Mothers, Daughters, and Sisters: Cross-Cultural Insights Into the Role of Female Family Members in Body Image and Eating Behaviours

By

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ABSTRACT

Body dissatisfaction and disordered eating are growing concerns for young women worldwide. Sociocultural influences, particularly female family members, are unique contributors, exerting both risks of appearance pressures and negative body talk, while also providing protective factors, such as positive attitudes towards body image and eating behaviours. The present thesis investigated these dual pathways, examining both negative and positive body image and eating behaviours across Western and non-Western cultures. The thesis is structured into five chapters. **Chapter 1** provides an overview of negative and positive body image (body dissatisfaction, body appreciation) and eating behaviours (disordered eating symptomology, mindful eating) within sociocultural familial contexts. **Chapters 2, 3** and **4** present three empirical studies examining female familial influences, body image and eating behaviour outcomes.

The first study (**Chapter 2**) surveyed 422 young Western Australian women, aged 17 to 25 years, to examine a modified version of the Tripartite Influence Model by focussing on the perceived influence of mothers and sisters in negative body image and eating behaviours, as mediated by appearance comparisons and internalisation. Greater pressures and fat talk from mothers and sisters were associated with greater comparisons and internalisation, and, in turn, body dissatisfaction and disordered eating symptomology. Participants perceived their mothers to exert greater pressures and fat talk than their sisters. The findings support the modified Tripartite Influence Model, demonstrating the distinct influence of female family members on negative body image and eating outcomes.

Given the global prevalence of body image and eating concerns, the second study (**Chapter 3**) was a replication in a non-Western sample, specifically, within a Middle-Eastern Lebanese population, aged 18 to 25 years ($N = 377$). Results mirrored those of Study 1, again

highlighting the role of appearance pressures and fat talk from mothers and sisters in predicting body dissatisfaction and disordered eating, as mediated by appearance comparisons and internalisation. Although participants perceived greater pressure from mothers than sisters, there was no difference in fat talk. A novel finding was that greater closeness in mother-daughter, but not sister, relationships was associated with lower pressures, body dissatisfaction and bulimia symptomology. These findings provide new insights of female familial influence on body image and eating outcomes within an understudied non-Western population.

The third study (**Chapter 4**) was a direct cross-cultural comparison of negative and positive body image and eating behaviours across young women aged 18 to 25 years, using data from Chapter 2 for the Western sample (n = 486) and from Chapter 3 for the Middle-Eastern (n = 372) sample. Familial appearance pressures and negative body talk contributed similarly to negative eating and body image outcomes across both cultural groups. However, Middle-Eastern participants exhibited relatively greater body appreciation and some mindful eating behaviours than their Western counterparts. Findings highlight distinct sociocultural differences in risk and protective factors contributing to body image and eating behaviour outcomes.

The final chapter (**Chapter 5**) synthesises the thesis findings and discusses theoretical and practical implications, limitations and future directions. Overall, the thesis advances understanding by shifting focus from risk factors of appearance-related pressures, toward protective factors like body appreciation and mindful eating. This work underscores the need for culturally sensitive research and interventions that consider female familial relationships to promote positive body image and eating outcomes.

DECLARATION

I certify that this thesis:

1. does not incorporate without acknowledgment any material previously submitted for a degree or diploma in any university

2. and the research within will not be submitted for any other future degree or diploma without the permission of Flinders University; and

3. to the best of my knowledge and belief, does not contain any material previously published or written by another person except where due reference is made in the text.

Signed: Melanie Deek

Date: 6/5/25

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PUBLICATIONS

Chapters 2 to 4 of this thesis consist of published peer-reviewed journal articles or manuscripts submitted for publication, each of which can be read as stand-alone papers. Chapters 2 and 3 have been published in the journal *Body Image,* while Chapter 4 is currently under revision with the same journal. Reviewer feedback received through the submission process has informed revisions to Chapters 2 and 3. Below is a reference list of each manuscript and corresponding thesis chapter, including a list of co-authors.

The manuscripts have been formatted according to the thesis guidelines. Efforts have been made to reduce unnecessary repetition in the general introduction and discussion. I am the primary author of all three manuscripts and the co-authors of the manuscripts include members of my supervisory committee, specifically Professor Eva Kemps and Associate Professor Ivanka Prichard. The co-authorship forms respond to all relevant authorship and publication clauses.

Chapter 2: Deek, M. R., Prichard, I., & Kemps, E. (2023). The mother-daughter-sister triad: The role of female family members in predicting body image and eating behaviour in young women. *Body Image*., 46, 336–346. https://doi.org/10.1016/j.bodyim.2023.07.001

Chapter 3: Deek, M. R., Kemps, E., & Prichard, I. (2024). My mother, sisters, and I: Investigating the role of female family members in body dissatisfaction and disordered eating behaviours among young Middle-Eastern women. *Body Image*., 48. https://doi.org/10.1016/j.bodyim.2024.101682

Chapter 4: Deek, M. R., Kemps, E., & Prichard, I. The role of female family members in relation to body image and eating behaviour: A cross-cultural comparison between Western and Eastern cultures. *Manuscript Under Revision.* [Submitted to *Body Image* journal 20 August 2024].

CHAPTER ONE: GENERAL INTRODUCTION

Overview

Body image is a multifaceted and multidimensional construct, comprising both negative and positive aspects (Bailey et al., 2017). Broadly defined, body image is the subjective perception and attitudes an individual holds about their own body (Tiggemann, 2004). It includes an individual's thoughts, feelings and beliefs about their physical appearance, shape, size and functionality, as well as how they think others perceive their appearance (Bailey et al., 2017; Neagu, 2015). Theory and research on body image has traditionally focussed on *body dissatisfaction*, as it precedes *disordered eating* and is associated with a higher incidence of psychological disorders, such as depression and anxiety, and increased risk of mortality and suicide (Butler & Heimberg, 2020; Schaumberg et al., 2017). However, more recent research has shifted toward a broader understanding of body image through a positive psychology lens, showing that both *negative* and *positive* aspects of *body image* can and do exist simultaneously (Tiggemann, 2015).

Much of the research on *negative* body image and eating behaviours has predominantly investigated outcomes in Western populations; however, emerging research indicates that these outcomes are not "Western-bound" issues, but rather, occur globally and across cultures (Rodgers et al., 2023). Notably, it has been well documented that the sociocultural environment is a significant contributor to the development and maintenance of body image and eating behaviour concerns, particularly for young women, who are at greater risk of these outcomes (Frederick et al., 2022; Griffiths et al., 2016). It has been postulated that certain sociocultural agents, such as family members, peers and the media, may contribute both similarly and differentially to the way body image is experienced across cultures (Thompson et al., 1999; Thompson & Stice, 2001). While the media is widely

recognised as a major promoter of the Western thin-ideal globally, suggesting that a thin body type is the ideal to which all women should aspire, other sources of influence, such as parents and siblings, may also play an important role in shaping body image and eating behaviours (Devine et al., 2022; Rodgers et al., 2024). Of particular interest to this thesis is the influence of parents, especially mothers, as they serve as the primary role model, exerting both direct and indirect pressures to attain appearance ideals, thereby contributing to body image and eating concerns in their daughters, and among sisters (Brun et al., 2021; Hillard et al., 2016). While research indicates an association between female family member influence and negative body image outcomes, it remains to be explored whether these family members are similarly positioned to foster positive body image, and in turn, promote healthful eating behaviours (Linardon et al., 2022; Webb et al., 2018).

Accordingly, the overarching aim of this thesis was to explore the coexistence of negative and positive body image and eating behaviours, in relation to the role of sociocultural influences, specifically female family members, across cultures. In so doing, it aimed to address gaps in the literature and contribute to our understanding of body image and eating behaviour beyond predominantly Western populations (Rodgers et al., 2023). The present chapter (**Chapter 1**), outlines the structure of the broader thesis, beginning with an examination of negative body image and its relationship with disordered eating behaviours. It then introduces sociocultural theory, focussing on the family environment, particularly the role of mothers and sisters. Following this, the chapter explores positive body image and eating behaviours. Overall, negative and positive body image are explored across both Western and non-Western female familial contexts. The chapter concludes with a summary of the thesis aims, along with a brief overview of **Chapters 2-5** and their respective contributions to the overall thesis.

Negative Body Image

The Evolution of Body Image Ideals

Body image is a complex and multifaceted construct that has evolved throughout history, shaped by cultural and societal norms and expectations (Frederick & Reynolds, 2022; Tiggemann, 2004). Historically, particularly prior to the twentieth century, a fuller and curvier body type was considered the ideal standard for beauty, as it signified wealth, fertility and health (Bojorquez & Unikel, 2012; Melisse et al. 2020). However, from the early to mid-twentieth century, the emergence of Western mass media and shifting sociocultural norms contributed to the widespread promotion of the Western thin-ideal (Frederick & Reynolds, 2022). The *Western thin-ideal* refers to the extent to which an individual "buys into" societal beauty ideals that promote an unrealistic and below-average weight for women (Fitzsimmons-Craft et al., 2012). In contemporary Western society, a thin body type is not only associated with beauty, but also with intelligence, success, happiness, confidence and desirability (Evans, 2003; Kidd et al., 2023). Given the pervasive role of the media in Western culture, women in particular are exposed to significant pressures to conform to thin-ideal beauty standards (Griffiths et al., 2016). This pressure stems from the objectification of women's bodies, whereby women's physical appearance is disproportionately tied to their self-worth and status in society (Bojorquez & Unikel, 2012; Kidd et al., 2023).

More recent body ideals, such as the *fit ideal*, which emphasises muscularity and leanness, and the *curvy ideal*, which promotes an hourglass figure (i.e., small waist and wider hips), have gained prominence (Hunter et al., 2021; Walker et al., 2022). Although the fit and curvy body ideals have been portrayed as healthier alternatives to the thin ideal, research suggests that these too are problematic, as they also promote unattainable beauty standards and maladaptive behaviours (e.g., significant dieting and exercise, body altering clothing,

cosmetic procedures; Ferdousi et al., 2025). Despite the rise of these alternative ideals, the Western thin-ideal remains the most influential in contributing to dissatisfaction with women's physical appearance, as it continues to be widely promoted across media and sociocultural contexts (Griffiths et al., 2016; Paterna et al., 2021).

Body Dissatisfaction and Internalisation of the Western Thin-Ideal

Body dissatisfaction refers to the negative subjective appraisals an individual makes about their body shape, weight and size, often leading to a perceived discrepancy between one's actual body and their ideal body image (Griffiths et al., 2016). For women, this discrepancy is often due to internalising the *Western thin-ideal* (Fitzsimmons-Craft et al., 2012). Research has consistently shown associations between appearance-related pressures, the internalisation of the Western thin-ideal, and maladaptive body image and eating behaviours among young women. For example, Blowers et al. (2003) investigated these relationships among primary school aged female students in Australia (89% Caucasian sample) and found that perceived media pressure contributed to greater internalisation of the thin-ideal, which in turn was associated with body dissatisfaction (Blowers et al., 2003). Rukavina and Pokrajac-Bulian (2006) found that among Croatian female high school students, internalisation of societal appearance ideals was linked to lower satisfaction with both appearance and weight. Arroyo (2015) examined the role of fashion magazine exposure among American university students, revealing that internalisation of the Western thin-ideal mediated the relationship between fashion magazine consumption and body dissatisfaction. Vartanian et al. (2016) also found that thin-ideal internalisation consistently correlated with greater levels of body dissatisfaction across young women from Australia and the United States. Chithambo (2020) similarly found that American university women (42% identified as

White) who internalised the thin-ideal were more likely to engage in restrictive eating practices, such as dieting, which in turn was associated with greater body dissatisfaction.

Although the Western thin-ideal has been viewed as a concern restricted to Caucasian women in Western societies, studies have shown that thin-ideal internalisation extends to non-Western cultures (Holmqvist & Frisén, 2010; Melisse et al., 2020). A recent meta-analysis of 78 studies by Paterna et al. (2021) demonstrated that greater internalisation of body shape ideals was associated with greater body dissatisfaction across Western (e.g., Europe, Australia) and non-Western (e.g., Asia) regions. However, a limitation of their study was that the majority of samples included were from Western regions, highlighting the need for further research focussed on non-Western countries. Earlier work by Nouri et al. (2011), however, investigated Western media exposure and thin-ideal internalisation among American college females aged 18 to 25 years who identified with a non-Western identity (i.e., Asian American or European). They found that while Asian Americans reported less exposure to thin-ideal media and lower body dissatisfaction compared to European Americans, exposure to such media similarly contributed to body dissatisfaction for both Asian American and European Americans. Moreover, Cheng et al. (2019) conducted a longitudinal study on cultural differences in risk factors for eating disorders among young women residing in the United States. Their findings revealed that at baseline, Asian Americans exhibited higher thin-ideal internalisation than African Americans and White Americans, although body dissatisfaction levels were similar across all cultural groups (Cheng et al., 2019). AlShebali et al. (2021) examined the role of Western media culture on eating and body image outcomes among female undergraduate students in Saudi Arabia, finding that internalisation of Western ideals and values was associated with body image dissatisfaction and eating pathology. AlShebali et al. (2021) further reported that young Saudi women exhibited levels of disordered eating behaviours and body dissatisfaction (measured

by the Eating Disorder Examination Questionnaire - EDE-Q) comparable to those of their Western counterparts. These studies highlight the pervasive influence of the Western thin-ideal across cultures, warranting the need for further examination of its role as a risk factor for body dissatisfaction and disordered eating outcomes in both Western and non-Western populations.

A Comparison of Body Dissatisfaction in Western versus Non-Western Cultures

Although research into body image concerns in non-Western populations has increased, the field continues to be dominated by studies focussed on Western and White/Caucasian populations, which limits our understanding of these concerns across diverse cultural contexts. Nonetheless, body dissatisfaction has emerged as a growing global concern for young women across a range of cultural contexts (Rodgers et al., 2023). Within Western culture, Fallon et al. (2014) found that the prevalence of body dissatisfaction among women living in the United States ranged between 13.4%-31.8% for the 2010-2011 period. In Australia, the prevalence of body image dissatisfaction increased from 44.2% in 2009 to 75.19% in 2015, particularly among young women (Milton et al., 2021). This finding is consistent with other research in Australia, with over 80% of Australian women experiencing some level of dissatisfaction with their bodies (Griffiths et al., 2016; Mond et al., 2013). According to the Butterfly Foundation's 2023 research survey, 76.5% of young Australian females aged 12 to 18 years reported a desire for thinness, 96.7% expressed some level of concern about their body image, and 59.3% reported body dissatisfaction (Butterfly Foundation, 2023). More broadly, and across other Western cultures, Milton et al. (2021) reported that 58.51% of young women across Australia, Canada, New Zealand, the United Kingdom, and the United States reported body image distress. While body image concerns

are well-documented in Western cultures, similar patterns have emerged in non-Western cultures.

Research across non-Western cultures demonstrates mixed findings regarding rates of body dissatisfaction, with some studies indicating that body dissatisfaction is lower in non-Western cultures, while others show similar or even higher rates compared to Western populations. For instance, Forbes and Frederick (2008) examined body dissatisfaction among African, Asian, European and Hispanic American college women in the United States. Although they found that Asian American women exhibited the lowest rates of body image satisfaction, there were no differences between the other cultural groups. In contrast, Holmqvist and Frisén (2010) reviewed the literature on body dissatisfaction across diverse cultural settings and found that body dissatisfaction is often more pronounced in affluent non-Western countries, and at times exceeds rates observed in those of Western countries (i.e., in parts of Asia compared to the United States). They attributed this rising dissatisfaction to the influence of Western beauty ideals through the Western media, even in societies that maintain traditional and non-Western ways of life, for instance, in Asia and the Middle-East. Swami et al. (2010) analysed data from the International Body Project (IBP-I), which measured body weight ideals and body dissatisfaction among 4,019 women across 10 world regions. Overall, they found significant regional variations, with women in South and North America exhibiting the highest levels of body dissatisfaction, and those in South and West Asia exhibiting the least amount. Intermediate levels were observed in all other regions, such as Southeast Asia, East Asia, Africa, Europe, and Oceania (Swami et al., 2010). Swami et al. (2010) explained these findings in line with those of Holmqvist and Frisén (2010), such that body dissatisfaction appears to be higher in more Westernised regions like the Americas, possibly due to stronger exposure to Western beauty ideals. On the other hand, women in South and West Asia, particularly in lower socioeconomic contexts, appear to experience

lower body dissatisfaction, which could be due to maintaining collectivistic cultural values and therefore lesser emphasis on thinness (Swami et al., 2010). Focussed cross-sectional studies, such as those of Rodgers et al. (2011), which compared body dissatisfaction between French and Australian young women, found that Australian women reported significantly higher dissatisfaction with their bodies. In addition, Forbes et al. (2012) found that over 80% of 18-24 year old undergraduate university women from Argentina, Brazil and the United States experienced some level of body dissatisfaction, although American women reported the greatest levels of body dissatisfaction. The researchers attributed this finding to the influence of enduring traditional appearance ideals in Argentina and Brazil, which may have provided some "protection" from the pervasive shift toward the Western thin-ideal (Forbes et al., 2012).

Further exploring the role of culture and body dissatisfaction, Rakhkovskaya and Warren (2016) studied over 1,000 culturally diverse college women residing in the United States. They found that African American women reported the lowest levels of body dissatisfaction (Rakhkovskaya & Warren. 2016). Their findings also revealed that cultural identity may play a role in reducing the strength of the relationship between pressure to attain thinness and body dissatisfaction for African and Asian American women, but this relationship was not observed in European or Latin American women (Rakhkovskaya & Warren. 2016). Moreover, a systematic review of 12 studies examining body image concerns across cultures found that women from non-Western or collectivistic cultures generally reported higher levels of body dissatisfaction than their Western counterparts (Çakıcı et al., 2021). This contrasts with aforementioned findings, particularly those of Rakhkovskaya and Warren (2016), which suggested that cultural identity may act as a mitigating factor for body image concerns. More recently, Frederick et al. (2022) investigated body image concerns across a diverse sample of 6,327 women residing in the United States. They found that, while

White women reported greater body image concerns, the difference between cultural groups was small, indicating that body image concerns are prevalent across diverse cultural groups (Frederick et al., 2022). In summary, collectively, studies to date, highlight that body dissatisfaction is a growing global concern, although its prevalence and impact vary across diverse cultural groups, indicating that cultural and societal factors likely play a unique role in shaping body image concerns.

Negative Eating Behaviour

Disordered Eating Behaviours Cross-Culturally

The association between *body dissatisfaction* and *disordered eating* is well-established within Western cultures, with an abundance of research indicating that individuals who experience dissatisfaction with their bodies are at a greater risk of engaging in *disordered eating* behaviours (Barakat et al., 2023). *Disordered eating* encompasses a range of problematic eating behaviours, such as frequent dieting, food restriction and binge eating (Slevec & Tiggemann, 2011). While disordered eating differs from clinical eating disorders such as anorexia or bulimia nervosa, it can serve as a precursor and risk factor for the development of clinically diagnosable eating disorders (Jacobi et al., 2018; Yoon et al., 2020). Stice et al. (2011) conducted an 8-year longitudinal study investigating risk factors for the onset of eating disorders in adolescent girls residing in Austin Texas (68% Caucasian sample). They found that body dissatisfaction is a strong predictor of disordered eating over time. Prnjak et al. (2021) further demonstrated that body dissatisfaction plays a significant role in the onset and maintenance of eating disorders, finding that Australian adolescents (70% female sample) who were more dissatisfied with their weight and shape were more likely to develop eating disorder symptoms within a year than those who were less dissatisfied. Despite the increasing prevalence of disordered eating behaviours, particularly

among women, much of the research remains focussed on Western contexts. A meta-analysis of 17 longitudinal studies by Romano et al. (2020) underscores this issue, noting a significant gap in research studies that do not report or investigate cultural differences, therefore limiting our understanding of disordered eating behaviours across diverse populations.

There is, however, some recent research which has investigated how disordered eating behaviours present across different cultures. Research by Smith et al. (2020) explored how body dissatisfaction and disordered eating present among Hispanic, non-Hispanic White, and Native American undergraduate women in the United States. They found similar levels of body dissatisfaction across cultural groups, with no significant group differences in bulimia, eating concerns, or drive for thinness symptomology. Additionally, Cruz-Sáez et al. (2020) reported an association between body dissatisfaction and disordered eating behaviours (drive for thinness and bulimia) in young adolescents residing in Spain. Similarly, Simone et al. (2022) examined disordered eating behaviours, i.e., unhealthy weight control behaviours and binge eating, over a 5-year period among White, Black/African American, Hispanic and Asian American participants from the United States. Their findings indicated that, across the lifespan, women across all cultural groups consistently reported higher disordered eating prevalence than men. A recent investigation by Yoon et al. (2023) across diverse cultural groups (American, African American, Hispanic, and Asian) found that disordered eating behaviours were more prevalent among young female undergraduate students in Texas, than males, with no significant differences across groups, suggesting that these concerns are widespread regardless of culture. However, while recent literature has provided cross-cultural insights into the prevalence of disordered eating behaviours, the majority of this research has been conducted within Western contexts (e.g., participants of different cultures residing in a Western country), thereby limiting our understanding of the cultural nuances across non-Western countries (Barakat et al., 2023).

Body Image and Eating Concerns in a Non-Western Context

Individualistic and Collectivistic Cultural Values

Culture, defined as the shared practices, values and norms within a group or society, is a complex and multifaceted construct (Fatehi et al., 2020; Minkov & Kaasa, 2022). Ethnicity, on the other hand, refers to specific cultural identities linked to traditions, languages, religion or shared histories (e.g., Arab, Anglo-Australian), and race often denotes broader social groupings based on physical characteristics (e.g., White/Caucasian, Black; Egede, 2006). These terms, i.e., culture, ethnicity and race, are often used interchangeably in the literature; however, when investigating health behaviours and outcomes, culture has been recognised as a concept which encompasses both ethnicity and race, and will therefore primarily be used to reflect these terms throughout this thesis (Egede, 2006).

Despite limited research on the relationship between culture and body image and eating behaviour, *individualism* and *collectivism* are among the most extensively studied *cultural* dimensions (de Vaate et al., 2020; Du, 2015; Frederick et al., 2016). Broadly defined, *individualism* refers to a cultural orientation which emphasises personal autonomy and independence from others and is generally observed in Western countries, such as the United States and Australia (Fatehi et al., 2020; Humphrey & Bliuc, 2021). In contrast, *collectivism*, typical in Middle-Eastern societies, prioritises group interconnectedness, particularly aligning one's beliefs, values and behaviours with those of the group and family unit (Fatehi et al., 2020; Humphrey & Bliuc, 202). Understanding the broader sociocultural environment is important for examining how societal norms and expectations shape body image and eating behaviours in non-Western cultures.

A Non-Western Cultural Context: The Middle-East

Among non-Western cultures, the Middle-East presents a particularly relevant context for investigation, as despite maintaining traditional ideals and *collectivist* values, the ongoing transmission of Western and *individualistic* values contributes to conflicting perceptions of body image and eating behaviours in the region (Holmqvist & Frisén, 2010; Melisse et al., 2020; Melisse et al., 2024). Formerly, a fuller and "plump" body type was assumed to be the ideal in Middle-Eastern cultures; however, the role of acculturation, i.e., the adoption of Western beliefs and values, and the promotion of Western media, has shifted these beauty ideals toward a preference for a thinner body type (Melisse et al., 2020). While pressures to attain the Western thin-ideal are widespread, the degree to which Western ideals shape body and eating outcomes varies across Middle-Eastern regions (Muthukrishna et al., 2020). The Middle-East is a diverse and multifaceted region, encompassing various ethnicities, languages, and religions, all of which shape sociocultural norms and expectations (Melisse et al., 2024). While some populations experience greater exposure to Westernisation, such as those in the United Arab Emirates (UAE) and Lebanon, others continue to maintain traditional perceptions of body image, such as Egypt and Jordan, reflecting the region's complex and evolving sociocultural environment (Muthukrishna et al., 2020; Swami et al., 2023).

Rates of Body Dissatisfaction and Disordered Eating in the Middle-East

Despite mixed findings, a growing body of research highlights significantly rising rates of body image dissatisfaction and disordered eating concerns among young women in non-Western contexts, and specifically the Middle-East (Rodgers et al., 2023). One notable example is a recent scoping review which reported that body image issues and disordered eating patterns in the Middle-East are comparable to those observed in Western countries (Thomas & Galadari, 2022). Body dissatisfaction and disordered eating are becoming

increasingly common across the Middle-East. Research by Schulte and Thomas (2013) found that 78% of young Emirati women, with a mean age of 19.9 years, reported body dissatisfaction. Additionally, 80.5% expressed a desire to be thinner, and 20% exhibited levels of maladaptive eating and weight concerns. A study by Musaiger (2015) investigated body weight concerns in five Arab countries, and found that approximately 32%-39% of women were dissatisfied with their weight, 17%-31% wanted to attain a Western body shape, and 22%-37% had engaged in dieting to lose weight. A literature review of 81 studies, mainly cross-sectional, by Melisse et al. (2020) identified that Arab women, in particular, are at risk for thin-ideal internalisation, body dissatisfaction, and disordered eating behaviours (e.g., restrained and binge eating). A scoping review by Azzeh et al. (2022) investigated the prevalence of high-risk disordered eating among young adults in the Middle-East. The prevalence of young women exhibiting symptoms characteristic of eating disorders ranged from 6.1% to 73.3%. Of the studies included in the review, few reported the prevalence of specific eating disorders, but of those that did, the prevalence of young women at risk of developing anorexia nervosa ranged from 0% in Jordan, 0.03% in Turkey, 1% in the UAE, to 9.5% in Oman; bulimia nervosa ranged from 0.6% in Jordan, 0.79% in Turkey, to 1% in the UAE; and binge eating disorder ranged from 1% in Turkey to 1.8% in Jordan. Moreover, recent research has expanded our understanding of eating disorders in the Middle-East. Specifically, Melisse et al.'s (2024) systematic review of 22 studies updated the prevalence rates of eating disorders in the region amidst rapid sociocultural changes. They found that approximately 30% of the Middle-Eastern population is at high risk of developing an eating disorder, with most studies focussing on female samples and the majority conducted in Lebanon. Collectively, researchers investigating these outcomes in Middle-Eastern populations suggest that sociocultural factors, such as the influence of Western media and its promotion of Western beauty ideals, and the shift from traditional *collectivistic* values to

Western *individualistic* values, play a key role in shaping body image and eating concerns in these populations.

The Sociocultural Environment

Body image and eating behaviour literature suggest that the sociocultural environment, particularly the adoption of Western cultural ideals, specifically the Western thin-ideal, plays a significant role in the development of body dissatisfaction, and in turn, disordered eating behaviours across Western and non-Western cultures (Paquette & Raine, 2004; Striegel-Moore & Bulik, 2007). Sociocultural theories propose that *sociocultural influences* of the media and significant others, such family members and peers, exhibit explicit or implicit messages relating to body image and eating behaviour norms and expectations (Paquette & Raine, 2004; Thompson et al., 1999). These pressures, in turn, have been postulated to be key contributors to body image and eating behaviour concerns (Holmqvist & Frisén, 2010; Rodgers et al., 2011).

Sociocultural theories have evolved over time to explain the development of body dissatisfaction and disordered eating behaviours and continue to adapt based on sociocultural influences (Holland & Tiggemann, 2016; Thompson & Heinberg, 2001). One earlier theory is Objectification Theory (Fredrickson & Roberts, 1997), which suggests that women in Western societies are socialised to internalise an observer's perspective of their bodies, leading them to perceive themselves as "objects" rather than human beings (i.e., self-objectification). This self-view, in turn, leads to greater body surveillance, and correspondingly, increased body dissatisfaction and disordered eating behaviours (Fredrickson & Roberts, 1997). Although Objectification Theory is not typically classified as a sociocultural model, because it focuses more on the internalisation of societal messages and their psychological consequences (e.g., shame, anxiety), it aligns closely with sociocultural

perspectives by highlighting how cultural and societal norms shape body image concerns (Holland & Tiggemann, 2016). Similarly, the Dual-Pathway Model (Stice, 2001) posits that sociocultural pressures contribute to body dissatisfaction through two primary mechanisms: the internalisation of the Western thin-ideal and experiences of negative affect, both of which predict disordered eating. Building on these perspectives, the Tripartite Influence Model, one of the most empirically tested sociocultural models, presents a comprehensive framework to conceptualise the development of body image dissatisfaction and disordered eating behaviours (Thompson et al., 1999; Thompson & Stice, 2001). Specifically, the model proposes that body image and eating behaviours are influenced by three key sources: media, peers and parents/family (Thompson & Stice, 2001). One of the key mechanisms through which these influences operate is sociocultural pressure to attain the Western thin-ideal, which manifests both directly (e.g., media advertisements promoting weight loss) and indirectly (e.g., appearance-related conversations) (Thompson & Stice, 2001; Sicilia et al., 2023). The effect of these influences contributes to engaging in physical appearance comparisons, i.e., comparing one's appearance with that of others, and internalising the Western thin-ideal. Appearance comparisons, particularly upward comparisons (i.e., comparing oneself to someone perceived as more attractive or thinner), are associated with heightened body dissatisfaction and increased risk of engaging in disordered eating behaviours (Barnhart et al., 2022). Internalisation of the Western thin-ideal leads individuals to adopt societal standards of attractiveness, specifically thinness, as personal benchmarks for their own body image and self-worth (Sicilia et al., 2023). As these appearance comparisons and thin-ideals tend to be unattainable, they lead to body dissatisfaction, which in turn, contributes to disordered eating behaviours, including bulimia symptomology and restrictive eating (Kakar et al., 2023).

Empirical studies have extensively tested the Tripartite Influence Model, with findings consistently supporting the proposed mechanisms of sociocultural pressures, internalisation and appearance comparisons in predicting body dissatisfaction and disordered eating in young women. Earlier work by Keery et al. (2004) supported the application of the Tripartite Influence Model with adolescent girls in the United States. They found that family pressures were indirectly related to body dissatisfaction via internalisation and comparison. In contrast, both peer and media pressures significantly contributed to body dissatisfaction directly and indirectly via internalisation and comparison. Rodgers et al. (2011) examined the Tripartite Influence Model among college women in Australia and France, and found that the model was a good fit across both samples. Their findings revealed that Australian participants, in contrast to French participants, reported greater perceived peer and media pressures, and higher levels of internalisation, comparisons and bulimia symptomology. Johnson et al. (2014) examined an expanded Tripartite Influence Model by including weight-related pressures from romantic partners, in addition to family, peer and media pressures, among college women in the United States. They found that partner and media pressures were associated with internalisation, while family, peer and media pressures were related to body dissatisfaction, which in turn contributed to disordered eating behaviours. More recently, Shagar et al. (2019) investigated a cross-cultural comparison of the Tripartite Influence Model in Australian and Malaysian adolescent girls. Their findings demonstrated support for the model in both cultures, but with notable differences. Specifically, while media and peer pressures were similarly significant contributors to internalisation for both groups, the influence of family was significantly linked with internalisation for Malaysian females, but not for Australian females. Additionally, body dissatisfaction was significantly associated with restrained eating only in the Australian sample. In summary, these studies demonstrate

the applicability of the Tripartite Influence Model, while also highlighting emerging research examining its relevance across diverse populations.

Although the Tripartite Influence Model was originally developed and tested with Western populations, it has since been applied and validated across various cultural contexts (Andersen & Swami, 2021). For instance, Burke et al. (2021) found that it could be applied across samples of White, Black, Latina and Asian women residing in the United States, demonstrating that the sociocultural influences of the media, family and peers function similarly among women across cultures. Frederick et al. (2022) also examined the model across diverse cultural groups living in the United States and found that greater perceived pressures from the media was associated with greater thin-ideal internalisation among White, Black, Hispanic and Asian women, and this relationship was strongest for Asian women. Moreover, the influence of family on thin-ideal internalisation was most pronounced among Asian and Hispanic women. These findings were explained by the collectivistic values held within these cultures, particularly the emphasis among Asian and Hispanic women on family cohesion, interdependence and prioritising group input over individual desires (Frederick et al., 2022). Furthermore, Kakar et al. (2023) tested the model among adolescent girls living in Australia, China, India and Iran, and reported mixed findings. In Australia, media pressures were the strongest, while in Iran, family pressures were most salient, and in India, family and peer pressures were strongest; in contrast, Chinese girls reported perceiving similar levels of pressure from the media, family and peers (Kakar et al., 2023). Collectively, these studies underscore the cross-cultural applicability of the Tripartite Influence Model, and highlight how sociocultural influences on body image and eating behaviour concerns may vary across cultures.

The Middle-Eastern Sociocultural Environment

While there is evidence of rising rates of body image and eating concerns in the Middle-East, there remains a scarcity of research exploring the applicability of theoretical frameworks, such as the Tripartite Influence Model, in this culture. This is important to address because understanding how established theoretical frameworks, such as the Tripartite Influence Model, apply to Middle-Eastern populations can extend our understanding of body image and eating concerns in this culture (Abdoli et al., 2024; Kakar et al., 2023). Although limited studies to date have tested the Tripartite Influence Model among Middle-Eastern samples, several studies have explored the associations proposed by the model. For instance, Zeeni et al. (2013) conducted a cross-cultural study examining sociocultural influences on body image and eating behaviours among Lebanese and Cypriot undergraduate women. They found that the influence of parents, peers and media on eating behaviours and body image was stronger in the Lebanese sample compared to the Cypriot sample (Zeeni et al., 2013). This was a notable finding given that Cyprus, as a European country, is considered to experience higher rates of Western exposure (e.g., the Western media) than Lebanon. Hosseini et al. (2017) investigated a partial Tripartite Influence Model, which did not include a test of the internalisation of the Western thin-ideal, among Iranian women aged 18-35 years and found that all sources of sociocultural influence, family, peers and media, were associated with greater body dissatisfaction; however, body dissatisfaction was not related to disordered eating. Additionally, social appearance comparisons mediated the relationship between media pressures and body dissatisfaction, but did not mediate the relationships between family and peer pressure, and body dissatisfaction. Similarly, research by Mostafa et al. (2018) found that body image concerns were associated with greater internalisation of the thin-ideal and perceived sociocultural pressures from parents, peers and the media among Egyptian female university students. As previously discussed, Kakar et al. (2023) identified family-based appearance pressures, in contrast to peer and media pressures, as the strongest

predictor of body image dissatisfaction among adolescent girls in Iran. Interestingly, peer pressure and appearance satisfaction were not correlated with thin-ideal internalisation or disordered eating (Kakar et al., 2023). Their findings also revealed that young Iranian females experience both direct peer pressure to look a certain way, and direct and indirect (via internalisation and appearance comparisons) media pressure to engage in disordered eating behaviours. However, although family pressures were strongly correlated with appearance satisfaction, they were not related to appearance satisfaction within the model (Kakar et al., 2023). This suggests that other factors such as media and peer pressures, especially in the context of mediating mechanisms like internalisation and appearance comparisons, could play a more significant role. Accordingly, while sociocultural factors like family, peer, and media pressures can influence body image and eating behaviours in Middle-Eastern populations, their roles may vary across cultures and when tested within the Tripartite Influence Model. This highlights the importance of testing and extending the Tripartite Influence Model specifically to Middle-Eastern samples to reflect cultural nuances and dynamics across these populations.

The Role of the Western Media

The Western media undoubtedly plays an important role in contributing to body image and eating concerns across cultures. Research has consistently demonstrated the pervasive influence of Western appearance ideals, particularly the thin-ideal, through media outlets such as television, magazines and social media (Holland & Tiggemann, 2016). These ideals contribute to body dissatisfaction and disordered eating among young women globally (Fioravanti et al., 2022; Grabe et al., 2008; Thompson et al., 2020). The Middle-East is no exception to this; Westernisation has introduced shifts in beauty standards, with many young women increasingly exposed to media portrayals that promote thinness as the ideal body type

(Melisse et al., 2024). For instance, research by Musaiger and Al-Mannai (2014) found that exposure to women's fashion magazines and television was associated with increased body weight concerns and dieting behaviours among female university students in five Arab countries (Bahrain, Egypt, Jordan, Oman and Syria), although the degree of influence varied across these countries. This variation was attributed to sociocultural differences, suggesting that young Middle-Eastern women may face conflict between attaining Western appearance ideals and maintaining traditional cultural beliefs about body image (Musaiger & Al-Mannai, 2014). Similarly, Radwan et al. (2018) explored the disaggregated influence of media and family on body image and eating concerns among university students in the United Arab Emirates (UAE), finding that both were important sources of influence/pressure. Their findings indicated that while media exposure contributed to negative body image perceptions in young women, it was also associated with negative familial attitudes and comments about appearance (e.g., negative body talk). These findings suggest that young Middle-Eastern women experience appearance pressures from multiple sociocultural influences, with the media also shaping broader familial attitudes, further highlighting the role of Westernisation in traditionally collectivistic cultures. However, some studies found no significant association between Western media and the internalisation of the thin ideal. For instance, Khaled et al. (2018) tested the influence of Western media images on body dissatisfaction among Omani women and found that exposure to thin images of Western celebrities or models did not significantly increase the desire for thinness. Rather, images of average-sized celebrities prompted a desire for a thinner body among women who had initially indicated a preference for a thin over heavy body type. These findings suggest that cultural beliefs and attitudes toward body size, particularly regarding what may be considered an "ideal" level of thinness, may mediate the role of Western media beauty ideals in the Middle-East (Khaled et al., 2018). Thompson et al. (2020) also investigated the influence of Western media on body

dissatisfaction across various non-Western countries, which included a focus on three Middle-Eastern countries (Turkey, Iran and Oman). Their findings demonstrated a significant relationship between internalisation of the Western thin-ideal and body dissatisfaction among Middle-Eastern women, which they attributed to increased exposure to Western media and cultural shifts resulting from Westernisation. Altogether, these studies highlight that Westernisation, and particularly, the promotion of the thin-ideal through Western media, contributes to body dissatisfaction and disordered eating behaviours among young women in Middle-Eastern populations. However, other sociocultural factors, such as the interplay of cultural values, and familial influence/pressures, also play both direct and indirect (e.g., mediated by media) roles in shaping body image and eating beliefs and behaviours in these cultures.

