the eight statements assessed the various levels of contact they had had with Anorexia Nervosa, Bulimia Nervosa and Binge Eating Disorder. These statements touched on the contact in different contexts, namely "media exposure", "observed in passing", "observed frequently", "I have an ED", "I have worked with someone with an ED", "A friend of the family has an ED", "My relative has an ED" and lastly the highest level of contact measure being 'I live with someone with an ED'. It is important to note that the "I have an ED" variable was used to exclude participants from the sample. The results of the scale were computed by adding the "Yes" responses for each ED. Thus, each of the 3 new variables ranged between 0 to 3, where higher values indicate higher levels of previous contact.

Perceived Body Image

The participants were asked to use a Perceived Body Image Scale to determine their perceived body image of an individual with Anorexia Nervosa, Bulimia Nervosa and Binge Eating Disorder. This section was only included in the survey in order to assess whether the majority of the participants grasped the descriptions of the EDs and did not respond haphazardly. They were also asked what they thought their own body image looks like from the scale provided which ranged from 1 to 9. The first image "1" was a supposed representation of what a person with Anorexia Nervosa would look like, and "9" represents what someone with Binge Eating Disorder would supposedly resemble. The participants answers were expected to be on either end of the spectrum for both these EDs, but were expected to be around the "normal" body image ranged from "4" to "5" to "slightly overweight" range of "6" or "7" for Bulimia Nervosa.

Intention to Engage (Social Distance Scale)

Lastly, the participant's intentions to engage with sufferers of EDs was measured using the Social Distance Scale³ adapted from Link et. al., 1987 to focus on questions on EDs and not mental illnesses in general. It comprised of four scenarios assessed on a 4-point Likert scale ranging between 1 indicating "definitely unwilling", 2 as "somewhat unwilling", 3 as "somewhat willing", and 4 as "definitely willing" that asked for self-report accounts of how the participants might interact with a person with an ED. Thus, higher values indicated a higher intention to engage with ED sufferers. The items included "renting a room in your home", "introducing a

³ The SDS has been modified to measure behavioural intention, specifically against ED's, not for mental illnesses as had previously been designed.

person (with the specified ED) to your friends”, “having your child marry the person suffering from the specified ED” and “working with a person with the ED”. The items in the scale were combined into three separate items for each ED: SDS_AN ($\alpha = 0.802$), SDS_BN ($\alpha = 0.753$) and SDS_BD ($\alpha = 0.834$).

Results

All analyses were conducted using IBM SPSS Statistics 24. The descriptive statistics and correlations can be found in *Table 2* and *Table 3 (Appendix C)*. This section addresses all the research goals individually, starting with the perceived prevalence of EDs per ethnicity of both target and participant, after that the results of the perceived prevalence of EDs moderated by the gender of the target and participant are reported. The third section addresses the perceived prevalence and intention to engage with EDs based on ethnicity and gender of both the target and participant. This is followed by a brief discussion of the results.

The Perceived Prevalence of Eating Disorders Moderated by Ethnicity of The Target and Participant

To test the hypothesis (H1) that participants will associate EDs more with White targets, a three-way mixed measures ANOVA was carried out on the ethnicity of the target (White, Black, Asian), ED (Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder) and the ethnicity of the participant (White, Asian). Mauchly's test of sphericity was not significant $\chi^2(9)=13.018, p>0.05$ and thus sphericity was assumed. The results yielded a significant effect for ethnicity of the target $F(2,382)=11.502, p<0.05$, which was qualified by the significant interaction between ethnicity of the target and ED, $F(4,764)=4.953, p<0.05$ (*Figure 3*).

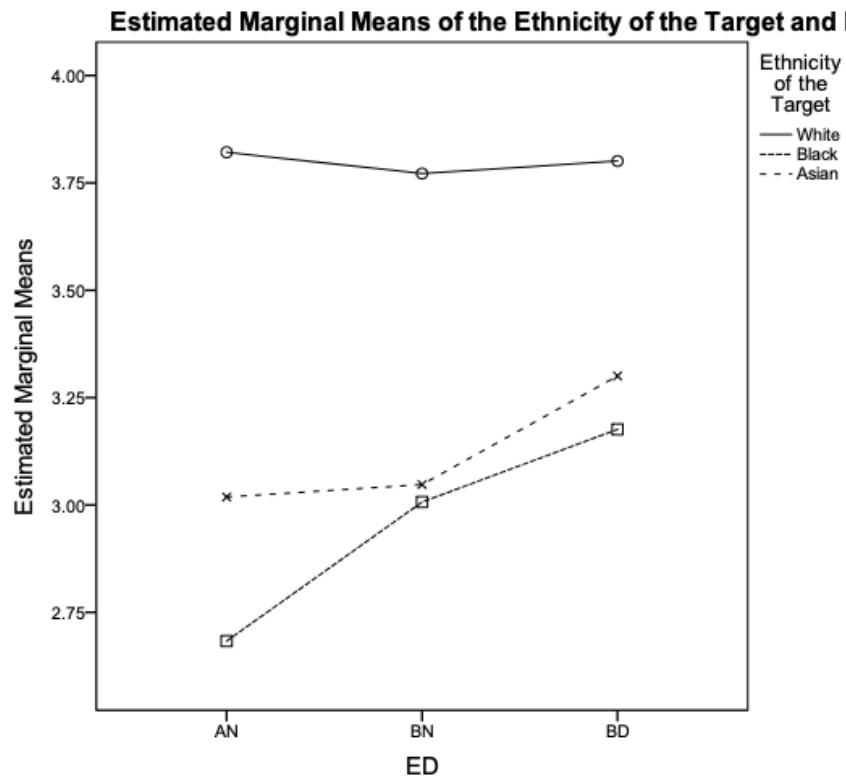


Figure 3. Estimated Marginal Means of the Ethnicity of the Participant and Eating Disorders.⁴

To test the interaction between the within subject variables of EDs (DV) and ethnicity of target (IV), paired samples t-tests were conducted for Anorexia Nervosa, Bulimia Nervosa and Binge Eating Disorder. The results for the Anorexia Nervosa test indicated statistically significant differences between all three ethnicities. The means indicated that the perceived prevalence of Anorexia Nervosa in White targets ($M=3.94, SD=1.087$) is higher than in Black targets ($M=2.72, SD=1.029$), $t(210)=12.601, p=0.000$, and White ($M=3.94, SD=1.087$) and Asian targets ($M=3.10, SD=1.089$), $t(210)=8.736, p<0.05$, and lastly the perceived prevalence of Anorexia Nervosa is higher in Asian targets ($M=3.10, SD=1.089$) than in Black targets ($M=2.72, SD=1.029$), $t(210)=-4.626, p<0.05$.

The paired samples t-test conducted on Bulimia Nervosa for all three target ethnicities indicated significant differences for White and Black $t(198)=9.305, p<0.05$, and White and

⁴ AN: Anorexia Nervosa, BN: Bulimia Nervosa, BD: Binge Eating Disorder

Asian target responses $t(198)=9.416, p < 0.05$. The means indicated the perceived prevalence of Bulimia Nervosa in White targets ($M=3.91, SD=0.996$) was higher than Black targets ($M=3.05, SD=1.034$), and similarly the perceived prevalence of Bulimia Nervosa in White targets ($M=3.91, SD=0.996$) was higher than in Asian targets ($M=3.02, SD=1.044$). No significant differences were found between Black and Asian targets.

The last paired samples t-test conducted on Binge Eating Disorder for all three targets indicated significant differences for White and Black targets $t(193)=7.635, p < 0.05$, and White and Asian targets $t(193)=7.345, p < 0.05$. The means indicated the perceived prevalence of Binge Eating Disorder in White targets ($M=3.91, SD=0.945$) was higher than in Black targets ($M=3.29, SD=1.018$), and in White targets ($M=3.91, SD=0.945$) more than Asian targets ($M=3.27, SD=1.009$). There were no significant differences in the perceived prevalence of Black and Asian targets suffering from Binge Eating Disorder. Overall, the results support the hypothesis (H1) and further show that a higher perceived prevalence of EDs among White targets does not depend on the ethnicity of the participant.

The initial three-way ANOVA also yielded a significant effect for ED $F(2,382)=71.755, p < 0.05$, which was further qualified by the significant effect for the interaction between ED and the ethnicity of the participant $F(2,382)=3.414, p < 0.05$. In order to test the interaction between ED and the ethnicity of the participant, a contrast⁵ was conducted, comparing the ethnicity of the participant (White, Asian) for each ED (Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder), which indicated significant differences between White and Asian participants only for Anorexia Nervosa $F(1,191)=8.470, p < 0.05$ (Figure 4).

⁵ using SPSS LMatrix command

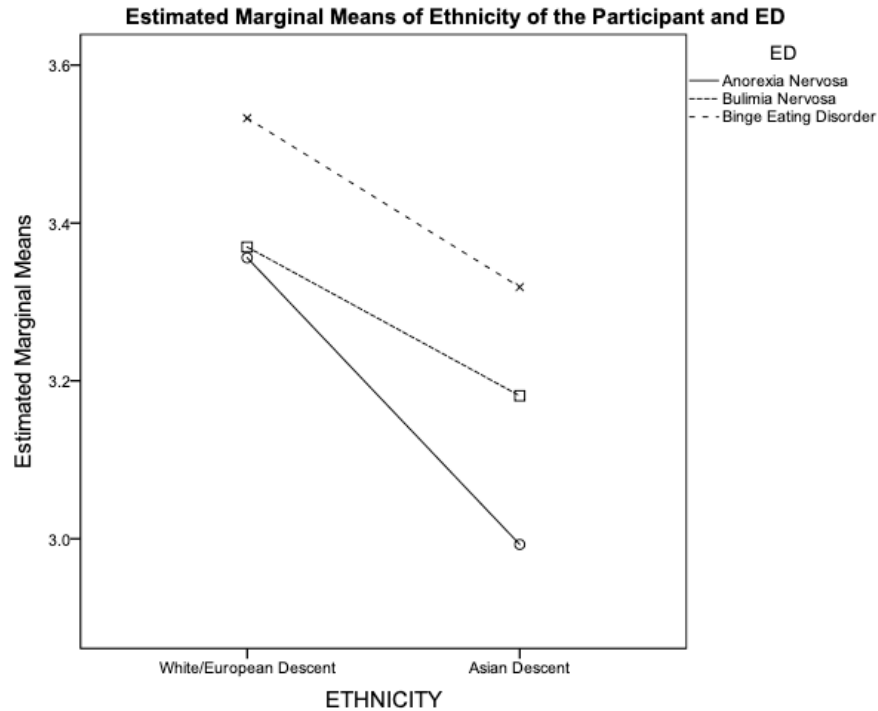


Figure 4. Estimated Marginal Means of Eating Disorders and the Ethnicity of the Participant.

