

Thin is still "in": Development and psychometric validation of the Thin Ideal Internalisation Assessment (THIINA)

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Thin is still “in”: Development and psychometric validation of the Thin Ideal

Internalisation Assessment (THIINA)

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Abstract

Across the last several decades, the thin ideal (i.e., a female physique characterised by slenderness and low body fat) has featured as the predominant beauty ideal promoted to women living in Western societies. Unfortunately, the widespread Western cultural endorsement of thinness as a desirable and attractive physical attribute is considered a key contributor to the high rates of body image and eating concerns reported by women living in these societies (Grogan, 2021; Swami, 2015). Studies have shown that women are most at risk when they have internalised these cultural messages and adopted the thin ideal as a personal beauty standard to strive for. Indeed, thin ideal internalisation has been identified as an important risk factor in women's body dissatisfaction and disordered eating (Barakat et al., 2023; Paterna et al., 2021).

Traditionally, thin ideal internalisation has been defined as the “extent to which an individual buys into socially defined ideals of attractiveness” (Thompson & Stice, 2001, p. 181). However, recent research has broadened the operationalisation of beauty ideal internalisation to include a range of cognitive, affective, and behavioural components (Uhlmann et al., 2020). Although this revised operationalisation distinguishes between multiple components of beauty ideal internalisation, this definition has not yet been applied to the thin ideal. Consequently, available measures of thin ideal internalisation are brief and unidimensional. The multidimensional operationalisation and measurement of thin ideal internalisation offers potential to improve theoretical and clinical understanding of this important construct in women's body image and eating. Therefore, the primary aim of this thesis was to develop and psychometrically validate a new measure of thin ideal internalisation that was designed to comprehensively assess the cognitive, affective, and behavioural components of thin ideal internalisation in women.

The first of the three empirical studies included in this thesis outlined the development and initial psychometric validation of the Thin Ideal Internalisation Assessment (THIINA). Thin ideal internalisation was operationalised as a multidimensional construct with three distinct domains: thin idealisation (i.e., cognitive and affective concern with thin ideal congruence), thin overvaluation (i.e., internalisation of cultural beliefs that congruence with the thin ideal will result in personal improvement and social rewards), and thin behavioural drive (i.e., engagement with behaviours designed to achieve or adhere to the thin ideal). In the first phase of this study, the three-factor structure of the new questionnaire was supported in a sample of adult women ($N = 301$, Mean age = 22.48 years, $SD = 6.72$). In the second phase, validity testing and factor confirmation was conducted in a separate sample of adult women ($N = 337$, Mean age = 23.22 years, $SD = 7.07$). In this phase, the two-week test-retest reliability of the THIINA was also examined using a subsample of participants ($N = 137$, Mean age = 24.28 years, $SD = 8.33$). The findings from this study supported the validity and reliability of the three THIINA subscale scores (i.e., Thin Idealisation, Thin Overvaluation, Thin Behavioural Drive) and a composite score representing overall thin ideal internalisation.

The second of the three empirical studies outlined evidence for the utility of the THIINA when testing a larger sociocultural model of women's body image and eating. Specifically, this study tested an extension to the Elaborated Sociocultural Model of Disordered Eating (Fitzsimmons-Craft et al., 2011) which incorporated a comprehensive assessment of thin ideal internalisation through use of the THIINA. In this study, additional variables were integrated into the Elaborated Sociocultural Model to achieve a more complete theoretical model of women's body image and eating. Specifically, this study included social media appearance pressures as an additional

sociocultural predictor of thin ideal internalisation (alongside traditional sources of appearance pressures), and body shame and psychological distress as additional problematic outcomes of sociocultural pressures and internalisation (alongside body dissatisfaction and restricted eating). In a cross-sectional sample of adult women ($N = 310$, Mean age = 23.13 years, $SD = 8.32$), this study found empirical support for the extended Elaborated Sociocultural Model and support for the utility of the THIINA when testing larger sociocultural models of body image and eating.

The third and final study in this thesis explored the relationships between personality, thin ideal internalisation, and core eating disorder symptomology. Specifically, this study applied a neurobiological personality framework, Reinforcement Sensitivity Theory (RST), to test the indirect relationships between individual differences in the behavioural inhibition system (BIS) and eating disorder symptoms (i.e., restraint, eating concern, weight and shape concerns), mediated via thin ideal internalisation. This study used bootstrapped mediation analyses and a cross-sectional sample of adult women ($N = 354$, Mean age = 22.06 years, $SD = 6.78$). Results indicated that thin ideal internalisation significantly mediated the relationships between BIS sensitivity and eating disorder symptoms. The findings from this study suggested greater self-reported BIS sensitivity (indicating higher levels of trait anxiety and rumination) may predict stronger endorsement of eating disorder symptomology (i.e., restraint, eating concern, weight and shape concerns), and that thin ideal internalisation may act as a mechanism underlying these relationships. Although the application of neurobiological personality frameworks to women's body image is an emerging area, the findings from this study provided preliminary support for the inclusion of personality traits in theoretical models of women's body image and eating.

Overall, the findings from this thesis found that the thin body ideal continues to be idealised, overvalued, and pursued by women. This research provided a novel contribution to the literature in that it validated the first multidimensional assessment of thin ideal internalisation. Collectively, the findings from this research supported previous investigations that have shown that women's internalisation of the thin ideal places them at greater risk for disturbances in body image and eating. Theoretical and clinical implications of these findings and areas of warranting further research investigation are highlighted.

Statement of Originality

This work has not previously been submitted for a degree or diploma in any University.

To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made in the thesis itself.

(Signed) _____ (Date) 04/10/2023
Chloe Kidd

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List of Abbreviations

AIC	Akaike Information Criterion
BAS	Behavioural Approach System
BC 95CI	Bias-Corrected 95% Confidence Interval
BEECOM	Body, Eating, and Exercise Comparison Orientation Measure
BIQ	Body-Image Ideals Questionnaire
BIS	Behavioural Inhibition System
BMI	Body Mass Index
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit Index
DASS-21	Depression Anxiety Stress Scale-21
DEBQ	Dutch Eating Behaviour Questionnaire
EAT-26	Eating Attitudes Test-26
EDE-Q	Eating Disorder Examination Questionnaire
EDI3-BD	Eating Disorder Inventory-3 Body Dissatisfaction subscale
EDI3-DFT	Eating Disorder Inventory-3 Drive for Thinness subscale
EFA	Exploratory Factor Analysis
FIIT	Fit Ideal Internalization Test
FFFS	Fight/Flight/Freeze System
IBSS	Ideal Body Stereotype Scale
KMO	Kaiser-Meyer-Olkin
OBCS	Objectified Body Consciousness Scale
RMSEA	Root Mean Square Error Of Association
RSES	Rosenberg Self-Esteem Scale
RST	Reinforcement Sensitivity Theory
RST-PQ	RST-Personality Questionnaire
SATAQ	Sociocultural Attitudes Towards Appearance Questionnaire
SDS-17	Social Desirability Scale – 17
SRMR	Standardised Root-Mean-Square Residual
THIINA	Thin Ideal Internalisation Assessment
TLI	Tucker-Lewis Index

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Acknowledgement of Papers included in this Thesis

Included in this thesis are papers in Chapters 6, 7 and 8 which are co-authored with other researchers. My contribution to each co-authored paper is outlined at the front of the relevant chapter. The bibliographic details for these papers including all authors are:

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SECTION 1

Chapter 1: Preamble

Overview of Theoretical Background and Thesis Aims

In contemporary Western societies, the cultural emphasis on adhering to attractive appearance ideals is evident in almost every facet of life. For instance, the importance placed on appearance and body image can be heard in conversations with peers and family members, observed in popular television shows, movies and advertising, seen widely displayed on social media, and clearly exhibited in general grooming practices and popular cosmetic enhancements (Tiggemann, 2011). Body image concerns are disproportionately experienced by women living in these societies (Swami et al., 2010), so much so that this discontent has long been described as a normative female experience (Levine & Harrison, 2009; Rodin et al., 1985). Women's discontent typically centres on their dissatisfaction with, and concern about, their body shape, size, and weight (Menzel, Krawczyk, et al., 2011). Unfortunately, poor body image is widely documented as having an adverse impact on women's psychological, physical, and social wellbeing (Grogan, 2021).