The Role of the Family

While sociocultural agents, such as the media and peers are key sources of influences, many of the aforementioned studies have also attributed the varying rates of body dissatisfaction and disordered eating in Middle-Eastern cultures to the role of the family. This is not surprising, given that in Middle-Eastern family units, the needs of the family often take precedence over individual needs and external influences (Beitin & Aprahamian, 2014). Additionally, the parent-child relationship in the Middle-East is enduring and bidirectional, continuing well into adulthood (Beitin & Aprahamian, 2014; Melisse et al., 2020). This is particularly the case for daughters, who are typically expected to maintain close relationships and fulfil familial obligations throughout their lives (Kulwicki, 2021; Tohme et al., 2024). Research also suggests that young Middle-Eastern women tend to report more positive and close relationships with their parents compared to their male counterparts, and feel more comfortable disclosing personal concerns (Beitin & Aprahamian, 2014; Tohme et al., 2024).

In contrast, Western individualistic cultures typically prioritise autonomy, where young adults are expected to gradually detach from their parents and become more independent (Beitin & Aprahamian, 2014). This shift towards autonomy in Western cultures has contributed to a declining role of family influence (Kagitcibasi, 2013; Oláh et al., 2018). Research suggests that as individuals seek greater independence, particularly in Western cultures, they tend to rely more on body and eating cues from external sources, such as the media and peers, while familial input tends to hold more weight in Middle-Eastern cultures (Beitin & Aprahamian, 2014). Moreover, cultural identity, and collectivistic values, more broadly, have been identified as potential protective factors mitigating the risks of body dissatisfaction and disordered eating behaviours (Cepeda-Benito et al., 2019; Soh et al., 2006; Warren et al., 2005). Thus, while Westernisation and Western media have promoted the Western thin-ideal and individualistic values in non-Western cultures, the family remains a central source of influence in Middle-Eastern populations.

The Role of Parents

The role of parents on body image and eating behaviour concerns has been widely examined and established across cultures (Al Sabbah et al., 2009; Rodgers et al., 2024; Soh et al., 2006; Swami, 2015; Trofholz et al., 2023). However, very little research based on sociocultural models, or the Tripartite Influence Model in particular, has investigated the influence of parents in isolation, specifically that of mothers and fathers. This is important given that parents are uniquely positioned in informing and shaping their children's eating attitudes and behaviours, both *directly* and *indirectly* (Brun et al., 2021). Research has demonstrated that both direct parental feedback and indirect modelling are significantly associated with disordered eating behaviours, such as drive for thinness and bulimia symptomology, as well as body dissatisfaction (Abraczinskas et al., 2012; Voelker et al.,

2015). This association has been found to remain significant even when controlling for media and peer influences, further suggesting that parental influence distinctly contributes to these outcomes (Abraczinskas et al., 2012; Zimmer-Gembeck et al., 2023).

Although both mothers and fathers serve as primary agents of socialisation across cultures, research demonstrates that mothers play a particularly influential role in shaping their children's body image and eating beliefs and behaviours across Western and non-Western cultures (Bäck, 2011; Dahill et al., 2021; McCabe & Ricciardelli, 2003; Shaban et al., 2018; Yaffe, 2023). Ferreira et al. (2021) conducted an integrative review of 26 studies across various countries (e.g., Australia, USA, Brazil, Spain, Portugal) and found that the mother-daughter relationship, in comparison to all other familial relationships, emerged as a key contributor to the development of body image and eating behaviour concerns in daughters. This finding is supported by the notion of a gender-linked transmission, suggesting that mothers may be stronger sources of influence on their daughter's body and eating-related behaviours, while fathers may have a similar role with their sons (Damiano et al., 2015; Rodgers et al., 2009). Although not directly tested within a Middle-Eastern population, this gender-linked transmission likely applies in Middle-Eastern cultures, as research indicates that daughters in these cultures report significantly greater attachments to their mothers than to their fathers (Tohme et al., 2024). Furthermore, daughters in Middle-Eastern cultures have been found to exhibit health-related behaviours in line with those of their mothers compared to their fathers (e.g., eating and nutrition habits/behaviours, engagement in physical activity; Ostovarfar et al., 2023; Shaban et al., 2018). Given the higher prevalence of body dissatisfaction and eating disorders among women globally, it is particularly relevant to examine the mother-daughter relationship in both a Western and Middle-Eastern context (Laboe et al., 2022). Numerous studies have found support for both *direct* and *indirect*

associations between the mother-daughter relationship and the development of body and eating behaviour concerns.

Direct and Indirect Maternal Influence

Direct and *indirect* maternal influence refers to how mothers transmit body and eating related messages via verbal and non-verbal cues (Hillard et al., 2016). *Direct* influence involves explicit comments and feedback regarding body shape, weight and eating habits (e.g., a mother telling her daughter to watch her weight; Brun et al., 2021). In contrast, *indirect* influence is the way in which mothers model certain body and eating-related behaviours, such as engaging in restrictive dieting behaviours or negative body talk about themselves or others (Brun et al., 2021). Although these maternal influences on body dissatisfaction and disordered eating behaviours have not been specifically examined within Middle-Eastern populations, research has documented their role across diverse cultures. For instance, Neumark-Sztainer et al. (2010) found that almost half of adolescent girls from diverse cultural backgrounds residing in the United States collectively reported that their mothers directly encourage them to diet, and a significant portion (one-third) observed their mothers modelling dieting behaviours. This direct and indirect influence was found to be associated with young girls' use of maladaptive health behaviours, such as eating restriction or binge eating (Neumark-Sztainer et al., 2010). Similarly, Chng and Fassnacht (2016) examined the direct influence of parents on young Singaporean adults' (aged between 18 to 25 years) body and eating outcomes. They found that female participants (compared to males) reported overhearing greater negative comments about their body shape, weight, and eating habits from their mothers than their fathers, which correlated with increased levels of body dissatisfaction and disordered eating patterns (Chng & Fassnacht, 2016). Arroyo et al. (2017) explored female familial relationships, specifically, between grandmothers, mothers

and daughters in the United States, and found that only mothers' direct comments about weight/size and their indirect modelling of weight-related behaviours significantly correlated with daughters' disordered eating symptomatology. Yu and Perez (2020) investigated the role of direct maternal influence, focusing on criticism to improve appearance, shape and weight, on young women's body and eating behaviours from diverse cultural backgrounds (i.e., White, Latina, Asian American). Their findings indicated that direct mother influence was associated with body dissatisfaction and disordered eating pathology across cultures. Overall, these findings demonstrate the role of *direct* and *indirect* maternal influence on body dissatisfaction and disordered eating symptomology in young women across cultures.

Negative Body Talk

Although women collectively experience mounting pressure from parents, peers and the media to attain appearance ideals, not all women are negatively impacted; that is, not all women will experience dissatisfaction with their bodies or engage in disordered eating behaviours (Mills et al., 2021). Researchers propose that this variance may be partially explained by the way body image ideals are transmitted, reinforced and internalised among women in close relationships, such as family members and friends (Hart & Chow, 2020). Thus, while both *direct* and *indirect* forms of influence are important to consider, of particular interest in the literature is the *direct* influence of women, specifically through *negative body talk (*Arroyo et al., 2022). *Negative body talk* refers to frequent conversations involving negative commentary about one's own or others' appearance (e.g., "I/She looks terrible in that dress"; Hart & Chow, 2020; Jones & Young, 2021). A form of *negative body talk* which has been widely investigated in the literature is *fat* talk, which is characterised by self-critical everyday conversations about one's body shape, weight and size (e.g., "I look so fat in this dress"; Arroyo & Andersen, 2016; Mills & Fuller-Tyszkiewicz, 2017; Nichter,

2009; Shannon & Mills, 2015). Both women and men engage in fat talk; however, research has found that women engage significantly more in these conversations than men (Guertin et al., 2017; Lin et al., 2021). *Fat talk* has become normalised within social interactions among women in the Western world due to societal expectations which discourage positive self-talk and praise, instead, reinforcing the tendency for women to speak negatively about themselves (Arroyo et al., 2022; Guertin et al., 2017).

In Western cultures, the association between mother and daughter fat talk is clear. For example, Arroyo and Andersen (2016) examined fat talk between mother-daughter dyads among female university students in the United States (primarily White/Caucasian sample). They found that both mothers and daughters engaged in fat talk, and this was linked to their own body image outcomes, specifically body dissatisfaction and surveillance, drive for thinness and bulimic tendencies. Additionally, mothers' fat talk was associated with their daughters' own bulimic tendencies (Arroyo & Andersen, 2016). Similarly, Rogers et al. (2017) found that undergraduate university women's (92.5% Caucasian) own fat talk was associated with the perceived fat talk from both their mother and closest female friend, demonstrating the reciprocal nature of fat talk within close female relationships. Research by Chow and Tan (2018) found that adolescent girls (48% Caucasian) who engaged in fat talk were more likely to experience eating disorder symptoms (i.e., dieting, bulimia, food preoccupation and control). When mothers participated in fat talk, this increased their daughters' risk of eating pathology, and this association was stronger when daughters actively participated in these conversations compared to only overhearing fat talk (Chow & Tan, 2018). Jones and Young (2021) examined fat talk among a culturally diverse (mainly Hispanic/Latino) sample of women aged 18-58 years residing in the United States. They found that daughters' perceptions of their mothers' thin-ideal internalisation, fat talk frequency and engagement in extreme weight-loss behaviours were associated with

daughters' own body dissatisfaction and weight-loss behaviours. While fat talk is considered a socially normative behaviour in Western society, there is a significant gap in our understanding of these dynamics beyond Western cultures, particularly in the Middle-East (Shannon & Mills, 2015). Given the particularly close-knit and collectivistic relationships among mothers and daughters in Middle-Eastern cultures, it is likely that similar patterns of maternal influence may occur, and thus it may be postulated that negative body talk likely occurs in these cultures as well (Tohme et al., 2024).

The Role of Sisters

Alongside the role of the mother-daughter relationship in the development of negative body image and eating behaviour, it has been observed that other female familial relationships, specifically between sisters, may similarly contribute to these outcomes. The sister relationship is uniquely positioned because unlike other familial relationships, sisters often serve a dual role, acting as both a family member and peer, beginning from childhood and continuing into adulthood (Johnson & Salafia, 2022; Preston, 2010). While research has investigated the combined influence of female peers and sisters on body image and eating behaviours, on the basis that women report their sisters and female peers as equal comparison and modelling targets, few studies have focussed solely on the influence of sisters alone (Coomber & King, 2008; McCabe et al., 2006; Rodgers et al., 2014). Early works by Tsiantas and King (2001) found that sister dyads aged 14 to 25 years in Australia demonstrated similar levels of body image disturbance (i.e., body size distortion, dissatisfaction and preference for thinness) and internalisation of the thin-ideal, with greater internalisation in turn predicting body dissatisfaction in both sisters. Keery et al. (2005) examined the role of appearance-related teasing from family members on American school girls' (85% Caucasian sample) body image outcomes. They found that girls who reported teasing from their sisters

experienced significantly higher levels of body dissatisfaction and engaged in more social appearance comparisons compared to those whose sisters did not tease them. However, sister teasing was not associated with any other body image variables, such as internalisation of the thin ideal, eating restriction and bulimic behaviour. Coomber and King (2008) investigated the Tripartite Influence Model regarding perceived familial modelling and pressure on maladaptive body and eating outcomes among Australian university students, specifically sister pairs aged 18 to 25 years. Sisters correlated on measures of internalisation, body image disturbance and disordered eating behaviours (bulimia and restriction). Participants also indicated a greater tendency to compare their physical appearance with their sisters and female peers in comparison to their parents. Notably, sisters and mothers were perceived as providing equal modelling cues and pressures related to body weight and dieting behaviours, while low perceived modelling from fathers was reported.

Limited studies to date have investigated the sole influence of sisters; however, works such as Preston's (2010) dissertation offer insights into the role of sisters in physical appearance comparisons and risk factors for eating pathology in young women (predominantly Caucasian sample). Their results indicated that sisters who frequently compared their physical appearance with one another were more likely to exhibit eating disorder pathology, i.e., maladaptive attitudes, feelings and behaviours related to eating. Additionally, Greer et al. (2015) explored how sibling communication about body image, both positive (e.g., body satisfaction, physical attractiveness, and body health) and negative (e.g., fat talk, dieting), was associated with body esteem in a predominantly European American sample aged 11 to 21 years. Overall, their findings indicated that girls who disclosed their own positive or negative body image concerns to their sisters tended to report better body esteem. In contrast, when girls overheard their sisters discussing body-related comments, it led to lower levels of body-esteem (Greer et al., 2015).

The role of sisters in shaping body image and eating behaviours is even less explored when considering cross-cultural contexts. Spurgas (2005) conducted semi-structured interviews with American university women from various cultural backgrounds (Caucasian, Asian, African, Caribbean) to understand how familial factors shape body perceptions. While participants identified parents as direct sources of influence on their body image, sisters were perceived as indirect influences, with many participants comparing their own physical appearance to that of their sisters (Spurgas, 2005). Nerini et al. (2016) examined how siblings' comments on appearance, especially from sisters, contributed to body dissatisfaction and disordered eating symptoms among young Italian women, finding that negative appearance-related commentary about weight and shape from sisters was associated with increased social appearance comparisons, body dissatisfaction and disordered eating symptomatology. More recently, Rivero et al. (2024) studied the role of negative weight and eating-related messages from family members, and internalisation of the Western thin-ideal, on Latina/Hispanic female university students in the United States. Negative messages from sisters were positively correlated with similar messages from both mothers and fathers, all of which contributed to greater internalisation. While it is promising that some research has explored the role of sisters in shaping body image and eating behaviour concerns, there remains a limited focus on sisters as distinct sources of influence, especially in areas such as fat talk. Moreover, there is an even greater scarcity of research examining sister relationships across diverse cultural contexts, with no research specifically addressing the Middle-East. In many collectivistic cultures, like the Middle-East, where family plays a central role, it is likely that sisters, similar to mothers, would also serve as key sources of influence on body image and eating behaviours.

Positive Body Image and Eating Behaviours

It stands to reason that if the mother-daughter-sister relationship plays a role in the development of *negative body image* and *eating behaviour* outcomes, it likely has the potential to also foster *positive body image* and *eating behaviours* (Linardon et al., 2022). However, as outlined above, much of the existing literature has focussed on pathological disturbances, i.e., body dissatisfaction and disordered eating symptomology, including within expanded versions of the Tripartite Influence Model that have examined disaggregated familial influences (Mills & Fuller-Tyszkiewicz, 2017; Swami et al., 2020; Tylka, 2018). In recent years, there has been a growing shift toward a more comprehensive exploration of the construct of body image, particularly through the lens of positive body image (Avalos et al., 2005; Mills & Fuller-Tyszkiewicz, 2017; Piran, 2015; Webb et al., 2018). Positive body image, a multifaceted construct, refers to the love, appreciation and acceptance of one's body, with a focus on its functionality, despite societal pressures to meet appearance ideals (Halliwell, 2015; Tiggemann, 2015).

Although positive and negative body image are often inversely correlated, research suggests that they are not simply opposite ends of the same continuum, but rather conceptually distinct constructs (Tylka & Wood-Barcalow, 2015a). Specifically, it is possible for individuals to exhibit positive body image, such as *body appreciation,* even in the presence of negative body image (e.g., body dissatisfaction) and maladaptive behaviours (e.g., fat talk, appearance comparisons, internalisation of the thin ideal, disordered eating symptomology; Andrew et al., 2016; Garnett et al., 2014; Halliwell, 2015; Tiggemann, 2015; Tiggemann, 2016; Tylka & Wood-Barcalow, 2015b). This distinction is further highlighted by researchers using separate measures for positive and negative body image, although the challenge remains in conceptually capturing both constructs within a single measure (Lin et al., 2021). Moreover, despite increasing research interest in positive body image, little attention has been paid to how this construct translates across Western and non-Western

cultures, and particularly with regard to capturing cultural nuances (e.g., measurement invariance; Lacko et al., 2022; Rodgers et al., 2023; Romano et al., 2020; Tiggemann, 2015). Thus, it is important to further examine specific components of positive body image, such as *body appreciation*, to better understand how this construct occurs across different cultural contexts.

Body Appreciation

Body appreciation, a widely investigated facet of *positive body image,* refers to one's acceptance of, favourable opinions toward, and respect for their body (Tylka & Wood-Barcalow, 2015a; Tylka & Wood-Barcalow, 2015b). At the individual level, body appreciation is thought to be a protective factor against body dissatisfaction and disordered eating symptomatology (Levine & Smolak, 2016; Linardon et al., 2023; Nolen & Panisch, 2022). Previous research has shown that body appreciation is inversely related to body preoccupation and dissatisfaction, and disordered eating symptomatology among young Western women (Avalos et al., 2005). Further works in Western contexts have found body appreciation to be a potential protective factor for women who internalise the thin-ideal, in that women who score highly on body appreciation place less importance on their appearance discrepancies (i.e., the difference between their ideal appearance and actual appearance; Halliwell, 2015). Similarly, investigations by Andrew et al. (2016) found that body appreciation was inversely related to young Australian women's appearance comparisons, i.e., the tendency to compare one's appearance with the appearance of others, and the likelihood of internalising the Western thin-ideal. Moreover, Avalos et al. (2005) proposed that body appreciation may protect against the use of maladaptive behaviours relating to weight loss or control. In support, Andrew et al. (2014), and Nolen and Panisch (2022), found that body appreciation has been linked to greater engagement in health behaviours (e.g., using

sun protection) and fewer unhealthy weight-loss behaviours (e.g., dieting) in primarily White/Caucasian samples. In addition, a meta-analysis by Linardon et al. (2022) found negative associations between body appreciation and body image disturbances, including drive for thinness/muscularity and internalisation of appearance ideals, in addition to negative associations with eating pathology and restraint among adult women (81.2% White/Caucasian sample).

Body Appreciation Across Non-Western Cultures

Although positive body image has primarily been investigated within White/Caucasian samples, researchers have begun to identify cultural differences in the way body appreciation is expressed and experienced in non-Western samples (Halliwell, 2015). Swami et al. (2009) explored cultural differences in positive body image, including body appreciation, among women living in the United Kingdom and found significant differences based on cultural background. Overall, Hispanic women reported the highest levels of body appreciation, followed by African Caribbean, Caucasian and South Asian women. The lower body appreciation reported by South Asian women was attributed to the potential role of Westernisation, specifically the conflict South Asian women may experience between Western individualistic values and the collectivistic familial expectations prevalent in their culture (Swami et al., 2009). In a broader international context, Swami et al. (2023) examined body appreciation across 65 Western and non-Western countries, with a predominately (60%) female sample. Their findings revealed that participants from Malta, Taiwan and Bangladesh reported the highest levels of body appreciation, while those from India, the United Kingdom, and Australia had the lowest. In response to calls for more diverse representation in body image research, especially in Africa and the Middle-East (for reviews see Rodgers et al., 2023 and Tiggemann, 2015), Swami et al.'s (2023) study also included participants from

Middle-Eastern countries, finding that Egypt ranked highest in body appreciation, followed by Turkey, Saudi Arabia, Iran, Palestine, Bahrain, Lebanon, and finally, the UAE.

Swami et al. (2023) also reported that greater body appreciation was linked to a greater "distance" from Western countries and values (e.g., individualism), such that individuals in non-Western cultures with less Western influence may feel less pressure to engage in, and conform to, Western body and eating-related behaviours. More recently, Hanson et al. (2024) investigated body appreciation and sociocultural pressures across the lifespan in both Western (residing in the UK, USA, Canada, Australia) and non-Western (Black Nigerian and Eastern Asian Chinese) women. They found that Black women reported the highest levels of body appreciation, followed by East Asian women, with White women reporting the lowest levels. Hanson et al. (2024) also found support for a modified version of the Tripartite Influence Model cross-culturally, such that greater internalisation of the Western thin-ideal and perceived pressure from media, peers and family were associated with lower body appreciation across all cultures.

To date, Swami et al. (2023) is the only study to have specifically compared body appreciation across Middle-Eastern cultures. However, the aforementioned study by Thompson et al. (2020), which investigated the influence of Western media on body image outcomes, and included some Middle-Eastern countries (Turkey, Iran and Oman), also observed that women in these countries reported higher levels of body appreciation compared to women in other non-Western countries. This finding suggests that sociocultural factors specific to Middle-Eastern cultures may contribute to a more nuanced and complex relationship with Western media ideals (Thompson et al., 2020). Nonetheless, there remains a significant gap in the research investigating body appreciation and its associated relationships within these populations (Fekih-Romdhane et al., 2023). Understanding these dynamics is

important given the distinct sociocultural environment of the Middle-East, where the interplay between Western individualistic and traditional collectivistic values is significant, especially as family plays a particularly prominent role in shaping body image outcomes (Fekih-Romdhane et al., 2023; Rodgers et al., 2023). Considering that body appreciation is expressed differently across countries and cultures, and may serve as a potential protective factor mitigating the risks of maladaptive body image and eating outcomes, further investigation in Middle-Eastern populations is warranted (Holmqvist & Frisén, 2010; Rodgers et al., 2023; Tiggemann, 2015).

Mindful Eating

Research has shown that individuals who feel positively about their bodies (e.g., exhibit greater levels of body appreciation) tend to engage in more positive or "healthful" eating habits, such as *mindful eating* (Keyte et al., 2022). While mindful eating is informed by the broader concept of *mindfulness*, the two are distinct constructs. Mindful eating involves paying full attention to the experience of eating, which includes being aware of hunger and satiety cues, and eating without distractions or judgement (Tapper, 2022; Winkens et al., 2018). On the other hand, mindfulness, originally rooted in Eastern Buddhist practices, refers to a broader awareness of present-moment experiences (Beccia et al., 2020). Mindfulness has been widely integrated into psychological interventions, including those targeting eating behaviours (Turgon et al., 2019). While research and interventions based on the concept of mindfulness have been found to be associated with lower levels of eating disorder symptomatology (e.g., dieting, binge and restrictive eating), its applicability beyond Western contexts remains less explored (for reviews see Turgon et al., 2019 and Warren et al., 2017). Moreover, this gap in cross-cultural research on mindful eating rather than mindfulness more broadly is particularly notable.

In Western individualistic cultures, contrary to the practice of mindful eating, consumption of meals is often viewed as a personal choice driven by individual preferences and goals, which in turn may contribute to a greater focus on one's physical appearance (Beitin & Aprahamian, 2014). In non-Western cultures, such as the Middle-East, eating behaviours and habits reflect collectivistic values, with meals often serving as communal experiences that foster a sense of belonging and group cohesion (Elran-Barak et al., 2020; Kulwicki, 2021). This collective focus can reduce the emphasis on individual physical appearance and eating habits, which may contribute to a more protective role of mindful eating. In support, research has found that frequent family mealtimes are associated with a lower likelihood of engaging in disordered eating behaviours (Elran-Barak et al., 2020; Ju et al., 2024).

Notably, Masuda et al. (2018) is the only study to have investigated the role of mindfulness on eating disorder cognition and behaviours among culturally diverse female university students (i.e., Asian, Black, White) residing in the United States. Their findings revealed negative associations between mindfulness and eating disorder cognition and behaviour among White and Asian American women, although, for Black American women, mindfulness was inversely associated with eating disorder cognition, but not eating disorder behaviour. Moreover, while mindfulness moderated the association between eating disorder cognition and behaviour in White American women, such that higher levels of mindfulness correlated with lower levels of eating disorder cognition and behaviour, it did not have the same moderating role in women of Asian American or Black American cultural backgrounds (Masuda et al., 2018).

Given these findings that mindfulness may mitigate eating disorder risk, further exploration of cultural differences in eating behaviours, especially regarding the role of

mindfulness and mindful eating, is essential for extending our understanding. Moreover, the protective effects of mindful eating may be more pronounced in some cultural contexts, such as Middle-Eastern cultures, with existing practices that reinforce a focus on collective eating, such as family mealtimes (Elran-Barak et al., 2020; Ju et al., 2024). Research has suggested that the family may serve as a basis for positive perceptions related to body image and eating behaviours (Choate, 2005; Maor & Cwikel, 2016). Thus, the mother-daughter-sister triad, particularly in Middle-Eastern cultures where familial relationships tend to be particularly significant, may play a key role in fostering body appreciation and mindful eating, providing a "safe" environment away from external pressures such as the media and peer influence (Brun et al., 2021).

Thesis Aims and Summary of Chapters

The overarching aim of this thesis was to investigate how sociocultural influences, specifically female family members, may contribute to both *negative* and *positive* body image and eating behaviours across Western and Middle-Eastern cultures. To this end, a series of three studies were conducted, as outlined in Chapters 2-4. The three chapters are either published manuscripts, or manuscripts submitted for publication, and can be read as stand-alone papers. The first (**Chapter 2**) is a cross-sectional study in a population of young Australian women and has been published in the journal *Body Image* (Deek et al., 2023). It aimed to investigate the perceived influence of mothers and sister(s) on body image disturbance and disordered eating behaviours. Based on the Tripartite Influence Model (Thompson et al., 1999), this study investigated how family sociocultural influences/pressures (mothers and sisters) and mediational factors (internalisation of the thin-ideal and appearance comparison) were associated with body dissatisfaction and disordered eating symptomatology (bulimia, and restriction). Overall, the study found that young

Australian women who reported greater perceived appearance pressures and fat talk from both their mothers and sisters experienced increased body dissatisfaction and a greater likelihood of engaging in disordered eating behaviours, with these relationships mediated by physical appearance comparisons and internalisation of the Western thin-ideal. This study was the first to investigate a modified version of the Tripartite Influence Model by focussing on disaggregated agents of female familial influence, as well as the role of fat talk within a Western population. In so doing, it contributed to the growing body of literature on body image and eating behaviour outcomes within the familial home environment.

The second study (**Chapter 3**) was a replication of *Study 1*, but in a different cultural sample. There has been ongoing research to indicate that there is an alarming rate of preoccupation with weight and disordered eating behaviours among young women globally, and in particular, within Middle-Eastern populations (Melisse et al., 2024). This study examined the role of mothers and sisters on body image and eating concerns among young Middle-Eastern women. Consistent with the findings from Study 1 in a Western sample, in Study 2 the influence/pressures and fat talk from both mothers and sisters, as mediated by appearance comparisons and internalisation of the Western thin-ideal, were associated with body dissatisfaction and disordered eating in young Middle-Eastern women. This study has also been published in the journal *Body Image* (Deek et al., 2024) and contributes to the generation of new knowledge about eating behaviour and body image outside the Western world.

Building upon these findings, the third study (**Chapter 4**) was a cross-cultural comparison of both *negative* and *positive* body image and eating behaviour outcomes in young Western and Middle-Eastern women. This is important because examining the associations between body image and eating behaviour outcomes in both Western and

Middle-Eastern populations is imperative to understanding the influence of culture. The study sought to determine whether the aforementioned sociocultural influences (female familial influence) and mediational factors were associated not only with negative body image (body dissatisfaction) and eating behaviours (disordered eating), but also with positive body image (body appreciation) and eating behaviours (mindful eating). The findings revealed similarities across Western and Middle-Eastern participants in perceived levels of mother fat talk, internalisation of the Western thin-ideal, body dissatisfaction and disordered eating behaviours. However, Middle-Eastern participants reported experiencing greater appearance pressures from their mothers and sisters, and engaged in more frequent fat talk around their mothers, compared to their Western counterparts. Middle-Eastern participants also reported greater perceived pressures from their sisters and were more likely to exhibit and overhear fat talk within their sister relationships, while Western participants demonstrated a greater tendency to engage in physical appearance comparisons. Notably, Middle-Eastern participants, in contrast to Western participants, exhibited greater levels of body appreciation and were more likely to engage in mindful eating practices, particularly eating with awareness and without distraction. This study, currently under revision with the journal *Body Image*, provides support for the coexistence of *negative* and *positive* body image across cultures, highlighting opportunities for future research and interventions to target positive body image and eating behaviours, even in the presence of negative body image and maladaptive eating.

The final chapter (**Chapter 5**) is a general discussion of the overall thesis results, their broader theoretical and practical/clinical implications, strengths, limitations and directions for future research.

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CHAPTER TWO: THE MOTHER-DAUGHTER-SISTER TRIAD: THE ROLE OF FEMALE FAMILY MEMBERS IN PREDICTING BODY IMAGE AND EATING BEHAVIOUR IN YOUNG WOMEN[1]

Abstract

Familial influence, specifically from mothers and sisters, may impact the development of body dissatisfaction and disordered eating in young women. Guided by the Tripartite Influence Model, the present study recruited 422 young Australian women for a survey to determine how appearance pressures and fat talk, exhibited by mothers and sisters, and mediational mechanisms (comparisons and internalisation), are associated with body dissatisfaction, and in turn, disordered eating symptomatology. We also explored differences in perceived ratings of mother versus sister appearance pressures and fat talk. Findings were in the hypothesised directions. Greater appearance pressures and fat talk from mothers and sisters was associated with greater body dissatisfaction, restriction and bulimic behaviours. Furthermore, appearance pressures from mothers and sisters was related to young women's likelihood of engaging in appearance comparisons and thin-ideal internalisation, which was associated with body dissatisfaction, and in turn, disordered eating symptomatology. Finally, participants perceived more appearance pressures from their mothers than their sisters, and perceived their mothers to exhibit greater fat talk than their sisters. The findings extend previous research in an important and novel way by investigating individual agents of female familial influence in addition to the role of fat talk in predicting body dissatisfaction and disordered eating.

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Introduction

Family members, along with other sociocultural influences, such as the media or peers, can play a key role in the development of maladaptive body image and problem eating behaviour (Keery et al., 2004; Rodgers et al., 2011). In particular, research has demonstrated that female family member influence, namely mothers and sisters, is linked to the development of body dissatisfaction and disordered eating in young women (Brun et al., 2020). Current findings suggest that there may be a gender-linked transmission between female family members, such that mothers and sisters are more likely to model certain eating and body related behaviours to their daughters and female siblings, respectively (Balantekin, 2019). However, very little research has investigated the disaggregated influence of parents and siblings, specifically that of mothers and sisters (McCabe & Ricciardelli, 2003). Because of the unique bond between mothers, daughters, and sisters, and the potential for female family members to influence body image and eating behaviour, an investigation into the mother-daughter-sister triad is warranted.

The potential influence of mothers and sisters on female body image can be explained by the Tripartite Influence Model (Thompson et al., 1999), which proposes that three sociocultural influences (parents, peers and media) affect body image and eating behaviour through two mechanisms: appearance comparisons and internalisation. *Appearance comparisons* is the tendency to compare one's physical appearance to that of others (Schaefer & Thompson, 2014). *Internalisation* refers to the extent to which an individual "buys into" culturally defined and approved ideals of attractiveness (i.e., the thin-ideal; Schaefer & Thompson, 2014; Thompson et al., 1999). Previous cross-sectional studies have confirmed the predicted associations between the Tripartite Influence Model variables, and a wealth of research exists in relation to the influence of the media, parents and peers (e.g., de Carvalho

et al., 2017; Shagar et al., 2019; Van den Berg et al., 2002). Some studies have conceptualised the influence of parents more broadly as "family influence" to consider the role of other family members including fathers and siblings (e.g., Van den Berg et al., 2002). However, this limits the conceptualisation of all family members to a single construct, rather than disaggregated agents of familial influence (i.e., mothers, fathers, brothers, sisters separately). Indeed, when investigated as individual agents of influence, sisters and female peers have been found to be of equal importance as social comparison targets, in that young women reported comparing their physical appearance with their sisters as often as they do with their female peers (Coomber & King, 2008). The sibling relationship is considered to be unique and distinct from other family relationships, in that it serves a dual purpose of both peer and familial, whereby siblings have the potential to inform and interconnect with peer relationships outside of the family home environment (Buist et al., 2013; Johnson & Salafia, 2022). As such, it is likely that sibling relationships, in contrast to parent-child relationships, function more similarly to peer relationships. Of particular interest to the present study are the pathways for mothers as 'parents' and sisters as 'peers'.

In a sample of U.S. college women, Van den Berg and colleagues (2002) found that the influence of family members on the development of body image and eating problems was fully mediated by appearance comparisons, which in turn contributed to body dissatisfaction and disordered eating (both restriction and bulimia). More recently, de Carvalho et al. (2017) found that among Brazilian undergraduate female students, parental influence was related to both appearance comparisons and internalisation of the thin ideal. A full mediation model was determined whereby comparisons and internalisation contributed to body dissatisfaction, which was associated with disordered eating. In addition, Shagar and colleagues (2019) examined a subsection of the model among young Australian and Malaysian women and found direct links between peer influence and body dissatisfaction, internalisation and

restrained eating, and internalisation and bulimic behaviours. Collectively, these findings provide support for the Tripartite Influence Model's predicted relationships, as well as the specific variables of interest of the present study, namely the influence of parents and peers.

Although both mothers and fathers are important sources of influence, mothers are considered to be primary role models for their daughters, and have been found to have more of an influence on the body and eating related beliefs of their daughters than fathers (Abramovitz & Birch, 2000; Balantekin et al., 2014; Francis & Birch, 2005; Rodgers et al., 2009; Wertheim, 2002). This is because mothers can influence their daughters' conceptualisation of body image and eating behaviour through two mechanisms: (1) *direct* and (2) *indirect* influence (Arroyo & Andersen, 2016; McCabe & Ricciardelli, 2003). Direct influence refers to the maternal attitudes towards shape, weight and eating behaviours that are exerted through verbal messages, such as criticism or encouragement to lose weight (Rodgers & Chabrol, 2009). In young women, direct maternal influence has repeatedly been associated with dieting, restriction and weight-loss attempts, body dissatisfaction, and disordered eating (Balantekin, 2019; Berge et al., 2018; Francis & Birch, 2005; Gross & Nelson, 2000). In contrast, indirect influence relates to the modelling of behaviours from mothers, such as disclosing self-related weight talk, dieting, or restricting food intake (Rodgers & Chabrol, 2009). Engaging in verbalisations relating to one's physical appearance and body image (e.g., self-related weight talk) is reflective of the broader construct of body talk, which can be further categorised into self-accepting/positive or negative dimensions (Rudiger & Winstead, 2013). *Fat talk* (e.g., "I am so fat", "I look so big in this dress"), a type of negative body talk, has been widely investigated as an indirect influence on body image and eating behaviour (Rudiger & Winstead, 2013). Reviews by Shannon and Mills (2015), and Mills and Fuller-Tyszkiewicz (2017), have linked fat talk to several maladaptive body-image outcomes, such

as body dissatisfaction, drive for thinness, perceived sociocultural pressure for thinness, and disordered eating, among young women in Western society.

Cross-sectional research has consistently demonstrated the negative impacts of fat talk amongst female family members (i.e., mothers and daughters) on body image and disordered eating behaviours. For instance, Arroyo and Andersen (2016) investigated the relationship between appearance-related communication and body image outcomes amongst mother-daughter dyads (daughters were aged between 18 and 25 years). They found that mothers' and daughters' fat talk were significantly related to one another and to their own negative body image behaviours (i.e., body dissatisfaction, body surveillance, drive for thinness, bulimic tendencies), and mothers' fat talk was positively related to daughters' bulimic behaviours. Rogers et al. (2017) explored fat talk amongst 17- to 26-year-old undergraduate female students and their mothers, and found that fat talk exhibited by mothers was a significant predictor of daughters' fat talk. Similarly, Chow and Tan (2018) found that when both mothers and their adolescent daughters (aged between 11 and 18 years) engaged in high levels of fat talk, this was associated with a greater risk of daughters exhibiting eating pathology and depressive symptoms. More recently, Jones and Young (2021) investigated the relationship between daughters' perceptions of their mother's weight-related behaviours and their own body image concerns across the lifespan (i.e., female participants were aged between 18 and 58 years). They found that mother's fat talk, thin ideal internalisation (extent to which they internalise and idealise a thin body type) and enactment of extreme weight-loss behaviours were significantly related to their daughters' body dissatisfaction. They further found that daughters' motivation to lose weight was significantly related to mothers' fat talk and enactment of extreme weight loss behaviours. However, mothers' thin ideal internalisation and enactment of common weight loss behaviours did not predict daughters' motivation to lose weight. This study demonstrates the ways in which mothers' weight- and

body- related beliefs and behaviours may be negatively transmitted via the mother-daughter relationship. Altogether, these findings suggest that mothers' and daughters' engagement in fat talk has the potential to lead to maladaptive body-image and disordered eating outcomes.