An analysis of the means showed a significant difference between White and Asian participants for Anorexia Nervosa, but not for the other two EDs. For Anorexia Nervosa, White participants significantly indicated it as more likely to occur ($M= 3.356, SD=0.061$) compared to Asian participants ($M=2.993, SD=0.109$), For Bulimia Nervosa, White participants ($M=3.370, SD=0.059$) also indicated it as more likely to occur compared to Asian participants ($M=3.181, SD=0.106$). Lastly, for Binge Eating Disorder, White participants ($M=3.533, SD=0.060$) indicated it as more likely to occur compared to Asian participants ($M=3.319, SD=0.107$). Overall, White participants saw all three EDs as equally likely to occur whereas Asian participants indicated Anorexia Nervosa as less likely compared to Bulimia Nervosa and Binge Eating Disorder.

The Perceived Prevalence of EDs moderated by the Gender of the Target and Participant

To test the hypothesis that participants will show an association of EDs with the females more than males (H2), a three-way mixed measures ANOVA was carried out to analyse the

interaction between the gender of the target and ED, with the gender of the participant as a between-subjects variable. Mauchly’s test of sphericity was significant $\chi^2(2)=8.219, p<0.05$ hence the Huynh-Feldt correction was used, the results indicated significant effects for eating disorder $F=(1.953,372.935)=10.329, p<0.05$, gender of the target $F=(1.000, 191.000)=37.256, p<0.05$, the interaction between gender of the target and the gender of the participant $F(1.000,191.000)=6.431, p<0.05$, and the interaction between ED and gender of the target $F(1.948,372.060)=23.912, p<0.05$.

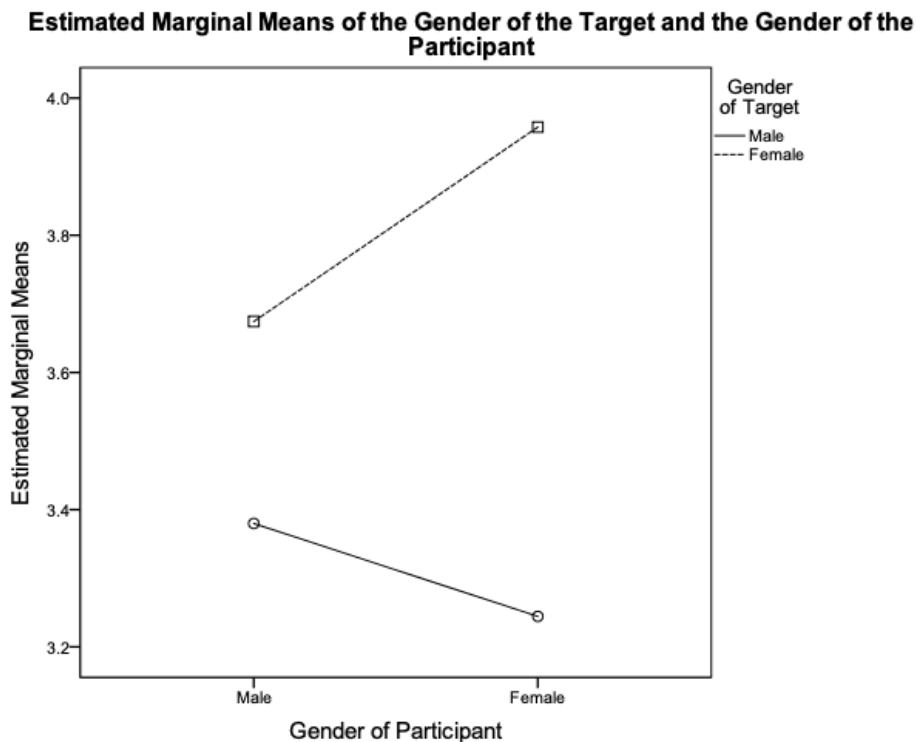


Figure 5. Estimated Marginal Means of the Gender of the Target and the Gender of the Participant.

To explore the interaction effect between the gender of the target and the gender of the participant, a contrast⁶ was conducted comparing male and female participants regarding their perceived prevalence of ED among male and female targets (*Figure 5*). The results indicated a significant difference between male and female participants only regarding the perceived

⁶ using SPSS L Matrix command

prevalence of EDs among female targets $F(1,191)=4.157, p < 0.05$. An analysis of the means showed that there was a significant difference between male and female participants when the target was female. Female participants perceived higher levels of prevalence ($M=3.958, SD=0.066$) compared to male participants ($M=3.674, SD=0.123$). With regards to male targets, the mean levels of perceived prevalence were lower than those of female targets, and there were no differences between the perceptions of male and female participants (Males: $M=3.380, SD=0.118$, Females: $M=3.244, SD=0.0063$).

To explore the interaction between ED and the gender of the target a paired samples t-test contrasting male targets and female targets for each ED was conducted (*Figure 6*). The results indicated a significant effect for Anorexia Nervosa $t(210)=-10.516, p < 0.05$ (Male: $M=2.79, SD=0.079$, Female: $M=4.09, SD=0.077$), and Binge Eating Disorder $t(193)=-7.163, p < 0.05$ (Male: $M=3.31, SD=0.077$, Female: $M=4.02, SD=0.070$) and the means indicated that female targets were significantly associated with both EDs compared to male targets. No significant difference was found for Bulimia Nervosa as the means indicated that both male and female targets were associated with this disorder to a similar degree $t(198)=1.244, p= 0.215$ (Male: $M=3.70, SD=0.080$, Female: $M=3.56, SD=0.081$). Taking these results into account, the findings partially support the hypothesis (H2) as all three EDs were associated with females, except Bulimia Nervosa, which was not significantly indicated with either gender.

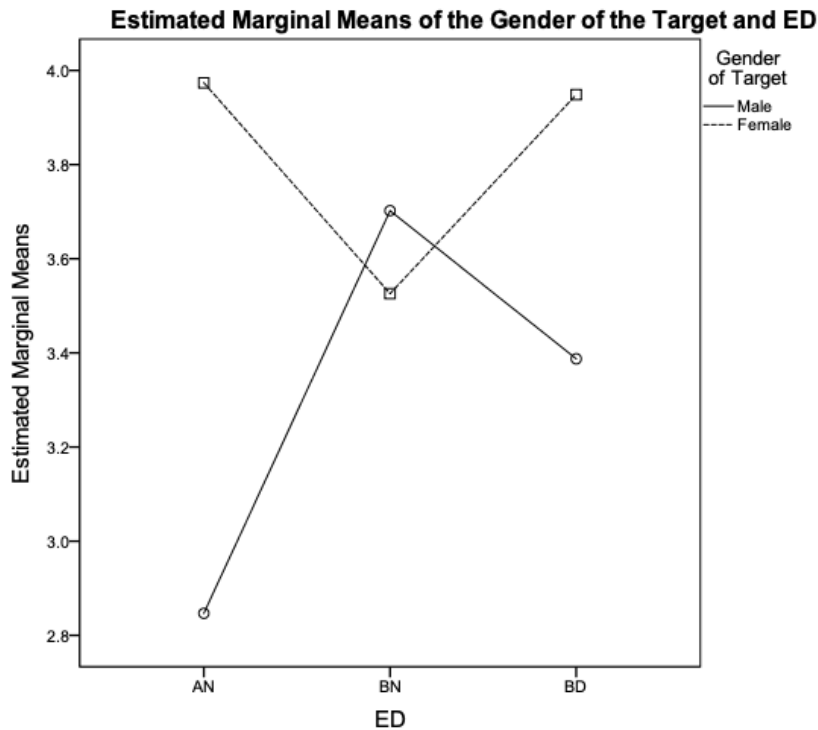


Figure 6. Estimated Marginal Means of Eating Disorder and the Gender of the Target.

The Perceived Prevalence and Intention to Engage with EDs Based on Ethnicity and Gender

To test the hypothesis that participants’ intention to engage with sufferers of EDs is more likely the more they associate those disorders with White targets compared to POC (H3), two way ANOVA’s were carried out on the intentions to engage with people suffering from each ED separately including as independent variables the difference in the perceived prevalence between two ethnic groups (i.e., the difference between White/Black, White/Asian, Black/Asian perceived prevalence) and the ethnicity of the participant.

For Anorexia Nervosa and including as predictor the difference in the perceived prevalence between White and Black targets, a main effect was found for the ethnicity of the participant $F(1,178)=19.078, p < 0.05$. White participants ($M=3.138, SD=0.054$) showed a higher intention to engage with people with EDs compared to Asian participants ($M=2.662, SD=0.094$). No significant effects were found for the interaction between the ethnicity of the participant and the difference between the perceived prevalence of White/Black’s with regards to Anorexia Nervosa.

For the White-Asian difference for Anorexia Nervosa, a main effect was found for the ethnicity of the participant $F(1,178)=18.672, p < 0.05$. White participants ($M=3.136, SD=0.054$) showed a higher intention to engage with EDs compared to Asian participants ($M=2.666, SD=0.094$). No significant effects were found for the interaction between the ethnicity of the participant and the difference between the perceived prevalence of White/Asian with regards to Anorexia Nervosa.

For the difference between the perceived prevalence of Anorexia Nervosa in Black/Asian's, a significant effect was found for ethnicity of the participant $F(1,178)=19.484, p < 0.05$. An analysis of the means showed the same main effect as in the previous analysis.

With regards to Binge Eating Disorder, including as predictor the difference in the perceived prevalence between White and Black targets, a main effect was found for the ethnicity of the participant $F(1,177)=6.182, p < 0.05$. White participants ($M=3.107, SD=0.058$) showed a higher intention to engage with EDs compared to Asian participants ($M=2.813, SD=0.103$).

For the White-Asian difference for Binge Eating Disorder, a main effect was found for the ethnicity of the participant $F(1,177)=6.410, p < 0.05$. The same main effect was found as in the previous analysis.

Lastly, for the Black-Asian difference for Binge Eating Disorder, a main effect was found for the ethnicity of the participant $F(1,177)=6.597, p < 0.05$. The same main effect was found as in the previous analysis.

No main effects were found for Bulimia Nervosa and the difference between the perceived prevalence in any of the ethnicities.

To test if the intention to engage with people suffering from EDs was informed by gender, a two-way ANOVA were carried out on the intentions to engage with people suffering from each ED separately including as independent variables the difference in the perceived prevalence between two target genders (the difference between Male/Female perceived prevalence) and the gender of the participant.

For Anorexia Nervosa and the difference between the Male/Female perceived prevalence a main effect was found for the gender of the participant $F(1,177)=6.981, p < 0.05$. Female participants ($M=3.082, SD=0.054$) showed a higher intention to engage with sufferers of Anorexia more than males ($M=2.803, SD=0.109$).

No main effects were found for participants intention to engage with Bulimia Nervosa and Binge Eating Disorder. Thus, the findings did not support the hypothesis (H3) that

participants' intention to engage with sufferers of EDs is more likely the more they associate those disorders with White targets compared to POC.