Across the last several decades, ample research has investigated factors that contribute to the development and disturbance of women's body image (Cash & Smolak, 2011). The findings from this research largely designate the Western cultural endorsement and idealisation of the thin and slender female body type (i.e., the thin ideal) as a key contributor to the high rates of body image concerns experienced by women (Grogan, 2021; Swami, 2015). Broadly, the sociocultural perspective denotes that sociocultural agents (e.g., media, family, peers) transmit cultural messages regarding the importance, attainability, and value of women's adherence to the thin ideal (Ata et al., 2015; Tiggemann, 2011). Repeated exposure to these messages increases the likelihood that women will accept and internalise the thin ideal as a

personal beauty standard to pursue and compare themselves against. In turn, women's appearance satisfaction is subject to the degree to which they perceive themselves as meeting this internalised thin beauty standard (Tiggemann, 2011). Unfortunately, because healthy adherence to the thin ideal is physically unattainable for most women (Brownell, 1991), internalisation and pursuit of the thin ideal is posited to increase women's body dissatisfaction, and their consequent engagement in disordered eating (e.g., restriction, purging), as they attempt to reconcile perceived body-ideal discrepancies (Tiggemann, 2011).

Strong empirical evidence supports the impact of broad sociocultural factors on body image concerns among women (Ata et al., 2015; Tiggemann, 2011). This has resulted in the development of several sociocultural models providing a framework for investigating women's body image disturbance. These models include the Tripartite Influence Model (Thompson et al., 1999), the Dual Pathway Model (Stice, Nemeroff, et al., 1996) and the Elaborated Sociocultural Model (Fitzsimmons-Craft et al., 2011). Across all sociocultural models, thin ideal internalisation features as a central mediating mechanism underlying the relationship between sociocultural appearance pressures and body image disturbance in women (Ata et al., 2015). As such, thin ideal internalisation is now considered an important risk factor for body dissatisfaction and disordered eating and is implicated in the onset and maintenance of eating disorders (Barakat et al., 2023; Culbert et al., 2015; Paterna et al., 2021; Stice, 2002).

Traditionally, thin ideal internalisation has been defined as the "extent to which an individual buys into socially defined ideals of attractiveness" (Thompson & Stice, 2001, p. 181). However, recent research has broadened the operationalisation of beauty ideal internalisation to include a range of cognitive, affective, and behavioural components (Uhlmann et al., 2020). Specifically, internalisation is hypothesised to

occur when a) an individual demonstrates acceptance and cognitive–affective desire to conform to an ideal, b) integrates societal value and meaning of adherence to that ideal into their own value and belief system, and c) complies with, or engages in, behaviours congruent with that beauty standard (Uhlmann et al., 2020).

Although this revised operationalisation recognises the multiple components underlying beauty ideal internalisation, this definition has yet to be applied to the thin ideal. Consequently, available measures of thin ideal internalisation are brief and unidimensional (e.g., 4-item Internalization Thin/Low Body Fat subscale of the Sociocultural Attitudes Towards Appearance Questionnaire-4R [SATAQ-4R]; Schaefer et al., 2017). Given the promise that thin ideal internalisation has shown in understanding disturbances in women’s body image (Paterna et al., 2021), and with recent studies raising concerns regarding the construct validity of available thin ideal internalisation questionnaires (Mol et al., 2023; Thompson et al., 2004; Thompson et al., 2018), the multidimensional operationalisation and measurement of thin ideal internalisation offers potential to improve theoretical and clinical understanding of this important construct. Therefore, the primary aim of this thesis was to develop and psychometrically validate a new measure of thin ideal internalisation that was designed to comprehensively assess the cognitive, affective, and behavioural components of thin ideal internalisation. Furthermore, the studies included in this thesis aimed to explore the utility of this new questionnaire when investigating key predictors and outcomes of women’s acceptance and internalisation of the thin ideal.

Summary of Thesis Chapters

The structure of this thesis is in the form of nine chapters divided across three sections. These chapters encompass relevant background theoretical and empirical literature, rationale, methodology, results, discussion, limitations, and implications of

the research conducted. The first section contains four chapters. This chapter (Chapter 1) provides a preamble to the thesis, including a brief overview of the theoretical background and summary of thesis aims. The discussion in Chapter 2 covers the evolution of the female body ideal across modern Western history, highlighting the centrality of thinness in women's body image and attractiveness, and theoretical and empirical evidence on the cultural meaning and value ascribed to thinness in Western society. Chapter 3 draws from the sociocultural framework, summarising several models that explore the temporal sequence through which cultural messages pertaining to female beauty ideals influence women's body image and eating behaviours. This chapter highlights the role of thin ideal internalisation as a key mediating mechanism underlying the relationships between sociocultural appearance pressures and body image disturbances and eating for women. This chapter then outlines several limitations of these models including the rising influence of social media and neglect of individual differences, offering potential avenues for future research. An overview of best-practice guidelines from the development and psychometric testing of self-report questionnaires, generally and as they relate to the assessment of body image is provided in Chapter 4. This chapter also provides a historical overview and critique of self-report measures of thin ideal internalisation, highlighting the need to develop and psychometrically validate a new multidimensional assessment tool of this construct.

Section 2 of this thesis consists of Chapters 5, 6, 7, and 8. Chapter 5 provides a preamble and rationale for this program of research. This research consists of three empirical studies reported in Chapters 6, 7, and 8. For each study, information regarding publication status is provided at the beginning of each chapter. Ethical approval for each study was granted by Griffith University's Human Ethics Review Committee (HREC Protocol Numbers: 2020/280 and 2021/278). The ethics protocol and approval details

are documented within the methodology sections of each paper and copies of participant information and consent forms are included in the Appendix of this thesis.

Finally, Section 3 (Chapter 9) provides an overall discussion of this program of research, summarising key findings and discussing key clinical and theoretical implications of this research program.

Chapter 2: Attractive Beauty Ideals and Women's Body Image

Introduction to Chapter 2

An array of theoretical frameworks are available for contextualising the nature of women's body image (e.g., evolutionary, feminist, cognitive behavioural; Cash & Smolak, 2011). Arguably, the most dominant and empirically supported frameworks are influenced by the sociocultural perspective. This perspective highlights the powerful influence of cultural pressures to conform to attractive beauty ideals on women's body image experience (Ata et al., 2015; Thompson et al., 1999). From a sociocultural perspective, beauty ideals represent culturally prescribed and endorsed standards for physical attractiveness that individuals within that culture adhere to (Calogero et al., 2007). That is, cultural values and norms influence what society considers an attractive beauty standard, and this influence is clearly apparent when examining the evolution of the "acceptable" weight and shape of the female body. Although a slender physique is considered one of the current beauty ideals for women living in Western societies (Grogan, 2021; Widdows, 2018), cultural standards regarding the female body have never been static (Fallon, 1990). Indeed, perhaps the most compelling evidence supporting the sociocultural perspective is the evolution of what constitutes the ideal female body across Western history, alongside women's unwavering attempts to modify their appearance to embody such standards (Calogero et al., 2007; Fallon, 1990; Grogan, 2021; Orbach, 2005).

Drawing from a sociocultural perspective, this chapter will summarise the evolution of the ideal female body across modern Western history. In addition, the theoretical and empirical evidence summarised in this section aims to highlight the Western cultural context in which thinness (i.e., the thin body ideal) has become

idealised and promoted as an important and valuable body ideal for women to pursue and internalise as a standard by which to compare their bodies to.