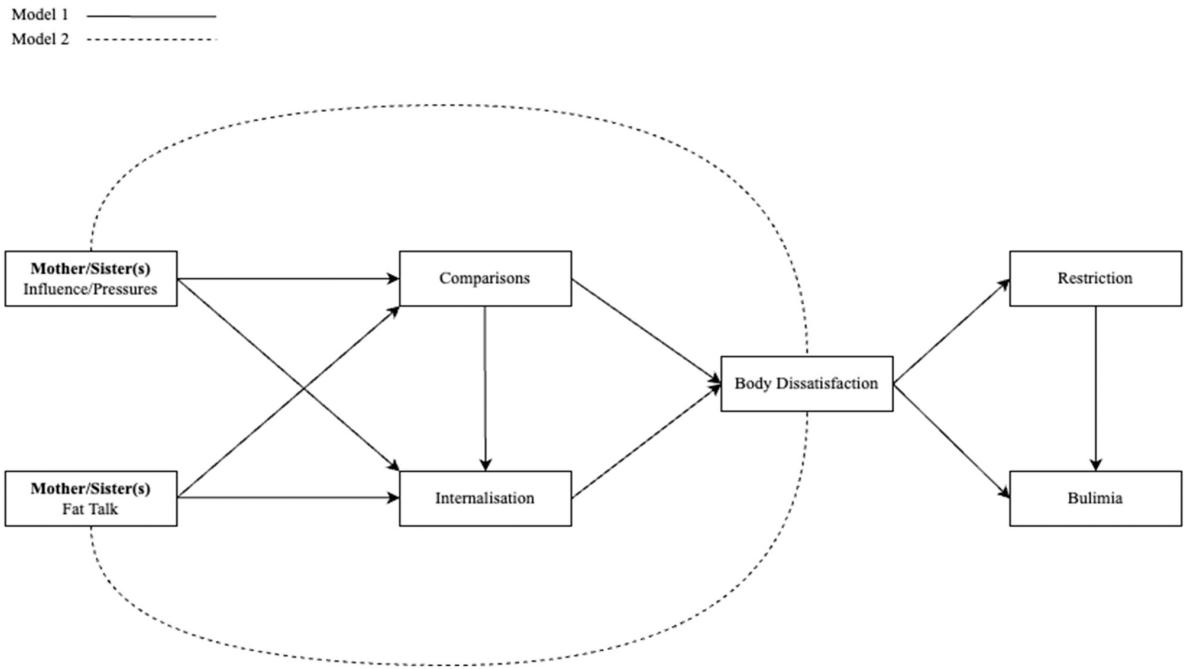
With the exception of twin studies, there is currently limited research examining the sister relationship in the context of maladaptive body image and problem eating outcomes. Tsiantas and King (2001) found that both younger and older sisters aged between 14 and 25 years scored comparably on levels of body size distortion, body dissatisfaction and body shape concerns. Furthermore, closest-in-age sisters showed similar levels of body image concerns, sociocultural awareness, and internalisation of the thin ideal (Tsiantas & King, 2001). Coomber and King (2008) found that mothers and closest-in-age sisters were equally important in providing both direct (i.e., disclosing body weight and shape concerns) and indirect (i.e., dieting behaviour) modelling cues related to negative body image and problematic eating behaviours. These findings suggest that both mothers and sisters may contribute to maladaptive body image and problem eating behaviour in young women. However, the generalisability of previous research (i.e., Coomber & King, 2008; Tsiantas & King, 2001) is limited by the use of small sample sizes (41–47 sister sibling pairs). To the best of our knowledge, there is currently no research investigating the sister relationship in the context of fat talk. Nonetheless, research examining the role of negative body talk more generally has found differences between sources of female sociocultural influences. For instance, Berge et al. (2016) found that when children reported on the prevalence of weight-based talk from specific family members, mothers were found to exhibit greater negative body talk than sisters. Furthermore, Rogers et al. (2017) found that mothers' fat talk explained more of the variance in the fat talk exhibited by young women than the perceived fat talk of their female peers. Thus, further investigation of the mother-daughter-sister triad

in the context of negative body image and problem eating behaviour, with a specific focus on the sister relationship in the context of fat talk, is warranted.

Given that young women experience mounting pressure to meet societal ideals in the external environment (i.e., media, peers), it is important to distinguish potential negative pathways so that future research has the potential to refocus the family environment, and in particular the mother-daughter-sister relationship, as a 'safe place' (Brun et al., 2020). Accordingly, the present study aimed to determine how the mother-daughter-sister relationship may be instrumental in body dissatisfaction and disordered eating outcomes among young women. Specifically, we investigated the relationships between the influence/pressures and fat talk from mothers and sisters, in predicting body dissatisfaction, and in turn, disordered eating symptomatology, as mediated by appearance comparisons and internalisation of the thin ideal. Guided by the Tripartite Influence Model, we predicted that negative influence/pressure, and fat talk from mothers and sisters, and mediational factors (comparisons and internalisation), would be associated with greater body dissatisfaction, and in turn, restriction and bulimia (see Figure 1). Furthermore, we aimed to explore whether differences exist between participants' perceptions of their mothers versus sister's(s′) influence/pressures and fat talk. Based on the notion that mothers are one of the first sources of socialisation and considered to be the primary role models for their daughters (Francis & Birch, 2005), we predicted that the influence/pressure of mothers would be greater than that of sisters. Furthermore, based on the findings of Berge et al. (2016) and Rogers et al. (2017), specifically that mothers' negative body talk was found to be a stronger source of influence than that of sisters and female peers, we predicted that mothers would be perceived to express greater fat talk than sisters.

Figure 1

Proposed Model: Modified version of the Tripartite Influence Model investigating the influence of mothers and sister(s).



Note. Thompson et al. (1999) originally proposed a primary and secondary model of the Tripartite Influence Model. Model 1 predicts an indirect relationship between influence/pressures and body dissatisfaction as mediated by comparisons and internalisation. Model 2 includes a direct path from influence/pressures to body dissatisfaction. We have similarly proposed these direct and indirect paths for the variable of fat talk to body dissatisfaction.

Methods

Participants

Participants were 422 young women (17–25 years) from the Flinders University student population and the wider Australian population. The inclusion criteria were: (a) individuals who identified as women/female, (b) 17–25 years old, and (c) either had a person they most identify with as their 'mother-figure' (i.e., a role model or significant other that fulfils a 'mother' role) and/or at least one sister. Participants were recruited online from undergraduate psychology classes via an advertisement on the Psychology Research Participation System (n = 94), Facebook (n = 70) and survey sharing websites (Prolific; n = 258). Participants were told that the study investigated "factors that may influence people's body image and eating behaviour". They were compensated for their time with course credit or a $5 AUD e-Gift voucher. Given that there is little consensus on the recommended sample size for Structural Equation Modelling (SEM; for a discussion see Sivo et al., 2006), sample size was determined based on Garson's (2008) summary of the literature which suggests the need for at least 100 cases, preferably 200, and that sample sizes of 250–500 have been used in "many articles" and "numerous studies that were in agreement" that fewer than 100 or 150 subjects was below the minimum.

Measures

Demographics

Participants completed a brief demographics questionnaire relating to their age, gender, country of birth and ethnicity. They were also asked to indicate the person they most identify with as their 'mother-figure' (e.g., biological mother). For consistency and brevity, this is referred to as 'mothers' throughout this paper, encompassing all types of 'mother-

figures'. Participants were also asked to indicate their mother's age and country of birth, whether they live at home with their mother, and how close they are with their mother on a 100mm visual analogue scale, ranging from 'not at all close' to 'extremely close'. Participants were asked to indicate whether they have (a) sister(s), and if applicable, to individually report their sister's(s′) age, relation (e.g., biological sister), whether they live at home with their sister(s), and how close they are with their sister(s).

Sociocultural influences/pressures and internalisation of appearance ideals

Four subscales of the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-4R; Schaefer et al., 2017) were used. The two Pressures Subscales, Pressures – Family and Pressures – Peers, were used to evaluate appearance pressures (i.e., pressures to achieve the societal ideal), whereby the wording of the Pressures – Family Scale was adapted to reflect mothers (4-items, e.g., "I feel pressure from my mother to look thinner"), and Pressures – Peers Scale, whereby the wording was adapted to reflect sister(s), (4-items, e.g., "I feel pressure from my sister [or sisters] to improve my appearance"). The two Internalisation Subscales, Internalisation – Thin/Low Body Fat Scale (4 items, e.g., "I want my body to look very thin") and Internalisation – General Attractiveness Scale (6 items, e.g., "It is important for me to be attractive"), were used to evaluate internalisation of appearance ideals (i.e., personal acceptance of societal ideals). Items are rated on a 5-point scale ranging from 1 (definitely disagree) to 5 (definitely agree), with higher mean scores indicating greater levels of appearance pressures and internalisation of appearance ideals. These subscales have previously demonstrated good convergent validity (generally medium to large associations) with the body dissatisfaction, drive for thinness, and bulimic symptomatology measures of the Eating Disorder Inventory (Schaefer et al., 2017). Internal consistency has also been found to be good in college women (Cronbach's $\propto$ of Pressures – Family = .93; Pressures –

Peers = .92; Internalisation – Thin/Low Body Fat = .82; Internalisation – General Attractiveness = .87; Schaefer et al., 2017). The subscales demonstrated acceptable internal consistency in the current sample (Cronbach's ∝ of Pressures – Family [mothers] = .91; Pressures – Peers [sister(s)] = .91; Internalisation – Thin/Low Body Fat = .86; Internalisation – General Attractiveness = .87).

Fat talk

The Family Subscale (FFTQ-F) of the Family Fat Talk Questionnaire (FFTQ; MacDonald et al., 2015) was administered to measure self-critical, body-related conversations within the family context. The wording of items was adapted for the present study from 'family members' to 'mothers', and if applicable, to 'sister(s)'. The 8-item Family Subscale, which measures fat talk exhibited by the respondent's family including criticism regarding their physical appearance, was measured separately for mothers (8-items, e.g., "When I'm with my mother, I hear her complain that her arms are too flabby") and sister(s) (8-items, e.g., "When I'm with my sister [or sisters], I hear her [or them] complain that her [or their] arms are too flabby"). Items are rated on a 5-point scale ranging from 1 (never) to 5 (always), with higher mean scores reflecting higher levels of overhearing fat talk in the family context. The Family Fat Talk Questionnaire (FFTQ) has produced valid and reliable scores of fat talk behaviours both exhibited and observed by young adult women within the family context. Previous validation work has found support for the convergent validity of the FFTQ-F, such that scores were significantly correlated with peer fat talk, body dissatisfaction, and social physique anxiety (MacDonald et al., 2015). The subscale has also demonstrated excellent internal consistency (Cronbach's ∝ of Family = .90; MacDonald et al., 2015). The current revised subscales also demonstrated acceptable internal consistency (Cronbach's ∝ of FFTQ-F [mothers] = .91; FFTQ-F [sister(s)] = .92).

Appearance comparisons

The Physical Appearance Comparison Scale-Revised (PACS-R; Schaefer & Thompson, 2014) was used to determine appearance comparisons. The 11-item scale measures the tendency to compare one's physical appearance to the physical appearance of others (e.g., "When I'm out in public, I compare my physical appearance to the appearance of others"). Items are rated on a 5-point Likert scale from 0 (never) to 4 (always), with higher mean scores indicating greater frequency of engaging in physical appearance comparisons. The Physical Appearance Comparison Scale-Revised (PACS-R) has previously demonstrated good inter-item reliability (r = .72; Schaefer & Thompson, 2014) and convergent validity with theoretically related variables (e.g., body satisfaction, eating pathology, sociocultural influences on appearance, and self-esteem; Schaefer & Thompson, 2014). Internal consistency has also been found to be good (Cronbach's $\propto$ = .91) in a sample of female university students (Robinson et al., 2017). Internal consistency in the current sample was excellent (Cronbach's $\propto$ = .96).

Body dissatisfaction

Body dissatisfaction was measured using the 9-item Body Dissatisfaction Subscale of the Eating Disorder Inventory (EDI; Garner et al., 1983). Items (e.g., "I feel satisfied with the shape of my body") are rated on a 6-point Likert scale from 0 (never) to 6 (always). As recommended by Schoemaker et al. (1994) for non-clinical samples, the entire range of possible scores was used, such that higher scores indicated greater body dissatisfaction. Internal consistency for the Body Dissatisfaction Subscale has been found to be excellent (Cronbach's $\propto$ = .91) in a sample of undergraduate female students (Hendrickse et al., 2017, Keel et al., 2007). Internal consistency in the current sample was acceptable (Cronbach's $\propto$ = .88).

Disordered eating symptomatology (restriction and bulimia)

The Drive for Thinness (Restriction) and Bulimia Subscales of the Eating Disorder Inventory (EDI; Garner et al., 1983) were used to measure disordered eating symptomatology. The Drive for Thinness (EDI-DT) Scale includes 7 items (e.g., "I think about dieting") as does the Bulimia (EDI-B) Scale (e.g. "I eat when I am upset"). Items are rated on a 6-point Likert scale from 0 (never) to 6 (always), with higher scores indicating greater drive for thinness (restriction) and bulimia symptomatology, respectively. The Eating Disorder Inventory (EDI) has previously demonstrated convergent validity with tests measuring conceptually related constructs (e.g., anorexic attitudes, eating restraint, body satisfaction, body dissatisfaction associated with changes at maturation). Internal consistency for the two subscales has been found to be excellent (Cronbach's ∝ of Drive for Thinness [Restriction] = .91; Bulimia = .80) in a sample of undergraduate female students (Hendrickse et al., 2017, Keel et al., 2007). The subscales demonstrated acceptable internal consistency in the current sample (Cronbach's ∝ of Drive for Drive for Thinness [Restriction] = .91; Bulimia = .89).

Procedure

The study was approved by the Flinders University's Human Research Ethics Committee (Project ID 4472). The study used a quantitative cross-sectional survey design and participants were tested through an online platform (Qualtrics). A total time commitment of approximately 15 minutes was required. After providing informed consent, participants completed demographics. They subsequently completed the measures of sociocultural influences, fat talk, appearance comparisons, internalisation of the thin ideal, body dissatisfaction, and disordered eating symptomatology (restriction and bulimia). Finally, participants reported their height and weight from which body mass index (BMI; kg/m^2) was

calculated to describe the sample. Attention checks were placed throughout the online questionnaire to ensure that participants were reading and attending to the questions. Rates of failing any one attention check were low and ranged from 0.2% to 2.1%. There were no participants who failed all the attention checks, and therefore, no participants were removed.

Data analytical plan and preparation

Data analysis was carried out in seven stages. First, using IBM SPSS v27, the data were reviewed to determine the number of participants who reported having a mother and/or sister(s). Six participants indicated that they did not have a mother, and 195 participants indicated that they did not have a sister. Accordingly, the data were split into two subsamples: (1) all participants who reported having a mother ($N = 416$), to investigate the influence of mothers alone, and then, (2) all participants who reported having both a mother and sister(s) ($N = 227$), to investigate the influence of mothers and sister(s) together to determine whether sister(s) added any influence beyond that of mothers. The two subsamples are hereon referred to as (1) mothers (only), and (2) mothers and sister(s) (together). Second, the data were screened to determine the amount of missing data at the variable level and to ascertain whether the data were missing at random. There were very few missing data at the variable level for both subsamples of participants who reported having a mother: SATAQ-P and FFTQ-F (0.5%), PACS (1%), SATAQ-I (0.2%), and EDI (across all 3 subscales: 1.2%), and the smaller subsample of participants who reported having both a mother and sister(s) (together): SATAQ-P [mother], SATAQ-P [sisters], FFTQ-F [mother], FFTQ-F [sisters], PACS and EDI (across all 3 subscales: 0.9%), and SATAQ-I (0.4%). Little's (1988) Missing Completely at Random (MCAR) method was used to conduct missing data analyses. Results indicated that the data was likely missing completely at random, for the mothers (only) subsample, $\chi^2 = 44.80$, $df = 49$, $p = .64$, and for the mothers and sister(s) (together)

subsample, $\chi^2 = 15.95$, $df = 22$, $p = .81$. Thus, missing data was handled using Expectation-Maximisation (EM) algorithm (Olinsky et al., 2003; Peters & Enders, 2002).

Third, the data were examined for normality and multicollinearity. Following Weston and Gore (2006), data variables were examined for normality on the basis of skewness and kurtosis values. Guidelines suggest that absolute values of skewness > 3 are extreme and kurtosis > 10 suggest a problem (Kline, 2005). No variables displayed substantive skewness or kurtosis. The data were then evaluated for multicollinearity in two ways. The Variance Inflation Factor (VIF) values were computed. All VIF values were < 10, confirming that there was no multicollinearity. Then, bivariate correlations were screened (see Table 1), as recommended by Weston and Gore (2006). The correlations indicated that there was no multicollinearity as all *r* values were < .85 (Kline, 2005).

Fourth, descriptive statistics were computed, and as a first step toward testing the hypotheses, correlations were performed to determine the linear relationships between study variables, which provided a basis for the subsequent mediational analyses. Fifth, following the guidelines of Shrout and Bolger (2002), mediation analyses were performed to investigate the potential direct and indirect (mediating) effects of the predicted variables using AMOS v27. Sixth, Structural Equation Modelling (SEM) was undertaken to test the proposed models separately for the mothers (only) subsample and the smaller subsample of participants who reported having both a mother and sister(s) (together), using AMOS v27 with maximum likelihood estimation. Finally, paired samples t-test were performed to explore whether differences existed between participants' perceived ratings of their mother's versus sister's(s′) influence/pressures and fat talk.

Results

Characteristics of the sample

Participants (N = 422) ranged in age from 17–25 years (M = 21.02, SD = 2.33) and had a mean BMI of 24.17 kg/m^2 (SD = 6.45). All participants resided in Australia and the majority (76.7%) were born in Australia. Four hundred and sixteen participants reported that they had a mother, and 227 participants reported having both a mother and at least one sister. In terms of participants' 'mother-figure', 93.8% identified their biological mother, 55.4% of mothers were born in Australia, and the mean age of mothers was 52.21 years (SD = 6.96). More than half (53.7%) of participants reported having a sister, with the majority (67.7%) reporting having one sister, 21.5% two sisters, and 11.5% having three or more. On average, participants reported their sister's mean age of 20.25 years (SD = 6.34), and 75.4% identified their sister(s) as biological, with the remaining identified as their half- (20.4%), step- (3.7%) or adoptive sister (0.6%). Participants indicated, on average, a close relationship with their mother (M = 76.44, SD = 23.1) and sister(s) (M = 71.55, SD = 24.29). Concerning living arrangements, more than half (63.2%) of participants were living at home with their mother, and 43.6% were living at home with at least one of their sisters.

Relationships between study variables

Pearson's correlations can be seen in Table 1 for both the subsample of participants who reported having a mother (only) and the smaller subsample of participants who reported having both a mother and sister(s) (together), which shared a similar pattern. Across both subsamples, the predictor variables of influence/pressure and fat talk were significantly positively correlated, as were the mediational variables, appearance comparisons and internalisation. Furthermore, mother and sister(s) influence/pressures, and fat talk, were also significantly positively correlated. As predicted, influence/pressures and fat talk from both

mothers and sister(s) was positively correlated with body dissatisfaction, restriction, and bulimia across both subsamples.

Tests of mediating (indirect) effects between study variables

Following Shrout and Bolger's (2002) recommendations, bootstrapping of 1000 samples with 95% Confidence Intervals (CIs) using AMOS with maximum likelihood estimation was used to examine the potential mediating (indirect) effects between study variables. When mediation has occurred, the standardised regression coefficients (β) for indirect effects are significant if the 95% biased-corrected confidence intervals (CIs) do not contain zero. Full mediation was determined by having only a significant *indirect* path in the model, whereas partial mediation was indicated by having both significant *indirect* and *direct* paths (taken from the regression weights table).

Table 1

Measure scales, means (and standard deviations) and correlation coefficients for the study variables for the (1) mothers (only), and (2) mothers and sister(s) (together) subsamples.

	Scale	M (SD)	1	2	3	4	5	6	7	8	9
Mothers (only)											
1. Mother: Influence/Pressures	1–5	2.53 (1.26)	-								
2. Mother: Fat Talk	1–5	2.48 (1.01)	**.38** * *	-							
3. Comparisons	0–4	2.21 (1.07)	**.26** * *	**.28** * *	-						
4. Internalisation	1–5	3.93 (.70)	**.21** * *	**.18** * *	**.67** * *	-					
5. Body Dissatisfaction	0–6	3.68 (1.04)	**.40** * *	**.20** * *	**.60** * *	**.56** * *	-				
6. Restriction (Drive for Thinness)	0–6	3.45 (1.26)	**.29** * *	**.25** * *	**.69** * *	**.73** * *	**.70** * *	-			
7. Bulimia	0–6	2.58 (1.15)	**.36** * *	**.25** * *	**.55** * *	**.40** * *	**.57** * *	**.65** * *	-		
Mothers and Sister(s) (together)											
1. Mother: Influence/Pressures	1–5	2.58 (1.25)	-								
2. Sister(s): Influence/Pressures	1–5	1.95 (1.06)	**.39** * *	-							
3. Mother: Fat Talk	1–5	2.46 (0.99)	**.32** * *	**.24** * *	-						
4. Sisters(s): Fat Talk	1–5	2.02 (0.91)	**.17** *	**.43** * *	**.39** * *	-					
5. Comparisons	0–4	2.23 (1.05)	**.26** * *	**.35** * *	**.26** * *	**.28** * *	-				
6. Internalisation	1–5	3.98 (0.65)	**.24** * *	**.24** * *	**.22** * *	**.19** * *	**.63** * *	-			
7. Body Dissatisfaction	0–6	3.7 (1.02)	**.37** * *	**.34** * *	**.19** * *	**.22** * *	**.58** * *	**.56** * *	-		
8. Restriction	0–6	3.56 (1.26)	**.31** * *	**.31** * *	**.25** * *	**.28** * *	**.67** * *	**.71** * *	**.72** * *	-	
9. Bulimia	0–6	2.64 (1.14)	**.39** * *	**.18** * *	**.17** * *	**.21** * *	**.51** * *	**.39** * *	**.58** * *	**.64** * *	-

Note. Significant correlation coefficients (* * $p < .01$, * $p < .05$) are boldfaced.

Influence/pressure, fat talk → comparisons, internalisation → body dissatisfaction

Simple path analyses were conducted with comparisons and internalisation as mediators between the predictor (influence/pressure and fat talk) and outcome variable (body dissatisfaction) for both subsamples: (1) mothers (only), (2) mothers and sister(s) (together). These simple path analyses were undertaken to determine whether there was support for the inclusion of the mediators (comparisons and internalisation) in the later testing of the proposed models.

As can be seen in Table 2, all indirect effects were significant for both subsamples: (1) mothers (only), (2) mothers and sister(s) (together), indicating either full or partial mediation for the predicted paths. Across both subsamples, the proposed mediating mechanisms of comparisons and internalisation partially mediated the relationship between influence/pressures and body dissatisfaction. Likewise, for the mothers (only) subsample, internalisation partially mediated the relationship between fat talk and body dissatisfaction. For the mothers and sister(s) (together) subsample, internalisation fully mediated the relationship between mother's fat talk and body dissatisfaction, but partially mediated the relationship between sister's fat talk and body dissatisfaction. Similarly, and across all path analyses for both subsamples, comparisons fully mediated the relationship between fat talk and body dissatisfaction.

Table 2

Direct effects and significance, standardised regression coefficients (β) for indirect effects, bias-corrected 95% confidence intervals (CIs), and significance of indirect effects on body dissatisfaction via *comparisons* and *internalisation*.

	Direct Effect (x → y)	Direct path significant?	Indirect Effect (β)	95% CI	Indirect Path Significant?	Mediation
'Mothers' (only)						
Influence/pressures → Comparisons → Body Dissatisfaction	.216	Yes	.138	.088 to .188	Yes	Partial
Influence/pressures → Internalisation → Body Dissatisfaction	.245	Yes	.102	.052 to .149	Yes	Partial
Fat Talk → Comparisons → Body Dissatisfaction	.037	No	.167	.109 to .232	Yes	Full
Fat Talk → Internalisation → Body Dissatisfaction	.107	Yes	.099	.049 to .153	Yes	Partial
'Mothers' (together)						
Influence/pressures → Comparisons → Body Dissatisfaction	.237	Yes	.136	.073 to .206	Yes	Partial
Influence/pressures → Internalisation → Body Dissatisfaction	.252	Yes	.121	.067 to .187	Yes	Partial
Fat Talk → Comparisons → Body Dissatisfaction	.042	No	.153	.070 to .240	Yes	Full
Fat Talk → Internalisation → Body Dissatisfaction	.073	No	.122	.055 to .197	Yes	Full
Sister(s) (together)						
Influence/pressures → Comparisons → Body Dissatisfaction	.155	Yes	.185	.120 to .260	Yes	Partial
Influence/pressures → Internalisation → Body Dissatisfaction	.217	Yes	.123	.064 to .192	Yes	Partial
Fat Talk → Comparisons → Body Dissatisfaction	.060	No	.161	.092 to .235	Yes	Full
Fat Talk → Internalisation → Body Dissatisfaction	.118	Yes	.102	.038 to .172	Yes	Partial

Note. Direct effects are significant at the $p < .05$ level and indirect effects are significant if the CIs do not contain zero.

Comparisons, internalisation → body dissatisfaction → restriction and bulimia

Further path analyses were conducted with body dissatisfaction as a mediator between the predictor (comparisons and internalisation) and outcome variables (body dissatisfaction → restriction and bulimia). As can be seen in Table 3, there were significant indirect effects between comparisons and internalisation, and restriction and bulimia via body dissatisfaction for both subsamples, mothers (only), and mothers and sister(s) (together), indicating either full or partial mediation for the predicted paths. For the mothers (only) subsample, body dissatisfaction partially mediated all the relationships between comparisons and internalisation, and restriction and bulimia. For the mothers and sister(s) (together) subsample, body dissatisfaction partially mediated the relationships between comparisons, restriction and bulimia, and internalisation and restriction, and the relationship between internalisation and bulimia was fully mediated by body dissatisfaction.

Table 3

Direct effects and significance, standardised regression coefficients (β) for indirect effects, bias-corrected 95% confidence intervals (CIs), and significance of indirect effects on restriction and bulimia via *body dissatisfaction*.

	Direct Effect (x → y)	Direct path significant?	Indirect Effect (β)	95% CI	Indirect Path Significant?	Mediation
'Mothers' (only)						
Comparisons → Body Dissatisfaction → Restriction	.501	Yes	.266	.210 to .323	Yes	Partial
Comparisons → Body Dissatisfaction → Bulimia	.353	Yes	.225	.163 to .293	Yes	Partial
Internalisation → Body Dissatisfaction → Restriction	.881	Yes	.237	.192 to .290	Yes	Partial
Internalisation → Body Dissatisfaction → Bulimia	.204	Yes	.280	.221 to .341	Yes	Partial
'Mothers' and Sister(s) (together)						
Comparisons → Body Dissatisfaction → Restriction	.384	Yes	.291	.224 to .378	Yes	Partial
Comparisons → Body Dissatisfaction → Bulimia	.254	Yes	.255	.175 to .350	Yes	Partial
Internalisation → Body Dissatisfaction → Restriction	.449	Yes	.264	.207 to .335	Yes	Partial
Internalisation → Body Dissatisfaction → Bulimia	.092	No	.299	.224 to .404	Yes	Full

Note. Direct effects are significant at the $p < .05$ level and indirect effects are significant if the CIs do not contain zero.

Evaluating the proposed model

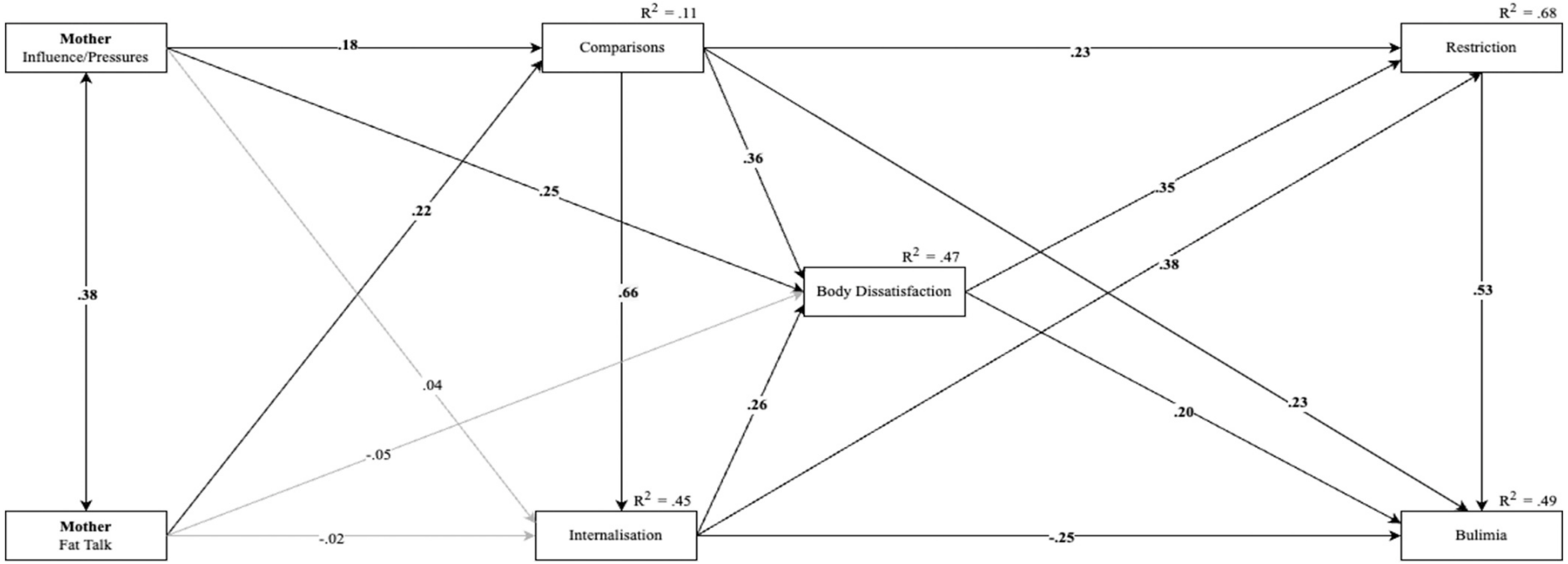
To integrate the findings of the bivariate correlations and mediational analyses, a series of structural models were constructed. The models were examined using the maximum likelihood method of Structural Equation Modelling (SEM) via AMOS 27. The proposed models were assessed for goodness-of-fit (how well the model fits the data) following the recommendations of Hu and Bentler (1999) and Weston and Gore (2006). These included the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Standardised Root Mean Square Residual (SRMR), and the Root Mean Square Error of Approximation (RMSEA). Guidelines for good fit include values of CFI and TLI ≥ .95, SRMR ≤ .08, and RMSEA ≤ .06. Values of CFI and TLI ≥ .90–.94, SRMR ≤ .09–.10, and RMSEA ≤ .07–.10 indicate acceptable fit. The following path models assumed bidirectional (co-varying) relationships between the two predictor variables (influence/pressure and fat talk) in line with the previous correlational analyses.

First, the proposed model was explored for the subsample of participants who reported having a mother (only) (Figure 2). The fit indices for the initially tested model revealed a good to acceptable model fit, $\chi 2 = 16.35$, $df = 4$, $p = .003$, $\chi 2/df = 4.08$; CFI = .99 (Good); TLI = .95 (Good); SRMR = .03 (Good); RMSEA = .08 (Acceptable). The model explained 11% of the variance in appearance comparisons, 45% in the internalisation of the thin ideal, 47% in body dissatisfaction, 68% in restrained eating, and 49% in bulimia. Next, to examine the added role of sister influence, the proposed model was explored for the smaller subsample of participants who reported having both a mother and sister(s) (together) (Figure 3). The fit indices for the tested model again revealed a good to acceptable model fit, $\chi 2 = 35.118$, $df = 10$, $p < .001$, $\chi 2/df = 3.51$; CFI = .97 (Good); TLI = .89 (Acceptable); SRMR = .03 (Good); RMSEA = .10 (Acceptable). The model explained 18% of the variance

in appearance comparisons, 41% in the internalisation of the thin ideal, 45% in body dissatisfaction, 69% in restrained eating, and 45% in bulimic symptomatology.

Figure 2

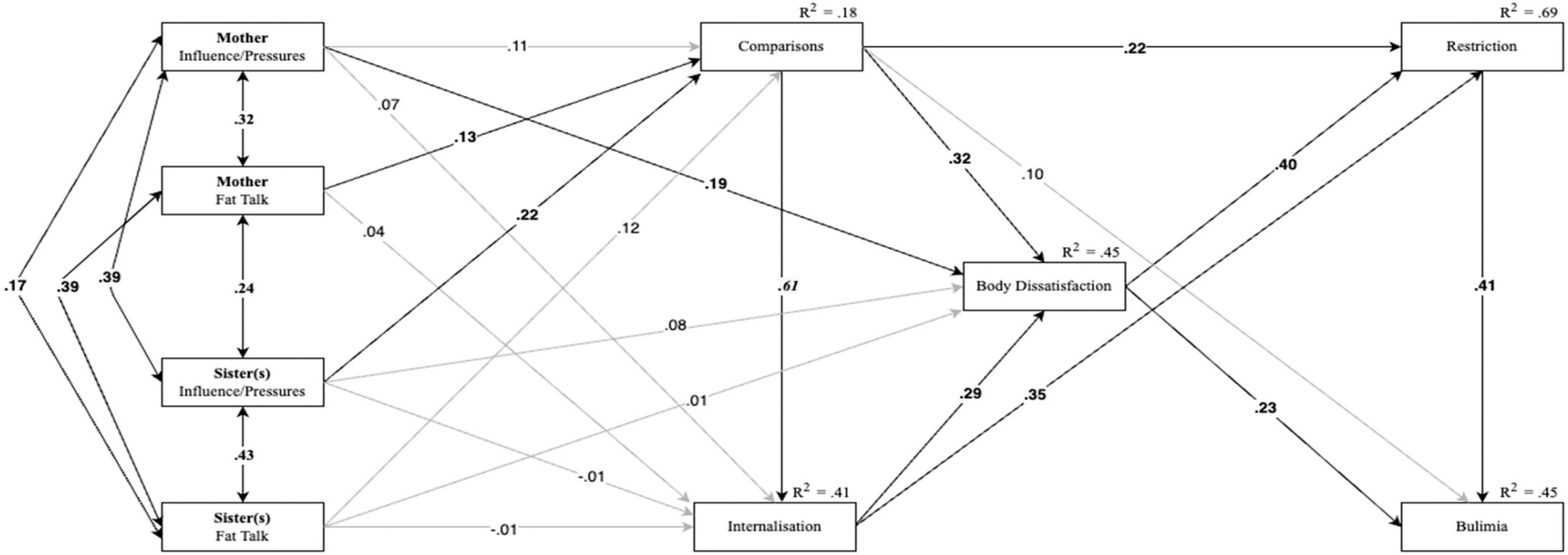
The model for the mothers (only) subsample which describes the associations between the predictor, mediating and outcome variables, with the standardised regression weights/estimates and squared multiple correlations (R^2).



Note. Significant coefficients ($p < .05$; taken from the regression weights table) are boldfaced and non-significant paths are displayed in grey.

Figure 3

The model for the mothers and sister(s) (together) subsample which describes the associations between the predictor, mediating and outcome variables, with the standardised regression weights/estimates and squared multiple correlations (R^2).



Note. Significant coefficients (*p < .05; taken from the regression weights table*) are boldfaced and non-significant paths are displayed in grey.

Influence/pressures and fat talk by mothers versus sister(s)

To investigate the final prediction, specifically whether differences exist in participants' perceptions of their mother's versus sister's(s′) influence/pressures and fat talk, a series of paired samples t-tests were performed. As predicted, participants perceived being significantly more influenced/pressured by their mothers (M = 2.57, SD = 1.25) than their sister(s) (M = 1.95, SD = 1.05), $t(226) = 7.33$, $p < .001$, and perceived their mothers to exhibit greater fat talk (M = 2.46, SD = .98) than their sister(s) (M = 2.02, SD = .90), $t(226) = 6.35$, $p < .001$.

Discussion

The aim of the present study was to examine the relationships between appearance influence and pressures, and fat talk, from mothers and sisters on body dissatisfaction and in turn, disordered eating outcomes. Specifically, based on the Tripartite Influence Model, we investigated how the perceived influence/pressures from mothers and sister(s), were associated with body dissatisfaction, and in turn, disordered eating symptomatology (restriction and bulimia), via two mediational mechanisms (appearance comparisons and internalisation of the thin-ideal). We also explored differences in perceived ratings of mother versus sister influence/pressures and fat talk. Overall, the findings were in the hypothesised directions.

First, greater influence/pressures and fat talk from mothers and sisters were associated with greater body dissatisfaction, restriction and bulimic behaviours. This is in line with previous research on the influence of mothers (Arroyo & Andersen, 2016; Balantekin, 2019; Berge et al., 2018; Chow & Tan, 2018; Francis & Birch, 2005; Gross & Nelson, 2000; Jones & Young, 2021; McCabe & Ricciardelli, 2003; Rogers et al., 2017) and sister(s) (Coomber &

King, 2008; Tsiantas & King, 2001). Second, simple path analyses provided support for the inclusion of the proposed mediating mechanisms in our modified version of the Tripartite Influence Model. Specifically, comparisons and internalisation, and body dissatisfaction, were found to have direct and/or indirect effects between the predictor and outcome variables. This supports previous literature that has investigated the way in which the broader influence of family members and female peers interacts with mediational mechanisms, such as appearance comparisons and internalisation of the thin ideal, and body dissatisfaction (de Carvalho et al., 2017; Rodgers et al., 2011; Shagar et al., 2019; Van den Berg et al., 2002). Third, specific to the present study, mothers and sisters contributed to young women's likelihood of engaging in appearance comparisons and thin ideal internalisation, which was associated with body dissatisfaction, and in turn, contributed to disordered eating symptomatology (restriction and bulimia). Finally, participants reported significantly more influence/pressure from their mothers than their sisters, and mothers were perceived to exhibit greater fat talk than sisters.