Discussion

The analysis of the perceived prevalence of EDs moderated by the ethnicity of the target and participant showed that, overall, participants predominantly associated all three EDs with White targets. Participants' perceived prevalence of Anorexia Nervosa was higher for White targets compared to Black and Asian targets, and in turn was higher in Asian targets more than Black targets. Their perceived prevalence of Bulimia nervosa and Binge Eating Disorder was higher in White targets compared to Black and Asian targets. No significant differences were found between Black and Asian targets. These results support the hypothesis that states that the participants associate EDs more with White targets (H1). It is interesting to note that based on the analysis of EDs and the ethnicity of the participant, White participants significantly indicated Anorexia Nervosa as more likely to occur compared to Asian participants. For Bulimia Nervosa and Binge Eating Disorder, White participants also indicated them as more likely to occur compared to Asian participants. Taking into account that participants had the most contact with Anorexia Nervosa compared to the other two disorders, the indication that the target in the case studies presented to the participants is less likely to be suffering from Anorexia Nervosa certainly needs to be shown some importance and analysed further.

The results for the interaction between the gender of the target and the participant with regards to EDs showed that according to both male and female participants, the perceived prevalence of Anorexia Nervosa and Binge Eating Disorder is higher in females than males, with females being more likely to indicate this effect. No significant associations were found for Bulimia Nervosa. These results partially confirm the hypothesis that participants associate all EDs more with the female gender (H2), with the exception of Bulimia Nervosa.

With regards to the hypothesis that participants' intention to engage with EDs is more likely the more they associate those disorders with White targets compared to POC (H3), the results rejected the hypothesis as the results displayed no significant effect between the ethnicity of the target and the intentions to engage with them. An interesting interaction was, however, found between the ethnicity of the participant and the intention to engage with EDs. White participants showed a significantly higher intention to engage with sufferers of Anorexia Nervosa and Binge Eating Disorder compared to Asian participants. No significant interaction was found for Bulimia Nervosa.

An analysis exploring the effect of gender on the intention to engage with sufferers of EDs was also conducted. The results showed that females displayed a higher intention to engage with sufferers of Anorexia Nervosa compared to male participants. No significant effects were found for Bulimia Nervosa and Binge Eating Disorder.

Since this study identified significant interactions for gender, ethnicity and EDs, especially with White participants showing a higher intention to engage with sufferers of the three ED subtypes in comparison to Asian participants, it was deemed useful to conduct a second study to determine what the lay beliefs are regarding the causes of EDs based on both these factors and the perception of EDs in POC. The information may help clarify the differences in the perceived prevalence found in this study and explain why the general public underestimates their prevalence in POC. Such information could be beneficial in helping researchers determine the educational needs of the public (Salafia et. al., 2015) and help with the development of culturally-sensitive approaches to the treatment and diagnosis of EDs.

Study II

An exploratory Study II was further carried out using open-ended questions to assess the beliefs that participants held regarding the causes of EDs, and close-ended questions that asked participants to indicate their perceived gender of the target. The purpose of Study II was to qualitatively explore the lay beliefs held by the public regarding the causes of EDs in White and non-White (POC) populations and to explore whether they associate a certain ED with a specific ethnicity or gender in order to corroborate the results of Study I. The literature review determined that this has not been done previously with a focus on different ethnicities. This study also allowed the exploration into how associating different explanations regarding the causes of EDs and their correlation with a certain ethnicity can be used to explain why the general public underestimates their prevalence in POC.

Design and Participants

The participants were presented with case vignettes of either White, Black, or Asian individuals suffering from the three ED subtypes. The same case vignettes developed for Study I were used to ensure consistency between both studies (*see Appendix B for questionnaire*). This was done to guarantee the attainment of reliable responses. They were also asked about the perceived gender of each individual. The total sample consisted of 121 participants, however

only 65 participants' results were used due to incomplete responses and disqualification based on ethnicity; only White and Asian participants were used in order to ensure consistency and corroboration of both Study I and Study II. Of these participants, 49 (75.4%) identified as females and 16 (24.6%) as males. With regards to ethnicity, 35 (53.8%) identified themselves as Asian and 30 (46.2%) as White. Their ages ranged from 18 to 48 ($M=25.42$, $SD=5.676$).

Instruments and Procedure

The online survey was passed around on social media platforms to attempt to reach a diverse pool of participants. The participants were informed that the study explored the perceived causes of ED's and were told their responses would be completely anonymous therefore taking measures to once again ensure that the attainment of honest responses.

After answering basic demographic questions regarding their age, ethnicity, gender and nationality, participants were presented with a set of the same case vignettes used in Study I (see *Appendix A*) and were asked to "Read the case vignette regarding an ethnically White/Black/Asian person described below and answer the questions that follow". The definition of the ED in question was specified underneath each vignette in order to assure participants understood what each ED was (see *Appendix B* for definitions). The participants were then asked, "what do you think could be the causes of the illness?" and were asked to specify two possible causes. This was followed by close-ended questions that used a 5-point Likert scale (with 1=very unlikely, 2=somewhat unlikely, 3=likely, 4=somewhat likely, 5=very likely) to assess what participants asked "Using the scale below, describe your feeling that the person suffering from the illnesses is one of the following genders" and were asked to indicate the gender as either male or female. The participants were then debriefed before completing the survey (see *Appendix B for Questionnaire*).

Results

A list of eight codes for the causes of EDs were generated based on an extensive review of the literature (Salafia et. al., 2015), and manually from reading the participants' responses to the questions "what do you think are the causes of M/J/W's illness?" whereby M suffers from Anorexia Nervosa, J suffers from Bulimia Nervosa and W suffers from Binge Eating Disorder. These codes were as follows: *biological factors, body dissatisfaction and eating behaviour, family problems, social problems, psychological/emotional problems, sociocultural factors, sports and health, and traumatic life events* (Salafia et. al., 2015). These codes provided a framework for the thematic analysis and allowed the grouping of participants responses under

each category. Participants’ responses were then grouped under each category. Since each participant was asked to identify at least two causes for each ED, many were therefore grouped under multiple categories (*see Table 3*). The responses were then analysed using IBM SPSS Statistics 24.

Table 1. Sample Responses for Each Coded Category.

Coded Category	Causes
Biological Factors	Genetics, Predisposition, Puberty, Chemical imbalance
Body Dissatisfaction and Eating	Fear of weight gain, Junk Food Addiction, Desire to be Thin
Family Problems	Pressure from parents, Controlling mother
Psychological/Emotional Problems	Stress, Low self-esteem, anxiety, depression, OCD
Social Problems	Bullying, Stress at work, isolation, loneliness
Sociocultural Factors	Media, societal expectations to look a certain way, western values, social conditioning
Sports and Health	Lack of physical activities, inability to lose weight through popular means like gym
Traumatic Life Events	Abuse, Sexual assault, Childhood trauma

Participants Perceived Causes of Eating Disorders moderated by Ethnicity

A mixed measures ANOVA was conducted to test the 8 (Causes: Biological Factors, Body Dissatisfaction and Eating, Family Problems, Psychological/Emotional Problems, Social Problems, Sociocultural Factors, Sports and Health, Traumatic Life Events) x 3 (ED: Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder) x 3 (Ethnicity of target: White, Black, Asian) x 2 (Ethnicity of participant: White, Asian) design and compare the effect of the eight coded perceived causes and EDs per the target ethnicities (within-subjects variables) and the ethnicity of the participant (between-subjects variables). Mauchly’s test of sphericity indicated that the assumption of sphericity was violated for the type of cause $\chi^2(27)=153.757, p<0.05$, the ED $\chi^2(2)=7.202, p<0.05$, and also the interaction between the type of cause and ED $\chi^2(104)=479.740, p<0.05$, therefore the degrees of freedom were corrected using the Greenhouse-Geisser estimates of sphericity. The results showed a significant effect for the type of cause $F(3.828,218.205) =$

63.643, $p < 0.05$, qualified by a significant interaction between the type of cause x ethnicity of the participant $F(3.828, 218.205) = 8.417, p < 0.05$.

To explore this interaction effect, a univariate test was conducted contrasting⁷ White and Asian participants regarding their perceived causes of EDs. The results indicated a significant difference between White and Asian participants for the cause Psychological/Emotional Problems $F(1, 61) = 16.767, p < 0.05$. An analysis of the means showed that both White and Asian participants indicated this factor the most likely cause of EDs, with White participants as more likely to report the interaction ($M = 1.195, SD = 0.090$) compared to Asian participants ($M = 0.696, SD = 0.083$). Other significant differences were also indicated for Body Dissatisfaction and Eating $F(1, 61) = 9.479, p < 0.05$. Asian participants ($M = 0.255, SD = 0.046$), were more likely to report it a cause of EDs compared to White participants ($M = 0.046, SD = 0.050$). Asian participants were also more likely to indicate Biological Factors as perceived causes of EDs $F(1, 61) = 5.115, p < 0.05$ ($M = 0.157, SD = 0.037$) more than White participants ($M = 0.034, SD = 0.040$). Lastly, with regards to Sports and Health, Asian participants ($M = 0.088, SD = 0.030$) were more likely to indicate it as a cause where as White participants did not see it as a cause of EDs overall ($M = 0.000, SD = 0.032$) $F(1, 61) = 4.026, p < 0.05$ (Figure 7).

⁷ using SPSS L Matrix command

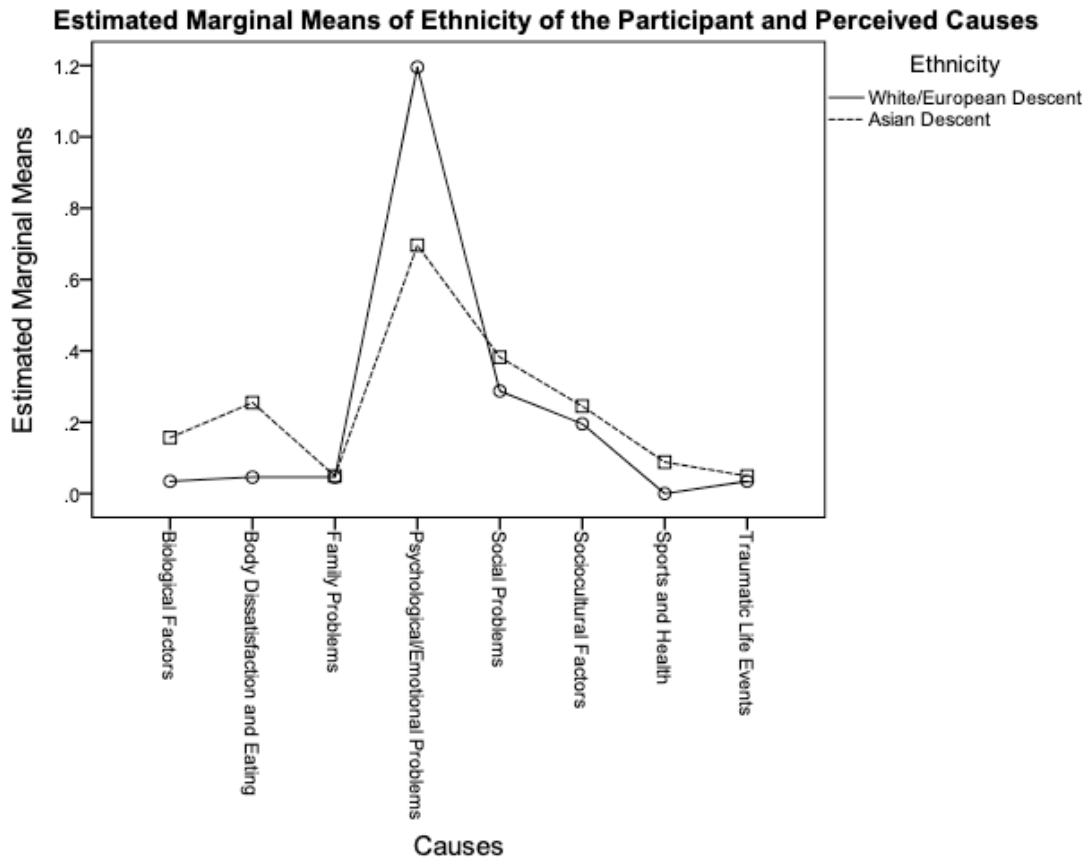


Figure 7. Estimated Marginal Means of Ethnicity of the Participant and Perceived Causes of Eating Disorders.