The Evolution of the Ideal Female Body in Western Culture

From the 15th century through to the 17th century, voluptuous female bodies were revered and widely portrayed in sculptural and painted artworks (Calogero et al., 2007). Idealised female figures represented by soft stomachs, full breasts and broad hips were illustrated in artworks such Rembrandt van Rijn's *Bathsheba at Her Bath* (1654) and François Boucher's *A Nude Woman Reaching to the Right* (1769). During this period, this larger body symbolised wealth, sensuality, and fertility (Bonafini & Pozzilli, 2011). Towards the end of the 19th century and into the early 20th century, a shift towards tightly controlled, smaller physiques was observed across affluent and industrialised Western nations (Calogero et al., 2007; Grogan, 2021). The famous Gibson Girl, a figure represented by a very slender waist and accentuated by a "monobosum" and wide hips, represented the ideal body during this time. This ideal was associated with the upper class and social stature, and women resorted to extreme corset use in attempts to embody this ideal (Mazur, 1986). The 1920s saw the emergence of the flapper era, characterised by a new female body shape that was slender and pre-pubescent (i.e., slim hips, flat chested; Calogero et al., 2007). In pursuit of this body, women engaged with starvation diets, excessive exercise and other extreme techniques (e.g., chest-binding) to reduce secondary sex characteristics (Caldwell, 1981; Silverstein, Peterson, et al., 1986). Illustrating this new extreme pursuit of thinness, eating disorders were scientifically recognised as a new phenomenon during this period (Fallon, 1990).

Exaggerated hourglass figures returned during the 1940s and 1950s, spurred on by the motion picture industry and Old Hollywood stars, such as Marilyn Monroe and

Elizabeth Taylor, representing female sensuality once again (Calogero et al., 2007; Grogan, 2021). However, slender female figures still remained idealised, embodied by celebrities such as Audrey Hepburn, and differentially associated with sophistication and the upper class (Mazur, 1986). During the 1960s, Twiggy emerged as a British cultural icon, with a physique that was flat chested, long legged, and very thin. Open about her working-class origins, Twiggy's rise to fame facilitated the thinness association with adventure, freedom and youthfulness. No longer confined to the wealthy and elite, women across all social classes pursued thinness (Grogan, 2021; Orbach, 2005). Strengthening the appeal of thinness, researchers documented trends of fashion models, beauty contestants, and Playboy centrefolds becoming increasingly thinner between the 1960s and 1980s (Garner et al., 1980; Silverstein, Perdue, et al., 1986; Spitzer et al., 1999; Wiseman et al., 1992). During this time, models and Miss America contestants became taller and their bust and hip measurements decreased (Mazur, 1986). Adolescent girls and adult women consistently reported a preference for slimmer female figures in research studies (Beck et al., 1976; Cohn et al., 1987; Horvath, 1981), and this preference coincided with a substantial increase in magazine articles and advertisements promoting diet and exercise for weight-loss purposes (Wiseman et al., 1992; Wiseman et al., 1993).

During the 1980s, the physically fit, toned and slim female physique gained esteem (Calogero et al., 2007). The rising popularity of the athletic female ideal coincided with an increase in women's reported dissatisfaction with their muscle tone and increased exercise engagement around this time (Garner, 1997; Orbach, 2005). However, waif-like models quickly returned to the runways during the 1990s (Grogan, 2021). The publicised outcry against the media glorification of severely underweight models at this time, related to concerns for the impact of this representation on women's

health and wellbeing (Grogan, 2021), was met with a shift towards alternative and seemingly “healthier” body ideals for women (e.g., fit and curvy ideals; Hunter et al., 2021; Uhlmann et al., 2018). However, there appears an almost covert standardisation of the thin body ideal across these new body ideals (Widdows, 2018). For example, the thin ideal clearly manifests in the ultra-thin bodies seen on fashion runways. However, it is also notable in the thin, athletic female bodies that dominate #fitspiration social media content and yoga lifestyle magazines (Hinz et al., 2021; Talbot et al., 2017). More covertly, thinness is also a core feature in “slim–thick” silhouettes of reality stars and celebrities, with these silhouettes characterised by a small waist and flat stomach accentuated by larger, toned buttocks and hips (McComb & Mills, 2022). In all representations of these female bodies, thinness remains the dominant and defining feature (Widdows, 2018).

The contemporary idealisation of thinness is exemplified in recent news publications loudly claiming that “heroin chic is back” (referring to the ultra-thin body ideals representative of the 1990s; Diaz, 2022). The reporting of the positive public reception to celebrities’ recent weight loss (e.g., reality star Kim Kardashian, pop singer Adele; Cortes, 2022; Specter, 2020), the short-supply of Wegovy or Ozempic due to the promotion of this diabetes drug as a quick weight-loss solution (Donnelly, 2022), and the rise of subtle social media hashtags that glorify diet culture and unrealistic appearance expectations (e.g., #whatieatinaday, #bodychec, #thatgirl; Diaz, 2022) is also evidence of this. Furthermore, popular social media platforms heavily feature images of thin and slender women that are widely consumed by users (see Ghaznavi & Taylor, 2015; Talbot et al., 2017; Wick & Harriger, 2018). For example, an examination of the top 10 list of the most followed social media accounts on TikTok (a video-based social media platform) in early 2023 revealed all women featured in this list represent

the thin body ideal standard (for example, see accounts by Charlie D'Amelio [@charlidamelio], Bella Poarch [@bellapoarch], Addison Rae [@addisonre] who have over 330 million followers combined; Statistica, 2023a). In sum, this review highlights the dynamic and evolving nature of the Western female body ideal. Although it is evident that the preferred female body has varied across history, a thin and slender female body remains idealised in current Western societies (Grogan, 2021; Widdows, 2018).

Western Media and the Idealisation of Thinness

The normalisation of the thin aesthetic is largely driven by the Western media's mass propagation of this ideal (Calogero et al., 2007; Groesz et al., 2002). For example, numerous content analyses have found that female models appearing in images and advertisements in popular women's magazines are predominantly thin (Bessenoff & Del Priore, 2007; Sypeck et al., 2004; Wasylkiw et al., 2009; Webb et al., 2017). Although a recent push was made to widen the media representation of body image diversity, as well as attempts to regulate the minimum body size of models in several countries (Australian Government, 2010; Krawitz, 2014), studies have shown minimal improvement in this area. A recent content analysis of 13 popular magazines marketed towards adolescent girls and women (e.g., Cosmopolitan, Vogue, Marie Claire) revealed more than 70% of models featured in images and advertisements within these magazines were classified as underweight (de Freitas et al., 2018). In addition to magazines and advertising, the thin ideal is propagated in every form of media available (Levine & Harrison, 2009). As described earlier, thin ideal media imagery is highly prevalent across social media platforms (Ghaznavi & Taylor, 2015; Talbot et al., 2017; Wick & Harriger, 2018). Furthermore, analyses of popular television shows (Fouts & Burggraf, 1999; Greenberg et al., 2003), popular movies (Neuendorf et al., 2010;

Silverstein, Perdue, et al., 1986), children's media (Baker-Sperry & Grauerholz, 2003; Harriger et al., 2018; Herbozo et al., 2004; Klein & Shiffman, 2006), music videos (Tiggemann & Slater, 2004), and even video games (Gestos et al., 2018; Martins et al., 2009) reveal popular female actors and animated characters are more likely to be portrayed as underweight or thin.

In addition to the prolific display of thin ideal imagery across all media platforms, media content also heavily implies the attainability of thinness and general malleability of the female body. A recent content analysis of women's health and fitness magazines revealed a strong emphasis of diet and exercise for weight-loss purposes, featured in almost a quarter of the 5,000 pages of content reviewed demonstrated this (Willis & Knobloch-Westerwick, 2014). Similar emphasis on appearance-motivated and body-shaping diet and exercise activities are prominent in headlines featured on the covers of women's magazines (Aubrey, 2010; Bazzini et al., 2015) and stories within these magazines (Conlin & Bissell, 2014; Guillen & Barr, 1994). Internet and social media content has also provided a new avenue through which users are exposed to an abundance of thinspiration content, which features thin ideal imagery, positive commentary about thinness, and guilt inducing messages aimed at inspiring appearance-related diet and exercise (Boepple & Thompson, 2016; Ghaznavi & Taylor, 2015; Talbot et al., 2017; Wick & Harriger, 2018).