Guided by the Tripartite Influence Model, our findings provide support for the predicted associations. Perceived influence/pressures and fat talk from both mothers and sisters were positively correlated with one another, as well as with body dissatisfaction, restriction, and bulimia. The influence/pressure and fat talk exhibited by mothers has been previously linked to negative body image outcomes and disordered eating (Arroyo & Andersen, 2016; Balantekin, 2019; Berge et al., 2018; Chow & Tan, 2018; Francis & Birch, 2005; Gross & Nelson, 2000; Jones& Young, 2021; McCabe & Ricciardelli, 2003; Rogers et al., 2017). In contrast, there is scarce research examining the outcomes of the influence/pressure of sisters, and no research on fat talk by sisters, in the context of negative body image and problem eating behaviour (Tsiantas & King, 2001). As expected, mother and sister(s) influence/pressure and fat talk were significantly positively correlated. It is likely

that sisters themselves are influenced/pressured by their mothers, and in turn, may transmit these learnt conceptualisations of body image and eating behaviour to their sisters (i.e., it could be postulated that sisters may also model the behaviours taught by their mothers to their own sister).

Our findings also provide support for the mediating relationships proposed in the Tripartite Influence Model (Thompson et al., 1999). The mediating mechanisms were investigated in two-parts: (1) the impact of sociocultural influences on body dissatisfaction as mediated by appearance comparisons and internalisation, and (2) the relationship between appearance comparisons and internalisation of the thin ideal on restriction and bulimia, as mediated by body dissatisfaction (Thompson et al., 1999). The former constitutes the novel component of our research in which these mediating relationships were replicated within our modified version of the model investigating the sociocultural agents of 'parents' and 'peers', but disaggregated into female familial influence (i.e., mothers and sisters). The latter relationships were also supported; for both mothers and sisters, body dissatisfaction partially mediated all the relationships, except between internalisation and bulimia, which was fully mediated by body dissatisfaction. Overall, appearance comparisons and internalisation, and body dissatisfaction, were found to have a mediating effect, either fully or partially, between the predictor (mother and sister influence/pressure and fat talk) and outcome variables. Our findings are in line with previous research which has investigated the role of family members and female peers, and the mediating mechanisms of appearance comparisons and internalisation in the context of the Tripartite Influence Model (e.g., de Carvalho et al., 2017; Rodgers et al., 2011; Shagar et al., 2019; Van den Berg et al., 2002). However, as previous research has been limited by the conceptualisation of all family members to a single construct, our work provides a novel contribution by investigating disaggregated agents of familial influence, namely mothers and sisters.

When examining the relationship between the influence/pressure exhibited by mothers and sisters on body dissatisfaction, the findings were consistent, such that the relationships were partially mediated (i.e., direct and indirect effects) via comparisons and internalisation for both the mothers alone, and mothers and sister(s) considered together subsamples. The Tripartite Influence Model originally predicted these direct and indirect paths between sociocultural influence/pressures and body dissatisfaction, and evidence exists in support of these pathways (Thompson et al., 1999). However, when investigating the variable of 'fat talk', as exhibited by mothers and sisters, there were differences in the predicted pathways. Notably, mother and sister fat talk was only indirectly related to body dissatisfaction via appearance comparisons. This finding suggests that young women who have mothers and/or sisters who disclose greater fat talk may also report higher levels of appearance comparisons and in turn, body dissatisfaction, due to the indirect modelling of these behaviours (e.g., disclosing negative self-related weight talk in the form of fat talk). This is consistent with previous research suggesting that negative forms of body talk, such as fat talk, may play a functional role in facilitating social comparisons made within female peer groups and the family home environment (Bailey & Ricciardelli, 2010; Corning & Gondoli, 2012; Keery et al., 2005).

In contrast, for thin-ideal internalisation, there were both direct and indirect pathways between mother and sister fat talk and body dissatisfaction. These findings suggest that fat talk exerted by mothers and sisters may have both direct and indirect effects on the development of body image concerns. Specifically, although mother and sister fat talk alone can increase body dissatisfaction, fat talk also has the potential to increase the likelihood of young women internalising the thin ideal, which in turn, contributes to body dissatisfaction. Collectively, these findings build upon previous research which identified several negative consequences of fat talk, specifically increased body dissatisfaction, in addition to a potential

mechanism (internalisation of the thin ideal), which appears to negatively contribute to the risk of developing body image concerns in young women (Kluck, 2010; Webb et al., 2018).

Our final models revealed an overall good fit to the data, demonstrating that the Tripartite Influence Model, originally developed to explain the way in which sociocultural influences affect body image and eating behaviour (Thompson et al., 1999), can be extended to investigate disaggregated agents of influence, namely mothers and sisters, in a targeted population of young Australian women. This is an important contribution as young adulthood (17–25 years) is a particularly sensitive time for women in the development of body image and eating behaviour concerns. Overall, our findings provide support for the usefulness of such a model through targeted analyses, and accordingly, highlight the specific role of female familial influences in contributing to these concerns. Future research may expand on these findings by investigating specific components of the Tripartite Influence Model variables (i.e., parents, peers) to differentiate between other family members (i.e., fathers and brothers versus mothers and sisters).

The finding that participants perceived being significantly more influenced/pressured by their mothers than their sisters, and that mothers exhibited greater fat talk than sister(s), extends previous research in two novel ways. First, while former research has investigated the relationships between mothers and daughters, and between sisters (e.g., Balantekin, 2019; Berge et al., 2018; Coomber & King, 2008; Francis & Birch, 2005; Gross & Nelson, 2000; Tsiantas & King, 2001), the present study is the first known to draw direct comparisons between mother and sister influence in the context of the Tripartite Influence Model. Although our findings were in line with predictions, they contradict some previous research which has found that mothers and sisters were equally important in modelling body image and eating related cues (Coomber & King, 2008). However, these comparisons should be

considered in the context of Coomber and King's (2008) sample, specifically, closest-in-age sister pairs (aged 18–25 years), whereas our study included sisters of all ages. Future research could investigate whether differences exist in the influence/pressure and fat talk exerted by multiple sisters of different ages and birth orders (i.e., youngest versus middle versus eldest sister).

One possible explanation for the finding that mothers were considered more influential and exert greater appearance pressure and fat talk than sisters could be that mothers are thought to be the primary source of influence in the family home environment (Brun et al., 2020; Francis & Birch, 2005). Notably, some girls as young as five years of age have been reported to exhibit body dissatisfaction in parallel with their mother's own weight concerns (Davison et al., 2000). Thus, maternal input may be a stronger source of influence and pressure than sisters due to body- and eating- related messages beginning in childhood, a time when the role of the parent, and more specifically, the maternal role is more prominent than that of siblings. Future research could further investigate the mother-daughter-sister relationship by exploring other factors which may shape and contribute to this relationship, such as the type of attachment style (e.g., secure versus insecure attachment) and conversational/communication factors (e.g., responsiveness, attentiveness, reciprocity). Additionally, given that interpersonal changes may occur in the mother-daughter relationship over time, future research could investigate the way in which factors such as the endurance and strength of the relationship may contribute to body- and eating- related outcomes at different ages and stages from childhood to adulthood.

Second, while fat talk exhibited by mothers has been previously examined (e.g., Arroyo & Andersen, 2016; Chow & Tan, 2018; Jones & Young, 2021; Rogers et al., 2017), to the best of our knowledge, there is currently no research investigating the sister

relationship in the context of fat talk. This is important because both mothers and sisters are thought to provide modelling cues related to body image and eating behaviour through direct and indirect mechanisms of influence (Coomber & King, 2008). Thus, examination of indirect influence in the form of fat talk is imperative in determining how mothers and sisters may differentially exert negative body and eating related messages. Overall, the present findings suggest that sisters may be weaker sources of influence/pressure for young adult women, and exhibit less fat talk, than mothers. Future research could explore whether these findings exist across the lifespan of women, including childhood, adolescence or older adulthood.

The study has some limitations that should be acknowledged and addressed in future research. While we aimed to measure the impact of the influence/pressure and fat talk of mothers and sisters on young women, the data collected was self-reported and thus represents participants' perceptions. It is possible that young women with greater thin ideal internalisation and appearance comparisons, and body dissatisfaction and disordered eating symptomatology, may be more sensitive, attentive, and responsive to body and eating related cues. Consequently, these individuals may engage in influence/pressure and fat talk behaviours, thereby eliciting similar behaviours to their female family members. Additional measures as reported by female family members separately would be useful in providing corroborating evidence and confirmation (e.g., self-reports by mother-daughter and sister dyads). Furthermore, the participants were a non-clinical sample of young adult women. Future research should investigate a targeted clinical sample with elevated body image and eating behaviour concerns (e.g., eating disorders), as such populations may be exposed to more influence/pressure and fat talk in the family environment.

Despite these limitations, the present study has some important theoretical and practical implications. Theoretically, the present study extends the growing body of literature on the Tripartite Influence Model, suggesting that it is a useful model to explain the development of body image and eating concerns in young women within the female familial home environment, in addition to the role of fat talk. Overall, the findings suggest that mothers and sisters play a role in influencing daughters' and sisters' conceptualisations of body image and eating behaviour, which in turn contributes to the development of body dissatisfaction and disordered eating outcomes. In so doing, they enhance our understanding of the factors which may contribute to the development of disordered eating and body image concerns in a novel way. Furthermore, the findings provide preliminary support for our predicted pathways from the Tripartite Influence Model, in the context of the mother and daughter, and sister(s), relationships. These will afford future research the opportunity to consider a broader methodological approach (e.g., recruiting female family members, such as mothers, sisters, and daughters, from the same family unit). Research is now needed to ascertain the potential for more positive pathways within the home environment. In addition, given that much of the research in the area of body image concerns and disordered eating has focussed on outcomes in Western 'white' populations, future research should endeavour to explore whether the observed relationships exist in other cultures.

At a practical level, given that young women experience mounting pressure to meet societal ideals in the external environment (e.g., media, peers), the family home environment may have the potential to be a 'safe place' (Brun et al., 2020). At a clinical level, insight into whether individuals with elevated body image and eating behaviour concerns are exposed to appearance influence/pressure or fat talk in the family environment may guide clinicians in terms of treatment options. For example, a clinician may include family members as a focus of inquiry and intervention, and work with them as partners in therapy, to lead to more

positive outcomes (e.g., Family-Based Treatment (FBT) for eating disorders; for a review see Lock & Le Grange, 2019). This could involve providing psychoeducation around the promotion of body satisfaction and engagement in healthful behaviours via modelling in the home environment. Importantly, research has shown that the risk for body image concerns and disordered eating in young women can be greatly reduced and prevented before progressing to clinical levels (i.e., eating disorders, mortality) through early identification and intervention (InsideOut Institute, 2021). Preventative strategies could include school or university-based programs for young women and their families, in addition to caregiver specific prevention programs, such as supporting and educating caregivers to remove any focus on fat talk or to recognise the early signs of an eating disorder (InsideOut Institute, 2021).

In conclusion, the present study has demonstrated a role for disaggregated agents of familial influence, namely mothers and sisters, and the mechanism of fat talk, in body dissatisfaction and disordered eating outcomes among young women. The findings extend previous research in an important and novel way by testing and presenting a modified version of a subsection of the Tripartite Influence Model, thereby enhancing our understanding of the factors in the family home environment which shape and inform young women's conceptualisations of eating behaviour and body image. If built upon, the present findings have practical and clinical implications that could help inform family-based interventions which could include mothers and sisters in the delivery of positive body image and eating related behaviours in the home environment.

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CHAPTER THREE: MY MOTHER, SISTERS, AND I: INVESTIGATING THE ROLE OF FEMALE FAMILY MEMBERS IN BODY DISSATISFACTION AND DISORDERED EATING BEHAVIOURS AMONG YOUNG MIDDLE-EASTERN WOMEN[2]

Abstract

The global rise in body dissatisfaction and disordered eating concerns is apparent; however, limited research in Middle-Eastern populations gives an incomplete understanding of these concerns. The present study recruited 377 young women aged 18 to 25 years from the Middle-East for an online survey to determine how female family members may contribute to body dissatisfaction and disordered eating behaviours. Guided by the Tripartite Influence Model, we investigated the relationships between appearance pressures and fat talk, from mothers and sister(s), in predicting body dissatisfaction, and in turn, disordered eating symptomatology (restriction and bulimia), as mediated by appearance comparisons and internalisation of the thin-ideal. Overall, greater appearance pressures and fat talk from mothers and sister(s) were associated with body dissatisfaction and disordered eating symptomatology. Greater reported closeness in mother-daughter relationships, but not sister relationships, was associated with less perceived appearance pressure and fat talk by mothers, and lower appearance comparisons, body dissatisfaction and bulimia symptomatology. Finally, participants perceived greater appearance pressure from their mothers than their sister(s), but there was no difference in their perceived levels of fat talk. Findings

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demonstrate the applicability of a subsection of the Tripartite Influence Model in a non-Western and understudied population, namely in young Middle-Eastern women.

Introduction

While the prevalence of body image and eating concerns were once considered to be bound to Western culture, the rising rates of these concerns has made these global problems, with a recent review suggesting an increase from 3.5% to 7.8% worldwide (2000–2018 period; Galmiche et al., 2019; Makino et al., 2004; Pike & Dunne, 2015). Women in particular are at a greater risk of developing body dissatisfaction and disordered eating compared to men (Griffiths et al., 2016; Melisse et al., 2020; Preston & Ehrsson, 2016; Shagar et al., 2019). Of particular relevance is the belief in Western culture that a thin body type, or 'thin-ideal', is the ideal to which all women should aspire (Melisse et al., 2020; Pike & Dunne, 2015). It has been suggested that the historical and ongoing adoption of Western values (i.e., Westernisation) has also contributed to the rising rates of body image concerns and disordered eating in young women in non-Western countries, particularly Middle-Eastern populations (Melisse et al., 2020). The internalisation of the Western thin-ideal has been observed in non-Western countries, with young Middle-Eastern women perceiving similar pressures to attain this ideal as their Western counterparts (Melisse et al., 2020; Pike & Dunne, 2015). Given that culture has long been recognised as a strong contributor to body image and eating behaviour problems, examining outcomes in non-Western cultures is imperative to extend our knowledge of the field. Moreover, it was previously assumed that disordered body image and eating behaviours were culturally bound syndromes, under the assumption that a curvy body type, associated with fertility and wealth, was the beauty ideal in Middle-Eastern cultures (Melisse et al. 2020). Thus, much of the research on body image and disordered eating to date has focussed on outcomes in Western 'white' populations, and

therefore, current conceptualisations reflect the Western experience (Acle et al., 2021; Murray, 2020; Roberts & Mortenson, 2023). To date, limited research has investigated body dissatisfaction and disordered eating in Middle-Eastern populations.

Among young Middle-Eastern women, findings indicate that there is a high rate of preoccupation with weight and engagement in disordered eating behaviours which are largely attributed to societal pressures to attain appearance-related ideals. For example, Thomas et al. (2010) found that in a sample of female undergraduate students (with a mean age of 19 years) from the United Arab Emirates (UAE), 78% were dissatisfied with their current body shape, and this was associated with elevated levels of disordered eating attitudes, such as concerns around dieting, body weight and/or problematic eating behaviours. The researchers attributed their findings to a number of Western sociocultural influences, namely rapid socioeconomic changes associated with extreme eating attitudes and behaviours, the development of a consumer culture promoting the Western thin-ideal, fluid female gender roles, and diet-related lifestyle changes (Thomas et al., 2010). Similarly, Schulte and Thomas (2013) found that almost 80% of Emirati-female university students (with a mean age of 19 years) presented with high levels of body dissatisfaction and a desire to attain the Western thin-ideal. More recently, a literature review by Melisse et al. (2020) found that across 81 studies, overall, Middle-Eastern women were particularly vulnerable to body dissatisfaction. Across the studies included in this review, 40% of participants were on a diet, about one-third engaged in restrained eating behaviour, and 13–55% were at risk of eating disorders. Melisse et al. (2020) identified several contributing sociocultural changes, emphasising the role of Westernisation, due to increased exposure to Western media and the transmission of Western beauty ideals in the Middle-East. They attributed these changes to the emergence of restrictive and disordered eating behaviours, and in turn, a shift from admiring a curvy body type to aspiring a thin body type (i.e., Western thin-ideal) among individuals in Middle-

Eastern countries (Melisse et al., 2020). Furthermore, Nakhoul and colleagues (2021) found that greater body dissatisfaction and maladaptive eating behaviours (i.e., dieting to lose weight, starving oneself) were associated with greater restrained eating among young Lebanese females aged 15 to 18 years. This study points to a cultural shift influenced by Western ideals, specifically the emphasis on a thin body type, contributing to restrained eating behaviours and body dissatisfaction (Nakhoul et al., 2021). Other evidence suggests that the rates of eating disorders in Middle-Eastern countries, specifically in Qatar and Lebanon, have surpassed those of the United States (Kronfol et al., 2018).

As part of the ARAB-EAT Project (2010–2011 period), which investigated eating attitudes in seven Middle-Eastern countries, Musaiger and colleagues (2013) found that the prevalence of young women at risk of disordered eating attitudes and behaviours (e.g., dieting, weight concerns, bulimia) ranged from 16.2% (Algeria) to 42.8% (Kuwait). In a recent comprehensive scoping review on the prevalence of high risk disordered eating among young adults in the Middle-East, Azzeh et al. (2022) found that the prevalence of young women at high risk of developing or having an eating disorder varied considerably across countries in the Middle East (2000–2020 period). Overall, the prevalence was observed to be the lowest among adolescent females in Israel (8.2%) and highest among female university students in Egypt (75.8%). Although Musaiger et al. (2013) and Azzeh et al. (2022) did not specifically investigate any contributing factors, they suggested that the rapid socio-cultural changes reported in Middle-Eastern countries, particularly Western values to attain thinness as an ideal body shape, may have contributed to the shift in the eating attitudes and behaviours. Taken together, these findings demonstrate the growing prevalence of body image and eating disorder concerns observed across Middle-Eastern countries, and highlights the need to further examine this population to determine factors that may influence risk.

One way to understand the factors which play a role in the development of body image concerns and maladaptive eating behaviours is through the application of theoretical models. Thompson et al. (1999) proposed the Tripartite Influence Model, a sociocultural model of body image which includes a test of direct (parents, peers, and media) and mediational mechanisms (appearance comparisons and internalisation of the thin-ideal) as factors contributing to body dissatisfaction, and in turn, disordered eating symptomology (drive for thinness/restriction and bulimia). The model is thought to provide a unique contribution as it integrates sociocultural factors with more proximal individual difference factors, and previous cross-sectional studies with Western samples have repeatedly confirmed the predicted associations (e.g., Johnson et al., 2015; Keery et al., 2004; Shroff & Thompson, 2006). However, as the Tripartite Influence Model was originally developed and tested to explain body image and eating problems in Western populations, there has been little investigation of its applicability in non-Western populations, particularly Middle-Eastern samples.

Although the applicability of the Tripartite Influence Model has not yet been formally tested in a Middle-Eastern sample, some of the proposed pathways in the model have been examined individually in this population (e.g., internalisation of the thin-ideal and disordered eating symptomatology). For example, Eapen et al. (2006) investigated the prevalence and correlates of disordered eating attitudes and symptomatology in a sample of adolescent girls aged 13 to 18 years from the United Arab Emirates (UAE). They found that greater internalisation of the thin-ideal and drive for thinness (i.e., eating restriction) were associated with higher disordered eating attitudes. More recently, Zainal et al. (2020) explored internalisation of the Western thin-ideal and disordered eating behaviours in a sample of 18 to 35-year-old Kuwaiti women. The findings indicated that Western thin-ideal internalisation significantly predicted greater risk for eating pathology, such as higher levels of concern

about dieting, body weight and problematic eating behaviours (Zainal et al., 2020). Despite this research, it remains unclear whether other pathways within the Tripartite model exist among Middle-Eastern samples (e.g., engagement in appearance comparisons, and disordered body and eating related behaviours). An investigation of these pathways within an empirical model is vital for the development of our knowledge and understanding about risk factors contributing to maladaptive body image and eating behaviour outside the Western world.

Research has also demonstrated support for the proposed pathways for the sociocultural agents of influence in the Tripartite Influence Model across non-Western cultures (e.g., Burke et al., 2021; Keery et al., 2004; Rodgers et al., 2011; Shagar et al., 2019); however, the model is yet to be tested in Middle-Eastern samples. Nonetheless, there is some evidence for the role of the media, family and peers, in contributing to body image concerns and disordered eating behaviours in this population. In particular, Hasan et al. (2018) investigated the influence of the family and media on disordered eating and body image concerns among university students (mean age of 20.4 years) in the United Arab Emirates (UAE). They found that body image concerns, and family and media influences, were significantly related to increased risk of developing disordered eating attitudes and behaviours. In addition, a systematic review by Thompson et al. (2020) found that, when exposed to Western media, most young women in Middle-Eastern countries (e.g., Turkey, Iran and Oman) were shown to internalise the thin-ideal, feel more encouraged to lose weight via messages from the media, and consequently, feel dissatisfied with their body and engage in maladaptive eating behaviours. More recently, a doctoral dissertation by Kakar (2022) investigated the role of sociocultural influences on notions of beauty ideals in adolescent Iranian girls aged 12–18 years. Participants perceived the role of their parents, and then, siblings and peers, respectively, to be a stronger source of influence than that of the media. These findings support the notion that while the media is without a doubt one of the strongest

promotors of the Western thin-ideal globally, family members and peers, including siblings, are also important agents of influence to further consider.

Notably, the structure of Middle-Eastern family units was previously thought to be a protective factor mitigating the risks of body dissatisfaction and disordered eating (Soh et al., 2006). However, the role of Westernisation has led to rapid sociocultural changes observed in the social structures of Middle-Eastern societies, particularly within the family unit (Melisse et al., 2020). The influence of Westernisation on Middle-Eastern family units is multidimensional, encompassing several sociocultural changes associated with the adoption of Western language, lifestyle, values, and beliefs (Melisse et al., 2020). Increased exposure to Western media and heightened interactions with Western expatriates in the Middle-East have played a pivotal role in relation to changes within Middle-Eastern family units. For instance, the availability of Western foods has contributed to a shift in dietary patterns, nutritional preferences and meal structures (e.g., mealtimes attended by all members of a family unit versus eating independently; Aljayyousi-Khalil, 2013; Kulwicki, 2021). Increased exposure to Western media has also contributed to a cultural shift towards valuing a thinner body type, influencing the way in which Middle-Eastern families function and perceive beauty and body ideals (Melisse et al., 2020; Pike & Dunne, 2015). In addition to these health-related changes, Westernisation has also led to broader changes in Middle-Eastern family units, relating to the way individuals function in these societies, specifically, by viewing oneself as part of a group (collectivist culture), versus as independent from others (individualistic culture; Nasser, 2009). For instance, in individualistic cultures, such as those of the West, young adulthood is considered to be a time for acquiring one's own identity, separate from that of the family (e.g., moving out of the family home; Kulwicki, 2021). In contrast, in collectivistic societies, such as those of the Middle-East, young adults are expected to remain closely involved and connected to the family unit, and this is particularly

the case for young women (Kulwicki, 2021). Although Westernisation has introduced a shift from collectivist to more individualistic family structures, unlike other rapidly changing sociocultural shifts, the collectivist values of Middle-Eastern cultures may help to preserve the closeness of the family unit. Thus, it stands to reason that young women raised in Middle-Eastern families will exhibit close family relationships, particularly with female family members (mothers, sisters), due to their collectivistic values that the needs of the family are more important than the needs of the individual (Nasser, 2009; Soh et al., 2006).

A small body of research has examined the role of closeness in mother-daughter relationships in contributing to body and eating related behaviours, and has tended to focus on younger cohorts (i.e., school-aged females) in Western populations. For example, Byely et al. (2000) investigated the nature of the mother-daughter relationship relative to dieting and body image in a sample of young girls aged 10–14 years residing in the United States. They found that young girls who perceived a positive relationship with their mothers (i.e., greater relationship warmth and low conflict) had less associated problematic dieting behaviour. Smith et al. (2016) also explored how maternal relationship quality may be associated with 8 to 12-year-old American girls' body image. The findings suggested that mother-daughter relationship quality was positively associated with daughters' body image, demonstrated by greater body esteem and lower body dissatisfaction. Overall, these findings indicate the potential role of closeness in mother-daughter relationships and body and eating related outcomes within Western populations. Given the influence of Western culture in the Middle-East, and correspondingly, the changing social structures observed in these societies, there is a need to examine the potential role of closeness, particularly within the family unit. It remains unclear whether Middle-Eastern families still prioritise closeness due to the enduring influence of traditional, collectivistic values or whether they are increasingly embracing more Western and individualistic values. Of interest to this research paper is the applicability of a

subsection of the Tripartite Influence Model in a Middle-Eastern population, specifically, the role of the family (i.e., parents, namely mothers, and siblings, as sisters) on body dissatisfaction and disordered eating symptomatology in young Middle-Eastern women.

Within all family units, the relationships among female family members (i.e., mothers, sisters) are of particular importance given that body dissatisfaction and disordered eating are more prevalent among women than men worldwide (Galmiche et al., 2019). Deek et al.'s (2023) recent examination of a subsection of the Tripartite Influence Model, exploring the role of mother-figures and sisters (as peers) in a Western sample, supports this notion. Their findings indicated that young Australian women reported experiencing appearance pressures from both their mothers and sisters, which were associated with their levels of body dissatisfaction and disordered eating behaviours (bulimia and restriction). Whether these same relationships exist in Middle-Eastern cultures remains unknown. This is important to investigate given the mother-daughter relationship in the context of Middle-Eastern families has been considered to be the "most fundamental and most intimate female relationship and… the cornerstone of Arab family life" (Abudi, 2010, p.83). Accordingly, the present study built upon the findings of Deek et al. (2023) by investigating disaggregated female familial influence in a non-Western sample, specifically, the role of mothers and sisters in predicting body image and eating behaviour concerns in young Middle-Eastern women.

In addition to the factors outlined within the Tripartite Influence Model, there is also evidence in Western cultures to suggest that women are universally more likely to influence and engage with one another in negative body talk by making disparaging comments about their body image, weight and eating behaviours (MacDonald et al., 2015). One mechanism in which young women's body image and eating disturbance is influenced is through body and weight related conversations, including fat talk (Shannon & Mills, 2015). Fat talk, a specific

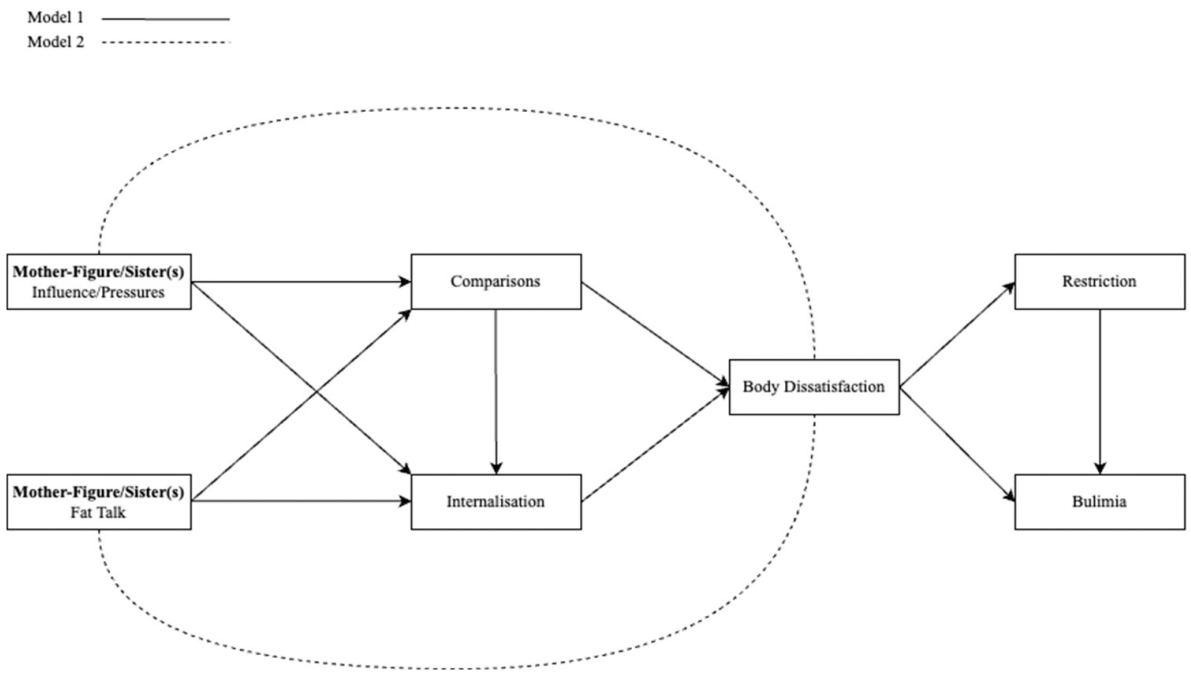
form of negative body talk, refers to self-criticism relating to one's physical appearance (e.g., "I look so fat in this dress"), and has repeatedly been associated with maladaptive body image and eating disorder outcomes in young Western women (Mills & Fuller-Tyszkiewicz, 2017; Rudiger & Winstead, 2013; Shannon & Mills, 2015). Of relevance to the present study, exposure to maternal fat talk has also consistently demonstrated negative impacts on body image and disordered eating behaviours in daughters in Western populations (e.g., Arroyo & Andersen, 2016; Deek et al., 2023; MacDonald et al., 2015). In addition to the impact of maternal fat talk, Deek et al. (2023) also found support for the role of sister's fat talk in contributing to young Australian women's body dissatisfaction and disordered eating behaviours (restriction and bulimia). However, while fat talk is anecdotally thought to be exhibited by women across cultures, the available research has tended to focus on Western populations, and thus, to the best of our knowledge, there is no research on the role of fat talk in Middle-Eastern populations. This is important to consider, because while fat talk may be considered universal, the degree to which young women in Middle-Eastern societies are affected by it remains unclear. Furthermore, it is unknown whether engagement in fat talk with female family members (mothers, sisters) may predict young Middle-Eastern women's body image and eating behaviours. Therefore, it may be postulated that the aforementioned associations between fat talk exhibited by female family members, and body dissatisfaction and disordered eating behaviours observed in Western samples, extends to young women in Middle-Eastern populations. Furthermore, mothers are universally considered the first source of socialisation (Brun et al., 2020; Francis & Birch, 2005), and have been perceived to exhibit greater fat talk than sisters (Deek et al., 2023); thus, maternal influence is likely to be greater than that of other female influences, such as sisters.

Accordingly, the present study aimed to determine how female family members (mothers, sisters) may contribute to body dissatisfaction and disordered eating behaviours in

a Middle-Eastern population. Guided by the Tripartite Influence Model, we investigated the relationships between the pressure to achieve Western appearance-related societal ideals, and fat talk, from mothers and sisters, in predicting body dissatisfaction, and in turn, disordered eating symptomatology, as mediated by appearance comparisons and internalisation of the thin-ideal. Specifically, we predicted that greater appearance pressure and fat talk, from mothers and sisters, and mediational factors (comparisons and internalisation), would be associated with greater body dissatisfaction, and in turn, contribute to disordered eating symptomatology (restriction and bulimia; see Figure 1). Additionally, based on the notion that closer familial relationships may be considered a protective factor mitigating the risks of body dissatisfaction and disordered eating, we aimed to explore whether the structure of Middle-Eastern family units in terms of closeness would play a contributing role by determining the influence of mothers and sisters in exhibiting appearance pressure and fat talk (Byely et al., 2000; Smith et al. 2016; Soh et al., 2006). We predicted that greater self-reported closeness in mother-daughter and sister relationships would be associated with lower appearance pressure and fat talk exhibited by mothers and sister(s), and less engagement in appearance comparisons, internalisation of the thin-ideal, body dissatisfaction, and disordered eating symptomatology (restriction and bulimia). Finally, following the findings of Deek et al. (2023), we predicted that the perceived appearance pressure and fat talk of mothers would be greater than that of sisters.

Figure 1

Proposed Model: Modified version of the Tripartite Influence Model investigating the influence of mothers and sister(s).



Note. Thompson et al. (1999) originally proposed a primary and secondary model of the Tripartite Influence Model. Model 1 predicts an indirect relationship between sociocultural influence/pressures and body dissatisfaction as mediated by comparisons and internalisation. Model 2 includes a direct path from sociocultural influence/pressures to body dissatisfaction. Following Deek et al. (2023), we have similarly proposed these direct and indirect paths for the variable of fat talk to body dissatisfaction.

Methods

Participants

Participants were 377 young women from the Lebanese American University (LAU) student population and the wider Lebanese population. The inclusion criteria were: (a) individuals who identified as women/female, (b) 18 to 25 years old, (c) either born in, lived or previously lived in a Middle-Eastern country, and/or identified with Middle-Eastern ethnicity, (c) either had a person they most identify with as their 'mother-figure' and/or at least one sister, and (d) were comfortable answering all questions in English. Participants were recruited online via an email from the university (n = 245), Instagram (n = 135) or Prolific (n = 8) and were told that the study investigated "factors that may influence women's body image and eating behaviour". Participants had the opportunity to enter into a draw to receive a monetary reimbursement for their time. Given that there is little consensus on the recommended sample size for Structural Equation Modelling (SEM; for a discussion see Sivo et al., 2006), sample size was determined based on Kline's (2023) summary of the literature which suggests the need for at least 200 cases.

Measures

Demographics

Participants completed a brief demographics questionnaire about their age, gender, ethnicity, and country of residence and birth. They were also asked to indicate the person they most identify with as their 'mother-figure' (e.g., biological mother; hereon referred to as 'mother/s′), their mother's age and country of birth, in addition to whether they have (a) sister(s), and if applicable, to individually report their sister's (s′) age and relation (e.g., biological sister). Participants also indicated whether they live at home with their mother

and/or sister(s), and how close they are with their mother and/or sister(s) on a 100 mm visual analogue scale, ranging from ‘not at all close’ to ‘extremely close’. This latter criterion served as the operational measure to assess the collectivist structure of Middle-Eastern family units in terms of relationship closeness between female family members.

Sociocultural influences/pressures and internalisation of appearance ideals

The Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-4R; Schaefer et al., 2017) was used to measure appearance pressures to achieve the Western societal ideal (Pressures Scale) and internalisation of the societal appearance ideals (Internalisation Scale). Two subscales of the Pressures Scale were used: The Family and Peers subscales, each containing 4 items. Following Deek et al. (2023), items were modified to ensure that participants understood that they were responding in relation to their mother (e.g., “I feel pressure from my mother to improve my appearance”) and/or sister(s) (e.g., “My sister [or sisters] encourage[s] me to get thinner”). Another two subscales from the Internalisation Scale were used: the Internalisation – Thin/Low Body Fat subscale (4 items), to assess internalisation of the thin-ideal (e.g., “I think a lot about looking thin”), and the Internalisation – General Attractiveness subscale (6 items) to measure internalisation of the Western societal ideal regarding attractiveness (e.g., “I think a lot about my appearance”). Participants responded on a 5-point scale (1 = definitely disagree, 5 = definitely agree). Item responses were averaged, with higher scores indicating greater appearance pressures. These subscales have previously demonstrated good internal consistency among a sample of Turkish college women (Cronbach’s ∝ of Pressures – Family =.86; Pressures – Peers =.91; Internalisation – Thin/Low Body Fat =.84; Internalisation – General Attractiveness =.86; Cihan et al., 2016) and the Pressures subscales among a sample of Lebanese women aged 18–39 years (Cronbach’s ∝ of Pressures – Family =.93; Pressures – Peers =.96; Hage, 2019). The

current modified subscales also demonstrated good internal consistency (Cronbach's ∝ of Pressures –Family [mothers] =.88; Pressures – Peers [sister(s)] = .90; Internalisation – Thin/Low Body Fat = .85; Internalisation – General Attractiveness = .84).

Fat talk

The Family Subscale of the Fat Talk Questionnaire (FFTQ-F; MacDonald et al., 2015) was administered to measure fat talk (i.e., self-criticism relating to one's physical appearance) within the family environment. Following Deek et al. (2023), the 8-item Family Subscale was used and modified to measure fat talk specifically exhibited by each of the respondents' female family members separately for mothers (8 items, e.g., "When I'm with my mother, I hear her complain that she is fat") and sister(s) (8 items, e.g., "When I'm with my sister [or sisters], I hear her [or them] complain that her [or their] arms are too flabby). Items were rated on 5-point scales (1 = never, 5 = always) and scores were averaged, with higher mean scores reflecting greater exposure to overhearing fat talk by female family members. The subscale has previously demonstrated excellent internal consistency (Cronbach's ∝ = 0.92) in a sample of female undergraduate students in a Western (American) population (Webb et al., 2018). The FFTQ-F has not been widely used among non-Western cultures, nor has it ever been used in a Middle-Eastern population. However, the FFTQ-F has previously demonstrated good internal consistency (Cronbach's ∝ =.90) in a sample of ethnically diverse undergraduate students (MacDonald et al., 2015). The current subscale also demonstrated good internal consistency (Cronbach's ∝ of Family [mothers] =.93; Family [sister(s)] = .93).

Appearance comparisons

The 11-item Physical Appearance Comparison Scale-Revised (PACS-R; Schaefer & Thompson, 2014) was used to assess appearance-related comparison tendencies. Using a 5-point scale, participants reported how often (0 = never, 4 = always) they compare their physical appearance with others ("When I'm out in public, I compare my physical appearance to the appearance of others"). Items were averaged, with higher mean scores indicating a greater tendency of engaging in physical appearance comparisons. The PACS-R has previously demonstrated good internal consistency (Cronbach's $\propto$ =.97) in a sample of Iranian female university students (Atari et al., 2015). Internal consistency in the current sample was good (Cronbach's $\propto$ =.96).