An Analysis of Gender and Eating Disorders

A mixed design ANOVA was conducted for the 3 (ED: Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder) x 2 (gender of the target: Male, Female) x 2 (gender of the participant: Male, Female) design. Mauchly’s test of sphericity indicated that the assumption was not violated for the gender of the target and eating disorder $\chi^2(2)=1.839, p>0.05$ and the results showed significant interaction effects gender of the target x gender of the participant $F(1,52) = 6.032, p<0.05$, and the gender of the target and ED $F(2,104)=8.234, p<0.05$.

To explore the interaction effect between the gender of the target and the gender of the participant, a univariate test contrasting⁸ the difference between the participants for the association of each ED was conducted. A significant difference was found for the contrast between male and female participants and the target genders $F(1, 52) = 4.476, p = 0.039$. Results indicated that males were more likely to show no significant difference between the association of EDs with any particular gender, however female participants were less likely to associate EDs with males, and more likely to associate EDs with females (*Figure 8*).

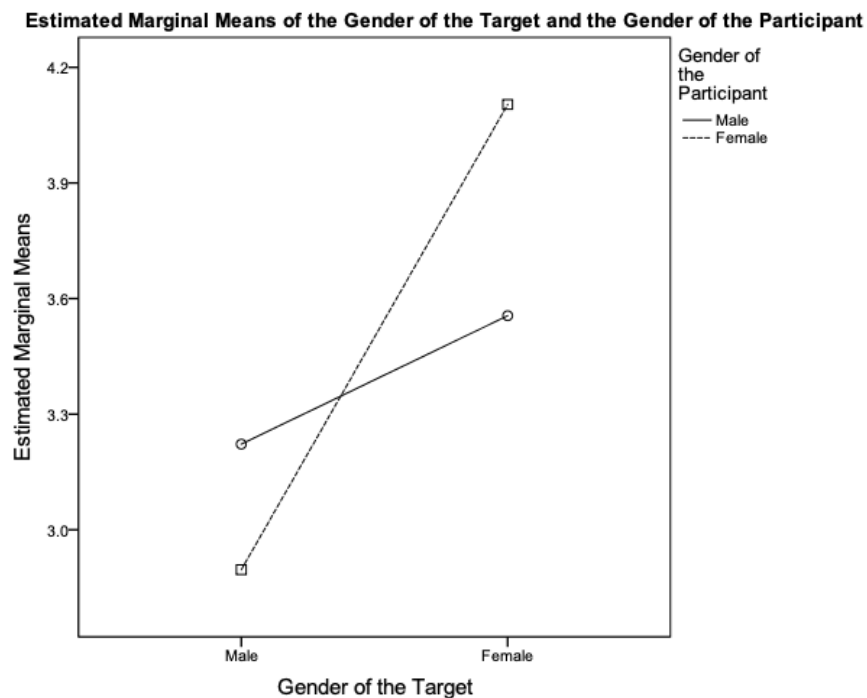


Figure 8. Estimated Marginal Means of the Gender of the Target and the Gender of the Participant.

In order to explore the interaction between EDs and the gender of the target a paired samples t-tests contrasting male targets and female targets for each ED was conducted. The results indicated a significant effect for Anorexia Nervosa with female targets being associated with the ED more than males $t(55)=-8.645, p < 0.05$ (Male: $M=2.48, SD=0.934$, Female: $M=4.27, SD=0.118$). A significant effect was also found for Bulimia Nervosa $t(53)=-4.900,$

⁸ using SPSS L Matrix and K Matrix commands

$p < 0.05$ with female targets being associated with it more than males as well (Male: $M = 2.87$, $SD = 1.047$, Female: $M = 3.93$, $SD = 0.949$). No significant effect was found for Binge Eating Disorder $t(53) = -1.594$, $p = 0.117$ (Male: $M = 3.52$, $SD = 0.987$, Female: $M = 3.83$, $SD = 0.966$) (Refer to Figure 9). The means indicate that Anorexia Nervosa and Bulimia Nervosa are associated with females more than males, whereas no significant association was found for Binge Eating Disorder.

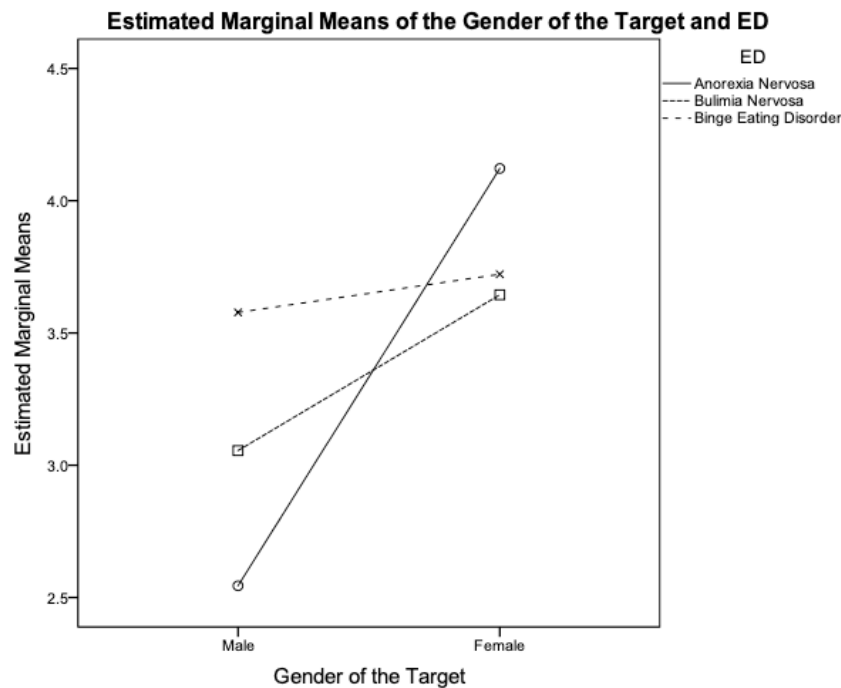


Figure 9. Estimated Marginal Means of the Gender of the Target and Eating Disorders.

Discussion

Study II’s findings showed participants referenced “Psychological/Emotional Problems” as the most likely cause of EDs (confirming the results of the study conducted by Salafia et. al., 2015), with White participants as more likely to report that than Asian participants. For “Body Dissatisfaction and Eating”, Asian participants were more likely to report it as perceived cause of EDs compared to White participants. Asian participants were also more likely to indicate Biological Factors as a perceived cause of EDs compared to White participants. Lastly, with regards to Sports and Health, Asian participants were more likely to indicate it as a cause whereas White participants did not see it as a cause of EDs overall. Literature reporting similar results could not be found, however the association of EDs primarily with “Psychological/Emotional Problems” can be indicative of awareness of current theories that

document how EDs occur in individuals. The association of EDs with more than one cause also shows that participants are potentially aware of the multifactorial nature of the illnesses. As shown by Striegel-Moore & Bulik (2007) EDs have been identified as multifactorial illnesses involving interactions between sociocultural, biological, and psychological factors as leading to their development. With regards to the association presented by Asian participants between “Body Dissatisfaction and Eating” and EDs, it can be linked to the presence of higher levels of body dissatisfaction in Asian girls. A study conducted by Smart & Tsong (2014) on weight, body dissatisfaction and disordered eating in Asian American women found that nearly one quarter of the 109 participants had engaged in disordered eating. They also reported to have experienced weight gain, mild body dissatisfaction and a desire to be thinner. Perceived causes for this involved the cultural and familial pressure to be thin and criticize weight gain. Contrary to the findings of Salafia et. al., (2015) “Biological Factors” were more frequently indicated as potential causes of EDs. This is indicative of changing perspectives, especially with regards to Asians, concerning the importance of biological factors, such as genetics, in the formation of EDs, and viewing them as more than just self-inflicted illnesses (Salafia et. al, 2015). Lastly, the indication of “Sports and Health” by Asian participants and not by White participants is also of significant interest. Research shows that pressure from sports coaches and friends regarding appearance and the need to lose weight for sports performances are factors commonly associated with disordered eating (Salafia et. al, 2015). Literature could not be found to support the association of this cause with EDs by Asian participants and not White participants, however, it does warrant consideration and is a potential area for future studies.

Regarding gender and EDs; the analysis of the interaction between the gender of the target and the gender of the participant showed that according to males, no significant interaction was found between the gender of the target and ED. Females displayed a significant effect for the association of all EDs with females more than males. They specifically indicated that Bulimia Nervosa is seen as more prevalent in females than males. Similarly, the interaction between the gender of the target and EDs showed that the disorders were primarily associated with female targets. Female participants specifically associated Anorexia Nervosa with female targets more than males, they also associated Bulimia Nervosa with females more than males. This is consistent with the statistics reported by the American Psychiatric Association (2013) as the female to male ratio of Bulimia Nervosa is 10:1 (American Psychiatric Association, 2013). No significant differences were observed for Binge Eating Disorder. These results differ from

those of Study I, which may be attributed to the differences in samples and nationalities. It may also be attributed to sufficient knowledge regarding the statistics of Binge Eating Disorder, as per the American Psychiatric Association (2013) the female to male ratio is not as skewed as it is for Anorexia Nervosa and Bulimia Nervosa. Males make up approximately 40% of the individuals suffering from Binge Eating Disorder. These findings and their implications will be discussed further in the next chapter.

CHAPTER V: GENERAL DISCUSSION

The purpose of both studies was to investigate the public's lay beliefs and perceptions of the three ED subtypes and their causes based on ethnicity and gender. Three research goals were identified; the first goal was to describe the perceived prevalence of EDs, and more specifically to explore if these perceptions are moderated by gender and ethnicity of both the participant and the target. This is of relevance to the study, as, conducting research into how individuals from different ethnicities perceive and stigmatize ED sufferers through reported intentions to engage with them will help illuminate potential areas of improvement in clinical and cultural settings. The hypotheses associated with this goal were that all ethnicities associate EDs more with White targets than POC (H1) and that participants associate EDs more with the female gender (H2).