Numerous studies have shown women's desire to embody the thin ideal is present across the lifespan. A mixed methods study exploring body image in young girls aged 3 to 6 years found nearly half of the girls interviewed worried about being fat, with one third reporting a desire to change their physical appearance in some manner (Hayes & Tantleff-Dunn, 2010). Aligning with this, girls aged as young as 5 years report a desire for a body that is thinner than their current size (Ambrosi-Randi, 2000; Lowes &

Tiggemann, 2003). Furthermore, a review found between 28% and 55% of girls aged between 6 and 11 years endorsed a preference for a thinner body (Ricciardelli & McCabe, 2001). From these studies, it appears that the belief a thinner body is preferable is evident in children even in early childhood. Thinness idealisation increases in adolescence, with approximately 70% of adolescent girls aged between 12 and 15 years reporting a desire for a thinner body than their current size (Wertheim et al., 2004), and more than 45% of adolescent girls aged between 16 and 19 years reporting that they engage in methods designed to induce weight loss (e.g., dieting, exercise; National Centre for Health Statistics, 2019).

Studies featuring adult female community members and college students have also recorded high rates of thinness idealisation. For example, Canadian researchers asked female undergraduate students to view photographic images of real women's bodies that fell across the range of body mass index (BMI) categories (i.e., emaciated, underweight, normal, overweight/obese). Approximately 89% of participants endorsed the ideal female body as one that had a BMI that was underweight or emaciated (i.e., $BMI \leq 18.5 \text{ kg/m}^2$; MacNeill & Best, 2015). Furthermore, recent research reports up to 70% of adult women report a desire for a thinner body than their current perceived size (Ralph-Nearman & Filik, 2020). Finally, the widespread endorsement of thinness was acutely demonstrated in a seminal study featuring 26 countries across 10 world regions (North America, South America, Western Europe, Eastern Europe, Scandinavia, Southeast Asia, South and West Asia, and Africa) and 7434 participants (54% female). Although there were inter-regional differences, participants living in Western, urbanised countries endorsed the ideal female body as one that was unrealistically thin (Swami et al., 2010).

Repeated exposure to the thin ideal in the media cultivates the perception that this ideal is the societal norm, thus blurring the boundaries between unattainable and realistic bodies (Calogero et al., 2007; Gerbner, 1998; Gerbner et al., 2002). The widespread endorsement and drive to embody the thin ideal in girls and women summarised earlier demonstrates this. Furthermore, repeated exposure to thinness attainability content (e.g., appearance-focused diet and exercise articles) socialises girls and women to internalise beliefs that the thin ideal is within reach for anyone who engages in the right combination of diet and exercise (Becker & Hamburg, 1996; Calogero et al., 2007; Halliwell et al., 2005). However, despite the illusion of societal appearance norms and perceived attainability of thinness, physiological limitations (including genetics) denotes that achieving and maintaining the thin ideal is realistic only for a very small proportion of women (Brownell, 1991; Calogero et al., 2007). Thus, unsurprisingly, research has consistently shown exposure to Western media and thin ideal imagery is linked with disturbances in women's body image, eating, and exercise (Becker, 2004; Becker et al., 2002; Grabe et al., 2008; Groesz et al., 2002; Stice, 2002; Swami et al., 2010).

The Female Body as a Reflection of Society and the Self

Extant research has documented the Western cultural influence on women's idealisation and desire to adhere to the thin ideal. However, the cultural transmission of appearance norms extends beyond just what is considered an attractive or unattractive appearance. These cultural messages articulate and reinforce what it means when an individual adheres to, or deviates from, appearance ideals (Cash, 2011a). That is, culturally endorsed beauty ideals provide information about societal values and meaning ascribed to appearances; therefore, adherence to beauty ideals communicate information about a person that extends beyond just their physical appearance (Calogero

et al., 2007; Cash, 2011a). Exposure to cultural messages regarding attractiveness and the value placed on adhering to appearance ideals may lead to the formation of positive biases and appearance-related schemas associated with beauty ideals, consequently influencing women's desire to embody such standards (Clark & Tiggemann, 2007). The Western cultural meaning ascribed to attractive appearances in general, and thinness specifically, are described in the following section.

Across history and cultures, female beauty ideals, in particular those related to the weight and shape of a woman, have been used to symbolise fertility (Bonafini & Pozzilli, 2011; Buss, 1989), motherhood and nurturing competence (Brown, 1991), sexuality, sophistication, and wealth (Grogan, 2021; Mazur, 1986). Attractive appearance ideals are also purported to reflect the distribution of resources in a society and the social status of the individual (Hesse-Biber, 2007). For example, in countries with less exposure to Western media and access to fewer resources, heavier female bodies are often viewed more favourably than lower body weight (Brown, 1991; Popenoe, 2003; Swami et al., 2010). In these societies, thin physiques are often equated with poverty, starvation, and disease, while larger bodies are viewed as a sign of health and prosperity (Brown, 1991; Swami, 2015). Furthermore, women's social status and primary role within these societies is often linked with motherhood. Where food scarcity is common, a larger-bodied woman signifies access to food and resources and, therefore, implies greater suitability for a healthy pregnancy and motherhood (Brown, 1991; Pradeilles et al., 2022). Thus, for women living in societies where their value is primarily determined by their ability to reproduce, women's social status and desirability for marriage may be obtained through their body weight (Anderson et al., 1992). Confirmation of the idealisation of adipose female bodies in these cultures can be seen through women's engagement with fattening rituals, such as the sustained

periods of intentional overeating and sedentary lifestyle, by some women living in African countries in preparation for marriage (Popenoe, 2003; Rguibi & Belahsen, 2006). Conversely, in affluent Western societies with abundant access to food resources, women's embodiment of the thin ideal is viewed as a potential pathway towards upward social mobility (Swami, 2015), and is consequently often appropriated by status-seeking individuals in lower and middle classes (Bordo, 2004). In sum, women's adherence (or non-adherence) to culturally endorsed beauty ideals may represent their social position, class status, and gender role in society (Bordo, 2004).

The content discussed in the previous section suggests the cultural idealisation of certain female body ideals may provide information regarding distribution of wealth and resources in a society and of women's primary role within that society. However, external physical appearances may also be used to infer individual characteristics that extend beyond resource access and reproductive ability. External physical appearances are often the first and most accessible characteristic in social interactions (Berscheid & Walster, 1974); therefore, some individuals may use outward appearances to ascribe certain attributes to individuals who do and do not meet culturally endorsed beauty standards. That is, the external body may be used to gauge information about an individual's emotional, moral and spiritual state (Bordo, 2004). Indeed, researchers have long highlighted several stereotypes linking physical attractiveness with desirable personality characteristics, moral goodness, and life outcomes (Dion et al., 1972; Eagly et al., 1991; Langlois et al., 2000; Widdows, 2018) – termed the “what-is-beautiful-is-good” effect (Dion et al., 1972, p. 285).

In their seminal study, Dion et al. (1972) were among the first to explore stereotypes associated with attractiveness. Participants were asked to record their initial judgements to three images, each representing the face of an attractive, average or

unattractive person of the opposite sex, respectively. Overall, physically attractive faces were viewed more favourably compared to less attractive counterparts. Specifically, attractive individuals were considered to have more socially desirable personality traits, and were expected to attain more prestigious occupations and experience greater interpersonal success. In later studies, physically attractive individuals were rated as more likely to be successful in romantic and platonic opposite-sex relationships (Feingold, 1990), experience better psychological well-being and have greater occupational success (Rennels, 2012). In a later meta-analysis, Eagly et al. (1991) found the what-is-beautiful-is-good effect was strongest for perceptions of social competence (e.g., sociability, popularity), and moderate for intelligence, potency (i.e., interpersonal dominance) and adjustment (i.e., psychological stability). Follow-up reviews corroborated these findings, reporting participants across studies were more likely to ascribe socially desirable attributes to attractive individuals (e.g., social skills, intelligence; Feingold, 1992; Langlois et al., 2000).