Body dissatisfaction

The Body Dissatisfaction Scale of the Eating Disorder Inventory (EDI; Garner et al., 1983) was used to assess body image concerns and dissatisfaction (9 items, e.g., "I feel satisfied with the shape of my body"). Items were rated on a 6-point Likert scale from 0 (never) to 6 (always). As recommended by Schoemaker et al. (1994) for non-clinical samples, the entire range of possible scores was used, such that higher scores indicated greater body dissatisfaction. Previous internal consistency has been found to be good (Cronbach's $\propto$ =.90) in a non-clinical sample of Saudi Arabian women (Alsulaiman & El Keshky, 2019) and was also good in the current sample (Cronbach's $\propto$ =.88).

Disordered eating symptomatology (restriction and bulimia)

Another two subscales of the EDI (Garner et al., 1983) were used to assess participants' levels of restriction and bulimia symptomatology: the Drive for Thinness (Restriction) Scale (7 items, e.g., "I am terrified about gaining weight") and Bulimia Scale (7 items, e.g., "I stuff myself with food"). Higher scores indicate greater drive for thinness

(restriction) and bulimia. Internal consistency has been found to be good for both subscales (Cronbach's ∝ of Drive for Thinness [Restriction] =.85; Bulimia =.85) in a non-clinical sample of Saudi Arabian women (Alsulaiman & El Keshky., 2019). Internal consistency in the current sample was also good (Cronbach's ∝ of Drive for Thinness [Restriction] =.92; Bulimia =.88).

Procedure

The study was approved by the Flinders University Human Research Ethics Committee (Project ID 4472) and Lebanese American University's (LAU) Institutional Review Board (IRB) (Project Code LAU.SAS. MM11.7). It used a quantitative cross-sectional online survey design and participants completed the survey via Qualtrics. A total time commitment of approximately 15 minutes was required. After providing informed consent, participants completed demographics. They subsequently completed the measures of appearance pressures, fat talk, appearance comparisons, internalisation of the thin-ideal, body dissatisfaction and disordered eating symptomatology (restriction and bulimia). Finally, participants reported their height and weight from which body mass index (BMI; kg/m^2) was calculated. This demographic variable was included to be able to describe the sample, as commonly reported with other samples recruited from the Middle-East (e.g., Affifi-Soweid et al., 2002; Radwan et al., 2019).

Data analytical plan and preparation

Data analysis was carried out in eight stages. First, using IBM SPSS v27, the data were reviewed to determine the number of participants who reported having either a mother and/or sister(s). A total of 377 participants reported that they had a mother, and 242 participants reported having both a mother and at least one sister. Accordingly, two subsamples were formed, first, to investigate the independent role of mothers (N = 377),

given that mothers are the first source of socialisation, and then, to determine whether sister(s) added any influence beyond that of mothers ($N = 242$). Second, the data were screened to determine any missing values at the variable level and to ascertain whether the data were missing at random. There were missing data at the variable level for both subsamples: role of mothers < 12.7%; added role of sister(s) <13.2%. Little's (1988) Missing Completely at Random (MCAR) method was used to conduct missing data analyses. Results indicated that the data was likely missing completely at random, for the role of mothers subsample, $\chi^2 = 36.909$, $df = 33$, $p = .293$, and the added role of sister(s) subsample, $\chi^2 = 63.199$, $df = 66$, $p = .575$. Thus, missing data was handled using Expectation-Maximisation (EM) algorithm (Olinsky et al., 2003; Peters & Enders, 2002). Third, the data were examined for normality and multicollinearity following Weston and Gore (2006). Data variables were examined for normality based on skewness and kurtosis values. No variables displayed substantive skewness or kurtosis (Kline, 2023). The data were then evaluated for multicollinearity in two ways: (1) the Variance Inflation Factor (VIF) values were computed, and all VIF values were < 10, confirming no multicollinearity, and (2) bivariate correlations were screened (see Table 1) and indicated that there was no multicollinearity as all r values were < .85 (Kline, 2023).

Fourth, descriptive statistics were computed, and as a first step toward testing the hypotheses, correlations were performed to determine the linear relationships between study variables, which provided a basis for the subsequent mediational analyses. Fifth, following the guidelines of Shrout and Bolger (2002), mediation analyses were performed to investigate the potential direct and indirect (mediating) effects of the predicted variables using AMOS v27. Sixth, Structural Equation Modelling (SEM) was undertaken to test the proposed models separately for the two subsamples using AMOS v27 with maximum likelihood estimation. Next, correlational analyses were computed to explore whether the collectivistic structure of

Middle-Eastern family units in terms of closeness between female family members would play a contributing role to levels of appearance pressures and fat talk exhibited by mothers and sister(s), and comparisons, internalisation, body dissatisfaction and disordered eating symptomatology (restriction and bulimia). Finally, paired samples t-test were performed to explore whether differences exist between participants' perceived ratings of their mother's and sister's(s′) appearance pressures and fat talk.

Results

Characteristics of the sample

Participants (N = 377) ranged in age from 18 to 25 years (M = 20.65, SD = 2.31) and had a mean BMI of 23.22 kg/m^2 (SD = 4.75). Most participants resided in Lebanon (93%), while the remaining resided in the United Arab Emirates (2.4%); Canada (1.1%); Australia (0.5%); and Bahrain, France, Italy, Saudi Arabia, Spain, Switzerland, Turkey, United States of America (0.3%) (0.6% of participants did not report their country of residence). Most participants (86.4%) were born in Lebanon, while others were born in Saudi Arabia (2.7%); United States of America (2.2%); Syrian Arab Republic (1.4%); United Arab Emirates (1.1%); Canada, Kuwait (0.8%); Australia, Brazil, Egypt (0.5%); and Bahrain, Bulgaria, France, Iraq, Libyan Arab Jamahiriya, Morocco, Panama, Qatar, Ukraine (0.3%) (0.4% of participants did not report their birth country). In terms of participants' 'mother-figure', 95.4% identified their biological mother; 90.2% of mothers were born in Lebanon, and the mean age of mothers was 50.38 years (SD = 7.20). More than half (65.6%) of participants reported having a sister, with the majority (64%) reporting having one sister, 24% two sisters, and 12% three or more. On average, participants reported a mean age of 20.68 years (SD = 7.81) for their sister(s), and 93.5% identified their sister(s) as biological, with the remaining identified as their half- (3.4%), biological twin (2.1%), biological triplets (0.8%), or adoptive

sister (0.3%). Participants indicated, on average, a close relationship with their mother (M = 80.02, SD = 21.07) and sister(s) (M = 78.96, SD = 22.67). Most (79.7%) participants were living at home with their mother, and 68% were living at home with at least one of their sisters.

Relationships between study variables

Pearson's correlations can be seen in Table 1 for both subsamples, which showed a similar pattern. The predictor variables of appearance pressure and fat talk, by mothers and sister(s), were significantly positively correlated, as were the mediational variables, appearance comparisons and internalisation. As predicted, appearance pressure and fat talk from both mothers and sister(s) were positively correlated with appearance comparisons, internalisation of the thin-ideal, body dissatisfaction, restriction, and bulimia symptomatology.

Table 1

Measure scales, means (and standard deviations) and correlation coefficients for the study variables for the two subsamples investigating (1) the role of mothers ($N = 377$), and (2) the added role of sister(s) ($N = 242$).

	Scale	M (SD)	1	2	3	4	5	6	7	8	9
Role of Mothers											
1. Influence/Appearance Pressures by Mothers	1-5	2.82 (1.19)	-								
2. Fat Talk by Mothers	1-5	2.56 (1.07)	**.39** * *	-							
3. Comparisons	0-4	1.85 (1.11)	**.36** * *	**.35** * *	-						
4. Internalisation	1-5	3.91 (0.70)	**.27** * *	**.17** * *	**.62** * *	-					
5. Body Dissatisfaction	0-6	3.54 (1.12)	**.39** * *	**.19** * *	**.65** * *	**.48** * *	-				
6. Restriction (Drive for Thinness)	0-6	3.53 (1.40)	**.40** * *	**.23** * *	**.68** * *	**.73** * *	**.68** * *	-			
7. Bulimia	0-6	2.67 (1.16)	**.41** * *	**.30** * *	**.60** * *	**.46** * *	**.62** * *	**.62** * *	-		
Added Role of Sister(s)											
1. Influence/Appearance Pressures by Mothers	1-5	2.80 (1.16)	-								
2. Influence/Appearance Pressures by Sister(s)	1-5	2.22 (1.10)	**.37** * *	-							
3. Fat Talk by Mothers	1-5	2.51 (1.06)	**.39** * *	.09	-						
4. Fat Talk by Sisters(s)	1-5	2.40 (1.05)	**.26** * *	**.42** * *	**.28** * *	-					
5. Comparisons	0-4	1.82 (1.10)	**.34** * *	**.30** * *	**.22** * *	**.32** * *	-				
6. Internalisation	1-5	3.88 (0.70)	**.24** * *	**.19** * *	**.13** *	**.20** * *	**.66** * *	-			
7. Body Dissatisfaction	0-6	3.53 (1.10)	**.35** * *	**.35** * *	.10	**.29** * *	**.63** * *	**.49** * *	-		
8. Restriction	0-6	3.55 (1.40)	**.36** * *	**.36** * *	**.17** * *	**.28** * *	**.70** * *	**.71** * *	**.67** * *	-	
9. Bulimia	0-6	2.63 (1.16)	**.32** * *	**.28** * *	**.24** * *	**.23** * *	**.60** * *	**.48** * *	**.61** * *	**.63** * *	-

Note. Significant correlation coefficients (**$p < .01$, *$p < .05$) are boldfaced.

Tests of mediating (indirect) effects between study variables

Following Shrout and Bolger's (2002) recommendations, bootstrapping of 1000 samples with 95% Confidence Intervals (CIs) using AMOS with maximum likelihood estimation was used to examine the potential mediating (indirect) effects between study variables. When mediation has occurred, the standardised regression coefficients (β) for indirect effects are significant if the 95% biased-corrected confidence intervals (CIs) do not contain zero. Full mediation was determined by having only a significant *indirect* path in the model, whereas partial mediation was indicated by having both significant *indirect* and *direct* paths (taken from the regression weights table).

The relationships between appearance pressures and fat talk, and body dissatisfaction, as mediated by comparisons and internalisation

Simple path analyses were conducted with comparisons and internalisation as mediators between the predictor (appearance pressure and fat talk) and outcome variables (body dissatisfaction) for both subsamples. These simple path analyses were undertaken to determine whether there was support for the inclusion of the mediators (comparisons and internalisation) in the later testing of the proposed models. As can be seen in Table 2, for participants with a mother, comparisons only partially mediated the relationship between appearance pressure and body dissatisfaction, but fully mediated the relationship between fat talk and body dissatisfaction. Internalisation partially mediated the relationship between appearance pressure and body dissatisfaction, and fat talk and body dissatisfaction.

Table 2

Direct effects and significance, standardised regression coefficients (β) for indirect effects, bias-corrected 95% confidence intervals (CIs), and significance of indirect effects on body dissatisfaction via *comparisons and internalisation* for the sample of participants with a mother (N = 377).

	Direct Effect (x → y)	**Direct path significant?**	**Indirect Effect (β)**	**95% CI**	**Indirect Path Significant?**	**Mediation**
Role of Mothers						
Influence/Appearance Pressures → Comparisons → Body Dissatisfaction	0.178	Yes	0.21	.147 to .274	Yes	Partial
Influence/Appearance Pressures → Internalisation → Body Dissatisfaction	0.289	Yes	0.109	.069 to .157	Yes	Partial
Fat Talk → Comparisons → Body Dissatisfaction	-0.045	No	0.234	.164 to .307	Yes	Full
Fat Talk → Internalisation → Body Dissatisfaction	0.11	Yes	0.08	.030 to .140	Yes	Partial

Note. Direct effects are significant at the $p < .05$ level and indirect effects are significant if the CIs do not contain zero.

As can be seen in Table 3, these patterns of results were similarly observed across the second subsample which included participants who reported having both a mother and at least one sister. Specifically, the relationship between appearance pressures from mothers and body dissatisfaction was partially mediated by both comparisons and internalisation. Fat talk by mothers and body dissatisfaction was fully mediated by comparisons; however, there was no mediating relationship via internalisation for this subsample. Moreover, the relationship between appearance pressure from sister(s) and body dissatisfaction was partially mediated by comparisons and internalisation. In contrast, comparisons fully mediated the relationship between fat talk from sister(s) and body dissatisfaction, while internalisation partially mediated the relationship between fat talk from sister(s) and body dissatisfaction.

Table 3

Direct effects and significance, standardised regression coefficients (β) for indirect effects, bias-corrected 95% confidence intervals (CIs), and significance of indirect effects on body dissatisfaction via *comparisons and internalisation* for the subsample of participants with both a mother and sister(s) ($N = 242$).

	Direct Effect (x → y)	**Direct path significant?**	**Indirect Effect (β)**	**95% CI**	**Indirect Path Significant?**	**Mediation**
Role of Mothers						
Influence/Appearance Pressures → Comparisons → Body Dissatisfaction	0.154	Yes	0.194	.101 to .276	Yes	Partial
Influence/Appearance Pressures → Internalisation → Body Dissatisfaction	0.242	Yes	0.105	.043 to .166	Yes	Partial
Fat Talk → Comparisons → Body Dissatisfaction	-0.045	No	0.144	.056 to .234	Yes	Full
Fat Talk → Internalisation → Body Dissatisfaction	0.034	No	0.064	-.014 to .137	No	No mediation
Added Role of Sister(s)						
Influence/Appearance Pressures → Comparisons → Body Dissatisfaction	0.182	Yes	0.171	.100 to .250	Yes	Partial
Influence/Appearance Pressures → Internalisation → Body Dissatisfaction	0.268	Yes	0.085	.029 to .140	Yes	Partial
Fat Talk → Comparisons → Body Dissatisfaction	0.097	No	0.192	.120 to .272	Yes	Full
Fat Talk → Internalisation → Body Dissatisfaction	0.197	Yes	0.092	.043 to .151	Yes	Partial

Note. Direct effects are significant at the $p < .05$ level and indirect effects are significant if the CIs do not contain zero.

The relationships between comparisons and internalisation, and restriction and bulimia, as mediated by body dissatisfaction

Further path analyses were conducted with body dissatisfaction as a mediator between the predictor (comparisons and internalisation) and outcome variables (restriction and bulimia). As can be seen in Table 4, there were significant indirect effects between comparisons and internalisation, and restriction and bulimia via body dissatisfaction for both subsamples. Across both subsamples, body dissatisfaction partially mediated all the relationships between comparisons and internalisation, and restriction and bulimia.

Table 4

Direct effects and significance, standardised regression coefficients (β) for indirect effects, bias-corrected 95% confidence intervals (CIs), and significance of indirect effects on restriction and bulimia via *body dissatisfaction*.

	Direct Effect (x → y)	**Direct path significant?**	**Indirect Effect (β)**	**95% CI**	**Indirect Path Significant?**	**Mediation**
Role of Mothers						
Comparisons → Body Dissatisfaction → Restriction	0.421	Yes	0.262	.197 to.336	Yes	Partial
Comparisons → Body Dissatisfaction → Bulimia	0.339	Yes	0.258	.189 to.334	Yes	Partial
Internalisation → Body Dissatisfaction → Restriction	0.521	Yes	0.205	.163 to.257	Yes	Partial
Internalisation → Body Dissatisfaction → Bulimia	0.209	Yes	0.249	.204 to.308	Yes	Partial
Added Role of Sister(s)						
Comparisons → Body Dissatisfaction → Restriction	0.463	Yes	0.239	.163 to.320	Yes	Partial
Comparisons → Body Dissatisfaction → Bulimia	0.362	Yes	0.241	.162 to.329	Yes	Partial
Internalisation → Body Dissatisfaction → Restriction	0.496	Yes	0.21	.158 to.278	Yes	Partial
Internalisation → Body Dissatisfaction → Bulimia	0.231	Yes	0.244	.182 to.318	Yes	Partial

Note. Direct effects are significant at the $p < .05$ level and indirect effects are significant if the CIs do not contain zero.

Evaluating the proposed model

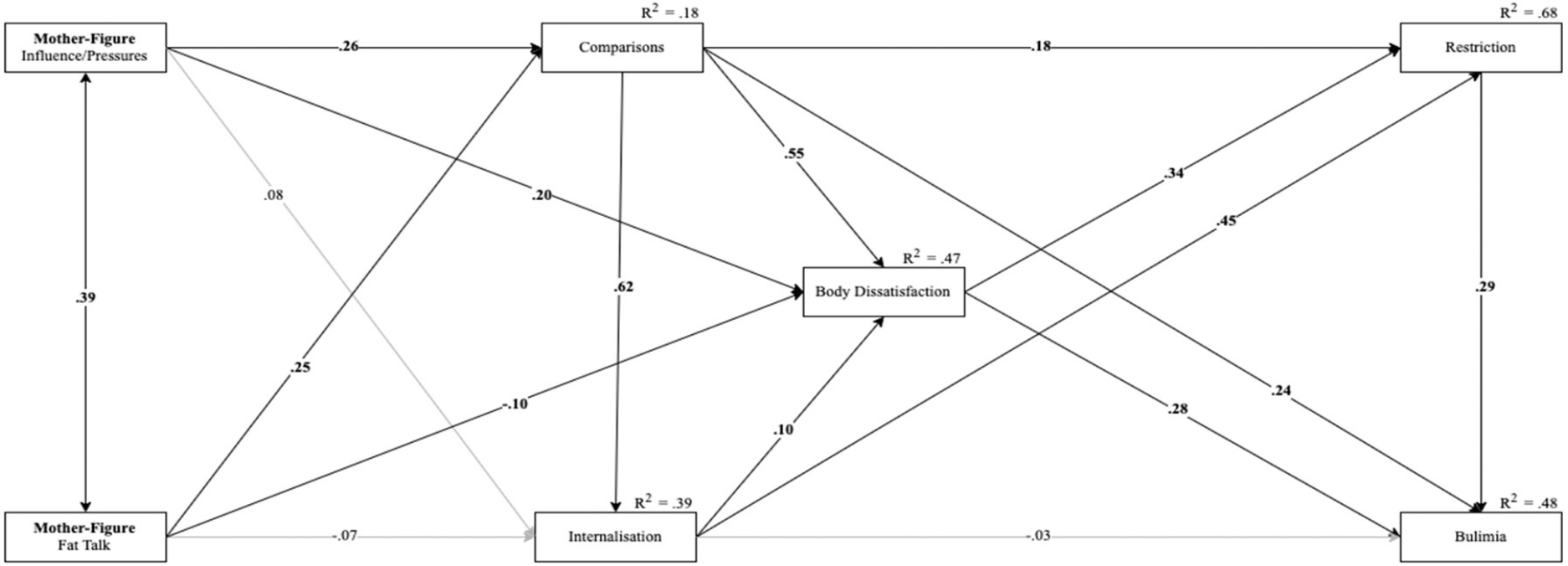
To integrate the findings of the bivariate correlations and mediational analyses, a series of structural models were constructed. The models were examined using the maximum likelihood method of Structural Equation Modelling (SEM) via AMOS 27. The proposed models were assessed for goodness-of-fit (how well the model fits the data) based on the following indicators: Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Standardised Root Mean Square Residual (SRMR), and the Root Mean Square Error of Approximation (RMSEA). For a fit to be acceptable, CFI and TLI should be ≥ .90–.94, SRMR ≤ .09–.10, and RMSEA ≤ .07–.10 (Weston & Gore, 2006). The following path models assumed bidirectional (co-varying) relationships between the two predictor variables (appearance pressure and fat talk) in line with the previous correlational analyses.

First, to investigate the independent role of mothers, the proposed model was explored for participants who reported having a mother (Figure 2). The fit indices for the initially tested model revealed an acceptable model fit, $\chi^2 = 24.60$, $df = 4$, $p < .001$, $\chi^2/df = 6.15$; CFI = .98; TLI = .91; SRMR = .03; RMSEA = .11. The model explained 18% of the variance in appearance comparisons, 39% in the internalisation of the thin-ideal, 47% in body dissatisfaction, 68% in restrained eating, and 48% in bulimia. Next, to examine the additive role of sister(s), the proposed model for the subsample of participants who reported having both a mother and sister(s) was explored (Figure 3). No indirect path was included for fat talk from mothers and body dissatisfaction via internalisation, based on the previous path analyses finding no mediating relationship. The fit indices for the tested model again revealed an acceptable model fit, $\chi^2 = 20.69$, $df = 10$, $p = .02$, $\chi^2/df = 2.07$; CFI = .98; TLI = .95; SRMR = .02; RMSEA = .06. The model explained 19% of the variance in appearance comparisons,

43% in the internalisation of the thin-ideal, 45% in body dissatisfaction, 66% in restrained eating, and 49% in bulimic symptomatology.

Figure 2

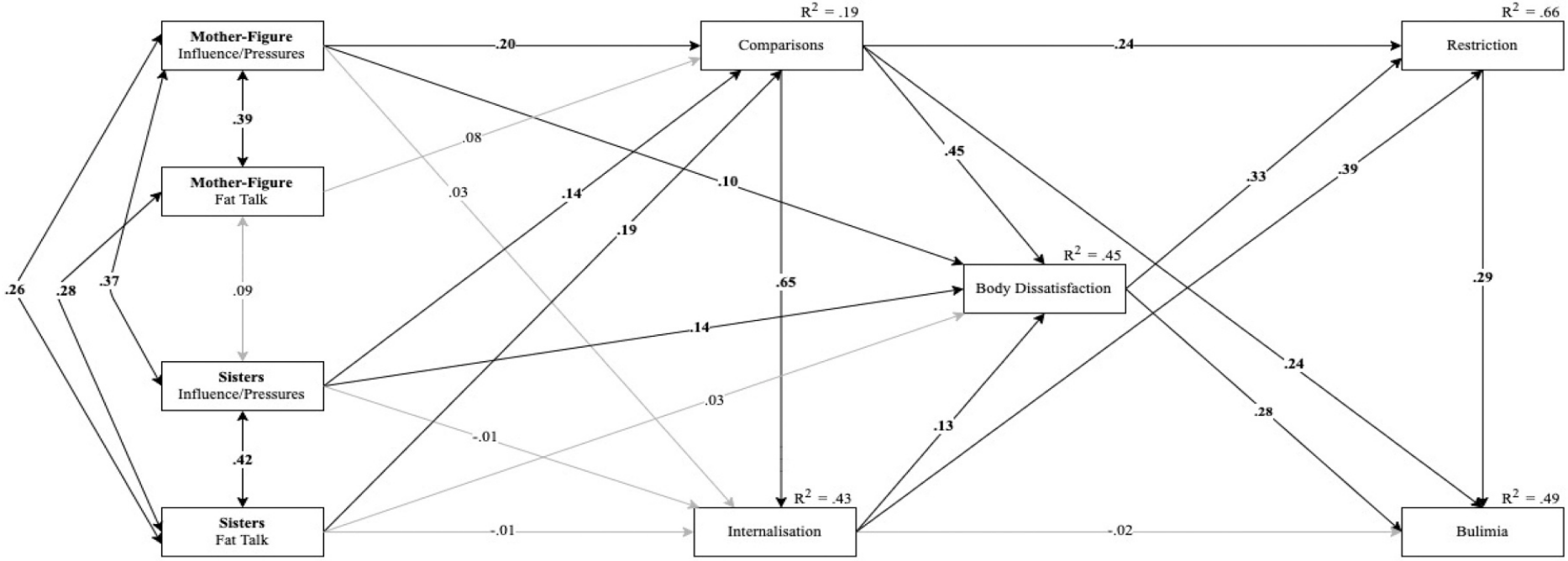
The model investigating the independent role of mothers which describes the associations between the predictor, mediating and outcome variables, with the standardised regression weights/estimates and squared multiple correlations (R^2) ($N = 377$).



Note. Significant coefficients ($p < .05$; taken from the regression weights table) are boldfaced and non-significant paths are displayed in grey.

Figure 3

The model investigating the added role of sister(s) for the subsample of participants with both a mother and sister(s) which describes the associations between the predictor, mediating and outcome variables, with the standardised regression weights/estimates and squared multiple correlations (R^2) (*N* = 242*)*.



Note. Significant coefficients (*p* < *.05*; taken from the regression weights table) are boldfaced and non-significant paths are displayed in grey.

Associations between reported mother-daughter and sister(s) closeness and study variables

Correlational analyses explored whether the collectivistic structure of Middle-Eastern family units in terms of closeness between female family members would play a contributing role in determining the appearance pressure and fat talk exhibited by mothers and sister(s), in addition to engagement in appearance comparisons, internalisation of the thin-ideal, body dissatisfaction and disordered eating symptomatology (see Table 5). As predicted, greater self-reported closeness in mother-daughter relationships was found to be associated with less perceived appearance pressure and fat talk exhibited by mothers, in addition to less engagement in appearance comparisons, and lower body dissatisfaction and bulimia symptomatology. However, closeness in mother-daughter relationships was not associated with internalisation or restriction. Contrary to our prediction, there were no significant relationships between reported closeness in sister relationships and study variables.

Table 5

Correlation coefficients for the associations between reported mother-daughter and sister(s) closeness, and study variables for the subsample of participants reporting having both a mother and sister(s) (*N* = 242*)*.

	Reported Closeness with Mother	**Reported Closeness with Sister(s)**
Perceived Influence/Appearance Pressures by Mothers	**-.19 * ***	0.05
Perceived Influence/Appearance Pressures by Sister(s)	-0.12	0.01
Fat Talk by Mothers	**-.31 * ***	0.04
Fat Talk by Sisters(s)	**-.15 ***	-0.02
Comparisons	**-.28 * ***	<-.01
Internalisation	-0.07	0.07
Body Dissatisfaction	**-.15 ***	0.02
Restriction	-0.09	0.04
Bulimia	**-.20 * ***	0.01

Note. Significant correlation coefficients (***p* < .01, **p* < .05) are boldfaced.

Appearance pressure and fat talk by mothers versus sister(s)

To investigate whether differences exist in participants' perceptions of their mother's versus sister's(s′) appearance pressure and fat talk, a series of paired samples t-tests were performed for the subsample of participants who reported having both a mother and sister(s). As predicted, participants perceived being significantly more pressured by their mothers (M = 2.80, SD = 1.16) than their sister(s) (M = 2.22, SD = 1.10), $t(241) = 7.04$, $p < .001$. However, there were no significant differences between participants' perceptions of mother's (M = 2.51, SD = 1.06) versus sister's(s′) (M = 2.40, SD = 1.05) fat talk, $t(241) = 1.43$, $p = .08$.

Discussion

This study investigated for the first time the applicability of a subsection of the Tripartite Influence Model in a non-Western population, specifically, the role of female family members (mothers, sisters) in predicting body image and eating behaviour concerns in young Middle-Eastern women. Overall, the aim of the study was to examine the relationships between pressures to achieve Western appearance-related societal ideals, and fat talk, from mothers and sisters, in predicting body dissatisfaction, and in turn, disordered eating symptomatology (restriction and bulimia), as mediated by appearance comparisons and internalisation of the thin-ideal. We also investigated whether the collectivistic structure of Middle-Eastern family units in terms of closeness between mothers and daughters, and sisters, would play a contributing role in determining body image and eating behaviour, in addition to exploring whether differences exist in perceived ratings of mother versus sisters appearance pressures and fat talk.

Guided by the Tripartite Influence Model, we found that greater appearance pressures and fat talk by mothers and sisters were associated with greater appearance comparisons,

internalisation of the thin-ideal, body dissatisfaction and disordered eating symptomatology (restriction and bulimia). This finding is consistent with global research on body image and eating behaviour outcomes (i.e., body dissatisfaction, disordered eating) in young women across Western and non-Western populations (e.g., Galmiche et al., 2019; Makino et al., 2004; Pike & Dunne, 2015), but extends these by examining a hitherto understudied subgroup, i.e., young Middle-Eastern women. Although previous research has demonstrated a growing prevalence of body image and eating concerns across Middle-Eastern populations (e.g., Azzeh et al., 2022; Eapen et al., 2006; Melisse et al., 2020; Musaiger et al., 2013; Nakhoul et al., 2021; Schulte & Thomas, 2013; Thomas et al., 2010; Zainal et al., 2020), to the best of our knowledge, this is the first study to examine potential contributors to negative body image and eating behaviours in young Middle-Eastern women within a theoretical model, specifically the Tripartite Influence Model.

In terms of mediating relationships, we found that appearance pressures from both mothers and sisters were directly related to body dissatisfaction, and indirectly via comparisons and internalisation (i.e., partially mediated). We further found that levels of engagement in appearance comparisons and internalisation of the thin-ideal were directly related to restriction and bulimia symptomatology, and indirectly as mediated by body dissatisfaction. Thompson et al. (1999) originally proposed these direct and indirect pathways, which have been empirically confirmed in Western populations (e.g., Deek et al., 2023; Johnson et al., 2015; Keery et al., 2004; Shroff & Thompson, 2006). Overall, these findings suggest that young Middle-Eastern women feel influenced/pressured by both their mothers and sisters to meet Western appearance-related societal ideals, thereby contributing to their body dissatisfaction, and in turn, disordered eating symptomatology (restriction and bulimia). Moreover, appearance pressures and fat talk exhibited by mothers and sisters was directly related to young Middle-Eastern women's levels of engagement in appearance

comparisons and internalisation of the thin-ideal. These direct relationships suggest that the influence/pressures and fat talk from mothers and sisters are associated with the way young Middle-Eastern women compare their appearance to others and internalise societal ideals of thinness. Although there has been no investigation of the role of these mediating mechanisms within Middle-Eastern populations, preliminary support exists for some of these proposed pathways. Specifically, and in line with previous research (i.e., Eapen et al., 2006 and Zainal et al., 2020), our work builds upon these findings by demonstrating associations beyond the linear relationships between body image and eating behaviours.

Although Eapen et al. (2006) and Zainal et al. (2020) established some direct associations between levels of thin-ideal internalisation and disordered eating behaviours (restriction and dieting) in a sample of young Middle-Eastern women, there has been no research investigating pathways within this population between other theoretically important constructs, such as the association between the role of sociocultural agents of influence (e.g., parents, peers) and engagement in appearance comparisons. The present findings present potential risk factors (e.g., appearance pressures and fat talk from mothers and sisters) contributing both directly and indirectly via mediating mechanisms to these maladaptive behaviours in young Middle-Eastern women. Moreover, the current investigation provides support for the role of disaggregated agents of female familial influence, namely mothers and sisters, in contributing to young Middle-Eastern women's engagement in appearance comparisons. This affords future researchers the opportunity to further investigate these contributing factors and associated outcomes within Middle-Eastern populations, such as the inclusion of engagement in appearance comparisons as a mediator in the relationship between the role of sociocultural influences, and body and eating related behaviours.

Novel to the present study was the examination of the role of negative body talk, namely, fat talk, in body dissatisfaction and disordered eating behaviours within a Middle-Eastern sample. While Thompson et al. (1999) did not include the construct of fat talk as a determinant of maladaptive body image and eating outcomes in their model, we found that fat talk exhibited by mothers and sisters played a role in contributing to appearance comparisons, internalisation of the thin-ideal and body dissatisfaction. Interestingly, when considering the role of fat talk expressed by mothers and sisters in association with negative body and eating related behaviours, a similar pattern was observed. Overall, fat talk exhibited by both mothers and sisters was indirectly related to body dissatisfaction via appearance comparisons (i.e., fully mediated), and both directly and indirectly via internalisation (i.e., partially mediated). However, unlike the findings of the main sample (mothers only), in the subsample of participants who reported having both a mother and at least one sister, no mediating relationship via internalisation between fat talk by mothers and body dissatisfaction was observed. This difference may be due to the smaller subsample having limited statistical power to detect mediation effects that were present in the larger sample (i.e., main sample for the role of mothers, $N = 377$; subsample for the added role of sister(s), $N = 242$). Alternatively, the inclusion of sister(s) in the subsample may have introduced additional and unique familial dynamics that influence the mediation process differently, such that the interplay between mothers and sisters may produce differences in how young women internalise the thin-ideal. Future research could employ a triadic approach, by recruiting female family members from the same family unit (i.e., mothers, sisters, and daughters) to investigate their potential individual and collective influences.

Our findings are consistent with Deek et al.'s (2023) work with a Western sample, which found that fat talk expressed by mothers and sisters was associated with young Australian women's (aged between 17 to 25 years old) body dissatisfaction via appearance

comparisons (indirectly) and internalisation (directly and indirectly). Moreover, our comparison to Deek et al.'s (2023) findings, using identical methodology and Structural Equation Modelling (SEM), reveals both consistent and differing roles of familial fat talk across cultural contexts (Western versus Middle-Eastern). In both samples, positive associations were observed between mother fat talk and appearance comparisons, but not internalisation of the thin-ideal. Notably, the Middle-Eastern sample exhibited a negative relationship between mother fat talk and body dissatisfaction, whereas the Western sample did not. Additionally, the Middle-Eastern sample showed a stronger positive relationship between sister fat talk and appearance comparisons than the Western sample. However, no associations were observed between sister fat talk and internalisation of the thin-ideal or body dissatisfaction in either sample. Taken together, these findings demonstrate the consistent and varying roles of female familial fat talk across both Western and non-Western cultures. Furthermore, the findings of the present study suggest that when fat talk is expressed within the family home environment, it has the potential to differentially contribute to negative body image outcomes in young Middle-Eastern women. Specifically, when young Middle-Eastern women overhear their mothers or sisters engage in fat talk, this can contribute to their own likelihood of engaging in appearance comparisons and internalising the thin-ideal, which in turn, leads to body dissatisfaction. However, simply overhearing fat talk expressed by mothers or sisters can directly affect young women's dissatisfaction with their own body shape, weight and size, regardless of any other contributing mechanisms. In keeping with the findings of MacDonald et al. (2015), and specifically, the development of the Family Fat Talk Questionnaire (FFTQ), our findings support the notion that fat talk has important implications within the home environment, and further extends these to Middle-Eastern family units.

In line with the findings of Deek et al. (2023), our final models revealed an overall good fit to the data demonstrating the applicability of a subsection of the Tripartite Influence Model, specifically, the role of female family members (mothers, sisters). Furthermore, the investigation is the first of its type to use a theoretically driven model to examine body image and eating behaviour concerns in young Middle-Eastern women. Despite former beliefs that body dissatisfaction and disordered eating outcomes are a Western-bound issue (Melisse et al., 2020), our findings are in line with more recent research which found that sociocultural factors similarly contribute to body and eating related concerns across cultures (e.g., Burke et al., 2021; de Carvalho et al., 2017; Shagar et al., 2019), and more specifically, in Middle-Eastern populations (e.g., Hasan et al., 2018; Thompson et al., 2020; Kakar, 2022). Moreover, our investigation indicates a global shift in the standards of beauty beyond those of Western societies, as demonstrated by the findings that young Middle-Eastern women perceive pressures to attain certain appearance ideals, similarly to their Western counterparts (i.e., the Western thin-ideal; Melisse et al., 2020; Pike & Dunne, 2015). It is likely that rapid sociocultural changes observed in non-Western countries, specifically the role of Westernisation, and in turn, within the social structures of Middle-Eastern societies, such as the shift in values (i.e., collectivistic, individualistic) held by Middle-Eastern family units, can account for some of these changes (Nasser, 2009).

The findings of the current study should, however, be considered in the context of the sample demographics. Specifically, recruitment methods took place via a university based in Lebanon, and therefore, the majority of participants reported either being born or residing in Lebanon at the time of completing the questionnaire. Consequently, the data may not be reflective of the wider Middle-Eastern population. In particular, despite being a Middle-Eastern country, Lebanon's society has had significant Western influence which has been more longstanding than other Middle-Eastern countries, and as a result, rates of body image

and eating concerns have been found to be rapidly increasing in Lebanon when compared with surrounding countries (e.g., Affifi-Soweid et al., 2002; Kronfol et al., 2018; Nakhoul et al.; 2021). Nonetheless, developing our understanding of the way in which body and eating concerns develop in this understudied population is valuable. Future investigations should endeavour to recruit female participants located across the Middle-East to determine whether differences exist in body and eating related behaviours, particularly when tested within a theoretical model.

Moreover, researchers have tended to overlook outcomes in non-Western cultures based on the assumption that disordered body image and eating behaviours were culturally bound syndromes, which has led to gaps in our understanding of how body image concerns and disordered eating behaviours may be experienced globally. Nonetheless, it is evident that in recent years, studies are beginning to address outcomes in non-Western populations (e.g., Burke et al., 2021; de Carvalho et al., 2017; Shagar et al., 2019), but lingering concerns remain at a theoretical level. Many assessment tools used to measure outcomes in non-Western population were originally developed for use in Western populations, thereby increasing the likelihood of biases. This is also a limitation of the present study. As such, it is important to develop culturally sensitive and validated assessment tools and measures to guide the investigation of body and eating related outcomes globally. Moreover, these tools should account for the individual and cultural nuances (e.g., values and beliefs) observed across different Middle-Eastern populations. For example, most Middle-Eastern populations will present with diverse religions and levels of religiosity, which may contribute to body and eating related outcomes distinctly between individuals (e.g., some individuals may fast or abstain from eating and/or drinking during religious observance, such as Lent or Ramadan). There is some evidence to suggest that while certain religious traditions (e.g., fasting) may increase the risk of developing disordered eating behaviours (e.g., Abraham & Birmingham,

2008; Akgül et al., 2014), other works have found that engagement with religion and spirituality is associated with positive body image (i.e., love, respect and acceptance of one's body; Tiggemann & Hage, 2019). Future research might therefore consider the development and validation of tools which are sensitive to such nuances across various Middle-Eastern populations, in turn, helping to minimise the risk of biases when measuring body and eating related outcomes in these populations.