The second goal was to examine the extent to which differences in the perceived prevalence of EDs regarding the gender and ethnicity of the targets influence participants' intention to engage with those individuals, and to what extent this is moderated by participants' gender and ethnicity. The hypothesis associated with this goal was that participants' intention to engage with sufferers of EDs is more likely the more they associate those disorders with White targets compared to POC (H3).

The final goal was to explore peoples lay beliefs regarding the causes of EDs across ethnicities and to determine if these beliefs changed depending on the gender and the ethnicity of the target. This was done in order to corroborate the results of Study I by examining whether the sample of participants used associated a certain ED cause with a specific ethnicity or gender. This could be used to explain why the public underestimates the prevalence of EDs in POC and males. The research is also of relevance as investigating how participants view POC suffering from EDs can help scholars determine the educational needs of the public and appropriately target the missing gaps in their knowledge.

This study is, to the best of my knowledge, the first one to carry out mixed measures surveys using White and Asian participants to investigate how people perceive EDs, their causes, and how that influences their intention to engage with them especially when it comes to the gender and ethnicity of the target. In addition, the experimental design of Study I allowed for the direct comparisons between the EDs and allowed for causal conclusions to be drawn from the results of the study. Another strength is the use of an open-ended format in Study II which

reduced possible biases from the authors' pre-understanding of possible causes and allowed participants to state more than one perceived cause of EDs, which is seldom possible with questionnaires that use close-ended formats.

Study I tackled the first two research goals. With regards to the prediction that all ethnicities will associate EDs more with White targets (H1), it was found that participants associated the three ED subtypes with White targets overall, and only significantly associated Anorexia Nervosa with Asian targets compared to Black ones. Regarding the association of EDs with White targets, it can be interpreted that the participants were mirroring the prevalent association between EDs and ethnically White individuals. The existence of the racial disparities between Whites and non-Whites suffering from EDs has been promoted by scientific research and the media for decades (For example, with Eli in the movie "To The Bone" which was released in 2017). Anorexic and Bulimic individuals are often portrayed as White females which reinforces the cultural image of young female sufferers and excludes POC and males (Saguy & Gruys, 2010). With regards to participants association of Anorexia Nervosa with Asian targets compared to Black targets, the higher levels of perceived prevalence of Anorexia Nervosa in Asians compared to Black targets could be linked to the lack of Black participants in the sample.

Further analysis into EDs and the ethnicity of the participant did, however, show that White participants indicated all three EDs as equally likely to occur in the targets. This is consistent with epidemiologic evidence as research shows that EDs are equally prevalent in both White and non-White samples. The DSM V states that the incidence and prevalence rates of Anorexia Nervosa, Bulimia Nervosa, and Binge Eating Disorder have risen over the past couple of years, and that they are present to a similar degree in several culturally diverse populations (American Psychiatric Association, 2013). Even though possible ascertainment biases may lead to the reported rates not reflecting the actual rates of the EDs in the relevant populations (American Psychiatric Association, 2013). Therefore, this significant association by them is a crucial step towards the betterment of the treatment biases against EDs in the general public, at least in western countries such as Portugal where a majority of the White participants originated. This finding could be used to increase awareness and help reduce stigma against those that find the courage to come forward and seek help for their disorders. EDs can affect anyone and it is imperative to increase the level of contact between the general public and realistic depictions of people suffering from EDs. Doing so would help inspire those that suffer silently to seek

treatment in the early developmental stages of their disorders rather than suffer in silence due to fear of stigmatization.

On the other hand, Asian participants indicated that the target was less likely to be suffering from Anorexia Nervosa compared to the two other ED subtypes. This is an interesting find because taken into consideration, as previously mentioned, it can be interpreted that Asian participants see Anorexia Nervosa as less common compared to Bulimia Nervosa and Binge Eating Disorder due to the popular portrayal of ED being limited to White females (Gordon et al., 2002).

Statistical evidence also indicates that Bulimia Nervosa and Binge Eating Disorder are of rising concern in the clinical world. It has been reported that Bulimia Nervosa has a prevalence rate of an estimated 1.1% to 4.2% in females ("Eating Disorders: Facts About Eating Disorders and the Search for Solutions", 2018) and an incidence rate that is comparable to estimates from White samples (American Psychiatric Association, 2013). Binge Eating Disorder is also reported to be just as prevalent in non-White populations as it is in White populations (American Psychiatric Association, 2013). With regards to EDs in Asians, studies have shown that Asian American girls reported more out of control eating and binge eating compared to all other females (Story, French, Resnick & Blum, 1995). The fact that Asian participants indicated an awareness of this information sheds some light into the changing perceptions of Asians towards EDs, at least with regards to Bulimia Nervosa and Binge Eating Disorder and it can be seen as beneficial for those suffering from these ED subtypes. This could lead to the reduction of bias towards them as with the steady increase of ED occurrences, especially in non-White populations, the development of awareness and culturally sensitive assessment and treatment methods by clinicians is merited.

The hypothesis (H2) that participants will associate EDs with females more than males was also partially accepted as the results showed that according to both male and female participants, the perceived prevalence of Anorexia Nervosa and Binge Eating Disorder was higher in females than in males, with female participants being more likely to indicate this effect. However, no significant associations were found for Bulimia Nervosa. This effect could be explained by the predominance of female participants in the sample compared to males. The lack of association of Bulimia Nervosa with any gender is, however, of particular interest because it contradicts the results of Study II. This association was proven to be significant in the second study as female participants indicated that all EDs, specifically Bulimia Nervosa, are more prevalent in females than males.

Another possible reason for the contradiction may be that participants do not know much about Bulimia Nervosa itself, even though a short description of the disorder was provided to them. This may perhaps explain why participants from Study I were unable to associate the ED with any specific gender. Overall, these results are of grave importance as empirical data shows that these EDs are considerably present in male populations. According to Hudson, Hiripi, Pope & Kessler (2007) males account for 25% of individuals suffering from Anorexia Nervosa and Bulimia Nervosa and account for 36% of those with Binge Eating Disorder. Male sufferers are often diagnosed after their disorder has progressed to a critical stage (Mond, Mitchison & Hay, 2014). They are also undertreated and misunderstood (Strother, Lemberg, Stanford & Turberville, 2013) and as a result their mortality rate is significantly higher (Mond, Mitchison & Hay, 2014) (Cohn & Lemberg, 2014). In addition, their reluctance to be diagnosed with an ED or participate in ED studies pose a considerable challenge to researchers (Rikani et al., 2013). Consequently, the rate of EDs in males may in fact be higher than reported (Rikani et al., 2013). The underrepresentation of males with regards to ED statistics, and the minimization of the need for gender equality within ED research, has existed for decades. It has even been promoted by entities such as NEDA from the 1980s until 2015, which was when the statistics were finally updated on their database (Cohn, Murray, Walen & Wooldridge, 2015). The association of EDs predominantly with females is an outdated premise that is concerning and merits an expansion of the education and policies focusing on being more gender inclusive with regards to EDs.

Concerning the third goal, the final hypothesis (H3) that participants will show more intentions to engage with White targets than POC suffering from EDs was rejected. The results showed no statistically significant effect between the ethnicity of the target and the participants resulting intentions to engage with them. However, the interaction found between the ethnicity of the participant and the intention to engage with EDs is of particular interest; White participants showed a higher intention to engage with sufferers of Anorexia Nervosa and Binge Eating Disorder compared to Asian participants. This could possibly be explained by the fact that Anorexia Nervosa and Binge Eating Disorder were associated with females more than males, and that a majority of the participants were White and female. With regards to Asian participants, a lack of positive exposure to EDs in Asian populations may explain their discrepancy with White participants.

The analysis conducted to explore the effect of gender on the intention to engage with sufferers of EDs showed that females displayed a higher intention to engage with sufferers of

Anorexia Nervosa compared to male participants. No significant effects were found for Bulimia Nervosa and Binge Eating Disorder. This could be explained by the higher levels of exposure to Anorexia Nervosa compared to Bulimia Nervosa and Binge Eating Disorder. Since Anorexia Nervosa was associated with females, corroborating with the literature that states that it is more common in females than males (American Psychiatric Association, 2013), participants willingness to engage with the ED can be explained by a mere exposure effect. White targets in general are more exposed to EDs, especially in Western countries, and therefore more willing to engage with the sufferers, independent of the target group. Asian participants, on the other hand, did not mirror this effect, which can be indicative of a lack of exposure and bias towards the disorders. Previous research into this outcome could not be found, however research conducted by Tsong (2017) on Asian Americans via an online survey shows that even though they experience greater cultural and familial pressure to be thin than non-Asian groups, their communities still harbour stigma about EDs and their treatment (Constante, 2017). This could be linked to a lack of understanding regarding the disorders, body image issues, and the impact of therapy (Constante, 2017). It would be interesting to investigate whether similar results can be found in larger samples of Asian participants in future studies.

With regards to Study II, to the best of our knowledge it is the only known study that assessed the perceived causes of EDs based on the ethnicities of both the targets and the participants. The use of both an open-ended and close-ended format also reduced possible biases from the authors' pre-understanding of possible causes and allowed participants to state more than one perceived cause of EDs, which is seldom possible with questionnaires that use solely close-ended formats. The results support the indication of Psychological/Emotional Problems as the primary cause of EDs for all ethnicities. However, White participants were more likely to report this interaction compared to Asian participants. These findings support those of Salafia et. al., (2015) as they too indicated that Psychological/Emotional Problems were one of the highest named causes of EDs. The results did also show that Asian participants reported Body Dissatisfaction and Eating, and Biological Factors, as perceived causes of EDs more compared to White participants. Overall, participants did not attribute Sociocultural Factors as the perceived primary causes of EDs and Asian participants endorsed Sports and Health as a perceived cause of EDs, unlike what was found by Salafia et. al., (2015). Biological Factors were more frequently indicated as potential causes of EDs, also contrary to the findings of Salafia et. al., (2015). This indicates changing perspectives regarding the importance of biological factors such as genetics in

the formation of EDs. Overall, it seems that participants are aware that EDs are multifaceted and complex. It is, however, important to comment on fact that participants least referred to “Traumatic Life Events” as a cause for EDs, similar to the results found by Salafia et. al., (2015). This provides insight into the need for better education for the general public as empirical evidence (Neumark-Sztainer, Story, Hannan, Beuhring & Resnick, 2000) does support the connection between a traumatic life event and the commencement of an ED.

Concerning the perceived prevalence of the causes of EDs depending on the ethnicity of the participant, no significant differences were found. One explanation for this may be that in Study I, the perceived prevalence of EDs was a within-subjects variable as the ethnicity was not made explicit to the participant. In study II, however, the ethnicity of the target was a between-subjects variable. Thus, perhaps differences only emerge when the intergroup comparative context is made salient. Overall, the findings of this study can be used to better educate the general public regarding the perceived and reported causes of EDs and their multifactorial nature in order to increase further awareness and promote understanding between those suffering from EDs and those who aren't.