Evidence also suggests that the positive perception of attractive individuals may accumulate over time and translate into actual social advantages (Frevert & Walker, 2014). For example, some research findings indicate that attractive individuals may experience more favourable employment (e.g., increased likelihood of being hired, higher compensation) and educational outcomes (e.g., higher grades, better student evaluations; Frevert & Walker, 2014; Ritts et al., 1992), reduced likelihood of arrest and conviction (Beaver et al., 2019), and reduced sentencing for criminal activities (Ahola et al., 2009; Leventhal & Krate, 1977; Mazzella & Feingold, 1994). Furthermore, in an international study featuring 37 countries, men and women both rated physical attractiveness as one of the most important characteristics when choosing a romantic partner (Buss, 1989). Finally, studies also have reported that individuals deemed

attractive are more likely to experience directed prosocial behaviours from others, including smiling, friendliness, cooperation, and caregiving (Rennels, 2012). In sum, this research suggests that people may be more likely to ascribe positive characteristics to individuals who adhere to cultural ideals of attractiveness, in particular characteristics that fall in the realm of social competence. This research also implies that positive stereotypes may even translate into real-world advantages across multiple life domains.

The Overvaluation of Thinness

Numerous studies have demonstrated that body mass is considered one of the most important determinants of female attractiveness. These studies typically have found that both female and male participants rate images of women and computer-generated female figures with lower weight and body mass as more attractive (Brierley et al., 2016; Fales et al., 2016; Puhl & Boland, 2001; Stephen & Perera, 2014; Swami & Tovee, 2005, 2007; Wang et al., 2015). Several studies have found adolescent girls and adult women endorse beliefs that being thin is important to be considered attractive by a potential partner and important for maintaining popularity with peers (Cohn & Adler, 1992; Paxton et al., 2005; Tiggemann et al., 2000; Wang et al., 2006). Given extant research has noted that thinness is a key determinant of a woman's level of attractiveness, then it would stand to reason that the what-is-beautiful-is-good effect would extend to women who ascribe to the thin body ideal. Indeed, multiple studies have recorded a range of perceived benefits associated with adherence to the thin ideal (e.g., Engeln-Maddox, 2006; Hohlstein et al., 1998; Rodgers et al., 2022).

Among the first to explore expected outcomes associated with thinness, Hohlstein et al. (1998) found female participants endorsed a range of positive beliefs associated with thinness attainment, including that being thin would result in increased self-esteem, confidence, and self-reliance as well as improve their ability to cope when

faced with failure or challenging tasks. Engeln-Maddox (2006) later explored young women's expectations regarding how their lives might change if their appearance aligned with the thin ideal that was heavily portrayed in the media at that time.

Participants reported a range of positive ways that they expected their life to change if their bodies aligned with the thin ideal, including increased confidence, self-esteem and happiness, and reduced body dissatisfaction. Furthermore, the majority of participants expected to see an improvement in their social interactions and romantic relationships, as well as greater occupational success. Participants also endorsed beliefs that these expected thinness-related outcomes are realistic, noting that they believed these outcomes were highly likely to occur if their body were to align with the thin aesthetic (Engeln-Maddox, 2006). Similarly, a recent qualitative study found women's pursuit of thinness was driven, in part, by expectations that achieving a thin body would increase their confidence and mood, and result in favourable attention from others (Rodgers et al., 2022). Many of the positive expectancies associated with thinness recorded in these studies align with those reported in previous research investigating positive stereotypes of general physical attractiveness (e.g., Eagly et al., 1991), thus supporting the extension of the what-is-beautiful-is-good effect to the thin body ideal.

The media portrayal of thinness has likely contributed to the initial development and reinforcement of positive expectancies associated with thinness. For example, thin characters featured in Western television shows and movies are more likely to be depicted as being physically attractive and having greater success in romantic relationships. Furthermore, thin characters are more likely to possess desirable characteristics (e.g., be more sociable, loving, kind, successful) and experience more positive mood states (e.g., happiness, energetic) compared to larger-bodied characters. Conversely, overweight and obese characters are more likely to be depicted as being of

lower intelligence, more likely to be unemployed, more likely to engage in antisocial acts and be depicted as the “villain”, and less likely to interact with romantic partners, talk about dating, or to receive affection from other characters (Greenberg et al., 2003; Herbozo et al., 2004; Klein & Shiffman, 2006; Klein & Shiffman, 2005; Northup & Liebler, 2010).

Due to the Western endorsement of thinness and the wide range of desirable characteristics and positive stereotypes ascribed to women who embody the thin ideal (e.g., positive mood states, confidence and self-esteem, morality, discipline, sociability, successful), the thin body likely holds greater social capital compared to other types of bodies (Rodgers et al., 2023). The media emphasis on health and fitness also communicates cultural beliefs that women’s weight and shape are controllable attributes, normalising cultural expectations that women are required to work on their bodies through diet and exercise. As pressure to conform to the thin ideal increases, and consequently, it becomes more evident that it is a societal norm, the pursuit of thinness becomes a moral obligation. In other words, the thin body ideal provides a set of standards and associated behavioural actions that women are held personally responsible for, requiring them to actively work towards and engage with (Bordo, 2004; Grogan, 2021; Widdows, 2018). Therefore, when a woman is viewed as having embodied the thin ideal, it is also implied that she has demonstrated restraint, discipline, and perseverance (Bordo, 2004; Grogan, 2021; Rodgers et al., 2023).

If the predominant Western female body ideal is one that is thin and slender, the antithesis to this ideal is a body with surplus weight and flesh. Indeed, overweight and obesity may be viewed as a “rebellion” against cultural norms of thinness (Bordo, 2004, p. 203). Again, as weight and shape are considered controllable attributes, women who do not meet thin ideal standards may be viewed by others as personally and morally

inadequate, and consequently become more vulnerable to weight-based stigmatisation and negative stereotyping (Bordo, 2004; Grogan, 2021). Weight-based stigmatisation relates to the social devaluing of a person because they are overweight or obese. This form of stigma can manifest in several ways, including teasing and bullying, prejudicial behaviours, discrimination, and social rejection (Pont et al., 2017). Unfortunately, weight-based stigmatisation has been documented across multiple contexts, including educational, employment, and healthcare environments (Puhl & Brownell, 2006; Puhl & King, 2013). Overweight and obese persons are also likely to experience weight bias in their interpersonal relationships (Puhl et al., 2008), including in the form of weight-related comments from parents and siblings (Keery et al., 2005; Puhl & Brownell, 2006), rejection from prospective and current partners (Chen & Brown, 2005; Sitton & Blanchard, 1995), and general social rejection and exclusion (Puhl & Brownell, 2006; Puhl et al., 2008).

Internalised negative weight-related stereotypes and attitudes are likely to drive prejudicial behaviours and discrimination against persons who are overweight and obese (Carr & Friedman, 2005; Puhl & Brownell, 2006). Unsurprisingly, decades of research studies have found consistent evidence of negative stereotypes and attitudes towards those who do not conform to the thin ideal. For example, negative attitudes towards obese persons appear to emerge in children aged as young as 3 years. In one study, children aged between 3 and 5 years chose significantly larger figure images of children to represent negative characteristics, compared to the smaller figure associated with positive characteristics (Spiel et al., 2012). In another mixed methods study, preschool-aged children were more likely to describe an overweight target figure as “mean”, rather than “nice”. When asked to justify this attribution in semi-structured interviews, participants referred to negative physical attributes (e.g., “fatter belly”; Su &

Aurelia, 2011, p. 27), behavioural attributes (e.g., describing the figure target as a bully, selfish, and more likely to treat others badly) and emotional attributes (e.g., angrier) to rationalise this choice (Su & Aurelia, 2011). Negative attitudes and perceptions of weight continue into adulthood, with multiple studies recording beliefs that overweight and obese persons are more likely to possess undesirable personality characteristics (e.g., low conscientiousness and agreeableness), interpersonal deficits (e.g., poorer social skills, more awkward, lower perceived popularity), impaired performance ability (e.g., less intelligent, lacking willpower, undisciplined, incompetence), poorer emotional wellbeing (e.g., reduced happiness, emotional instability, psychopathology) and low morality (e.g., hostility, dishonesty; Bordo, 2004; Foster et al., 2003; Greenleaf & Weiller, 2005; Hebl & Heatherton, 1998; Mussap et al., 2016; Price et al., 1987; Puhl & Heuer, 2009; Puhl et al., 2008; Regan, 1996; Roehling et al., 2008; Young & Powell, 1985).