A particularly interesting finding were the associations (generally small to medium relationships; Cohen, 2013) between perceived closeness in the mother-daughter relationship and body and eating related behaviours. We found that greater self-reported closeness in mother-daughter relationships, but not sister relationships, was associated with less perceived appearance pressures and fat talk exhibited by mothers, and a lower likelihood of engaging in appearance comparisons, body dissatisfaction and bulimia symptomatology. Given that no support was found for the associations between reported closeness in sister relationships and body and eating related variables, such that sisters did not add any influence beyond that of mothers, it appears that sisters provide less of a modelling effect than mothers when considering the role of closeness in relationships. Nonetheless, our aforementioned findings demonstrated the role of sisters in contributing to body and eating related outcomes via other pathways (e.g., appearance pressures and fat talk, appearance comparisons and internalisation of the thin-ideal). This is in line with some preliminary research which has similarly found that young women perceive their sisters to be influential contributors to their body image via the transmission of either positive or negative messages (e.g., Coomber & King, 2008; Deek et al., 2023; McCabe et al., 2006; Tsiantas & King, 2001). Overall, these findings are important given that female familial relationships in collectivistic family units, such as Middle-Eastern families, are considered to be closely linked and connected, and therefore, have the potential to be more positively influential in contrast to individualistic or Western

family units (Nasser, 2009; Soh et al., 2006). This is because the quality and closeness of familial relationships has been found to serve as a protective factor mitigating the risks of body dissatisfaction and disordered eating (Byely et al. 2000; Smith et al. 2016; Soh et al., 2006). Our findings suggest that the collectivistic structure of Middle-Eastern family units, in terms of closeness between mothers and daughters, could be positively associated with body image and eating behaviour outcomes. This is in line with the recent transition in the body image and eating disorder literature on the role of the family, by refocussing on how the mother-daughter relationship may have the potential to serve as a source of positive body image, i.e., body appreciation, and healthful eating behaviours, such as mindful or intuitive eating (Brun et al., 2020; Jones & Young, 2021; Maor & Cwikel, 2016; Webb, et al., 2018). Future investigations should consider the use of standardised measures (i.e., beyond a single item measure) to ascertain whether closeness in mother-daughter and sister relationships may serve as a protective factor against body and eating concerns in young Middle-Eastern women. Finally, we found that participants perceived greater appearance pressures to look a certain way from their mothers than their sisters, but mothers and sisters were perceived as exhibiting similar levels of fat talk. The finding that mothers were perceived as exhibiting greater appearance pressures and influence than sisters is consistent with previous research in Western populations (e.g., Arroyo & Andersen, 2016; Deek et al., 2023; MacDonald et al., 2015). It may be postulated that mothers are perceived as stronger sources of influence than sisters because they are universally considered the first source of socialisation, beginning from birth and continuing throughout the lifespan (Brun et al., 2020; Francis & Birch, 2005). However, in the context of Middle-Eastern families, mothers are considered to be particularly influential in modelling behaviours related to health and nutrition. For instance, the preparation and presentation of meals by Middle-Eastern mothers is thought to be a way of expressing love and care (Kulwicki, 2021). This love, and in turn, appreciation for mothers, is

expressed by family members eating wholeheartedly, reaching satiety and consuming nutritious foods, which in itself is viewed as good health (Kulwicki, 2021). Moreover, Aljayyousi-Khalil's (2013) doctoral dissertation found that when health behaviours of Middle-Eastern mothers were perceived by their daughters as positive, this in turn was found to positively shape and influence their own health behaviours, specifically, by preparing meals at home, attending family mealtimes, engaging in exercise and limiting high caloric food intake (e.g., fast food). Overall, these findings (i.e., Aljayyousi-Khalil, 2013; Kulwicki, 2021) demonstrate the way in which health and nutrition beliefs and values of Middle-Eastern mothers are transmitted within the family home environment, and particularly, in shaping young Middle-Eastern women's own health behaviours. Accordingly, our finding that greater appearance pressures from mothers, despite similar levels of fat talk between mothers and sisters, supports the notion that closeness in female familial relationships, together with the direct and indirect modelling of specific health behaviours, may contribute to the development of appearance-related beliefs.

Contrary to prediction, there were no significant differences between mother versus sisters in perceived fat talk. This is an interesting finding, given that previous work by Deek et al. (2023) found that young Australian women perceived their mothers to exhibit greater fat talk than their sisters. These differences could be explained by the living arrangements of participants across the two samples (i.e., Australian versus Middle-Eastern samples). Deek et al. (2023) investigated outcomes in what is typically considered to be an individualistic culture (i.e., Australian family units), as characterised by the demographics of their sample with only 63.2% of participants living at home with their mother and 43.6% living at home with at least one of their sisters. In contrast, the present study recruited participants from a population in which collectivistic familial values are more commonly observed, with the majority of participants living at home with their mother and at least one sister (79.7% and

68%, respectively). It is likely that being within the home environment affords a greater opportunity for young Middle-Eastern women (in contrast to Australian women) to overhear negative body-related conversations (i.e., fat talk), especially when these messages have the potential to be transmitted from multiple female family members (i.e., both mothers and sisters). Notably, this investigation is the first to investigate the role of negative body talk in a Middle-Eastern sample, and demonstrates that family fat talk appears to be consistent when considered within this population (MacDonald et al., 2015). Thus, the present findings provide preliminary support for the associations between appearance pressure and fat talk exhibited by female family members (mothers, sisters) in contributing to young Middle-Eastern women's body dissatisfaction and disordered eating behaviours. Future research could investigate whether these outcomes exist even when young Middle-Eastern women no longer live in the family home environment (e.g., moving out to live in their own home). Moreover, as fat talk is anecdotally believed to be prevalent across cultures, future research should also explore the potential nuances and variations of body talk outside Western culture. For example, it would be worth exploring whether fat talk is perceived similarly across cultural contexts as well as any distinct cultural factors around the nature and impact of such talk particularly in Middle-Eastern cultures.

The findings have important theoretical and clinical implications. The present study investigated for the first time the applicability of a theoretical model, specifically, a subsection of the Tripartite Influence Model, originally created and tested to explain body image and eating problems in Western populations, in a Middle-Eastern population. Namely, it investigated the role of female familial influences (mothers, sisters) in predicting young Middle-Eastern women's engagement in appearance comparisons and internalisation of the thin-ideal, and in turn, body dissatisfaction and disordered eating symptomatology. The findings afford future research the scope to further examine the associations between body

image and eating behaviour outcomes in Middle-Eastern populations, and importantly, to determine the potential influence of culture. Furthermore, unlike previous work which tends to conceptualise all family members as one construct and therefore limits the ability to draw conclusions on the distinct role of any one family member, our work provides a novel contribution by investigating disaggregated agents of female familial influence (i.e., mothers and sisters). Here we demonstrated some key cultural differences, such that participants perceived greater pressures to meet Western appearance-related ideals from their mothers than their sisters, and interestingly, in contrast to findings in Western samples (e.g., Deek et al. 2023), mothers and sisters were perceived as exhibiting similar levels of fat talk. Moreover, the results contribute to the validity of using the Tripartite Influence Model to guide hypotheses testing, and in turn, identify patterns that may underlie body dissatisfaction and disordered eating symptomatology among a hitherto understudied subgroup. Our findings also provide support for the inclusion of the role of fat talk within the Tripartite Influence Model, therefore demonstrating the potential to revise the model to include these novel pathways.

As body image and eating disorder interventions to date have been dominantly Westernised, this research has significant practical and clinical implications that could help inform the development of culturally-tailored interventions. Considering that current guidelines for the treatment of eating disorders recommend the inclusion of immediate family members, such as mothers and sisters, in the intervention process (e.g., Family-Based Treatment – FBT; Hage, 2019), future research could inform these interventions by further investigating the potential role of the mother-daughter-sister relationship and tailoring these to Middle-Eastern family units. Specifically, encouraging and educating female family members to transmit and model positive body image and eating cues to their daughters and sisters, could lead to positive outcomes within the family home environment mutually (i.e., a

reciprocal relationship forming the mother-daughter-sister triad; Jones & Young, 2021). Furthermore, our findings demonstrate the existence of direct and indirect relationships contributing to body image and eating concerns in young Middle-Eastern women, and highlights the need for early intervention programs which target these pathways before reaching clinical levels (i.e., eating disorders). Given that current treatment and intervention programs for eating disorders used in the Middle-East were originally developed for Western populations (e.g., Cognitive Behavioural Therapy– CBT; Safiri et al., 2022), it is important to build upon the present findings to determine whether these strategies are appropriate, effective and relevant for targeting these concerns in Middle-Eastern populations. This study provides preliminary indication of the potential contributing factors (i.e., sociocultural influences and mediating mechanisms) to body image and eating disorder concerns in young Middle-Eastern women, and may guide the development of culturally appropriate preventative strategies in the Middle-East. In particular, the present findings could inform treatment and intervention programs by considering the unique dynamics of female family members within Middle-Eastern family units. This could involve incorporating a shift from Western approaches which often focus on individualistic models, to interventions which emphasise the collectivistic and interconnected familial relationships of Middle-Eastern female family members.

In conclusion, our study provides novel data on the relationships between the perceived appearance pressures and fat talk by mothers and sisters on young Middle-Eastern women's levels of body dissatisfaction and disordered eating symptomology. The findings also have the potential to inform the development of culturally sensitive measures for assessing specific body image and eating beliefs in Middle-Eastern populations. Overall, the findings demonstrate support for the proposed relationships in a subsection of the Tripartite Influence Model beyond a Western population, and in so doing contributes to the generation

of new knowledge about eating behaviour and body image outside the Western world. Furthermore, this investigation adds to the growing body of literature suggesting that appearance comparisons and internalisation of the thin-ideal play a vital role in the development of body dissatisfaction both directly and indirectly. The rapid sociocultural changes observed in non-Western populations, specifically Middle-Eastern societies, highlights the need for culturally tailored body image and disordered eating programs and interventions which appropriately consider the broader family system.

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CHAPTER FOUR: THE ROLE OF FEMALE FAMILY MEMBERS IN RELATION TO BODY IMAGE AND EATING BEHAVIOUR: A CROSS-CULTURAL COMPARISON BETWEEN WESTERN AND MIDDLE-EASTERN CULTURES[3]

Abstract

While recent research has shifted toward investigating positive body image, gaps remain in our understanding beyond Western contexts. The present study investigated cross-cultural differences in the associations between perceived pressures from female family members (mothers and sisters) and both negative and positive body image and eating behaviour outcomes. Participants, aged 18 to 25 years, were recruited from both a Western (n = 486) and Middle-Eastern (n = 372) population, and completed an online survey measuring familial pressures and fat talk, internalisation, appearance comparisons, body dissatisfaction, disordered eating, body appreciation and mindful eating. Group comparisons and associations were examined using t-tests and correlations with Fisher r-to-Z transformation. Overall, both mothers and sisters were found to be important sources of appearance pressures. Results demonstrated similarities and differences in negative body image and eating behaviours across cultures. However, the major finding was clear. Middle-Eastern participants, compared to Western participants, demonstrated greater levels of body appreciation and certain mindful eating behaviours. Despite young Middle-Eastern women facing similar body image and eating concerns as Western women, they exhibit greater body appreciation which may mitigate these concerns. These findings extend our understanding of body image and eating

[3] Deek, M. R., Kemps, E., & Prichard, I. The role of female family members in relation to body image and eating behaviour: A cross-cultural comparison between Western and Eastern cultures. *Manuscript Under Revision.* [Submitted to *Body Image* journal 20 August 2024].

behaviour across cultures, and could inform the development of interventions which promote positive body image and healthful eating behaviours within the family environment.

Introduction

Body image research has tended to focus narrowly on negative body image, particularly, *body dissatisfaction* (Mills & Fuller-Tyszkiewicz, 2017). However, the notion of a more comprehensive and holistic conceptualisation of body image, calling for a shift toward *positive body image,* has emerged over time (i.e., Burychka et al., 2021; Avalos et al., 2005; Piran, 2015; Webb et al., 2018). *Positive body image* is defined as the process whereby an individual engages in positive appraisals of their body, with love and respect, appreciating strengths over imperfections, and discerningly interpreting body-related feedback (Tylka & Wood-Barcalow, 2015b). It consists of multiple facets, such as body appreciation, body functionality, and body flexibility, with the former a central and fundamental component of *positive body image* and its measurement (Swami et al., 2020; Swami et al., 2023; Tylka & Wood-Barcalow, 2015b). *Body appreciation* refers to one's acceptance of, favourable opinions toward, and respect for one's body (Tylka & Wood-Barcalow, 2015b). In contrast, *body dissatisfaction* refers to negative evaluations of one's body size, shape, and weight (Mills & Fuller-Tyszkiewicz, 2017; Tylka & Wood-Barcalow, 2015b). Although the *presence* of positive body image has previously been construed as the mere *absence* of negative body image, these constructs are not mutually exclusive (Tiggemann & McCourt, 2013). While both body dissatisfaction and body appreciation fall under the broader construct of body image, they are not opposite ends of a single continuum; rather, they represent related but distinct experiences that can and do coexist (Halliwell, 2015; Tiggemann & McCourt, 2013). Thus, research on *positive body image,* as distinct from *negative body*

image, is imperative to extending our understanding in the field of body image (Tylka & Wood-Barcalow, 2015a).

Notably, research has indicated that the experience of *positive body image* varies among Western and non-Western cultures, contributing to distinctions in how individuals from diverse cultural backgrounds perceive and appraise their physical appearance (Tylka & Wood-Barcalow, 2015a). In particular, research by Swami and colleagues (2009), which investigated the role of positive body image across cultures in the United Kingdom, found that women of Hispanic and African Caribbean ethnic backgrounds exhibited greater levels of body appreciation than women from Caucasian backgrounds. In contrast, women of South Asian backgrounds reported the lowest levels of body appreciation (Swami et al., 2009). These findings were attributed to greater exposure of South Asian women to Western media, giving rise to cultural conflicts between Western individualistic values, apparent in their interactions with Western society, and Eastern collectivistic styles, embedded through closely-linked and traditional familial values (Swami et al., 2009). More recently, Swami et al. (2023) investigated the cross-cultural nuances of positive body image via the Body Appreciation Scale-2 (BAS-2) across 65 Western (e.g., United States, United Kingdom, Australia) and non-Western (e.g., China, India, United Arab Emirates) cultures. They found that nations with greater "cultural distance" from Western countries, in terms of values, norms, beliefs and practices, exhibited greater levels of body appreciation (Swami et al., 2023). When compared to the United Kingdom, the countries with the greatest body appreciation were Malta, Taiwan, and Bangladesh, whereas the countries with the lowest body appreciation included India, the United Kingdom, and Australia (with Australia ranking last; Swami et al., 2023).

Of particular relevance to the present study, Swami et al. (2023) provided cross-cultural insights of positive body image specifically within Middle-Eastern populations. They found that among the Middle-Eastern countries included in the study, diverse levels of body appreciation were observed when compared to the United Kingdom. Specifically, Egypt displayed the highest levels of body appreciation, followed by Turkey, Saudi Arabia, Iran, Palestine, Bahrain, Lebanon, and lastly, the United Arab Emirates (UAE). Compared to these Middle-Eastern countries, Western countries, in particular Australia, the United Kingdom and the United States of America (USA) ranked last (Swami et al., 2023). It may be postulated that the varying levels of body appreciation observed among Middle-Eastern populations may be a result of the sustained influence of traditional Arab values, despite the role of Westernisation (Melisse et al., 2020).

In Middle-Eastern cultures, collectivistic values are common, such that individuals are more likely to place importance on the needs of the family than themselves (Melisse et al., 2020; Nasser, 2009). Conversely, Western cultures, with a more individualistic orientation, place a greater emphasis on individual needs, achievements, and appearances (Beitin & Aprahamian, 2014). In collectivistic contexts, body image and eating patterns may be less individually centred, as the emphasis is placed on the broader group or family (Nasser, 2009). In contrast, in individualistic cultures, the focus on the individual and appearance may contribute to greater social comparisons (e.g., appearance comparisons), as individuals are more likely to assess their self-worth based on others' physical attributes (Nasser, 2009). While Swami et al.'s (2023) investigation provides valuable insights into cross-cultural comparisons of body appreciation, it is important to note certain limitations in their approach. Notably, their study focussed primarily on assessing the relationships between body appreciation and various lifestyle outcomes, such as life satisfaction, financial security, and urbanicity, without delving into specific cultural correlates, such as social norms and values,

or family dynamics. In contrast, the present study seeks to address this gap by offering a more nuanced understanding, beyond Swami et al.'s (2023) investigation, of the relationship between family dynamics and body appreciation, which is imperative to understanding the influence of culture. More specifically, we aimed to examine the familial correlates of positive body image in both Western and non-Western populations by narrowing our scope to include only a single Western and Middle-Eastern country.

The inclusion of a Lebanese sample offers a particularly relevant context for examining the associations between familial influence and body image and eating behaviour outcomes. Compared to other Middle-Eastern countries, Lebanon has had greater exposure to Western influence, particularly through the media and in turn, promotion of Western beauty ideals (i.e., the Western thin-ideal); yet, it has maintained collectivist and traditional family values (Soubra et al., 2024, Zeeni et al., 2017). For instance, Lebanon has one of the highest levels of migration in the Middle-Eastern region, contributing to differing societal pressures and attitudes toward body image and eating behaviours, as individuals are often exposed to Western beauty standards while also navigating traditional expectations of their home culture (Abou-Rizk and Rail, 2014, Zeeni et al., 2017). Thus, Lebanon's cultural hybridity, specifically the integration of Western influence with traditional Middle-Eastern values, may make familial influence on body image and eating behaviour more complex.

More generally, women who have positive body image, or *body appreciation*, are thought to have grown up in a family environment that encourages them to focus on internal characteristics of the body with love, respect, and acceptance, rather than the value of the body externally (Tylka & Wood-Barcalow, 2015a; Webb et al., 2018). In contrast, women who have negative body image or *body dissatisfaction*, may have been raised in an environment where family members often engage in negative body talk (e.g., *fat talk*), which

may lead them to focus on environmental or other external cues for governing food consumption (Webb et al., 2018). Recent investigations by Deek et al. (2023; 2024) found that pressures to meet appearance ideals and fat talk from mothers and sisters were associated with greater appearance comparisons, internalisation of the Western thin-ideal, and in turn, body dissatisfaction, eating restriction and bulimic behaviours among young Western and Middle-Eastern women. Moreover, Deek et al. (2024) revealed that the collectivistic structure of Middle-Eastern family units, characterised by the perceived closeness between mothers and daughters, was linked to less pressure to attain appearance ideals and reduced fat talk from mothers. This closeness was also associated with fewer appearance comparisons, as well as lower body dissatisfaction and fewer bulimia symptoms in young Middle-Eastern women (Deek et al., 2024). Relatedly, a meta-analysis by Linardon et al. (2022) found an inverse association between body appreciation and levels of sociocultural pressures/influences to meet appearance ideals (i.e., less internalised pressures from the media and parents), and less critical caregiver messages related to body image or eating behaviours across Western and non-Western samples. More generally, increased levels of body appreciation have been associated with less negative body talk (i.e., conversations about weight loss and dieting) amongst women in Western cultures (Wasylkiw & Butler, 2014).

Webb et al. (2018) established that women who frequently overheard negative body talk within the Western family home environment had lower levels of *body appreciation,* and what they termed as healthful eating behaviours, *mindful eating*. *Mindful eating*, rooted in Eastern Buddhist teachings, may be described as a responsiveness to appetitive cues, which involves paying attention to and being aware of our food, being in the moment, and without judgement (Bush et al., 2014). Building upon this definition, Winkens et al. (2018) proposed four key domains for measuring mindful eating: the ability to eat while focussing on food, eating in response to hunger and satiety cues, being aware of one's eating, and eating without

distraction. A growing body of evidence supports the notion that mindful eating practices are effective in the treatment of eating disorders and the modification of problematic eating behaviours (e.g., restrained eating, bulimia; Beccia et al., 2018; O'Reilly et al., 2014; Wanden-Berghe et al., 2014). Cross-culturally, attitudes towards food and eating exhibit notable differences between individualistic (Western) and collectivistic (Eastern) societies. In individualistic cultures, there is a strong emphasis on personal accountability for health and eating behaviours, which can contribute to greater concerns around eating behaviour (Rodríguez-Arauz et al., 2016). In contrast, collectivistic cultures view food and eating as a means for strengthening social bonds and expressing cultural identity (Fekih-Romdhane et al., 2023; Rodríguez-Arauz et al., 2016). In these cultures, there is typically less focus on weight and body image concerns, and a greater emphasis on the social aspects of food and eating, which may promote positive eating practices, such as mindful eating. Relatedly, Masuda and Marshall (2018) demonstrated the role of mindfulness in moderating the association between eating disorder cognition, such as a fear of weight gain and perceived self-worth tied to self-control, and behaviour (e.g., binge eating, restricting) among diverse ethnic groups. Taken together, these findings indicate both cultural similarities and specific nuances in the relationships between mindful eating and disordered eating cognition and behaviour.

To the best of our knowledge, the study by Webb et al. (2018) is the sole investigation to date to have evaluated positive body image (body appreciation) and mindful eating in a Western family home environment. Their findings provide preliminary support for the influence of family members, such that less negative parental commentary (i.e., fat talk) positively predicted body appreciation and mindful eating in young women. However, the study did not provide participants with the opportunity to indicate which family member(s) they were referring to when responding to the questionnaire. It is possible that different

sociocultural influences, such as mothers or sisters, may yield different outcomes in the context of body image and eating behaviour across cultures (e.g., as found by Deek et al., 2023 and Deek at al., 2024). The generalisability of Webb et al.'s (2018) findings are also confined to a Western population. Given Masuda and Marshall's (2018) findings of an association between mindfulness and eating disorder cognition and behaviour among diverse ethnic groups, it is important to consider potential cultural/ethnic differences in the relationship between mindful eating behaviours, and body and eating related outcomes across Western and non-Western populations.

Thus, the overarching aim of this research was to investigate the variables of female familial pressures, and body image and eating behaviour outcomes, across Western and Middle-Eastern cultures. Specifically, we sought to ascertain whether there are cross-cultural differences in the perceived appearance pressures from mothers and sisters on both *negative* and *positive* body image (body dissatisfaction and body appreciation) and eating behaviour (disordered eating symptomatology and mindful eating) outcomes. This aim was investigated in two ways. First, and based on the findings of Deek et al.'s (2023, 2024), separate investigations in Western (Australian) and Middle-Eastern (Lebanese) samples, we compared participants from both cultural backgrounds. We hypothesised that Western and Middle-Eastern participants would report similar levels of perceived mother and sister appearance pressures and fat talk, as well as comparable levels of thin-ideal internalisation, appearance comparisons, body dissatisfaction, and disordered eating symptomatology (drive for thinness/restriction and bulimia). We also predicted that the strength of the relationships between perceived maternal and sister appearance pressures, fat talk, and self-exhibited fat talk with negative body image and eating behaviours would be different across the groups, with Western women exhibiting significantly stronger associations compared to Middle-Eastern women. Second, we aimed to investigate female familial interactions and their

specific contribution to *positive* body image and eating behaviours, specifically, *body appreciation* and *mindful eating*, across Western and Middle-Eastern cultures. Given the unique interplay of Westernisation and enduring traditional values in Middle-Eastern countries, we predicted that young Middle-Eastern women, in contrast to young Western women, would report greater body appreciation and mindful eating behaviours (Fekih-Romdhane et al., 2023; Masuda & Marshall, 2018; Rodríguez-Arauz et al., 2016; Swami et al., 2023). Furthermore, based on the close familial bonds typically observed in collectivistic Middle-Eastern cultures (Deek at al., 2024), we predicted that familial pressures would be more strongly related to positive body image (body appreciation) and eating behaviour (mindful eating) in Middle-Eastern women than in Western women.

Methods

Participants

The study sample comprised 858 young women aged between 18 and 25 years. Four-hundred and eighty-six participants were recruited from Australia and 372 participants from Lebanon, and are hereon referred to as the Western or Middle-Eastern sample/participants, respectively. Western participants were recruited online via survey sharing websites (Prolific; $n = 253$), the Flinders University student population first year psychology pool ($n = 164$) and Facebook ($n = 69$), and received course credit or a $5 AUD e-Gift voucher for their participation. Middle-Eastern participants were recruited online from the Lebanese American University (LAU) student population via an email ($n = 246$), Instagram ($n = 118$) and Prolific ($n = 8$), and had the opportunity to enter into a raffle draw to receive a monetary reimbursement for their time. The inclusion criteria were: (a) individuals who identified as women/female, (b) aged 18 to 25 years old, (c) lived in Australia (Western sample), or, were either born in, lived or previously lived in a Middle-Eastern country, and/or identified with

Middle-Eastern ethnicity (Middle-Eastern sample), and (c) had a person they most identified with as their ‘mother-figure’.

Measures

Demographics

A demographic measure was administered to gather the following variables: age, gender, country of birth, race/ethnicity, and self-reported height and weight from which body mass index (BMI; kg/m^2) was calculated. Participants were asked to identify the person they most associate with as their 'mother-figure' (e.g., biological mother, step-mother). For consistency and conciseness, these figures are collectively referred to as 'mothers' throughout this manuscript. Participants were also asked to indicate whether they have any sisters and, if so, their relation (e.g., biological sister, step-sister). Furthermore, participants provided demographic details about their mothers and if applicable, sister(s), including age and country of birth, as well as information regarding cohabitation. Following Deek et al. (2024), they were also asked to indicate the perceived closeness of their relationship with their mother and sister(s), measured on a 100 mm visual analogue scale ranging from 'not at all close' to 'extremely close'.

Mothers’ and sisters’ appearance pressures

The Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-4R; Schaefer et al., 2017) was used to measure respondents’ perceived pressure to achieve societal appearance ideals. Specifically, items from the Pressures subscales were employed, including the Pressures – Family (4-items) scale, which was adapted following Deek et al. (2023; 2024) to measure perceived pressure from mothers (e.g., “I feel pressure from my mother to look thinner”), and the Pressures – Peers Scale (4-items), where the wording was

adapted to reflect appearance pressure from sister(s) (e.g., “I feel pressure from my sister(s) to improve my appearance”). Participants rated each item on a 5-point scale ranging from 1 (*Definitely Disagree*) to 5 (*Definitely Agree*), with higher mean scores indicating greater perceived levels of appearance pressures. These subscales have previously demonstrated good internal consistency among a sample of Australian women aged 18-25 years (Cronbach's ∝ of Pressures – Family = .89; Cronbach's ∝ of Pressures – Peers = .89; Shagar et al., 2019) and in a sample of Lebanese women aged 18–39 years (Cronbach's ∝ of Pressures – Family =.93; Pressures – Peers =.96; Hage, 2019). The current modified subscales also demonstrated good internal consistency (Western sample: Cronbach's ∝ of Pressures – Family [mothers] = .91; Cronbach's ∝ of Pressures – Peers [sister(s)] = .91; Middle-Eastern sample: Cronbach's ∝ of Pressures – Family [mothers] = .88; Cronbach's ∝ of Pressures – Peers [sister(s)] = .90).

Mothers’ and sisters’ fat talk and self-exhibited fat talk

The Family Fat Talk Questionnaire (FFTQ; MacDonald et al., 2015) measures negative body-related conversations within the family context. Modifications were made to the item wording following Deek et al. (2023; 2024). The Self Scale (8-items; e.g., “When I’m with my mother [or sisters], I complain that my arms are too flabby”) measures the respondents’ engagement in negative comments concerning their body when in the presence of their mother or sister(s). The Family Scale (8-items, e.g., “When I’m with my mother [or sisters], I hear her complain that her arms are too flabby”), assesses fat talk exhibited by the respondents’ family members, including criticism related to their own physical appearance. Responses are rated on a 5-point Likert scale ranging from 1 (*Never*) to 5 (*Always*). Higher mean scores indicate greater levels of overhearing or engaging in fat talk within the female family context. Previous validation work has demonstrated excellent internal consistency of

both subscales in a sample of ethnically diverse undergraduate students (Cronbach's ∝ of Self = 0.88 and Family = 0.90; Macdonald et al., 2015). The current revised subscales also demonstrated good internal consistency (Western sample: Cronbach's ∝ of Self [around mother] = .88; Family [mothers] = .92 Self [around sister(s)] = .92; Family [sister(s)] = .92; Middle-Eastern sample: Cronbach's ∝ of Self [around mother] = .89; Family [mothers] = .93; Self [around sister(s)] = .92; Family [sister(s)] = .93).

Physical appearance comparisons

The 11-item Physical Appearance Comparison Scale-Revised (PACS-R; Schaefer & Thompson, 2014) was employed to measure participants' tendencies to compare their physical appearance with that of others. Items are rated on a 5-point Likert scale from 0 (*Never*) to 4 (*Always*), where higher scores indicate greater frequency of engaging in physical appearance comparisons. The PACS-R has previously demonstrated good internal consistency in Australian female university students (Cronbach's ∝ = .91; Robinson et al., 2017) and amongst ethnically diverse college women (Cronbach's ∝ = .96-.97; Schaefer et al., 2015). It also demonstrated good internal consistency in the current study (Western sample: Cronbach's ∝ = .97; Middle-Eastern sample: Cronbach's ∝ = .96).

Internalisation of appearance ideals

Another two subscales of the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-4R; Schaefer et al., 2017) were used to assess participants' levels of internalising appearance ideals. The two subscales were the: Internalisation – Thin/Low Body Fat Scale (4-items) and Internalisation – General Attractiveness Scale (6-items). Higher scores indicate greater levels of internalisation of appearance ideals. These subscales have previously demonstrated good internal consistency in samples of young women across

Western (Cronbach's ∝ of Internalisation – Thin/Low Body Fat = .82; Cronbach's ∝ of Internalisation – General Attractiveness = .87; Schaefer et al., 2017) and Eastern (Cronbach's ∝ of Internalisation – Thin/Low Body Fat = .84; Cronbach's ∝ of Internalisation – General Attractiveness = .86; Cihan et al., 2016) cultures. The current modified subscales also demonstrated good internal consistency (Western: Cronbach's ∝ of Internalisation – Thin/Low Body Fat = .86; Cronbach's ∝ of Internalisation – General Attractiveness = .87; Middle-Eastern: Cronbach's ∝ of Internalisation – Thin/Low Body Fat = .85; Cronbach's ∝ of Internalisation – General Attractiveness = .84).

Body dissatisfaction and disordered eating symptomatology (drive for thinness/restriction and bulimia)

The Eating Disorder Inventory (EDI; Garner et al., 1983) was used to measure body dissatisfaction and disordered eating symptomatology, specifically, drive for thinness/restriction and bulimia. The three subscales included were the Body Dissatisfaction Scale (9 items), Drive for Thinness (Restriction) Scale (7 items) and Bulimia Scale (7 items,). Items are rated on a 6-point Likert scale from 0 (*Never*) to 6 (*Always*). As recommended by Schoemaker and colleagues (1994) for non-clinical samples, the entire range of possible scores was used, such that higher scores indicated greater body dissatisfaction, drive for thinness/restriction and bulimia symptomology. The Eating Disorder Inventory (EDI) has previously demonstrated excellent internal consistency for the three subscales in a Western (Cronbach's ∝ of Body Dissatisfaction = .91; Drive for Thinness/Restriction = .91; Bulimia = .80; Hendrickse et al., 2017, Keel et al., 2007) and Eastern (Cronbach's ∝ of Body Dissatisfaction = .88; Drive for Thinness/Restriction = .92; Bulimia = .88; Alsulaiman & El Keshky, 2019) non-clinical sample of women. The subscales in the current sample also demonstrated acceptable internal consistency (Western: Cronbach's ∝ of Body

Dissatisfaction = .88; Drive for Thinness/Restriction = .91; Bulimia = .89; Middle-Eastern: Cronbach's ∝ of Body Dissatisfaction = .88; Drive for Thinness/Restriction = .92; Bulimia = .88).

Body appreciation

The Body Appreciation Scale (BAS-2; Tylka & Wood-Barcalow, 2015b) was administered to measure general body appreciation. The 10-item scale assesses individuals' acceptance of favourable opinions toward, and respect for their bodies. Items are rated on a 5-point Likert scale from 1 (*Never*) to 5 (*Always*), with higher mean scores indicating greater body appreciation. The Body Appreciation Scale (BAS-2) has previously demonstrated excellent internal consistency in a sample of undergraduate female university students living in England and Wales (Cronbach's ∝ = .90; Slater et al., 2017), and across Western and Eastern cultures (Cronbach's ∝ = .91-.96; Razmus et al., 2020). Internal consistency in the current sample was also excellent (Cronbach's ∝ for Western sample = .95; Cronbach's ∝ for Middle-Eastern sample = .96).

Mindful eating

The Mindful Eating Behavioural Scale (MEBS; Winkens et al., 2018) was administered to measure mindful eating practices. The 17-item scale measures the level of four domains of the attention element of mindful eating: Focused Eating (5 items), Eating with Awareness (3 items), Eating in response to Hunger and Satiety Cues (5 items), and Eating without Distraction (4 items). Items are rated on a 5-point Likert scale from 1 (*Never*) to 5 (*Very Often*). Due to low inter-factor correlations, the computation of a total score is not recommended; therefore, total subscale scores were computed, with higher mean scores indicating greater levels of mindful eating (Winkens et al., 2018). The Mindful Eating

Behavioural Scale (MEBS) has previously demonstrated acceptable convergent validity and internal consistency of all subscales (Cronbach's ∝ of Focused Eating = .77; Eating with Awareness = .91; Eating in Response = .83; Eating without Distraction .72) in undergraduate students living in the United Kingdom (Keyte et al., 2020). The MEBS has also demonstrated good internal consistency in a predominantly female sample (over 80%) of Lebanese adults with a mean age of 30.22 years (Cronbach's ∝ of Focused Eating = .85; Eating with Awareness = .89; Eating in Response = .89; Eating without Distraction .70; Awad et al., 2024). The subscales also demonstrated acceptable internal consistency in the current sample (Western: Cronbach's ∝ of Focused Eating = .78; Eating with Awareness = .88; Eating in Response = .85; Eating without Distraction = .69; Middle-Eastern: Cronbach's ∝ of Focused Eating = .71; Eating with Awareness = 87; Eating in Response = .84; Eating without Distraction = .75).

Procedure

The study was approved by the Flinders University Human Research Ethics Committee (Project ID 4472) and Lebanese American University's (LAU) Institutional Review Board (IRB) (Project Code LAU.SAS. MM11.7). Participants were invited to complete an online quantitative cross-sectional survey administered via Qualtrics and were told that the study examined "factors that may influence people's body image and eating behaviour". A total time commitment of approximately 15 minutes was required. After providing informed consent, participants completed the following measures, in order: demographics (self, mother, and if applicable, sisters), levels of mindful eating, perceived appearance pressures and internalisation of the thin ideal, familial and self-fat talk, body appreciation, engagement in appearance comparisons, body dissatisfaction and disordered eating symptomatology (drive for thinness/restriction and bulimia), and height and weight.

Data Analytic Plan

Data preparation

Data preparation and analyses were conducted using IBM SPSS v27. Missing data at the variable level were minimal (≤ 5.5 %), and Little's Missing Completely at Random (MCAR) test (Little, 1988) indicated that the data were likely missing completely at random, $\chi^2 = 132.574$, df = 128, p = .373. Consequently, no imputation was applied, and pairwise deletion was used for the analyses (Kline, 2023). The dataset was examined for normality and multicollinearity. Extreme skewness was defined as absolute values > 3, and kurtosis > 10 indicated potential issues (Kline, 2023, Weston & Gore, 2006). None of the variables displayed significant skewness or kurtosis, suggesting that the data were normally distributed. Multicollinearity was assessed using Variance Inflation Factor (VIF) values. All VIF values were below 10, indicating no issues with multicollinearity (Weston & Gore, 2006).

Hypotheses testing

Several statistical analyses were conducted to address the study aims and test the hypotheses. First, independent samples t-tests were performed to determine whether there were group differences between the Western and Middle-Eastern samples in perceived appearance pressures and fat talk from mothers and sisters, self-exhibited fat talk, thin-ideal internalisation, appearance comparisons, body dissatisfaction, disordered eating symptomatology (drive for thinness/restriction and bulimia), body appreciation and mindful eating behaviours. Second, Pearson correlation analyses were conducted to examine the relationships between familial pressures and fat talk, self-exhibited fat talk, and body image and eating behaviour outcomes across both cultural groups. In addition, Fisher r-to-Z transformations were used to assess whether the strength of these relationships differed between the Western and Middle-Eastern samples.

Results

Sample characteristics

Western participants (N = 486) had a mean age of 20.80 years (SD = 2.28) and a mean body mass index (BMI) of 24.09 kg/m^2 (SD = 6.17). All Western participants resided in Australia and the majority were born in Australia (79%). Middle-Eastern participants (N = 372) had a mean age of 20.69 (SD = 2.32) and a mean body mass index (BMI) of 23.24 kg/m^2 (SD = 4.80). The majority of Middle-Eastern participants were born in Lebanon (85.5%) and also resided in Lebanon (92.8%). All participants identified a "mother-figure", with the majority identifying their biological mother (Western: 95.7%; Middle-Eastern: 95.4%). Most mothers of Middle-Eastern participants were born in the same country in which data was collected, i.e., Lebanon (90.1%). In contrast, only 59.5% of mothers of Western participants were born in Australia; the remaining 40.5% were born in various other countries (6.3% United Kingdom; 3.3% China; 3.1% India; 2.7% Malaysia; 2.3% Vietnam; 2.0% Philippines; 1.4% New Zealand; 1.2% Sri Lanka; 1.0% Canada; 0.8% Pakistan, South Africa, United States, Zimbabwe; 0.6% Hong Kong, Italy, Lebanon, Scotland, Singapore, Taiwan, Thailand, Turkey; 0.4% Cambodia, Chile, Croatia, East Timor, France, Indonesia, Iraq, Ireland, Japan, Papua New Guinea, Portugal, Romania, Russia; 0.2% Argentina, Austria, Bosnia, Brazil, Congo, Eritrea, Germany, Iran, Korea, Laos, Montenegro, Netherlands, Poland, Qatar, Serbia, Slovakia, Spain, Sweden, Syria, Wales). Additionally, 63.6% of Western and 78% of Middle-Eastern participants reported living at home with their mother. Middle-Eastern participants (M = 80.07, SD = 21.01) indicated, on average, a closer relationship with their mothers than Western participants (M = 77.28, SD = 22.44), $t(856) = 1.85$, $p = .06$, $d = 0.13$.