Limitations

Several limitations to the studies conducted indicate that the results warrant consideration and should be interpreted with caution. To start with, despite considerable recruitment efforts, the response rate and relatively small sample sizes for both studies was disappointing. This study attempted to increase diversity of responses by recruiting participants of various ethnicities and genders, however the samples for both studies were predominantly female. In addition, the sample for Study I was also homogenous both in age, nationality and ethnicity, as half of them were ethnically White individuals primarily from Portugal whereas there were more Asian than White participants in Study II who were of Tanzanian or British origin (see Table 7 and Table 8 in Appendix C). These differences in samples may be the reason behind the attribution, or lack thereof, of the EDs (Particularly Bulimia Nervosa and Binge Eating Disorder) with a particular gender.

In addition, the sample sizes, the fact that most participants did not complete both surveys, the fact that they divided into groups based on their ethnicity, and that for Study II each ethnicity had a quota of a minimum of 30 participants, only White and Asian ethnicities met the criteria for both Study I and Study II. Thus, the Black, Arab and Latino participants had to be

excluded. This is problematic as the aim of the both studies involved looking at how different ethnicities perceived EDs, therefore it would have been beneficial to include these participants. Hence, these results of both studies cannot be generalised to the population at large and can only be used to provide a general idea of the perceptions of EDs.

Furthermore, for Study II the codes by Salafia et. al. (2015) were used and coded by the researcher but were not verified by the supervisor. Hence interrater reliability cannot be assumed.

Lastly, a potential limitation of this study is the fact that there were notable confound variables that were difficult to control for. In Study I, the White participants were primarily Portuguese, whereas the Asian participants came from different countries. In Study II, there were more Asian than White participants that were mainly from Tanzania and Britain. The effects found for both studies could have been influenced by general perceptions about ethnic groups and so cannot be generalised.

Future Research

Future studies in the area could benefit from reducing homogeneity by recruiting more ethnically diverse and larger samples in their research as it would be interesting to see how the perceived causes and prevalence of EDs differ among a multi-ethnic sample. It would also be useful to observe whether the intention to engage with EDs regardless of the ethnicity of the target can be replicated in cross-cultural studies of larger sample sizes. The confirmation of the results would indicate a step towards the right direction with regards to the reduction of the negative stigma surrounding EDs, especially in POC.

Another potential area of further investigation is the reasoning behind why Asian participants showed lower intentions to engage with ED sufferers and whether this is indicative of bias, specifically with regards to Anorexia Nervosa and how it was perceived to be less common in Asians. Such an investigation could potentially be used to understand how POC approach the topic of EDs in non-White contexts, and, promote a more inclusive view of EDs, especially in the clinical world, leading to improved treatment and cultural competence.

Lastly, it is deemed necessary to adopt a gender-sensitive approach to research into EDs with the recognition of the different dynamics and needs of male sufferers, including formulating ways to get a larger male sample to participate in the study. The information from such studies could be useful in educating the masses, including clinicians and health professionals, regarding

the perceptions held against males suffering from EDs and could lead to earlier ED recognition and better treatment programs.

Conclusion

Despite its limitations, this study contributes to the existing research on EDs in numerous ways. It is the first known study to assess the subjective lay perceptions of the perceived causes of EDs and intentions to engage their sufferers in a sample of both ethnically White and Asian participants. It has also allowed the assessing of the direct comparison between the three ED subtypes with gender and ethnicity, allowing several causal conclusions to be drawn from the results. In so doing, it contributes to the relatively small pool of literature that is presently discussing the perceptions of EDs in different contexts.

Overall, the misconceptions surrounding EDs and their prevalence, as indicated by the participant samples used in this study are a cause for concern. It is important to raise awareness of the fact that, in reality, EDs do not discriminate between gender or ethnicity. The associations of EDs with White females is of serious consequence and can be detrimental to the diagnosis and treatment of those that do not fit the stereotype from overcoming their fear of being stigmatized and seeking help.

It is hoped that the implications of this research will be significant in showing the public the repercussions of the perceptions that they hold against Anorexia Nervosa, Bulimia Nervosa and Binge Eating Disorder in all populations, but specifically concerning males and POC. These results may also be of relevance to clinicians and health professionals as they may shed some light onto the cognitive beliefs that surround EDs, potentially leading to the facilitation of better care of patients suffering from these disorders. It is hoped that with time, the stigma associated with EDs will change, and more POC and males will come forward and seek treatment for their illnesses without the fear of stigmatisation and misdiagnosis.

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LIST OF APPENDICES

Appendix A: Questionnaire for Study I

Informed Consent Form

The following will provide you with information about this online survey in order to help you decide whether or not you wish to participate. Please note that participation is voluntary, refusal to take part in the study involves no penalty and participants may withdraw from the study at any time. In this survey you will be asked to explore the general perceptions of people suffering from eating disorders. This survey is **completely anonymous** and in no case will responses from individual participants be identified. Rather, all data will be pooled and published in aggregate form only. All information you provide will remain confidential and will not be associated with you in any way. Your participation in this survey will require no more than 10 minutes. You do have the option of temporarily pausing the survey and completing it within a one week period if needed. When this survey is complete you will be provided with a debriefing statement and you will be free to ask any questions to the investigator via email. If you have any further questions concerning this study please feel free to contact the following:

The Investigator:

Ismat Ara Khan

Email: ismat_khan@iscte.pt

The Supervisor:

Ricardo Borges Rodrigues

Email: ricardo.rodrigues@iscte-iul.pt The Institution: Instituto Universitário de Lisboa

(ISCTE-IUL) Research Center: Centro de Investigação e Intervenção Social (CIS) By clicking on "I agree" below, you are confirming that you are **18 years of age or older**, understand the statements above, and freely consent to participate in the study.

I Disagree (1)

I Agree (2)

Debriefing Statement

Thank you for your participation in this survey. The purpose of my study is to compare the cross-cultural presence of public attitudes towards males and females from African and Asian ethnic groups suffering from eating disorders.

Mental illnesses are highly stigmatized across the globe, specifically eating disorders. Individuals suffering from eating disorders are vulnerable to being blamed for their condition which is not only harmful to their well-being but also that of their families and can often lead to treatment avoidance. Considering that eating disorders have the highest mortality rate of any other mental illness and that every 62 minutes at least one person dies as a direct result from an eating disorder, the fact that research suggests that only 22% of people suffering from eating disorders are receiving treatment in developed countries should be a serious cause for concern.

There is widespread belief that eating disorders are a lifestyle choice and that the sufferers alone are to blame for their illness. There is also a common notion that eating disorders only affect White females, which can leave both males and the people of colour suffering from these illnesses feeling like outcasts. There has been little to no research into the stigma held by the public with regards to people of colour and males suffering from eating disorders, that is why I thought it imperative to gather data on the issue and raise awareness regarding its existence.

If you have any questions regarding this survey, please feel free to contact:

The investigator

Ismat Ara Khan

Email: ismat_khan@iscte.pt

The supervisor

Ricardo Borges Rodrigues

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The Institution: Instituto Universitário de Lisboa (ISCTE-IUL) Research Center: Centro de Investigação e Intervenção Social (CIS)

I would once again like to remind you that this survey is completely anonymous and in no case will responses from individual participants be identified. Rather, all data will be pooled and

published in aggregate form only. All information you provide will remain confidential and will not be associated with you in any way.

Finally, I urge you not to discuss the study with anyone else who is currently participating or might participate at a future point in time. As you can certainly appreciate, I value the authenticity of your responses in order to be able to properly analyze the data provided and should other future participants be informed of the details of the study before its completion it would surely affect the way they respond to the questions.

Thank you for your time.

Demographic Information

Demographic questions asked in the first section of the study.

Please fill in the blank or indicate the response that best answers the following questions.

1. Age: _____

2. Nationality

(dropdown menu with 202 countries provided – Afghan to Zimbabwean)

3. Ethnicity

	Ethnicity
1	White
2	Black
3	Asian
4	Latino
5	Middle Eastern/Arab Descent
6	Other (Please specify)

4. Gender

	Gender
1	Male
2	Female
3	Prefer not to say

ED Scenarios (Adapted from White et al., 2010)

Vignette 1: “M recently visited their physician to complain about fatigue and sleeplessness that has been on-going for 6 months. The doctor notes that M is noticeably quite weak and is wearing an oversized, baggy t-shirt. M often complains about their weight and follows the obsessive rule of only eating food that is green in colour. M’s mother is concerned for her child because M suffers from mood swings, low self-esteem and impaired school performance.” (*Anorexia Nervosa*)

Vignette 2: “J frequently undergoes weight fluctuations and often complains about an obsession with eating and weight. J has tried unsuccessfully to lose weight and often become so hungry that J overeats to the point of throwing up. J suffers from low self-esteem, mood swings, guilt and depression. J is focused on muscle gain and fat loss and often feels quite lonely due to self-imposed isolation and a reluctance to develop close relationships.” (*Bulimia Nervosa*)

Vignette 3: “W often eats excessive amounts of food even when they are not hungry in order to avoid thinking about the problems they are having at work. W reports that they have never engaged in activities such as self-induced vomiting or the use of laxatives but does participate in repetitive diets and fasts. W often eats in secret, fears the disapproval of others and is overly sensitive to references about weight or appearance.” (*Binge Eating Disorder*)

Questions asked after each vignette:

Using the scale below, describe what your feeling is that the person in described above is one of the following (reverse coded in SPSS):

White:

Very Likely	Somewhat Likely	Likely	Somewhat Unlikely	Very Unlikely
5	4	3	2	1

Black:

Very Likely	Somewhat Likely	Likely	Somewhat Unlikely	Very Unlikely
5	4	3	2	1

Asian:

Very Likely	Somewhat Likely	Likely	Somewhat Unlikely	Very Unlikely
5	4	3	2	1

Other (Please Specify: _____) :

Very Likely	Somewhat Likely	Likely	Somewhat Unlikely	Very Unlikely
5	4	3	2	1

Using the scale below, describe your feeling that the person described above is one of the following genders (scale was reverse coded for SPSS analysis):

Female:

Very Likely	Somewhat Likely	Likely	Somewhat Unlikely	Very Unlikely
5	4	3	2	1

Male:

Very Likely	Somewhat Likely	Likely	Somewhat Unlikely	Very Unlikely
5	4	3	2	1

Other (Please Specify: _____):

Very Likely	Somewhat Likely	Likely	Somewhat Unlikely	Very Unlikely
5	4	3	2	1

Level-of-Contact Report [LCR] (adapted from Holmes et al., 1999)

An eating disorder involves serious disturbances in eating behaviour, such as extreme and unhealthy reduction of food intake or severe overeating, as well as feelings of distress or extreme concern about body shape or weight.

General definitions of eating disorders relevant to this survey are described below:

1) Anorexia Nervosa

An emotional disorder characterised by the obsessive desire to lose weight by refusing to eat and an intense fear of gaining weight or becoming fat.

2) Bulimia Nervosa

Characterised by recurrent episodes of binge eating (eating a relatively large amount of food in a short period of time) accompanied by a feeling that one cannot stop eating or control what or how much one is eating, followed by purging episodes (through behaviours such as self-induced vomiting, misuse of laxatives, diuretics, or other medications, fasting or excessive exercise) in order to prevent weight gain.

3) Binge Eating Disorder

The frequent consumption of unusually large amounts of food accompanied by a feeling that one cannot stop eating or control what or how much one is eating. Binge Eating Disorder is not associated with purging episodes.