In sum, this section highlighted the widespread endorsement of the thin ideal extends beyond just a cultural opinion regarding the type of female body shape and size that is considered attractive. Across cultures, the female body ideal communicates information about societal structure, cultural values, and the distribution of wealth and resources in that society. Furthermore, the female body may be viewed as a dichotomous symbol representing personal order or disorder (Bordo, 2004). That is, in Western societies in particular, women are taught that their body is malleable, and that thinness is an achievable and valuable body standard to pursue. Therefore, a woman's control over her body weight and shape is considered a matter of personal and moral responsibility and her ability to adhere to the thin ideal standard becomes a reflection of her internal self.

Thin Ideal Internalisation

Awareness of the importance and value Western culture places on the thin body ideal is associated with increased body dissatisfaction in women (Bidstrup et al., 2022; Grabe et al., 2008; Heinberg et al., 1995; Thompson et al., 2018). However, women have been shown to be most at risk for body image disturbances and other psychopathology when they have internalised the thin ideal as a personally important body standard to aspire towards and adhere to (Barakat et al., 2023; Paterna et al., 2021; Stice, 2002; Thompson & Stice, 2001). Broadly defined, *thin ideal internalisation* refers to the degree to which an individual accepts, endorses and desires to conform to the thin body ideal, integrates cultural attitudes, beliefs and values ascribed to thinness into their own belief system, and is driven to engage in behaviours designed to attain and adhere to thin ideal standards (Thompson et al., 1999; Uhlmann et al., 2020).

The widespread and prolific endorsement of thinness, perpetuated by society's rejection of adiposity, conveys the message that the thin body ideal is a societal norm and a crucial standard by which to judge attractiveness (Gerbner et al., 2002; Mingoia et al., 2017). The perceived importance and pressure placed on women's conformity to the thin ideal implies that adherence to this body standard is necessary to obtain higher social status and acceptance from others (Bordo, 2004; Swami, 2015; Vartanian & Hopkinson, 2010). Thus, when a woman internalises the thin ideal, she likely has acknowledged and accepted the societal value ascribed to thinness and adopted this beauty ideal as a personal beauty standard (Thompson & Stice, 2001). Consequently, internalising this beauty ideal will likely lead to an increased desire to embody the thin ideal and preoccupation with ensuring congruence with the thin body standard. As described earlier in this chapter, women's idealisation and preoccupation with thinness and desire to adhere to the thin ideal has been found across the lifespan (e.g., Ambrosi-

Randi, 2000; Hayes & Tantleff-Dunn, 2010; MacNeill & Best, 2015; Ralph-Nearman & Filik, 2020; Ricciardelli & McCabe, 2001; Wertheim et al., 2004). The strength of a woman's internalisation of the thin ideal may also be represented in her emotional response to her perceived ability, or inability, to meet these internalised appearance standards. This may be displayed as feelings of accomplishment and success when internalised standards are approximated and achieved. Conversely, deviation or noncongruence with internalised thin body standards moves beyond just an aesthetic failure towards a failure of the self. That is, failure to meet internalised standards may represent a personal or moral shortcoming, consequently resulting in emotional distress and feelings of rejection (e.g., shame, guilt; Etzioni, 2000; Gilbert, 1997; Higgins, 1987; McKinley & Hyde, 1996; Uhlmann et al., 2020; Widdows, 2018).

As outlined earlier in this chapter, the value in embodying the thin ideal is increased by implicit positive stereotypes and benefits associated with embodying the thin ideal in Western society (Calogero et al., 2007). Through frequent messaging and reinforcement of positive sociocultural attitudes, thinness is equated with psychological (e.g., happiness, confidence, self-esteem) and social benefits (e.g., romantic success, sociability, acceptance); desirable personality characteristics, including morality and discipline; and practical rewards, such as occupational successes (Bordo, 2004; Engeln-Maddox, 2006; Hohlstein et al., 1998; Rodgers et al., 2023; Widdows, 2018).

Conversely, not adhering to the thin ideal is likely to be met with a range of negative sociocultural attitudes (Puhl & Heuer, 2009). When a woman has internalised the thin ideal, she has likely integrated these cultural attitudes and thinness beliefs into her own belief and values system (Uhlmann et al., 2020). Thus, her desire to embody the thin ideal moves beyond just aesthetic appeal and is now driven by her own beliefs that

attainable and valuable rewards are associated with adherence to this beauty standard (Calogero et al., 2007; Uhlmann et al., 2020).

Finally, due to the Western media presentation of the female body as malleable and the thin ideal as attainable, women's devotion to the pursuit of thinness through engagement with diet and exercise has become normalised (Bordo, 2004; Calogero et al., 2007). Accordingly, adherence to the thin body ideal is not restricted to having a slender appearance, but also extends to behavioural actions designed to achieve and approximate the ideal. When a woman has internalised the thin ideal, her drive to embody such standards is likely to be demonstrated through motivated action and engagement with ideal-congruent behaviours, such as dieting and exercise (Uhlmann et al., 2020). Although many reasons exist as to why an individual will engage in certain diets and exercise behaviours, research has shown that women who have internalised the thin ideal are more likely driven to engage in these behaviours for aesthetic purposes (Anić et al., 2022; Homan, 2010; Uhlmann et al., 2020).

Leading researchers have argued that no other body image construct has demonstrated the promise that thin ideal internalisation has shown in the investigation and understanding of risk factors contributing to women's body image and psychopathology (Thompson et al., 2018). Therefore, unsurprisingly, considerable empirical investigation into the construct has occurred since the initial operationalisation of this construct during the 1990s (Thompson et al., 1999). In terms of body image concerns, thin ideal internalisation has been linked with appearance anxiety (Christian et al., 2021), body shame (Knauss et al., 2008; Moradi & Varnes, 2017), weight and shape concerns (Hoffmann & Warschburger, 2019), reduced self-esteem (Schaefer et al., 2015; Schaefer et al., 2017), and lower body appreciation (Andrew et al., 2016). Furthermore, a recent systematic review and meta-analysis of 78

studies ($N = 39,491$) found that thin ideal internalisation was positively associated with body dissatisfaction (Paterna et al., 2021). Thin ideal internalisation has also been associated with a range of disordered eating behaviours, including dieting and restricted eating and bingeing and purging behaviours (Carrard et al., 2020; Chithambo, 2018; Donovan et al., 2020; Homan, 2010; Keery et al., 2004; Schaefer et al., 2019; Stice, 2001; Yamamiya et al., 2008). Finally, thin ideal internalisation is considered a causal risk factor that is implicated in the onset and maintenance of eating disorders (Barakat et al., 2023; Cafri, 2005; Paterna et al., 2021; Stice, 2002; Thompson & Stice, 2001).

Summary of Chapter 2

This chapter summarised evidence that one of the prevailing attractive beauty ideals for women living in Western, affluent societies is the thin body ideal. The desirability of the thin ideal has been propelled by culturally sanctioned messages that thinness is equated with higher social status, social acceptance, and desirable personality attributes, while excess weight and obesity may conversely be met with stigmatised attitudes, discrimination, and social rejection. With the prolific propagation of the thin ideal in the media, coinciding with messages that this ideal is attainable by any woman who engages in diet and exercise, the thin ideal has been prescribed as normative, achievable, and an important determinant of women's attractiveness and social worth. However, this body standard is often at odds with the average woman's biological predisposition of weight and shape, and thus is an impossible standard for most women to achieve and maintain. Therefore, when a woman has internalised the thin body ideal as a personally important standard by which to strive towards and judge her body against, it is not surprising that she is put at greater risk for body image concerns and eating pathology.