More than half of participants across the Western (56.8%) and Middle-Eastern (66.1%) samples reported having at least one sister (M = 1.46 sisters, SD = 0.83 for the Western sample; M = 1.51, SD = 0.79 for the Middle-Eastern sample). In the Western sample, participants identified their sister relationships as either biological (75%), half-sister (18.8%), step-sister (4.2%), biological twin sister (1.5%), or adoptive sister (0.5%). In the Middle-Eastern sample, participants identified their sister relationships as either biological (93.5%), half-sister (3.2%), biological twin sister (2.2%), other (0.8%), or adoptive sister (0.3%). Living at home with at least one sister was reported by 45.5% of Western participants and 67.2% of Middle-Eastern participants. Middle-Eastern participants (M = 80.94, SD = 20.22) reported significantly greater perceived closeness with their sisters than Western participants (M = 72.06, SD = 23.80), $t(518.03) = 4.55$, $p < .001$, d = 0.40.

The role of mothers and sister(s) in body image and eating behaviour outcomes across Western versus Middle-Eastern samples

A series of independent samples *t*-tests were conducted to determine whether differences existed in outcome measures based on the role of mothers and sister(s), and between the Western and Middle-Eastern samples. The results are presented in Table 1 for the main sample examining the role of mothers and Table 2 for the subsample of participants who also reported having (a) sister(s). Middle-Eastern participants reported experiencing significantly greater perceived appearance pressure from their mothers, and exhibiting greater fat talk around their mothers, than Western participants. For those participants who indicated having (a) sister(s), Middle-Eastern participants reported significantly greater perceived pressure to meet appearance-related ideals and overhearing fat talk from their sister(s), in addition to a greater likelihood of exhibiting fat talk around their sister(s) than Western participants. Middle-Eastern participants also showed significantly greater body appreciation

and mindful eating behaviours, specifically, eating with awareness and without distraction, than Western participants. In contrast, Western participants were significantly more likely to engage in appearance comparisons than Middle-Eastern participants. There were no other statistically significant differences (refer to Tables 1 and 2).

Table 1

Measure scales, means (and standard deviations), and inferential statistics for the study variables across cultures (Western and Middle-Eastern samples) for the main sample of participants who reported having a mother.

		Culture		
		Western (*N* = 486)	**Eastern (*N* = 372)**	
	Scale Range	Mean *(SD)*	Mean *(SD)*	Inferential Statistic
Mother's appearance pressures	1-5	2.45 (1.25)	2.83 (1.21)	$t(844) = 4.42$, $p < .001$, $d = 0.31$*
Self-exhibited fat talk around mother	1-5	1.88 (0.80)	2.22 (0.97)	$t(668.89) = 5.35$, $p < .001$, $d = 0.39$*
Mother's fat talk	1-5	2.48 (1.01)	2.58 (1.11)	$t(719.66) = 1.38$, $p = .17$, $d = 0.10$
Internalisation of the thin ideal	1-5	3.93 (0.71)	3.91 (0.71)	$t(849) = -0.25$, $p = .81$, $d = -0.02$
Appearance comparisons	0-4	2.24 (1.07)	1.85 (1.15)	$t(818) = -4.93$, $p < .001$, $d = -0.35$*
Disordered eating – Drive for thinness/restriction	1-6	3.45 (1.27)	3.54 (1.45)	$t(641.79) = 0.95$, $p = .34$, $d = 0.07$
Disordered eating – Bulimia	1-6	2.56 (1.13)	2.68 (1.20)	$t(809) = 1.39$, $p = .17$, $d = 0.10$
Body dissatisfaction	1-6	3.65 (1.04)	3.53 (1.17)	$t(648.90) = -1.50$, $p = .07$, $d = -0.11$
Body appreciation	1-5	3.24 (0.85)	3.52 (1.01)	$t(641.72) = 4.27$, $p < .001$, $d = 0.31$*
Mindful eating – Focussed eating	1-5	4.08 (0.60)	4.08 (0.62)	$t(856) = .12$, $p = .91$, $d = 0.01$
Mindful eating – Eating in response	1-5	3.27 (0.84)	3.24 (0.93)	$t(752.56) = -.52$, $p = .60$, $d = -0.04$
Mindful eating – Eating with awareness	1-5	3.44 (0.98)	3.58 (1.04)	$t(856) = 1.98$, $p = .05$, $d = 0.14$*
Mindful eating – Eating without distraction	1-5	2.64 (0.72)	2.85 (0.87)	$t(712.01) = 3.85$, $p < .001$, $d = 0.27$*

Note. Significant group differences ($p < .05$) are marked by an *.

Table 2

Measure scales, means (and standard deviations), and inferential statistics for the study variables across cultures (Western and Middle-Eastern samples) for the subsample of participants who also reported having (a) sister(s).

		Culture		
		Western (*n* = 276)	**Eastern (*n* = 246)**	
	Scale Range	Mean *(SD)*	Mean *(SD)*	Inferential Statistic
Sister's appearance pressures	1-5	1.97 (1.07)	2.22 (1.13)	$t(503) = 2.46$, $p = .01$, $d = 0.22$*
Self-exhibited fat talk around sisters	1-5	2.00 (0.93)	2.24 (1.04)	$t(455.42) = 2.69$, $p = .01$, $d = 0.24$*
Sister's fat talk	1-5	2.03 (0.92)	2.42 (1.11)	$t(432.88) = 4.15$, $p < .001$, $d = 0.38$*
Internalisation of the thin Ideal	1-5	3.97 (0.67)	3.88 (0.71)	$t(514) = -1.49$, $p = .14$, $d = -0.13$
Appearance comparisons	0-4	2.29 (1.05)	1.82 (1.14)	$t(493) = -4.69$, $p < .001$, $d = -0.42$*
Disordered eating – Drive for thinness/restriction	1-6	3.59 (1.26)	3.55 (1.46)	$t(427.57) = -0.26$, $p = .80$, $d = -0.02$
Disordered eating – Bulimia	1-6	2.65 (1.12)	2.65 (1.20)	$t(488) = -0.04$, $p = .97$, $d = 0.004$
Body dissatisfaction	1-6	3.70 (1.00)	3.53 (1.16)	$t(425.80) = -1.71$, $p = .09$, $d = -0.16$
Body appreciation	1-5	3.19 (0.84)	3.54 (1.01	$t(425.02) = 4.22$, $p < .001$, $d = 0.39$*
Mindful eating – Focussed eating	1-5	4.07 (0.60)	4.09 (0.64)	$t(520) = 0.29$, $p = .77$, $d = 0.03$
Mindful eating – Eating in response	1-5	3.20 (0.84)	3.22 (0.91)	$t(520) = 0.32$, $p = .75$, $d = 0.03$
Mindful eating – Eating with awareness	1-5	3.43 (1.00)	3.53 (1.04)	$t(520) = 1.17$, $p = .24$, $d = 0.10$
Mindful eating – Eating without distraction	1-5	2.67 (0.71)	2.86 (0.88)	$t(468.45) = 2.75$, $p < .001$, $d = 0.24$*

Note. Significant group differences ($p < .05$) are marked by an *.

Relationships between study variables and the role of mothers and sister(s) between the Western and Middle-Eastern samples

Pearson correlations coefficients can be seen in Table 3 for the overall sample and Table 4 for the subsample of participants who also reported having (a) sister(s). Across both cultural groups, significant positive correlations were found between perceived mother appearance pressures and self-exhibited fat talk around mothers, as well as between mother appearance pressures and mother fat talk. Moreover, self-exhibited fat talk around mothers was positively correlated with mother fat talk across both groups. Fisher r-to-Z transformation showed significant differences between the Western and Middle-Eastern samples in the strength of the relationship between self-exhibited fat talk around mothers and mother fat talk, with these associations being stronger in the Western sample, $Z = -2.92$, $p < .001$. There was a comparable pattern (i.e., appearance pressures, and self-exhibited and sister fat talk) concerning the role of sister(s). However, the strength of these sister(s) relationships was not significantly different between the Western and Middle-Eastern samples.

Table 3

Pearson correlation coefficients for the study variables across cultures for the main sample of participants who reported having a mother (*N* Western = 486; *N* Middle-Eastern = 372).

		Culture	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Mother's appearance pressures	Eastern	-												
		Western	-												
2	Self-exhibited fat talk around mother	Eastern	**.37****	-											
		Western	**.37****	-											
3	Mother's fat talk	Eastern	**.39****	**.25****	-										
		Western	**.38****	**.43****	-										
4	Internalisation	Eastern	**.26****	**.48****	**.18****	-									
		Western	**.21****	**.36****	**.19****	-									
5	Appearance comparisons	Eastern	**.34****	**.53****	**.35****	**.61****	-								
		Western	**.28****	**.46****	**.30****	**.68****	-								
6	Disordered eating – Drive for thinness/restriction	Eastern	**.39****	**.62****	**.24****	**.71****	**.67****	-							
		Western	**.30****	**.52****	**.27****	**.73****	**.70****	-							
7	Disordered eating – Bulimia	Eastern	**.40****	**.52****	**.31****	**.45****	**.59****	**.61****	-						
		Western	**.35****	**.44****	**.27****	**.41****	**.54****	**.65****	-						
8	Body dissatisfaction	Eastern	**.38****	**.56****	**.19****	**.47****	**.64****	**.67****	**.60****	-					
		Western	**.39****	**.45****	**.21****	**.57****	**.61****	**.70****	**.57****	-					
9	Body appreciation	Eastern	**-.23****	**-.48****	**-.19****	**-.46****	**-.65****	**-.54****	**-.53****	**-.68****	-				
		Western	**-.29****	**-.29****	**-.14****	**-.47****	**-.55****	**-.54****	**-.49****	**-.70****	-				
10	Mindful eating – Focussed eating	Eastern	**-.14****	**-.11***	-0.07	-0.02	**-.21****	**-.17****	**-.32****	**-.26****	**.22****	-			
		Western	-0.05	-0.02	0.01	**.12****	0.08	0.02	**-.10***	-0.06	**.10***	-			
11	Mindful eating – Eating in response	Eastern	**-.26****	**-.38****	**-.16****	**-.32****	**-.45****	**-.46****	**-.58****	**-.47****	**.51****	**.30****	-		
		Western	**-.25****	**-.22****	**-.16****	**-.30****	**-.35****	**-.45****	**-.54****	**-.45****	**.44****	**.27****	-		
12	Mindful eating – Eating with awareness	Eastern	**-.22****	**-.32****	**-.14****	**-.19****	**-.30****	**-.30****	**-.56****	**-.33****	**.24****	**.32****	**.38****	-	
		Western	**-.18****	**-.33****	**-.20****	**-.17****	**-.25****	**-.27****	**-.50****	**-.25****	**.19****	**.20****	**.30****	-	
13	Mindful eating – Eating without distraction	Eastern	**-.12***	**-.15****	**-.13***	**-.20****	**-.24****	**-.21****	**-.25****	**-.19****	**.15****	**.14****	**.13***	**.32****	-
		Western	**-.11***	**-.15****	**-.16****	-0.04	**-.12***	-0.09	**-.22****	**-.15****	0.06	**.17****	**.16****	**.38****	-

Note. Significant correlation coefficients (**$^{**}p < .01$, $^{*}p < .05$) are boldfaced.

Table 4

Pearson correlation coefficients for the study variables across cultures for the subsample of participants who also reported having a sister(s) (*N* Western = 276; *N* Middle-Eastern = 246).

		Culture	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Sister(s) appearance pressures	Eastern	-												
		Western	-												
2	Self-exhibited fat talk around sister(s)	Eastern	**.49****	-											
		Western	**.42****	-											
3	Sister(s) fat talk	Eastern	**.41****	**.40****	-										
		Western	**.42****	**.48****	-										
4	Internalisation	Eastern	**.18****	**.49****	**.20****	-									
		Western	**.24****	**.37****	**.20****	-									
5	Appearance comparisons	Eastern	**.29****	**.59****	**.31****	**.65****	-								
		Western	**.37****	**.50****	**.27****	**.66****	-								
6	Disordered eating – Drive for thinness/restriction	Eastern	**.35****	**.63****	**.29****	**.69****	**.69****	-							
		Western	**.32****	**.55****	**.29****	**.73****	**.69****	-							
7	Disordered eating – Bulimia	Eastern	**.28****	**.55****	**.23****	**.46****	**.60****	**.62****	-						
		Western	**.22****	**.47****	**.22****	**.41****	**.51****	**.66****	-						
8	Body dissatisfaction	Eastern	**.35****	**.63****	**.29****	**.47****	**.62****	**.66****	**.60****	-					
		Western	**.35****	**.49****	**.21****	**.59****	**.60****	**.73****	**.57****	-					
9	Body appreciation	Eastern	**-.25****	**-.46****	**-.17***	**-.46****	**-.62****	**-.53****	**-.54****	**-.67****	-				
		Western	**-.22****	**-.36****	**-.17****	**-.54****	**-.60****	**-.58****	**-.51****	**-.71****	-				
10	Mindful eating – Focussed eating	Eastern	**-.15***	**-.18****	0.02	-0.02	**-.16***	**-.15***	**-.27****	**-.22****	**.17***	-			
		Western	0.1	0.1	**.12***	**.20****	0.09	0.06	-0.09	-0.03	0.05	-			
11	Mindful eating – Eating in response	Eastern	**-.18****	**-.40****	-0.09	**-.31****	**-.45****	**-.43****	**-.58****	**-.46****	**.49****	**.29****	-		
		Western	**-.14***	**-.20****	-0.09	**-.26****	**-.29****	**-.41****	**-.53****	**-.42****	**.40****	**.23****	-		
12	Mindful eating – Eating with awareness	Eastern	**-.17****	**-.27****	**-.14***	**-.25****	**-.33****	**-.33****	**-.56****	**-.33****	**.29****	**.30****	**.40****	-	
		Western	-0.08	**-.30****	**-.16****	**-.12***	**-.22****	**-.26****	**-.54****	**-.23****	**.19****	**.22****	**.29****	-	
13	Mindful eating – Eating without distraction	Eastern	**-.16***	**-.20****	**-.26****	**-.20****	**-.30****	**-.23****	**-.31****	**-.24****	**.17***	0.1	0.09	**.32****	-
		Western	-0.08	-0.09	**-0.06**	0.03	-0.06	-0.02	**-.17****	-0.1	0.03	**.20****	**.12***	**.39****	-

Note. Significant correlation coefficients (**$^{**}p < .01$, *$p < .05$) are boldfaced.

In addition, perceived mother and sister(s) appearance pressures, self-exhibited fat talk and mother and sister(s) fat talk, were positively correlated with internalisation of the thin-ideal, appearance comparisons, disordered eating symptomology (drive for thinness/restriction and bulimia) and body dissatisfaction in both the Western and Middle-Eastern samples. Significant cultural differences were observed in the strength of the relationships between self-exhibited fat talk around mothers and internalisation of the thin ideal ($Z = 2.08$, $p = 0.04$), self-exhibited fat talk and disordered eating symptomology (drive for thinness/restriction; $Z = 2.07$, $p = 0.04$), and self-exhibited fat talk and body dissatisfaction ($Z = 2.06$, $p = 0.04$), with the Middle-Eastern sample demonstrating stronger associations across all these relationships. The strength of the correlation between sisters' fat talk and body dissatisfaction also differed significantly between the Western and Middle-Eastern samples, with the Middle-Eastern sample exhibiting a stronger relationship, $Z = 2.24$, $p = 0.02$.

Furthermore, body appreciation, and the mindful eating behaviours of eating in response and eating with awareness, were significantly negatively correlated with all study variables for both cultures from the overall main sample. Fisher r-to-Z transformation indicated that the strength of these relationships, specifically, between self-exhibited fat talk around mother and body appreciation ($Z = -3.15$, $p < .001$), appearance comparisons and body appreciation ($Z = -2.20$, $p = 0.03$), and self-exhibited fat talk and eating in response (around mother: $Z = -2.51$, $p = 0.01$; around sister(s): $Z = -2.44$, $p = 0.01$), was significantly stronger in the Western sample in comparison to the Middle-Eastern sample. In contrast, there were no significant cultural differences in the relationships with eating with awareness.

Finally, the mindful eating variables of focussed eating and eating without distraction exhibited mixed results across both cultural groups for the overall main sample. Specifically,

in the Western sample, focussed eating was not significantly associated with mother's appearance pressures, self-exhibited fat talk, mother's fat talk, appearance comparisons, disordered eating (drive for thinness/restriction) and body dissatisfaction. In contrast, among the Middle-Eastern sample, focussed eating was significantly negatively correlated with all of these variables, except mother's fat talk and internalisation of the thin-ideal. Furthermore, the relationship between bulimia symptomatology and focussed eating was significantly different between the Western and Middle-Eastern samples, with the Western sample demonstrating stronger associations, $Z = -3.22$, $p = p < .001$. Although eating without distraction was significantly correlated with all study variables within the Middle-Eastern sample, non-significant results emerged between eating without distraction, and internalisation, disordered eating symptomatology (drive for thinness/restriction) and body appreciation in the Western sample. Using the Fisher r-to-Z transformation, there were no other significant cultural differences in the relationships between eating without distraction and any of the study variables.

Discussion

While body image concerns and eating disorders are evident on a global scale, the construct of positive body image, as distinct from negative body image, especially in the context of Middle-Eastern societies, remains largely unexplored (Tiggemann, 2015; Tylka & Wood-Barcalow, 2015a). The present study sought to expand upon our current understanding of body image and eating behaviour outcomes by investigating the variables in relation to female familial appearance pressures across Western and Middle-Eastern cultures. Specifically, the study aimed to determine whether cross-cultural differences exist in the perceived appearance pressures from mothers and sisters on both *negative* and *positive* body image (body dissatisfaction and body appreciation) and eating behaviour (disordered eating

symptomatology and mindful eating) outcomes. In addition, the strength of the relationships between perceived maternal and sister appearance pressures, fat talk, and body image and eating behaviour outcomes was examined and compared across the Western and Middle-Eastern samples. The findings indicated both similarities and differences in body image and eating behaviour outcomes across cultures. Western and Middle-Eastern participants similarly reported experiencing pressures from mothers and sisters regarding appearance, engaging in fat talk, and exhibiting heightened body dissatisfaction and disordered eating behaviours. The major finding was that Middle-Eastern participants, compared to Western participants, exhibited greater body appreciation and some mindful eating behaviours, specifically, eating with awareness and without distraction. These findings suggest that although young Middle-Eastern women, like their Western counterparts, are vulnerable to body image and eating concerns, they have relatively high body appreciation which may serve to mitigate these risks.

Overall, in the current study, there were varied findings regarding cross-cultural differences in *negative* body image and eating behaviour outcomes across the Western and Middle-Eastern samples. Participants from both the Western and Middle-Eastern samples reported experiencing similar levels of mother fat talk, internalising the Western thin-ideal, body dissatisfaction and engaging in disordered eating behaviours (drive for thinness/restriction and bulimia). These findings are not in line with earlier research which has found that the prevalence of thin-ideal internalisation, body dissatisfaction and disordered eating outcomes in women from Western countries tends to be greater than those from non-Western countries (Schaefer et al., 2019; Swami et al., 2010; Makino et al., 2004). However, the present findings may be understood in the context of the rapid cultural, social and economic changes undergone in the Middle-East (Abdoli et al., 2024; Melisse et al., 2020; Musaiger, 2015). It has been postulated that countries with more substantial history of

Western influence or "Westernisation", which is pertinent to the Arab world, may place greater importance on body image, centred around the desire to achieve the Western thin-ideal (Jill Thompson et al., 2020; Melisse et al., 2020). Exposure to Western media and consequently, globalisation of Western beauty ideals which alter perceptions of body image (i.e., from plumpness to thinness), shifts from traditional dietary patterns to high caloric, low-nutrient Western-style diets, urbanisation, and in turn, an increase in sedentary behaviours and social withdrawal, are all factors postulated to have contributed to changes in the body image and eating behaviours of Middle-Eastern populations (Azzeh et al., 2022; Safiri et al., 2023). These aforementioned factors likely also contribute to a mother's own body and eating-related concerns, which may in turn be transmitted via negative body talk, i.e., *fat talk*, within the family home environment (Deek et al., 2023; Deek et al., 2024). Thus, these findings align with the notion that body dissatisfaction and disordered eating symptomatology are not "Western-bound" constructs, but rather occur comparably across certain Western and Middle-Eastern societies (Keski-Rahkonen et al., 2018; Melisse et al., 2020).

Although there were no cross-cultural differences in perceived levels of mother's fat talk, it is interesting to note that Middle-Eastern participants reported experiencing greater perceived appearance pressure from their mothers, and exhibited greater fat talk around their mothers, than Western participants. This finding suggests stronger maternal pressure related to attaining appearance ideals in Middle-Eastern family units. Given the collectivistic values held in Middle-Eastern cultures, familial influences on body image and eating behaviours may play a stronger role for young women than they do in Western cultures (Beitin & Aprahamian, 2014; Melisse et al., 2020). A possible explanation for the finding that young Middle-Eastern women exhibited greater fat talk around their mothers than young Western women, is that young Middle-Eastern women may feel more comfortable to disclose their

body-related concerns via fat talk around their mothers. This is in line with researchers (i.e., Beitin & Aprahamian, 2014; Kulwicki, 2021) defining the parent-child relationship in Middle-Eastern societies as particularly important in terms of closeness across the lifespan, in contrast to Western parent-child relationships, in which young adulthood is seen as a time for acquiring one's own identity. Moreover, Middle-Eastern mothers have been found to view their daughters as extensions of themselves; this connected view, in turn, likely facilitates interactions which reinforce emotional closeness and openness in conversations, albeit including disclosure of body-related criticisms (Beitin & Aprahamian, 2014).

The findings also revealed notable differences across cultures between young women's self-exhibited fat talk, and body and eating related concerns. In particular, the findings suggest that in Middle-Eastern cultures, there is a stronger relationship (in contrast to Western cultures) between engaging in fat talk and internalising the Western thin-ideal, experiencing body dissatisfaction, and disordered eating symptomology (drive for thinness/restriction). This suggests that in Middle-Eastern cultures, discussions centred around negative body talk (i.e., fat talk) are likely a greater predictor of young Middle-Eastern women feeling dissatisfied about their bodies and engaging in disordered eating behaviours, in contrast to young Western women. A systematic review and meta-analysis by Mills and Fuller-Tyszkiewicz (2017) provided support for the relationships of engagement in fat talk and thin-ideal internalisation, and fat talk and body dissatisfaction; however, the reviewed studies included predominantly White, Caucasian samples. There is also a vast amount of evidence for the association between women's engagement in fat talk and disordered eating symptomology (for a review, see Shannon & Mills, 2015). Some researchers (i.e., Lau et al., 2006; Phan & Tylka, 2006; Sabik et al., 2010) have proposed that greater cultural identity may increase, rather than mitigate, the association between women's body dissatisfaction and drive for thinness/eating restriction. However, the relationship

between cultural and familial appearance pressures, and fat talk, remains largely unexplored, and remains to be defined as a Western-bound construct, although our findings contradict this (Shannon & Mills, 2015; Sladek et al., 2018).

In addition, the relationship between self-exhibited fat talk and mother fat talk was significantly stronger in the Western sample compared to the Middle-Eastern sample. This is an important finding as it suggests that fat talk may be more of a reciprocal activity within Western family units, such that mothers and daughters may mutually perpetuate negative body-related conversations. In support, Engeln and Salk (2016) argued that fat talk is likely driven by sociocultural influences, noting that mothers, daughters and sisters, engage in fat talk, and likely do so with one another across both Western and non-Western cultures. Moreover, while appearance-related pressures transmitted by mothers are internalised by young women universally, and potentially have a greater impact in Middle-Eastern cultures, mother fat talk may not be interpreted in the same way. In Middle-Eastern cultures, mother fat talk may not be viewed as a form of 'negative' body talk and could be interpreted differently than in Western contexts (Halliwell, 2015). This raises an important question about the cross-cultural validity of existing fat talk measures, such as the Family Fat Talk Questionnaire (FFTQ; MacDonald et al., 2015), which was employed in the present study. Although the FFTQ was developed with an ethnically diverse sample, it may not fully capture the cultural nuances specific to Middle-Eastern populations. Given that fat talk is a relatively new area of research, future work should explore the broader impacts of body talk in Middle-Eastern populations and whether a more nuanced cultural understanding of the concept is required.

We further found that Western participants, compared to Middle-Eastern participants, reported a greater tendency to compare their physical appearance with that of others. To date,

there is limited research examining physical appearance comparisons beyond samples of Western women, although Deek et al.'s (2023; 2024) separate investigations determined that young Western and Middle-Eastern women engaged in appearance comparisons which contributed to their levels of body dissatisfaction and disordered eating symptomology. In terms of cross-cultural comparisons, Schaefer et al. (2015) found cultural differences in appearance comparisons between White, Hispanic and African American women. Their findings revealed that White and Hispanic women engaged in greater appearance comparisons when compared to African American women. In building upon this, our investigation is the first of its kind to examine and compare the association between familial appearance pressures, appearance comparisons, and body image and eating behaviour outcomes in specific Western and Middle-Eastern populations. The observation that women in Middle-Eastern cultures engaged in fewer appearance comparisons than those in Western cultures could be explained by the individualistic versus collectivistic values held in these societies (Melisse et al., 2020; Nasser, 2009). In Western societies, such as that of Australia, individualistic values tend to place emphasis on personal success, autonomy and physical appearance as central to one's identity and self-worth, which in turn, are likely to drive greater upward social comparisons (Schaefer et al., 2015). In contrast, in collectivistic cultures, like Lebanon, although there is still an emphasis on individual appearance as a marker of self-worth, beauty, more broadly, is not only driven by individual needs and achievements (Beitin & Aprahamian, 2014). El Jurdi and Smith (2018) found that the beauty ideals of Lebanese women are simultaneously constructed by individual and national/group identity. Specifically, while Lebanese women do engage in appearance comparisons, they differ from Western women in that they align their beauty ideals with that of other individuals, in addition to their broader cultural group (El Jurdi & Smith, 2018). This is considered to be a key component of collectivistic cultures for expressing and maintaining an

identity and a sense of belonging within their group (Melisse et al., 2020; Nasser, 2009). Overall, our findings suggest that while there are some similarities in the drivers of appearance comparisons, there are distinct differences in Middle-Eastern cultures which may mitigate the strength of these relationships, such as cultural and group identity.

Interestingly, there were cross-cultural differences for perceived levels of sisters' appearance pressures, self-exhibited fat talk around sisters and sisters' fat talk. Specifically, Middle-Eastern participants reported greater perceived pressure to meet appearance-related ideals, a higher likelihood of exhibiting fat talk around their sisters, and more frequently overhearing fat talk from their sisters. We also found that the relationship between sisters' fat talk and participants' body dissatisfaction was significantly stronger in the Middle-Eastern sample compared to the Western sample. Overall, these findings suggest that Middle-Eastern sisters are more likely to disclose their own fat talk, and thus have a greater influence, as their fat talk was more strongly related to young Middle-Eastern women's own body dissatisfaction. Sisters, being closer in age to participants compared to their mothers, may be more likely to disclose their own negative body talk due to having similar cultural and societal experiences and expectations, in which fat talk is potentially more normalised (Johnson & Salafia, 2022). Moreover, sibling relationships, while initially forming in early childhood and typically influenced by family, take on characteristics similar to peer relationships and continue to be influential into early adulthood (Johnson & Salafia, 2022; Lamb et al., 2014). In the case of Middle-Eastern sibling relationships, collectivistic familial values likely further strengthen these bonds, leading to greater closeness and interaction between siblings. This is supported by our finding that Middle-Eastern participants reported significantly greater perceived closeness with their sisters than Western participants. This closeness likely positions sisters in Middle-Eastern cultures as greater sources of influence when compared to Western sibling relationships, with a role akin to that of peers in shaping

body image concerns throughout adulthood (Coomber & King, 2008; Deek et al., 2024; Whiteman et al., 2011).

Novel to the present study was the examination of *positive body image* and *eating behaviour* outcomes across a Western and Middle-Eastern population. Our findings demonstrated that although young Middle-Eastern women experienced similar levels of body dissatisfaction as their Western counterparts, they reported significantly higher body appreciation. In support of our findings, Tiggemann and McCourt (2013) suggest a complex interplay between body dissatisfaction and body appreciation by challenging our understanding of body image as either entirely positive or negative; they argue that these constructs can and do occur simultaneously, as confirmed by our findings for young Middle-Eastern women. Moreover, our findings are consistent with Jill Thompson et al. (2020) and Swami et al. (2023) in that participants from Middle-Eastern samples demonstrated greater body appreciation than participants from Western samples. Our findings also indicated that in Western cultures, self-exhibited fat talk around mothers and levels of appearance comparisons were more strongly associated with lower body appreciation than in Middle-Eastern cultures. Halliwell (2015) proposed that individuals with greater positive body image may engage in less fat talk and fewer appearance-related comparisons, opting instead for downward and/or functionally-related comparisons with close comparison targets, such as family and friends. In support, participants in our Middle-Eastern sample demonstrated greater body appreciation, and engaged in less fat talk and appearance comparisons, whereas Western women who engaged in more fat talk and appearance comparisons were more likely to experience lower body appreciation. While the present study focused specifically on the disaggregated influence of female family members, it did not address whether these family members were considered as comparison targets. It would be insightful for future research to explore whether female family members serve as comparison targets as well as the nature of

these comparisons (e.g., upward or downward comparisons; Coomber & King, 2008; Strahan et al., 2006).

To the best of our knowledge, few studies have investigated mindful eating practices within a Middle-Eastern population, and only one study (i.e., Awad et al., 2024) has investigated the four key domains of mindful eating, as proposed by Winkens et al. (2018), in a Lebanese sample. As expected, our findings demonstrated that Middle-Eastern participants, in contrast to Western participants, reported a relatively greater ability to eat with awareness and without being distracted. However, contrary to our predictions, there were no cultural differences in participants' abilities to eat while focussing on food, and eating in response to their hunger and satiety cues. These findings suggest a cultural inclination towards some mindful eating practices in Middle-Eastern societies; however, other aspects of mindful eating appear to be universally practiced regardless of cultural background. Moreover, we found that all four domains of mindful eating (i.e., focussed eating, eating in response, eating with awareness and eating without distraction), were positively associated with greater body appreciation across both Western and Middle-Eastern cultures, except for eating without distraction, which was not related to body appreciation in the Western sample. Body appreciation has been found to be associated with mindful eating practices in Western cultures, and mindful-eating interventions have been found to improve levels of body appreciation (Bush et al., 2014; Webb et al., 2018). Interestingly, in line with the findings for our Western sample, Awad et al. (2024) found positive associations between body appreciation, and focussed eating, eating in response, and eating with awareness, but not eating without distraction, in a predominantly female (82.2%) Lebanese sample. This apparent contradiction could be explained by differences in sample demographics, particularly age, with Awad et al.'s (2024) sample having a mean age of 30.22 years compared to our samples' mean age of around 20 years. Notably, Awad et al. (2024) found

that older age was significantly associated with less eating without distraction, which could account for the lack of association between body appreciation and eating without distraction in their predominantly older sample. In considering the role of female family members, a novel component of the present study, almost all domains of mindful eating practices, except for focussed eating, were negatively associated with mothers' and sisters' appearance pressures and fat talk across cultures. While existing studies, such as that of Webb et al. (2018), have explored the role of family members in body appreciation and mindful eating outcomes, no research has investigated the relationships between specific domains of mindful eating and the role of individual family members. This is important as our findings demonstrate a unique interplay of the role of female family members on positive body image and eating behaviour outcomes in different cultural contexts, and further contributes to a more comprehensive understanding of mindful eating practices.

Like all research, the present study has some limitations that warrant consideration. First, the majority of participants in the Middle-Eastern sample were either born in or resided in Lebanon at the time of completing the survey, which may limit the generalisability of the findings to the broader Middle-Eastern populations (Frederick et al., 2022). While Lebanon shares common features with other Middle-Eastern countries, such as traditional collectivistic values, its unique sociocultural context, shaped by its historical and ongoing exposure to Westernisation, presents notable differences (Melisse et al., 2024, Soubra et al., 2024, Zeeni et al., 2013). Future researchers could expand samples to include individuals from African and Middle-Eastern populations with less exposure to Westernisation, such as Egypt, Jordan and Yemen, to specifically address cultural dimensions of familial values, such as collectivism and individualism, and relational closeness, which while discussed, were not directly measured here. Another limitation is that the measures of appearance pressures (i.e., SATAQ-4R, FFTQ) were originally developed for Western populations, which may not fully

capture sociocultural influences specific to non-Western cultures. This raises concerns about the measurement invariance of these tools across cultural groups (Lacko et al., 2022). While the findings provide insight into the role of familial appearance-related pressures in Middle-Eastern populations, future research would benefit from a qualitative approach to determine the extent to which body image concerns in Middle-Eastern populations align with or diverge from Western beauty ideals and pressures versus local cultural norms. Finally, the study included body mass index (BMI) as a demographic variable to describe the sample; however, future research could consider incorporating perceived or subjective body size measures, which may better reflect individual and culturally relevant perceptions of health (Gutin, 2018).

The present study has some important theoretical and practical implications. Theoretically, the findings demonstrate the ways in which body image and eating behaviours are similarly and differentially expressed in a Western versus non-Western culture. In so doing, they advance our understanding of sociocultural influences by examining the nuanced role of individual family members, specifically, mothers and sisters. This highlights the importance of investigating individual family relationships, rather than treating family influence as a combined variable (Webb et al., 2018). Relatedly, research has traditionally focussed on interventions which target body dissatisfaction and disordered eating (Guest et al., 2019). However, our findings demonstrate a need to also focus on factors which promote positive body image and healthful eating behaviours, even in the presence of negative body image and disordered eating behaviour (Nolen & Panisch, 2022). Given the shared body and eating concerns across cultures, global interventions should prioritise reducing appearance-related pressures within the family home, while also promoting positive body image and mindful eating practices (Halliwell, 2015). Moreover, the findings have the potential to inform the development of targeted interventions and public health strategies (such as

educational programs) that address the specific needs of different cultural groups (Koreshe et al., 2023). For Middle-Eastern contexts, the study underscores the importance of involving family members, especially mothers and sisters, in interventions aimed at developing positive body image and healthful behaviours (Guest et al., 2019; Tiggemann, 2015). While in Western contexts, in addition to considering the role of the family, interventions may also explicitly focus on reducing appearance comparisons and negative body talk.

In sum, the present study makes an important contribution to the literature by investigating both negative and positive body image and eating behaviour outcomes across Western and Middle-Eastern cultures. Despite young Middle-Eastern women experiencing body image and eating concerns, they have relatively greater body appreciation and certain levels of mindful eating compared to their Western counterparts, which may serve as potential protective factors. Moreover, the findings highlight the disaggregated role of female family members and further underscores the unique relationship between mothers, daughters and sisters, thereby emphasising the need for culturally tailored family-based interventions. Further research is needed to grow the body of evidence on the coexistence of negative and positive body image across cultures in order to contribute to the development of culturally sensitive measures and interventions.

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CHAPTER FIVE: GENERAL DISCUSSION

Overview

The purpose of this final chapter **(Chapter 5)** is to discuss and synthesise the key findings of the studies presented in this thesis. It will also address the broader theoretical and practical/clinical implications of these findings, and highlight the strengths and novel contributions of this work to the existing literature. Additionally, the chapter will address the limitations of the research and propose directions for future research. Finally, the chapter will close with a summary of the main conclusions.

Summary of Aims and Key Findings

As discussed in **Chapter 1**, this thesis had three overarching aims. First, it aimed to examine the coexistence of *negative* and *positive* body image and eating behaviours in young women, building upon the notion that these constructs are not mutually exclusive but rather exist simultaneously (Bailey et al., 2017; Tiggemann, 2015; Tiggemann, 2024). Second, it investigated these dynamics within the context of sociocultural influences, focussing specifically on the role of female familial relationships. In particular, a modified version of the Tripartite Influence Model (Thompson et al., 1999; Thompson & Stice, 2001) was applied to examine the disaggregated role of female familial influence, specifically, mothers and sisters, as distinct sources of sociocultural influence/pressure. To this end, **Chapter 2** and **Chapter 3** examined how mothers and sisters may contribute to specific risk factors, such as appearance-related influence/pressure and negative body talk (i.e., fat talk), in shaping young women's negative body image and problem eating behaviours. In addition to examining these negative pathways, **Chapter 4** aimed to investigate whether female family members are positioned to also foster positive body image and eating behaviour outcomes (Brun et al.,

2021; Hillard et al., 2016; Linardon et al., 2022; Webb et al., 2018). Third, the thesis examined these themes across both Western and non-Western cultural contexts, thereby informing our understanding of body image and eating behaviours beyond Western frameworks (Rodgers et al., 2023; Romano et al., 2020).