Please keep these definitions in mind as you respond to the following questions.

Please read each of the following statements carefully and place a check by each statement that is true for you:

	Please select one per statement		If yes, please select the eating disorder(s) in question based on the descriptions provided above		
	Yes	No	Anorexia Nervosa	Bulimia Nervosa	Binge Eating Disorder
I have watched a movie or television show in which a character depicted a person with an eating disorder.	1	2			
I have observed, in passing, a person I believe may have had an eating disorder.	1	2			
I have observed persons with an eating disorder on a frequent basis.	1	2			
I have an eating disorder.	1	2			
A friend of the family has an eating disorder.	1	2			
I have a relative who has an eating disorder.	1	2			
I live with a person who has an eating disorder.	1	2			

Intentions to Engage (Social Distance Scale, Adapted from Link et. al. (1987))

Please answer the questions below, indicating the extent of your willingness or unwillingness to engage in the scenarios described, using the following scale:

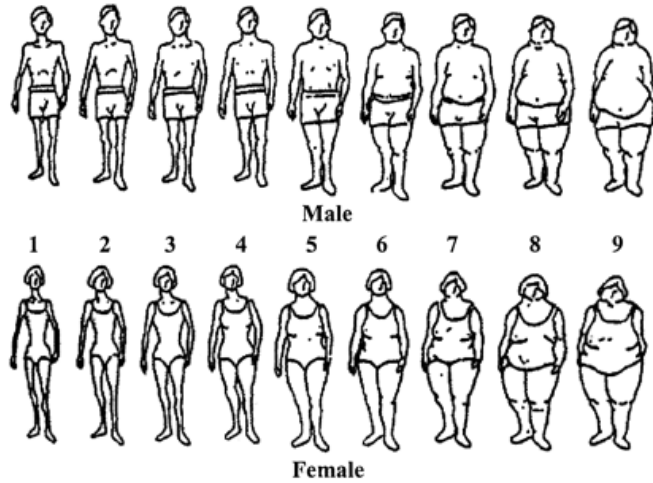
	Definitely Unwilling	Probably Unwilling	Probably Willing	Definitely Willing
How would you feel about renting a room in your home to a person with Anorexia Nervosa?				
How would you feel about introducing a person with Anorexia Nervosa to your friends?				
How would you feel about having your child marry a person with Anorexia Nervosa?				
How would you feel about working with a person with Anorexia Nervosa?				
How would you feel about renting a room in your home to a person with Bulimia Nervosa?				
How would you feel about introducing a person with Bulimia Nervosa to your friends?				

	Definitely Unwilling	Probably Unwilling	Probably Willing	Definitely Willing
How would you feel about having your child marry a person with Bulimia Nervosa?				
How would you feel about working with a person with Bulimia Nervosa?				
How would you feel about renting a room in your home to a person with Binge Eating Disorder?				
How would you feel about introducing a person with Binge Eating Disorder to your friends?				
How would you feel about having your child marry a person with Binge Eating Disorder?				
How would you feel about working with a person with Binge Eating Disorder?				

Body Image Index

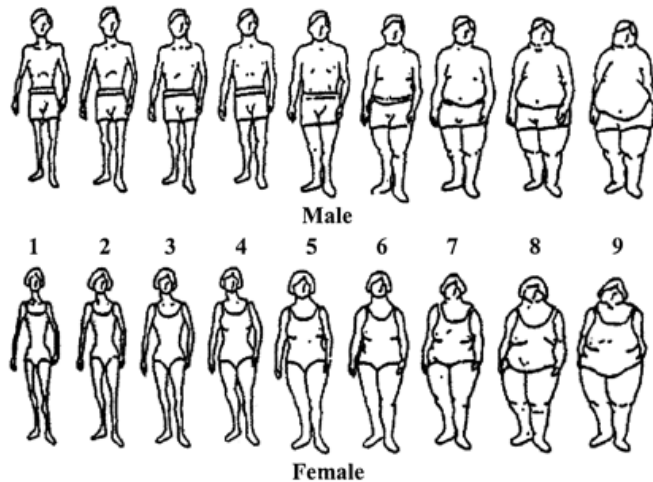
Please answer the following questions based on the image depicted below:

Which figure do you think best depicts what a person suffering from Anorexia Nervosa looks like?



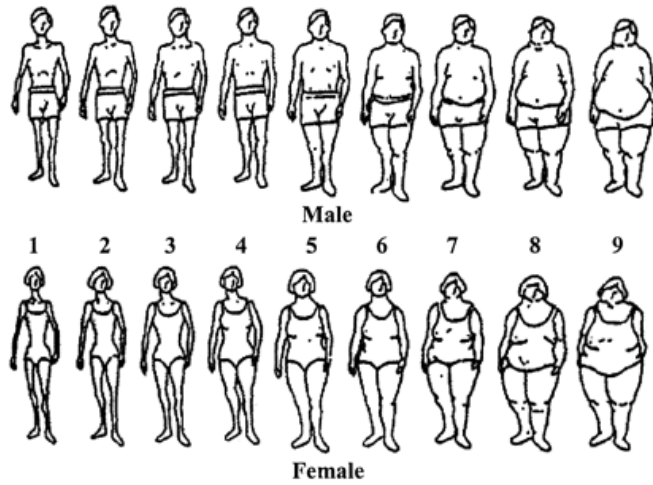
1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Which figure do you think best depicts what a person suffering from Bulimia Nervosa looks like?



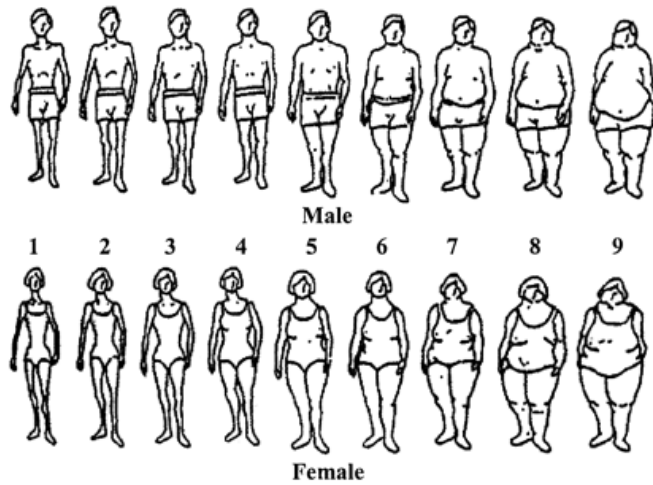
1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Which figure do you think best depicts what a person suffering from Binge Eating Disorder looks like?



1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Which figure do you think best depicts your current body image?



1	2	3	4	5	6	7	8	9
---	---	---	---	---	---	---	---	---

Appendix B: Questionnaire for Study II

Informed Consent

The following will provide you with information about this online survey in order to help you decide whether or not you wish to participate. Please note that participation is voluntary, refusal to take part in the study involves no penalty and participants may withdraw from the study at any time. In this survey you will be asked to explore what you believe are the causes of eating disorders. It is **completely anonymous** and in no case will responses from individual participants be identified. Rather, all data will be pooled and published in aggregate form only. Your participation in this survey will require no more than 7 minutes. You do have the option of temporarily pausing the survey and completing it within a one-week period if needed. When this survey is complete you will be provided with a debriefing statement and you will be free to ask any questions to the investigator via email. If you have any further questions concerning this study, please feel free to contact the following:

The Investigator:

Ismat Ara Khan

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Ricardo Borges Rodrigues

Email: ricardo.rodrigues@iscte-iul.pt

The Institution:

Instituto Universitário de Lisboa (ISCTE-IUL)

By clicking on "I agree" below, you are confirming that you are **18 years of age or older**, understand the statements above, and freely consent to participate in the study.

Debriefing Form

Thank you for your participation in this survey. The purpose of my study is to compare the notions that people have regarding the causes of eating disorders, especially in the ethnically non-white populations as there is a gross underrepresentation of the prevalence of eating disorders in Asian and African societies.

Mental illnesses are highly stigmatized across the globe, specifically eating disorders.

Individuals suffering from eating disorders are vulnerable to being blamed for their condition

which is not only harmful to their well-being but also that of their families and can often lead to

treatment avoidance. Considering that eating disorders have the highest mortality rate of any other mental illness and that every 62 minutes at least one person dies as a direct result of an eating disorder, the fact that research suggests that only 22% of people suffering from eating disorders are receiving treatment in developed countries should be a serious cause for concern. There is widespread belief that eating disorders are a lifestyle choice and that the sufferers alone are to blame for their illness. There is also a common notion that eating disorders only affect White females, which can leave both males and the people of colour suffering from these illnesses feeling like outcasts. There has been little to no research into the stigma held by the public with regards to people of colour and males suffering from eating disorders, that is why I thought it imperative to gather data on the issue and raise awareness regarding its existence.

If you have any questions regarding this survey, please feel free to contact:

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I would once again like to remind you that this survey is completely anonymous and in no case will responses from individual participants be identified. Rather, all data will be pooled and published in aggregate form only. All information you provide will remain confidential and will not be associated with you in any way.

Finally, I urge you not to discuss the study with anyone else who is currently participating or might participate at a future point in time. As you can certainly appreciate, I value the authenticity of your responses in order to be able to properly analyze the data provided and should other future participants be informed of the details of the study before its completion it would surely affect the way they respond to the questions.

Thank you for your time.

Definition of EDs provided

Eating disorders are psychological disorders characterized by abnormal or disturbed eating habits. The ones that will be focused on in this survey are **anorexia nervosa**, **bulimia nervosa** and **binge eating disorder**.

Case Vignettes

Read the case vignette regarding an ethnically **White/Black/Asian person** described below and answer the questions that follow:

M recently visited their physician in order to complain about fatigue and sleeplessness that has been on-going for 6 months. The doctor notes that M is noticeably quite weak and is wearing an oversized, baggy t-shirt. M often complains about their weight and follows the obsessive rule of only eating food that is green in colour. M's mother is concerned for her child because M suffers from mood swings, low self-esteem and impaired school performance. M was diagnosed with **Anorexia Nervosa**.

Anorexia Nervosa is defined as a psychological disorder characterised by the obsessive desire to lose weight by refusing to eat and an intense fear of gaining weight or becoming fat.

What do you think could be the cause(s) of M's illness? (1 cause per line)

- 1. (1) _____
- 2. (2) _____

Read the case vignette regarding an ethnically **White/Black/Asian** person described below and answer the questions that follow:

J frequently undergoes weight fluctuations and often complains about an obsession with eating and weight. J has tried unsuccessfully to lose weight and often becomes so hungry that J overeats to the point of throwing up. J suffers from low self-esteem, mood swings, guilt and depression. J is focused on muscle gain and fat loss and often feels quite lonely due to self-imposed isolation and a reluctance to develop close relationships. J suffers from **Bulimia Nervosa**.