Chapter 3: Sociocultural Models Explaining Women's Body Image and Eating

Introduction to Chapter 3

The evidence presented in the previous chapter highlighted the Western cultural influence on the endorsement and pursuit of beauty ideals. Although other perspectives have been proposed (e.g., evolutionary), acknowledgment of the cultural influence on body image has led to the sociocultural perspective dominating research in this area. The sociocultural perspective can be used as a framework for understanding the transmission of cultural influences on women's body image and the natural consequences of these appearance pressures (Tiggemann, 2011). The sociocultural perspective attempts to discern the temporal sequence through which sociocultural appearance pressures manifest in body image and eating disturbances in women (Mills & Fuller-Tyszkiewicz, 2017). In general, the perspective holds that sociocultural agents (i.e., media, family, peers) transmit culturally endorsed standards of attractive appearances to an individual. This cultural context places paramount importance on adhering to beauty ideals as a determinant of an individual's value, attractiveness, and social standing. As described in Chapter 2, the Western female beauty ideal is one that emphasises thinness as a core characteristic. Thus, exposure to these thinness messages increase the likelihood individuals will internalise thin beauty ideals. Consequently, an individual's ability to approximate the internalised thin ideal will influence their appearance satisfaction and subsequent engagement in eating behaviours (Tiggemann, 2011).

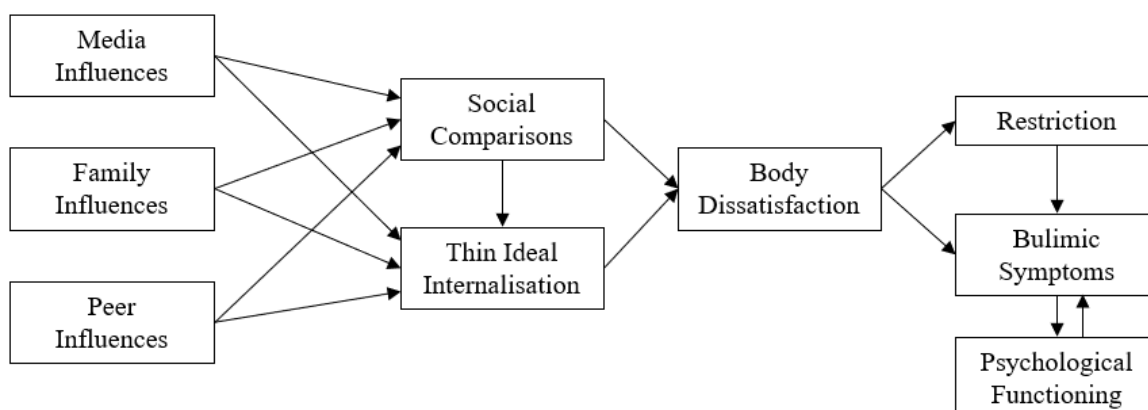
The sociocultural perspective has guided the development and testing of several theoretical models exploring specific risk factor pathways to disturbances in women's body image and eating. The objective of Chapter 3 is to describe and summarise evidence supporting the dominant theoretical models that incorporate a

sociocultural lens, these being the Tripartite Influence Model (Thompson et al., 1999), the Dual Pathway Model (Stice, Nemeroff, et al., 1996), Objectification Theory (Fredrickson & Roberts, 1997), and the Elaborated Sociocultural Model (Fitzsimmons-Craft et al., 2014). This chapter will then provide general critique of these sociocultural models to highlight gaps for future research endeavours.

Sociocultural Models of Women's Body Image and Eating Disturbances

The Tripartite Influence Model

The Tripartite Influence Model of body image and eating disturbances (Figure 1; Thompson et al., 1999) posits that societal standards for female attractiveness (i.e., thin ideal) are transmitted through three powerful sociocultural agents, specifically family, peers, and the media. Exposure to sociocultural messages of endorsed appearance standards increase women's engagement in unfavourable social appearance comparison and their internalisation of thin beauty ideals as a personally important standard by which to judge themselves against. Appearance comparisons and thin ideal internalisation then put individuals at risk for body dissatisfaction when they perceive a discrepancy between their physical body and this nearly impossible to achieve thin beauty standard (Brownell, 1991). Body dissatisfaction is posited to lead to compensatory behaviours, specifically restricted eating and bulimic behaviours, which, in turn, negatively impact on individual's psychological well-being (e.g., depression, anxiety, self-esteem; Thompson et al., 1999).

Figure 1*Tripartite Influence Model of Body Image and Eating Disturbances*

Note. Image adapted from Thompson et al. (1999).

Having received considerable research attention, the Tripartite Influence Model is perhaps the most empirically supported sociocultural model available for understanding women's body image and eating disturbances. The full model has received substantial support from a series of cross-sectional studies, featuring adolescent girls (Keery et al., 2004; Papp et al., 2013; Shroff & Thompson, 2006), and young (de Carvalho et al., 2017; Donovan et al., 2020; Johnson et al., 2014; Rodgers et al., 2011), mid-life (Hockey et al., 2021; Slevic & Tiggemann, 2011) and older women (Carrard et al., 2020). The Tripartite Influence Model has also been used to explore body image in more diverse groups, including lesbian and bisexual women (Hazzard et al., 2019; Huxley et al., 2014), postpartum women (Lovering et al., 2018), ethnic and culturally diverse groups (e.g., Burke et al., 2021; de Carvalho et al., 2017; Rodgers et al., 2011; Shagar et al., 2019; Yamamiya et al., 2008), and transgender persons (Strubel et al., 2020). In addition, the model has been used to explore cosmetic surgery engagement (Menzel, Sperry, et al., 2011; Sharp et al., 2015), the influence of other socially endorsed beauty ideals for men and women (e.g., fit female body ideal, Donovan et al., 2020; mesomorphic male body ideal, Girard et al., 2018), and

depression (Strubel et al., 2020). Research has provided ample empirical support for the pathways proposed in the Tripartite Influence Model (Tylka et al., 2023), and additional direct pathways from media influences to body dissatisfaction (Carrard et al., 2020; Donovan et al., 2020; Papp et al., 2013) and from thin ideal internalisation to dietary restriction (Keery et al., 2004; Yamamiya et al., 2008) are also often observed in studies.

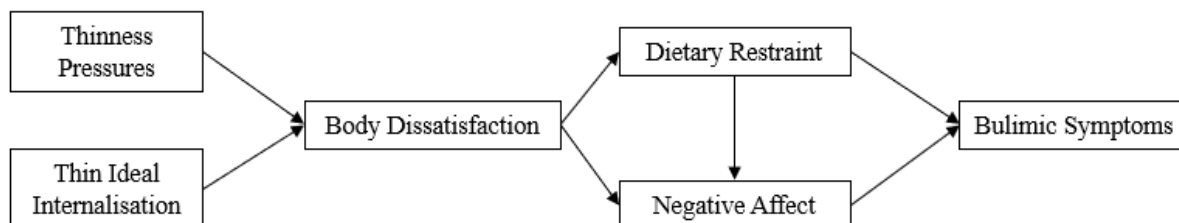
The Dual Pathway Model of Bulimia Nervosa

The Dual Pathway Model of Bulimia Nervosa proposes dual mechanisms through which sociocultural appearance pressures result in some women developing symptoms of bulimia nervosa (Figure 2; Stice, 1994, 2001). This model posits that women are vulnerable to experiencing body dissatisfaction if they are frequently exposed to sociocultural messages that reinforce and perpetuate the thin ideal (i.e., thinness pressures), including messages that emphasise the importance and centrality of attractive appearances for women and have internalised the thin ideal. Body dissatisfaction is then associated with bulimic symptoms via two pathways, dietary restraint and negative affect. Body dissatisfaction is posited to lead to dietary restraint due to underlying beliefs that restriction is beneficial for weight control. Dietary restraint may then directly lead to bulimic symptoms due to hunger and inhibited eating associated with caloric deprivation and indirectly through negative affect that may also occur from restriction and threats to psychological wellbeing with chronic diet violations. Body dissatisfaction may also increase the experience of negative affect as a result of frequent negative self-evaluations, and bulimic symptoms may then function to self-soothe or avoid negative emotions (Crowther & Williams, 2015; Stice, 2001). Dietary restraint is also directly related to negative affect (Ata et al., 2015), while BMI

is proposed to directly influence perceived sociocultural thinness pressures and body dissatisfaction (Stice, Nemeroff, et al., 1996).