Female Familial Influence on Western Women's Body Image and Eating Behaviour

Based on these overarching aims, the first study **(Chapter 2)** employed a cross-sectional survey design to examine a modified version of the Tripartite Influence Model (Thompson et al., 1999; Thompson & Stice, 2001), specifically investigating the disaggregated role of female familial influence, in addition to the role of fat talk within a Western culture. The study examined how young Australian women's engagement in physical appearance comparisons and internalisation of the Western thin-ideal mediated the relationships between appearance-related pressures/influence and fat talk from mothers and sisters in contributing to negative body image and eating behaviour outcomes. It was found that young Australian women who reported greater perceived appearance pressures and fat talk from both their mothers and sisters experienced greater body dissatisfaction and were more likely to engage in disordered eating behaviours, i.e., eating restriction and bulimia symptomology. These relationships were mediated by the frequency of young women comparing their physical appearance to that of others and internalising the Western thin-ideal. Overall, these findings align with previous research investigating the broader role of the family on young Western women's appearance comparisons, internalisation, body dissatisfaction and disordered eating behaviours within the Tripartite Influence Model (Johnson et al. 2015; Rodgers et al., 2011; Van den Berg et al., 2002). Additionally, they reflect the distinct influence of mothers (Abramovitz & Birch, 2000; Balantekin, 2019; Brun et al., 2020; Francis & Birch, 2005; Hillard et al., 2016; McCabe & Ricciardelli, 2003) and

sisters (Coomber & King, 2008; Greer et al., 2015; Keery et al., 2005; McCabe et al., 2006; Preston, 2010; Rodgers et al., 2014; Tsiantas & King, 2001) on young women's maladaptive body image and eating outcomes.

Notably, key differences were observed in the role of fat talk from mothers and sisters. While fat talk from both mothers and sisters was indirectly associated with body dissatisfaction through engagement in appearance comparison, it was also directly and indirectly related via thin-ideal internalisation. This finding supports the notion that familial conversations around weight and appearance, such as negative body talk, can shape young women's body image concerns both directly by reinforcing thin-ideal internalisation and indirectly through increased engagement in physical appearance comparisons (Arroyo & Andersen, 2016; Chow & Tan, 2018; Corning & Gondoli, 2012; Greer et al., 2015; Jones & Young, 2021; Keery et al., 2005; Rogers et al., 2017). Moreover, differences emerged in how participants perceived their mothers and sisters as sources of influence, such that maternal input regarding appearance pressures and fat talk, in contrast to sister input, was perceived as a stronger source of influence. These results are consistent with previous studies indicating that mothers are significant sources of influence compared to other family members (e.g., fathers or siblings; Balantekin, 2019; Brun et al., 2021; Damiano et al., 2015; Rodgers et al., 2009). Moreover, this study uniquely investigated sister fat talk for the first time, with no prior research comparing its role alongside that of mothers or other family members, despite evidence to indicate that sisters directly and indirectly model body image concerns and eating behaviours (Coomber & King, 2008; Tsiantas & King, 2001). Overall, **Chapter 2** presented support for a modified version of the Tripartite Influence Model, which investigated for the first time disaggregated agents of female familial influence, in addition to the role of fat talk within a Western population.

The Role of Mothers and Sisters in a Non-Western Culture

The rising rates of body image and eating concerns globally suggest that young women across both Western and non-Western cultures are increasingly impacted (Rodgers et al., 2023). The ongoing adoption of Western values in non-Western countries, particularly in the Middle-East, has introduced unrealistic Western beauty ideals, contributing to the growing prevalence of body dissatisfaction and disordered eating in these regions (Melisse et al., 2024). As such, it was important to consider whether the familial relationships and associated negative pathways identified in **Chapter 2** would also hold in a non-Western culture such as the Middle-East. Accordingly, the second study **(Chapter 3)** aimed to extend the findings of the first study by investigating whether the same mother-daughter-sister relationship in shaping young women's body dissatisfaction and disordered eating symptomology exists among young Middle-Eastern women. In addition to the appearance pressures and fat talk of mothers and sisters, the study also investigated the role of familial closeness in mother-daughter and sister relationships given the collectivistic structure of Middle-Eastern family units (Fatehi et al., 2020; Humphrey & Bliuc, 2021; Tohme et al., 2024).

The overall findings from Study 2 were in line with those of a Western cultural context (i.e., Study 1, **Chapter 2**); the mother-daughter-sister relationship was associated with young Middle-Eastern women's body dissatisfaction and disordered eating symptomology (bulimia and restriction), and these relationships were mediated by appearance comparisons and internalisation of the Western thin-ideal. Moreover, fat talk was indirectly related to body dissatisfaction via appearance comparisons, and directly and indirectly related to body dissatisfaction through thin-ideal internalisation. These findings were consistent with ongoing research that indicates growing concerns around body image

and eating behaviours among young Middle-Eastern women (e.g., Azzeh et al., 2022; Kronfol et al., 2018; Melisse et al., 2020; Melisse et al., 2024; Nakhoul et al., 2022; Thomas & Galadari, 2022). However, there remains a notable gap in studies specifically examining the unique role of female familial influences within the Tripartite Influence Model among Middle-Eastern women. Study 2 was the to first address this gap, in addition to investigating the role of fat talk, thereby offering novel insights into how the mother-daughter-sister relationship contributes to body image dissatisfaction and disordered eating behaviours in this previously understudied population (Holmqvist & Frisén, 2010; Rodgers et al., 2023).

Another important finding was the difference in perceived influence between mothers and sisters. Young Middle-Eastern women reported experiencing greater appearance pressures from their mothers than their sisters, supporting the notion that mothers are stronger sources of familial influence across cultures (Brun et al., 2021; Dahill et al., 2021; Damiano et al., 2015; Hillard et al., 2016; Shaban et al., 2018; Yaffe et al., 2023). However, unlike the Western sample (i.e., Study 1, **Chapter 2**), where mothers were perceived as the primary source of fat talk, Middle-Eastern women reported similar levels of fat talk from both their mothers and sisters. This finding may reflect the collectivistic values commonly observed in Middle-Eastern cultures, specifically the close familial relationships among female family members, which likely foster an environment where concerns about appearance are openly discussed, albeit with negative outcomes (Beitin & Aprahamian, 2014; Tohme et al., 2024).

Although levels of fat talk were perceived similarly across mothers and sisters, the closeness of the mother-daughter and sister relationships was associated with different body- and eating-related outcomes. This finding was demonstrated through the study's novel examination of the perceived closeness of female familial relationships. It was found that greater closeness in mother-daughter relationships, but not sister relationships, was associated

with lower appearance pressures and fat talk, and less appearance comparisons, body dissatisfaction and bulimia symptomology. These findings underscore the unique dynamics of familial influences in collectivistic cultures, demonstrating how the closeness of mother-daughter relationships may mitigate negative body image and eating outcomes, even when negative body talk, such as fat talk, is present. Supporting literature in Western contexts highlights similar trends, indicating that close familial relationships, particularly maternal relationships, could positively influence body image and eating outcomes (Byely et al., 2000; Gonçalves et al., 2020; Smith et al., 2016; Tetley et al., 2014). However, less is known regarding the mother-daughter-sister relationship and body image and eating behaviour outcomes in Middle-Eastern cultures (Ostovarfar et al., 2023; Shaban et al., 2018).

Collectively, the study findings further supported a modified version of the Tripartite Influence Model and demonstrated its applicability in a non-Western, Middle-Eastern and understudied population. Given that existing body image and eating disorder interventions are primarily Westernised, there is a need for research to inform the development of culturally sensitive interventions that address the unique cultural nuances of non-Western cultures, particularly in the Middle-East (Chua et al., 2020; Hage, 2019; Jones & Young. 2021, Safiri et al., 2022). The maintenance of collectivistic values in Middle-Eastern family units highlights the need for interventions to consider the distinctive influence of female family members in shaping body image and eating behaviour outcomes.

A Cross-Cultural Comparison of the Mother-Daughter-Sister Relationship

Recent calls in the literature have emphasised not only the need to address gaps in understanding how female familial influence contribute to body dissatisfaction and disordered eating, but also to determine whether these relationships may be instrumental in promoting positive body image and eating outcomes (Arroyo et al., 2017; Brun et al., 2021;

Laboe et al., 2022; Rodgers et al., 2024). In recognising that the mother-daughter-sister relationship contributes to body image dissatisfaction and disordered eating symptomology among young women across cultures, the third study **(Chapter 4)** aimed to build upon the findings of **Chapter 2** and **Chapter 3** by examining whether these relationships were also associated with positive body image and eating behaviours. Specifically, the study investigated cross-cultural differences in perceived appearance pressures/influence from mothers and sisters, and how these relate not only to *negative* body image (body dissatisfaction) and eating behaviours (disordered eating symptomology), but also to *positive* body image (body appreciation) and eating behaviours (mindful eating).

Cross-cultural similarities and differences emerged regarding *negative* body image and eating behaviour outcomes. Young women from both Western and Middle-Eastern cultures reported similar levels of mother fat talk, internalisation of the Western thin-ideal, body dissatisfaction and disordered eating. These findings are particularly interesting given that earlier investigations had indicated that negative body image and eating outcomes tend to be more pronounced in Western populations (Makino et al., 2004; Schaefer et al., 2019). However, consistent with recent research, the findings demonstrated that body image dissatisfaction and disordered eating are global concerns, with rates in non-Western countries comparable to those observed in Western countries (Galmiche et al., 2019; Rodgers et al., 2023; Van Eeden et al., 2021). This is not surprising, considering the Middle-East's ongoing adoption of Western values through Westernisation, which transmits negative body and eating related messages aligned with the Western thin-ideal (Holmqvist & Frisén, 2010; Melisse et al., 2024; Thomas & Galadari, 2022).

Moreover, Middle-Eastern participants reported experiencing greater perceived appearance pressure from their mothers and engaging in more frequent fat talk around their

mothers than their Western counterparts. Middle-Eastern participants also reported greater perceived pressure to meet appearance-related ideals from their sisters, as well as a greater likelihood of exhibiting and overhearing fat talk within their sister relationships. These findings align with the close-knit nature of familial relationships often observed in Middle-Eastern cultures, particularly due to the maintenance of traditional and collectivistic values that underscore the significant role of the family (Beitin & Aprahamian, 2014; Kulwicki, 2021; Melisse et al., 2024; Tohme et al., 2024). This suggests that, for young Middle-Eastern women, familial influences on body image and eating behaviours may be more pronounced compared to their counterparts in Western cultures, where individualistic values can lead to a greater focus on external sources of pressure, such as peers or the media (Beitin & Aprahamian, 2014; Fatehi et al., 2020). In addition, Western participants reported a greater tendency to compare their physical appearance with that of others, compared to Middle-Eastern participants, which further supports existing literature highlighting the emphasis on individual appearance prevalent in Western cultures where individualistic values are common (El Jurdi & Smith, 2018; Schaefer et al., 2015). Notably, the relationship between self-exhibited fat talk and mother fat talk was significantly stronger in the Western sample compared to the Middle-Eastern sample, indicating that negative body image discussions may be more reciprocal between mothers and daughters in Western cultures. This finding aligns with the only study to have investigated these relationships across cultures (i.e., Engeln & Salk, 2016), which reported a mutual reinforcement of fat talk among family members. However, the lack of research on fat talk in non-Western cultures limits our interpretation and understanding of these findings (Halliwell, 2015; MacDonald et al., 2015; Shannon & Mills, 2015).

Novel to the present study was the investigation of *positive* body image and eating behaviours, and significant cultural differences were found. Middle-Eastern participants

exhibited greater levels of body appreciation and were more likely to engage in some mindful eating practices, particularly in terms of eating with awareness and without distraction. These findings align with limited prior research indicating that Middle-Eastern populations generally report higher levels of body appreciation compared to their Western counterparts (Swami et al., 2023; Thompson et al., 2020). Additionally, the observed cultural differences in mindful eating practices are consistent with studies suggesting that collectivistic values, common in non-Western cultures, promote more mindful eating behaviours (Awad et al., 2024; Elran-Barak et al., 2020; Ju et al., 2024; Kulwicki, 2021). Notably, no studies to date have simultaneously investigated these two positive pathways, i.e., body appreciation and mindful eating practices, within Middle-Eastern cultural contexts and familial dynamics. Moreover, there appeared to be a greater perceived closeness in female familial relationships among Middle-Eastern participants compared to their Western counterparts, with Middle-Eastern participants reporting significantly greater closeness to their sisters. This familial closeness may foster an environment where body appreciation and mindful eating coexist, even amid body dissatisfaction and disordered eating symptomology, as supported by ongoing works on the coexistence of positive and negative body image constructs (Tiggemann, 2015; Tiggemann, 2024).

In sum, these findings highlight the nuanced interplay of female familial influences on both negative and positive body image and eating behaviours across cultures. Despite facing similar body and eating concerns, young Middle-Eastern women demonstrated relatively higher levels of body appreciation and some mindful eating behaviours. Broadly speaking, the present study responds to calls in the literature by investigating the role of female familial influence on young women's negative and positive body image and eating behaviours across both Western and non-Western cultures. Importantly, it is the first to examine how female

family members uniquely contribute to positive body image and eating behaviours within two distinct cultural contexts.

Integration of Key Findings

Theoretical Implications

Collectively, the present studies offer important and novel theoretical contributions. Previous research on the risk factors for body image and disordered eating behaviours has often been limited by the absence of robust theoretical frameworks to guide hypothesis testing and interpretation of findings (Keery et al., 2004; Stice, 2001). **Chapter 2** and **Chapter 3** of this thesis addressed this gap by using an empirically tested model, specifically the Tripartite Influence Model (Thompson et al., 1999; Thompson & Stice, 2001), to investigate these risk factors, and thereby build upon the model in three key ways. First, cross-sectional model testing supported a modified version of the Tripartite Influence Model by examining how specific female members contribute to body dissatisfaction and disordered eating behaviours via appearance pressures and negative body talk (i.e., fat talk). Previous applications of the model often treated family influence as a singular, undifferentiated construct, disregarding the unique role that different family members (e.g., mothers, fathers, sisters and brothers) may play (Burke et al., 2021; Kakar et al., 2023). As proposed by the Tripartite Influence Model, it was found that the mother-daughter-sister relationship was directly associated with young Western and Middle-Eastern women's body dissatisfaction and disordered eating symptomology, and these relationships were also indirectly related by mediating pathways (via comparisons and internalisation). By disaggregating these influences, the present research provides a more nuanced understanding by highlighting the distinct pathways through which these female familial influences operate across cultures.

Second, although the Tripartite Influence Model identifies key sources of sociocultural influence, it does so in relatively broad terms, without differentiating the specific forms these influences may take. One such form of influence is negative body talk, particularly fat talk, which has been widely investigated and linked to body dissatisfaction and disordered eating symptomology among young Western women (Arroyo et al., 2022; Hart & Chow, 2020; Webb et al., 2018). It is interesting to note that although fat talk is considered a socially normative behaviour in Western cultures, especially within close female relationships, and thus a potentially strong source of influence, it has not been fully considered within existing theoretical models, including the Tripartite Influence Model. Although some studies have employed the Tripartite Influence Model to examine familial fat talk, such as Webb et al.'s (2018) work on body appreciation and mindful eating, they addressed these factors more broadly. Specifically, these factors were explored outside the scope of the model, which was originally developed to understand *negative* body image and eating behaviour outcomes. Thus, the present works **(Chapters 2** and **3)** integrated fat talk within a modified version of the Tripartite Influence Model for the first time, differentiating its role on negative body image and eating behaviour outcomes. Findings demonstrated that even indirect exposure, i.e., overhearing fat talk from female family members, can contribute to young Western and Middle-Eastern women's engagement in physical appearance comparisons and internalisation of the Western thin-ideal, and in turn, body dissatisfaction. However, nuanced familial and cultural differences emerged. In **Chapter 2**, Western participants reported overhearing greater fat talk from their mothers than sisters, whereas in **Chapter 3**, young Middle-Eastern women reported experiencing comparable levels of fat talk from both their mothers and sisters. By expanding the Tripartite Influence Model to include negative body talk, this thesis highlights its role as a distinct form of familial influence that contributes to body dissatisfaction and eating disturbances in culturally nuanced ways.

Third, the Tripartite Influence was originally developed and tested within a Western population, thus reflecting a Western perspective of body image and eating behaviours (Andersen & Swami, 2021). While recent studies have begun to examine the model in non-Western populations, there remains limited understanding of these relationships between sociocultural sources of influence, and body image and eating behaviours, within Middle-Eastern populations (Abdoli et al., 2024; Hosseini et al., 2017; Kakar et al., 2023; Mostafa et al., 2018). To the author's knowledge, **Chapter 3** presents the first investigation of a modified version of the Tripartite Influence Model, specifically focussing on female familial influence, among young Middle-Eastern women. Overall, the findings demonstrated that female familial influence plays a role in young Middle-Eastern women's negative body image and eating behaviour outcomes. This extends the applicability of the model to a non-Western context, demonstrating that female familial pressures similar to those observed in Western populations also exist in Middle-Eastern cultures. Additionally, the results of **Chapter 3** suggest that despite differing sociocultural environments, body image and eating concerns are not confined to Western White women, supporting the notion of the rising global prevalence rates of these issues (Rodgers et al., 2023). **Chapter 3** also explored the collectivistic structure of Middle-Eastern familial closeness in mother-daughter and sister relationships. The findings suggested that maintaining close familial relationships, despite the adoption of Western individualistic norms, may contribute to a lower likelihood of experiencing body dissatisfaction and disordered eating. These insights underscore the importance of accounting for sociocultural factors specific to non-Western environments when applying the Tripartite Influence Model across cultures.

Finally, **Chapter 4** contributes to the growing body of literature by shifting the focus from negative body image and eating behaviours to examining the role of female familial relationships in fostering positive body image (body appreciation) and eating (mindful eating)

behaviours across both Western and Middle-Eastern cultures. **Chapter 4** uniquely highlights both cross-cultural similarities and distinctions in the ways perceived appearance pressures from mothers and sisters contribute to body image and eating behaviours. Specifically, while young Western and Middle-Eastern women experienced comparable pressures from their mothers and sisters regarding appearance, contributing to their body dissatisfaction and disordered eating symptomology, Middle-Eastern women exhibited relatively higher body appreciation and levels of mindful eating. Such findings suggest that Middle-Eastern cultural environments, characterised by closer familial relationships, may contribute to more coexistence of positive body image alongside negative body image. These findings support theoretical perspectives suggesting that positive and negative body image are independent constructs, such that individuals can maintain body appreciation, even while experiencing body dissatisfaction (Burychka et al., 2021; Halliwell, 2015; Piran, 2015; Tiggemann, 2024).

Chapter 4 also extends cross-cultural research on body image by being one of the first to examine positive body image and eating behaviours in a Middle-Eastern culture, alongside a Western culture, offering novel insights into how the sociocultural environment distinctly shapes body and eating related outcomes (Awad et al., 2024; Swami et al., 2023). This contribution is especially significant as it addresses a critical gap in body image research by extending beyond the predominantly Western-focussed literature, responding to calls for broader representation, especially in African and Middle-Eastern populations(Rodgers et al., 2023, Swami et al., 2023; Tiggemann, 2015).

Practical and Clinical Applications

The overarching findings of this thesis demonstrate important practical and clinical implications. Specifically, **Chapters 2** and **3** investigated for the first time disaggregated agents of female familial influence, alongside the role of fat talk, offering a focussed

examination of a modified version of the Tripartite Influence Model. The application of the Tripartite Influence Model in clinical settings across cultures can guide targeted treatment approaches, which in turn can appropriately identify risk factors before they reach clinical levels of body dissatisfaction and disordered eating (Thompson et al., 2020). Given the rising rates of body dissatisfaction and eating disorders globally, posing a significant burden to public health systems, focussing on early identification of elevated levels of familial appearance pressures, fat talk, appearance comparisons or thin-ideal internalisation could facilitate timely intervention and reduce their prevalence (Ciao et al., 2014; Diedrichs, 2017; Koreshe et al., 2023; Stice et al., 2013). Importantly, the relatively closer familial relationships in Middle-Eastern cultures (in contrast to Western cultures), as identified in **Chapters 3** and **4**, indicate that interventions should be culturally adapted. The Tripartite Influence Model can be applied to existing interventions to better understand and address culturally specific sociocultural risk factors in these cultures; specifically, the same constructs proposed by the model could be retained, but intervention content and delivery may need to be adapted. This approach may guide the development of interventions that are appropriately aligned with cultural norms and values, aiming to more effectively mitigate body dissatisfaction and disordered eating outcomes across cultures (Thompson et al., 2020). In collectivistic cultures like the Middle-East, interventions might emphasise family interdependence, shared responsibilities, and the inclusion of both mothers and sisters in intervention delivery. In contrast, in Western contexts such as Australia, while the involvement of mothers and sisters remains relevant, interventions may benefit from incorporating a balance of individualised strategies (e.g., building personal body appreciation) alongside optional family-based components (e.g., psycho-education on female familial fat talk; Wergeland et al., 2024).

Across **Chapters 2** to **4,** it was evident that female family members play a key role in contributing both *negatively* and *positively* to young Western and Middle-Eastern women's body image and eating behaviours. While current Western eating disorder interventions, such as Family-Based Treatment (FBT) or Family-Facilitated Cognitive-Behavioural Therapy, typically incorporate family involvement, these approaches often focus on parents as the primary agents (Lock & Fitzpatrick, 2007; Wergeland et al., 2024). The present thesis findings suggest, however, that these intervention models could be expanded by incorporating other key sources of familial influence, specifically, female family members, such as sisters, in addition to mothers. This is especially relevant in cultures like those in the Middle-East, where close familial relationships, particularly between mothers and daughters, and sisters, are central to young women's body image and eating behaviour outcomes. In **Chapter 4**, the finding that young Middle-Eastern women perceived greater closeness with their sisters compared to their Western counterparts underscores the importance of involving these specific family members in intervention strategies. Although this closeness dynamic has not previously been investigated in a Middle-Eastern population, research in predominantly Western cultures has indicated that closer familial relationships (e.g., greater cohesion and lower conflict), particularly among mothers, daughters and sisters, are associated with a lower incidence of eating disorder symptomatology and associated psychological distress, in addition to a greater likelihood of eating disorder recovery (Latzer et al., 2015; Rienecke et al., 2024; Zohar et al., 2016). Given the closer familial relationships observed in Middle-Eastern cultures, interventions that target body image and eating behaviour concerns could benefit by including not only mothers, but also sisters. For instance, intervention models in Middle-Eastern contexts could be designed to actively engage siblings in shared sessions or home-based practices. Thus, existing family-focussed interventions, which tend to rely on Western, individualistic models, could be adapted to incorporate collectivistic values that are

more in line with the cultural nuances such as those of the Middle-East when working with these populations.

Furthermore, traditional interventions typically focus on body dissatisfaction and eating disorders, yet the findings from **Chapter 4** provide an opportunity to further broaden and adapt approaches specifically to Middle-Eastern cultures. In particular, the findings from **Chapter 4** revealed that while young Middle-Eastern women experience body image and eating concerns similar to their Western counterparts, they also report relatively higher levels of body appreciation and some mindful eating behaviours. These findings, coupled with the closer perceived relationships with mothers and sisters, suggest that the Middle-Eastern family home environment could serve as a potential protective space, providing refuge from external sociocultural influences such as the Western media and peer pressures (Brun et al., 2021). Shifting the focus of family-based interventions to promote body appreciation and mindful eating, even in the presence of negative body image and eating behaviour, could provide a more proactive and preventative approach for young Middle-Eastern women (Haidar et al., 2024; O'Hara et al., 2021). Some existing interventions that focus on positive body image and healthful eating, such as the 'Expand Your Horizon' and the 'Eat For Life' programs, have demonstrated effectiveness in improving these areas (e.g., body appreciation and mindful eating), while also reducing maladaptive body image and eating behaviour outcomes (Beccia et al., 2018; Bush et al., 2014; Guest et al., 2019). However, these interventions have predominantly been applied to Western populations, therefore, adapting such approaches for Middle-Eastern women to include family-based components may enhance their cultural relevance. For example, the collectivistic nature of Middle-Eastern cultures typically promotes mindful eating through the practice of shared meals; thus, interventions could build on these existing cultural practices to reinforce healthful eating

behaviours specifically within the family home environment (Haidar et al., 2024; Hallit et al., 2023).

While family-based interventions are also relevant for Western populations, the findings of **Chapter 4** suggest that these interventions could benefit from a more targeted approach. A key finding identified in the Western context is the greater likelihood of young Western women (compared to Middle-Eastern women) to engage in physical appearance comparisons, in addition to the stronger reciprocal relationship between self-exhibited fat talk and mother fat talk. Therefore, interventions for Western women should address both the pervasive cultural tendency to engage in appearance comparisons and the negative role of conversational patterns, such as fat talk, within families. While Western-based interventions would benefit from incorporating individualised strategies (e.g., decreasing appearance comparisons), practices from collectivist cultures can also inform more relational, family-inclusive approaches. For instance, interventions such as the 'Happy Being Me' program, which includes psycho-education about the negative impacts of engaging in appearance based comparisons, could also benefit from incorporating family-based psycho-education around the reciprocal nature of negative body talk (Bird et al., 2013; McLean et al., 2019; Schaefer & Thompson, 2018). Although some family-based therapy models for eating disorders already address negative body talk, psycho-education programs can precede these efforts by reaching broader, non-clinical populations as a preventative approach (Becker & Stice, 2017; Vanderkruik et al., 2020). Specifically, these programs can equip female family members with the knowledge and skills to recognise and reduce negative communication patterns, such as fat talk, and in turn, shift discussions toward more positive or health-focussed conversations around body image and eating behaviours (Alleva et al., 2021; Vanderkruik et al., 2020).

Taken together, the findings of **Chapter 4** underscore important cross-cultural insights that can guide the development of public health strategies and psycho-educational programs adapted to different cultural groups (Moreno et al., 2023). Specifically, the cross-cultural comparisons revealed that culturally sensitive and inclusive health programs should address the unique sociocultural family factors contributing to body image and eating behaviours globally. Policymakers could use these findings to advocate for, and implement health initiatives that resonate with individualistic values prevalent in Western cultures, or conversely, collectivistic values, like those in Middle-Eastern cultures (Saunders et al., 2019). In so doing, health programs may be more effective in mitigating body dissatisfaction and eating disorder risk through culturally appropriate interventions that consider familial and societal nuances (Holmes et al., 2023).

Limitations and Directions for Future Research

Measures

The present thesis has some limitations that warrant consideration and suggest avenues for future research. Broadly speaking, the studies presented in **Chapters 2** to **4** were based solely on cross-sectional designs and self-report measures. While these methods offer valuable insight into participants' experiences, they capture subjective data at a single point in time. Given that body image and eating concerns develop over the lifespan, particularly in women from girlhood through young adulthood and into motherhood, a cross-sectional approach limits the ability to understand how these concerns evolve over time (Christian et al., 2020). Research in Western samples has suggested that as women age, they place less importance on evaluating their appearance in relation to the Western thin-ideal and increasingly value body function over appearance (Hockey et al., 2021). Given that developmental trajectories differ across cultures, particularly in collectivistic societies where

women are often expected to maintain close familial ties and uphold traditional roles throughout life, in contrast to individualistic cultures where autonomy is typically emphasised, alternative body ideals and cultural expectations may differentially shape body image at different stages of life (Melisse et al., 2024; Tiggemann, 2004). Thus, future research should consider longitudinal designs that examine the directionality and long-term role of maternal and sister influences on women's body image and eating behaviours from childhood through to adulthood across cultures.

Additionally, the studies presented in **Chapters 2** to **4** relied on self-reported data based on participants' perceptions of family influence, specifically from mothers and sisters, and therefore cannot be corroborated by the family members themselves. While previous research has explored the general role of family influence on body image and eating behaviour, there remains limited focus on female familial appearance pressures and fat talk, particularly in relation to *positive* body image and eating behaviour (Linardon et al., 2022; Webb et al., 2018). To address this limitation, future studies could recruit mother-daughter-sister triads to capture individual data from each family member, which could provide a more nuanced and validated understanding of the associations between female family member influence and both *negative* and *positive* body image and eating (Devine et al., 2022; Rodgers et al., 2024). It would also be of interest to recruit mother-daughter dyads to investigate the potential reciprocal relationship between self-exhibited fat talk and mother fat talk in Western cultures as observed in **Chapter 4**. Moreover, while **Chapters 2** and **3** were guided by the Tripartite Influence Model (Thompson et al., 1999), with a specific focus on female familial influences, they did not explicitly evaluate peer and media influences, as proposed by the original model. Future research would benefit from adapting and refining the Tripartite Influence Model to better address how these three sociocultural sources, particularly female peers and media (e.g., female models or social media influencers), interact and shape body

image and eating behaviours across cultures. Future studies could also extend the Tripartite Influence Model to examine the influence of emerging body ideals beyond the Western thin-ideal. Such work could include the *fit ideal*, which promotes muscularity and leanness, and the *curvy ideal*, which emphasises an hourglass figure characterised by a small waist and large bust and hips (Hunter et al., 2021; Walker et al., 2022). It would be of particular interest to examine the distinct associations of these ideals with women's engagement in physical appearance comparisons, as originally proposed by the Tripartite Influence Model, and to consider the inclusion of body surveillance as another potential mechanism linking sociocultural appearance pressures to body image outcomes (Frederick et al., 2022).

Another limitation relates to the use of the self-report measures specifically for the non-Western (Middle-Eastern) samples in **Chapters 3** and **4.** Although participants from the Middle-Eastern sample spoke English and reported feeling comfortable answering all questions in English, it was not their primary language. Most participants were born or resided in Lebanon, where Arabic is the primary language, and English and French are secondary languages. However, proficiency in English is a requirement for admission to the university from which the sample was recruited (i.e., Lebanese American University – LAU) and is the language of instruction. Nevertheless, given that English was not the primary language of these participants, there may have been potential for misinterpretation of some of the items on the questionnaires. Fortunately, some of the measures used in **Chapters 3** and **4** have been translated and validated for Arabic-speaking populations, although this occurred after data collection had taken place for the present thesis. For example, Makki et al. (2023) translated the Sociocultural Attitudes Toward Appearance Questionnaire-4 (SATAQ-4R; Schaefer et al., 2017) into Arabic, and Fekih-Romdhane et al. (2023) translated, in addition to validating, the Body Appreciation Scale (BAS-2; Tylka & Wood-Barcalow, 2015) in an Arabic-speaking Lebanese population. The findings of Fekih-Romdhane et al. (2023)

provided preliminary support for the psychometric properties of the BAS-2 and its applicability among Arabic speakers, particularly in the Lebanese context. Future research should consider these recent validations when investigating outcomes in Arabic-speaking populations to ensure the appropriateness and validity of the measures used.

Relatedly, researchers, such as Lacko et al. (2022), have raised concerns about measurement invariance when measures that were originally developed and validated in Western, English speaking populations are applied to non-Western cultural groups. Lacko et al. (2022) specifically explored the cultural constructs of individualism and collectivism, and suggested that participants from different cultural backgrounds with different values may interpret questionnaire items differently. This issue is particularly relevant to the present thesis, given that body image and eating behaviour outcomes were investigated in a non-Western culture, i.e., a Middle-Eastern sample (**Chapters 3** and **4)**. It was found that sociocultural factors in Middle-Eastern cultural contexts play an important role in shaping how body image and eating behaviour constructs are experienced and understood. For example, the concept of familial negative body talk (i.e., fat talk), a relatively recent area of research, was examined in a Middle-Eastern sample for the first time. However, as fat talk was yet to be explored in a Middle-Eastern population, there is limited insight into how Middle-Eastern individuals perceive, understand and engage with negative body talk, and whether it may differ from the Western conceptualisation. Therefore, it is important for future investigations to determine whether the sociocultural concepts, such as fat talk, are experienced and perceived similarly or differently across Western and non-Western cultural groups.

Despite these limitations, some recent studies have begun to address measurement invariance across body image and eating behaviour measures. For instance, Swami et al.

(2023) conducted a study across 65 nations, including Middle-Eastern countries (e.g., Egypt, Lebanon, United Arab Emirates), to investigate the scalar measurement invariance of the Body Appreciation Scale (BAS-2; Tylka & Wood-Barcalow, 2015). Their findings indicated that the BAS-2 showed full scalar invariance across diverse cultural groups and languages, suggesting its applicability across diverse cultural contexts (Swami et al., 2023). These findings lend support to the inclusion of the BAS-2 in **Chapter 4** of the present thesis for measuring body appreciation in a non-Western, Middle-Eastern population. Furthermore, the present findings underscore the potential for future research to apply the BAS-2 in cross-cultural studies of body image and eating behaviours. It remains important, however, for future investigations to continue cross-validating such measures to ensure that they accurately capture the intended constructs while accounting for cultural nuances (e.g., individualistic versus collectivistic values).

Sample Characteristics

The study samples across **Chapters 2** to **4** consisted predominantly of young (17 to 25 years old), tertiary-educated women, which may not be representative of the broader population. However, the inclusion of young women remains an important contribution, given that this is a particularly sensitive period for the development of body image and eating behaviour concerns (Frederick et al., 2022). Nevertheless, it would be valuable for future research to include a more diverse sample, potentially by examining women of the same age group, but from non-tertiary education backgrounds. Additionally, researchers could investigate body image and eating behaviours in African and Middle-Eastern populations with less exposure to Westernisation, such as Egypt, Jordan and Yemen (Muthukrishna et al., 2020; Swami et al., 2023). Previous research suggests that women in regions with less Westernisation or greater cultural distance from Western norms may experience lower levels

of body dissatisfaction and disordered eating concerns, potentially due to the maintenance of traditional beauty standards or less emphasis on the Western thin-ideal (Khaled et al., 2018; Thompson et al., 2020). Moreover, given the rising rates of body image and eating concerns among men and gender-diverse individuals, future research could also include other genders to yield a more comprehensive understanding of these experiences across Western and non-Western populations (Brown & Keel, 2023; Murray et al., 2017; Schaefer et al., 2021). Thus, examining potential differences in body image and eating concerns across genders and diverse cultures could inform more culturally sensitive research and broaden our understanding beyond Western female samples.

Novel to the present thesis was the investigation of both negative (**Chapter 3**) and positive (**Chapter 4**) body image and eating behaviours in a non-Western, Middle-Eastern population. As previously mentioned, the majority of participants were either born in or resided in Lebanon at the time of completing the study, which may limit the generalisability of the findings to the broader Middle-Eastern population. This warrants particular attention as the sociocultural environment in Lebanon, while sharing similarities with other Middle-Eastern countries (e.g., traditional collectivistic values), also presents distinct differences. For instance, Lebanon's geographical proximity to the Mediterranean, and its historical and ongoing exposure to Westernisation, have been associated with higher body image and eating concerns compared to other Middle-Eastern countries (Melisse et al., 2024; Zeeni et al., 2013). Additionally, Lebanon's religious diversity (e.g., Christianity, Islam, Druze) compared to other Middle-Eastern countries contributes to varying societal norms and expectations around appearance and body image (Doumit et al., 2017; Sfeir et al., 2022). Specifically, religiosity has been associated with differing body image and eating behaviour outcomes across both Western and Middle-Eastern regions, in that religiosity has been associated with lower levels of disordered eating and body image concern, in addition to greater positive

body image, such as body appreciation (Akrawi et al., 2015; Doumit et al., 2017; Musaiger et al., 2015; Sfeir et al., 2022; Tiggemann & Hage, 2019). Additionally, Lebanon has one of the highest levels of migration in the Middle-Eastern region. This global mobility contributes to differing societal pressures and attitudes toward body image and eating behaviours, as individuals are often exposed to Western beauty standards abroad while also navigating traditional expectations of their home culture (Abou-Rizk & Rail, 2014; Zeeni et al., 2017). Future research should consider recruiting individuals from a wider range of Middle-Eastern countries to better understand regional differences in body image and eating behaviours, particularly in relation to Westernisation and cultural values.

Conclusions

The present thesis aimed to contribute to the growing body of literature on the role of the sociocultural environment in shaping both *negative* and *positive* body image and eating behaviours. It specifically focussed on the distinct influence of female family members on the body image and eating behaviours of young women across Western and non-Western cultures. The overall findings from **Chapters 2** and **3** provided support for a modified version of the Tripartite Influence Model, demonstrating a distinct role for female family member influence in shaping young Western and Middle-Eastern women's body dissatisfaction and disordered eating symptomatology. **Chapter 4** extended these investigations by examining how these same female familial relationships were related to positive body image (body appreciation) and eating (mindful eating) behaviours. Although young Middle-Eastern women experienced similar body image and eating behaviour concerns to their Western counterparts, they demonstrated relatively greater body appreciation and mindful eating behaviours.

Overall, findings from the present thesis extend previous research in an important and novel way by demonstrating the disaggregated influence of female family members (i.e., mothers and sisters), in addition to the role of fat talk, in understanding body image and eating behaviours across Western and non-Western cultures. These findings highlight the dual role of female familial influences as both risk (i.e., appearance pressures, fat talk) and protective (i.e., relational closeness, body appreciation, mindful eating) factors in shaping body image and eating behaviours. In so doing, the thesis addressed a significant gap in the literature by investigating body image and eating behaviour outcomes in an understudied, non-Western, Middle-Eastern population. The implications of the work are significant. Theoretically, it broadens the applicability of a modified version of the Tripartite Influence Model focussing on the distinct role of female family members, in addition to its relevance to a non-Western population. Practically, the findings advocate for culturally sensitive interventions involving female family members, particularly mothers and sisters. In Western populations, interventions could focus on reducing appearance-based comparisons and fat talk, whereas in Middle-Eastern cultures, cohesive family-based approaches could promote body appreciation and mindful eating practices. Ultimately, the thesis offers a greater understanding of the complex interplay between negative and positive body image and eating behaviours within the sociocultural female familial environment. It provides avenues for future research to further examine these dynamics through a culturally sensitive lens, and, in turn, inform the development of interventions that promote positive body image and eating behaviours, amidst negative body image and disordered eating, globally.

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