Bulimia Nervosa is characterised by recurrent episodes of binge eating (eating a relatively large amount of food in a short period of time) accompanied by a feeling that one cannot stop eating or control what or how much one is eating, followed by purging episodes (through behaviours such as self-induced vomiting, misuse of laxatives, diuretics, or other medications, fasting, or excessive exercise) in order to prevent weight gain.

What do you think could be the cause(s) of J's illness? (1 cause per line)

1 (1) _____

2 (2) _____

Read the case vignette regarding an ethnically **White/Black/Asian** person described below and answer the questions that follow:

W often eats excessive amounts of food even when they are not hungry in order to avoid thinking about the problems they are having at work. W reports that they have never engaged in activities such as self-induced vomiting or the use of laxatives but does participate in repetitive diets and fasts. W often eats in secret, fears the disapproval of others and is overly sensitive to references about weight or appearance. W has been diagnosed with **Binge Eating Disorder**.

Binge Eating Disorder has to do with the frequent consumption of unusually large amounts of food accompanied by a feeling that one cannot stop eating or control what or how much one is eating. Binge eating disorder is not associated with purging episodes.

What do you think could be the cause(s) of W's illness? (1 cause per line)

1 (1) _____

2 (2) _____

Using the scale below, describe your feeling that the person suffering from **AN/BN/BD** is one of the following genders:

Gender	Very Likely 5	Somewhat Likely 4	Likely 3	Somewhat Unlikely 2	Very Unlikely 1
Male					
Female					

Appendix C: List of Tables

Table 1. Sample Responses for Each Coded Category (Study II)

Coded Category	Causes
Biological Factors	Genetics, Predisposition, Puberty, Chemical imbalance
Body Dissatisfaction and Eating	Fear of weight gain, Junk Food Addiction, Desire to be Thin
Family Problems	Pressure from parents, Controlling mother
Psychological/Emotional Problems	Stress, Low self-esteem, anxiety, depression, OCD
Social Problems	Bullying, Stress at work, isolation, loneliness
Sociocultural Factors	Media, societal expectations to look a certain way, western values, social conditioning
Sports and Health	Lack of physical activities, inability to lose weight through popular means like gym
Traumatic Life Events	Abuse, Sexual assault, Childhood trauma

Table 2: Descriptive Statistics (Study I)

Variables	Mean	Std. Deviation	N
Age	24.26	6.901	238
Gender	1.75	0.431	236
Ethnicity	1.44	0.828	238
IE_AN⁹	3.0193	0.66261	181
IE_BN	2.7153	0.74028	180
IE_BD	3.0347	0.68949	180
Level of Contact_AN¹⁰	1.6597	2.00572	160
Level of Contact_BN¹¹	1.2785	1.80820	160
Level of Contact_BD¹²	0.8861	1.69236	160
Body Image_AN	1.67	1.472	179
Body Image_BN	4.01	2.252	180
Body Image_BD	6.85	1.880	180
Body Image_OWN¹³	4.46	1.300	180

⁹ IE: Intention to Engage

¹⁰ Anorexia Nervosa

¹¹ Bulimia Nervosa

¹² Binge Eating Disorder

¹³ Participants perception of their own body image based on the Body Image Index

Table 3: Correlations (Study I)

	Ethnicity	Gender	Contact_ AN	Contact_ BN	Contact_ BD	IE_AN	IE_BN	IE_BD
Ethnicity	1							
r	-0.48	0.458	0.002	0.75	0.162*	-0.309**	-0.083	-0.184*
Sig.	0.458		0.979	0.252	0.013	0.000	0.270	0.013
Gender		1						
r	-0.48	0.458	0.119	0.015	-0.055	0.163*	0.046	0.091
Sig.	0.458		0.068	0.820	0.401	0.028	0.541	0.226
Contact_ AN			1					
r	0.002	0.119	0.380**	0.154*	0.067	0.067	0.013	0.054
Sig.	0.979	0.068	0.000	0.018	0.373	0.862	0.476	0.054
Contact_ BN				1				
r	0.075	0.015	0.380**	0.236**	0.296**	-0.040	0.057	0.039
Sig.	0.252	0.820	0.000	0.000	0.000	0.597	0.446	0.604
Contact_ BD					1			
r	0.162*	-0.055	0.154*	0.236**	0.296**	-0.137	-0.027	-0.011
Sig.	0.013	0.401	0.018	0.000	0.000	0.067	0.723	0.887
IE_AN						1		
r	-0.309**	0.163*	0.067	-0.040	-0.137	0.611**	0.611**	0.766**
Sig.	0.000	0.028	0.373	0.597	0.067	0.000	0.000	0.000
IE_BN							1	
r	-0.083	0.046	0.013	0.057	-0.027	0.611**	0.604**	0.604**
Sig.	0.270	0.541	0.862	0.446	0.723	0.000	0.000	0.000
IE_BD								1
r	-0.184*	0.091	0.054	0.039	-0.011	0.766**	0.604**	0.604**
Sig.	0.013	0.226	0.476	0.604	0.887	0.000	0.000	0.000

Note:

IE: Intention to engage, AN: Anorexia Nervosa, BN: Bulimia Nervosa, BD: Binge Eating Disorder

Table 4. Results of the contrast for the difference between participants per cause(K Matrix). (Study II)

Contrast Results (K Matrix)^a

Contrast		Difference between White and Asian participants for each Cause	Transformed Variable						
			T2	T3	T4	T5	T6	T7	T8
L1	Contrast Estimate	-.367	-0.627	-0.009	1.498	-0.285	-0.149	-0.265	-0.044
	Hypothesized Value	0	0	0	0	0	0	0	0
	Difference (Estimate - Hypothesized)	-.367	-0.627	-0.009	1.498	-0.285	-0.149	-0.265	-0.044
	Std. Error	.162	0.204	0.111	0.366	0.274	0.246	0.132	0.107
	Sig.	.027	0.003	0.935	0.000	0.303	0.546	0.049	0.685
95%	Lower Bound	-.692	-1.034	-0.231	0.766	-0.833	-0.640	-0.529	-0.258
	Upper Bound	-.043	-0.220	0.212	2.229	0.263	0.342	-0.001	0.171
	Interval for Difference								

a. Based on the user-specified contrast coefficients (L') matrix: difference between White and Asian for each Cause.

Table 5. Univariate Test Results for the Differences between White and Asian Participants for Each Cause. (Study II)

Univariate Test Results

Source	Transformed Variable	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Contrast	Difference between White and Asian participants per cause	2.110	1	2.110	5.115	.027	.077	5.115	.605
	T2	6.148	1	6.148	9.479	.003	.134	9.479	.858
	T3	.001	1	.001	.007	.935	.000	.007	.051
	T4	35.119	1	35.119	16.767	.000	.216	16.767	.981
	T5	1.271	1	1.271	1.081	.303	.017	1.081	.176
	T6	.348	1	.348	.368	.546	.006	.368	.092
	T7	1.097	1	1.097	4.026	.049	.062	4.026	.506
	T8	.030	1	.030	.166	.685	.003	.166	.069
	Error	Difference between White and Asian participants per cause	25.160	61	.412				
T2		39.566	61	.649					
T3		11.713	61	.192					
T4		127.770	61	2.095					
T5		71.713	61	1.176					
T6		57.652	61	.945					
T7		16.618	61	.272					
T8		10.954	61	.180					

a. Computed using alpha = 0.05

Table 6. Results of the Contrast (K Matrix) for the Gender of the Target and the Gender of the Participant. (Study II)

Contrast Results (K Matrix) ^a		Transformed Variable	
		Difference between Participants for each ED	T2
L1	Contrast Estimate	0.978	-1.644
	Hypothesized Value	0	0
	Difference (Estimate - Hypothesized)	0.978	-1.644
	Std. Error	0.730	0.777
	Sig.	0.186	0.039
	95% Confidence Interval for Difference	Lower Bound	-0.486
		Upper Bound	2.442
			-3.204
			-0.085

Based on the user-specified contrast coefficients (L') matrix: difference between participants for each ED.

Table 7. Univariate Test Results for The Gender of the Target and the Gender of the Participant. (Study II)

Univariate Test Results

Source	Transformed Variable	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Noncent. Parameter	Observed Power ^a
Contrast	difference between participants for each cause	7.170	1	7.170	1.796	.186	.033	1.796	.260
	T2	20.281	1	20.281	4.476	.039	.079	4.476	.546
Error	difference between participants each cause	207.644	52	3.993					
	T2	235.644	52	4.532					

a. Computed using alpha = 0.05

Table 8. Frequencies of Nationalities (Study I)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Albanian	6	2.5	2.5	2.5
	American	19	8.0	8.0	10.5
	Angolan	1	0.4	0.4	10.9
	Australian	2	0.8	0.8	11.8
	Azerbaijani	3	1.3	1.3	13.0
	Bangladeshi	1	0.4	0.4	13.4
	Brazilian	3	1.3	1.3	14.7
	British	12	5.0	5.0	19.7
	Canadian	3	1.3	1.3	21.0
	Danish	2	0.8	0.8	21.8
	French	2	0.8	0.8	22.7
	German	6	2.5	2.5	25.2
	Greek	1	0.4	0.4	25.6
	Indian	8	3.4	3.4	29.0
	Irish	1	0.4	0.4	29.4
	Italian	5	2.1	2.1	31.5
	Japanese	3	1.3	1.3	32.8
	Kenyan	1	0.4	0.4	33.2
	Mexican	1	0.4	0.4	33.6
	Nepalese	1	0.4	0.4	34.0
	Netherlander	2	0.8	0.8	34.9
	Norwegian	3	1.3	1.3	36.1
	Pakistani	12	5.0	5.0	41.2
	Polish	1	0.4	0.4	41.6
	Portuguese	117	49.2	49.2	90.8
	Romanian	1	0.4	0.4	91.2
	Spanish	1	0.4	0.4	91.6
	Swedish	1	0.4	0.4	92.0
	Tanzanian	13	5.5	5.5	97.5
	Thai	1	0.4	0.4	97.6
	Turkish	4	1.7	1.7	99.6
	Vietnamese	1	0.4	0.4	100.0
	Total	238	100.0	100.0	

Table 9. Frequencies of Nationalities (Study II)

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid				
Albanian	1	1.5	1.5	1.5
American	2	3.1	3.1	4.6
Azerbaijani	1	1.5	1.5	6.2
Belgian	2	3.1	3.1	9.2
British	10	15.4	15.4	24.6
Dutch	1	1.5	1.5	26.2
French	1	1.5	1.5	27.7
German	1	1.5	1.5	29.2
Italian	2	3.1	3.1	32.3
Japanese	2	3.1	3.1	35.4
Kazakhstani	2	3.1	3.1	38.5
Macedonian	1	1.5	1.5	40.0
Malaysian	3	4.6	4.6	44.6
Pakistani	4	6.2	6.2	50.8
Portuguese	8	12.3	12.3	63.1
Romanian	1	1.5	1.5	64.6
Salvadoran	1	1.5	1.5	66.2
Tanzanian	18	27.7	27.7	93.8
Turkish	1	1.5	1.5	95.4
Welsh	1	1.5	1.5	96.6
Welsh	2	3.1	3.1	100.0
Total	65	100.0	100.0	