Figure 2

The Dual Pathway Model of Bulimia Nervosa



Note. Image adapted from Stice, Nemeroff, et al. (1996).

An initial examination of the Dual Pathway Model in female undergraduate students found all proposed pathways to be significant, with the model accounting for a substantial 71% of variance in bulimic symptomatology (Stice, Nemeroff, et al., 1996). Several cross-sectional studies have since provided support for model pathways when tested in pre-adolescent girls (Evans et al., 2013), adolescents (Hutchinson et al., 2010), female university students (Duemm et al., 2003; Maraldo et al., 2016; Shepherd & Ricciardelli, 1998), adolescent and adult community members with bulimic symptoms (Stice, Ziemba, et al., 1996), male and female adults with binge eating symptoms (Welsh & King, 2016), and obese adults (Womble et al., 2001). Several longitudinal studies have also supported most pathways proposed in the model (Allen et al., 2012; Dakanalis et al., 2014; Puccio et al., 2019; Puccio et al., 2016; Salafia & Gondoli, 2010; Stice, 2001; Stice et al., 1998), although only a few have tested the model in its entirety (e.g., Puccio et al., 2019; Puccio et al., 2016; Stice, 2001). A three-wave longitudinal study of adolescent girls ($N = 231$) found baseline thinness pressures and thin ideal internalisation predicted increases in body dissatisfaction during the 2-year study period. Baseline body dissatisfaction also predicted increases in dieting and negative affect, and baseline dieting and negative affect predicted growth in bulimic symptoms

over the study period (Stice, 2001). The model has also demonstrated good model fit in two samples of adult females across a 1-month follow-up period (Puccio et al., 2019; Puccio et al., 2016). Support for the Dual Pathway Model and proposed mediated pathways were also obtained in a 2-year longitudinal study of adolescent girls ($N = 361$; Dakanalis et al., 2014).

Although support for the overall model has been obtained from cross-sectional and longitudinal studies, some studies have failed to obtain support for specific pathways within the model. For example, nonsignificant relationships between BMI and body dissatisfaction (Puccio et al., 2019), body dissatisfaction and dietary restraint (Puccio et al., 2016), dietary restraint and bulimic symptoms (Hutchinson et al., 2010; Ouwens et al., 2009; Van Strien et al., 2005), and between negative affect and bulimic symptoms (Puccio et al., 2016) have been recorded. Other study findings also suggest extending the original Dual Pathway Model to include additional risk factors, such as negative urgency and interoceptive awareness, may improve overall model fit and explanatory power (Dakanalis et al., 2014; Puccio et al., 2019; Van Strien et al., 2005).

Objectification Theory

Drawing from sociocultural and feminist perspectives, Objectification Theory provides an integrated framework for understanding women's body image and eating disturbances through the social lens of gender roles and sexual objectification of women living in Western societies (Fredrickson & Roberts, 1997; McKinley & Hyde, 1996). This theory proposes that women are taught from a young age that their social worth and standing is determined by their physical appearance and sexual attractiveness. This encourages the view of women and girls' bodies as objects that exist to be observed and enjoyed by others, and then judged in terms of how closely their bodies align with culturally endorsed appearance standards (Fredrickson & Roberts, 1997; McKinley &

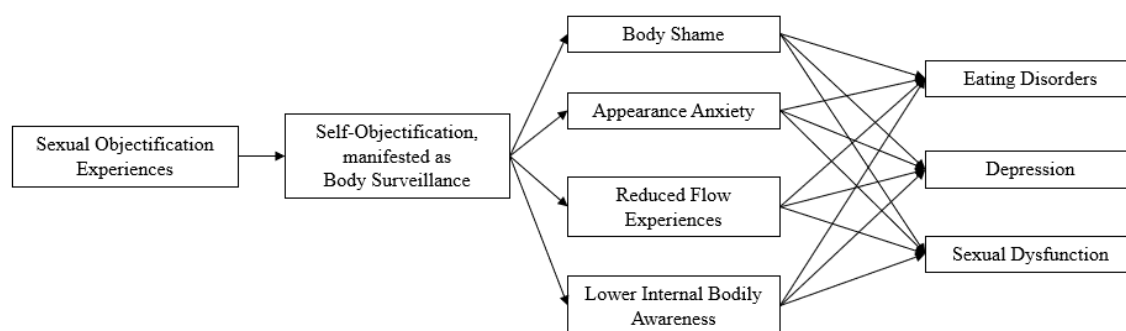
Hyde, 1996). The emphasis on women's appearance and sexuality is communicated and reinforced through common practices of sexual objectification of women's bodies, which can be directly and indirectly observed throughout Westernised culture (Calogero et al., 2011). For example, objectification practices are clearly evident in some interpersonal interactions (e.g., sexual harassment and violence, sexualised gazing) and sexually objectifying media and advertising, but also exist in other discrete forms (e.g., clothing such as crop tops and bikinis for young girls).

According to Objectification Theory, frequent exposure to objectifying experiences may lead some women to internalise the observer's perspective on her body. Women who internalise these perspectives may begin to view their bodies as objects or parts separate from their personhood that exist only for the pleasure of others. Furthermore, they may begin to value their observable physical appearance attributes above other attributes, such as personality and intelligence. This internalisation is termed self-objectification and may behaviourally manifest as habitual self-surveillance or monitoring of outward physical appearances in anticipation of being viewed and evaluated by others (Roberts et al., 2018). Self-objectification and manifest body surveillance are proposed to increase body shame and appearance anxiety, reduce and inhibit flow states (i.e., the complete immersion in a physical or mental task; Csikszentmihalyi, 1990), and impact awareness of internal body states (e.g., physiological sensations such as hunger or sexual arousal). The impact of self-objectification and body surveillance subsequently increases women's risk of eating disorders, depression, and sexual dysfunction (see Figure 3; Fredrickson & Roberts, 1997; Roberts et al., 2018). As these consequences are the distal result of gender socialisation and sexual objectification practices, women's discontent and disordered

eating are viewed as stemming from a sociocultural context, rather than a focus on individual pathology (McKinley, 2011).

Figure 3

Objectification Theory Framework



Note. Image adapted from Moradi and Huang (2008).

Considerable research has supported the role of sexual objectification in women's body image. The full model of objectification theory has been supported in cross-sectional studies featuring adolescent girls (Slater & Tiggemann, 2002) and female college/university students (Moradi et al., 2005; Steer & Tiggemann, 2008; Szymanski & Henning, 2007; Tiggemann & Kuring, 2004; Tiggemann & Slater, 2001; Tiggemann & Williams, 2012; Tylka & Hill, 2004). Consistent with objectification theory that suggests women are more vulnerable to body image and eating disturbances due to more frequent exposure to sexual objectification experiences compared to men, a recent large population study ($N = 11,620$) found that women were more likely to report higher levels of self-objectification, thin ideal internalisation and appearance pressures, compared to male participants (Frederick et al., 2022). Furthermore, a recent meta-analysis found a stronger relationship between self-objectification and disordered eating for women compared to men (Schaefer & Thompson, 2018). Finally, a large body of experimental and cross-sectional research has provided support for the direct and indirect relationships between self-objectification, eating pathology, and mental health

(see Kahalon et al., 2018; Schaefer & Thompson, 2018). However, unlike extant literature that has tested and found support for body shame and appearance anxiety as mediators of these relationships, less research has examined the mediating roles of flow experiences and interoceptive awareness (Ata et al., 2015; Kahalon et al., 2018; Tiggemann & Williams, 2012).

The Elaborated Sociocultural Model of Disordered Eating

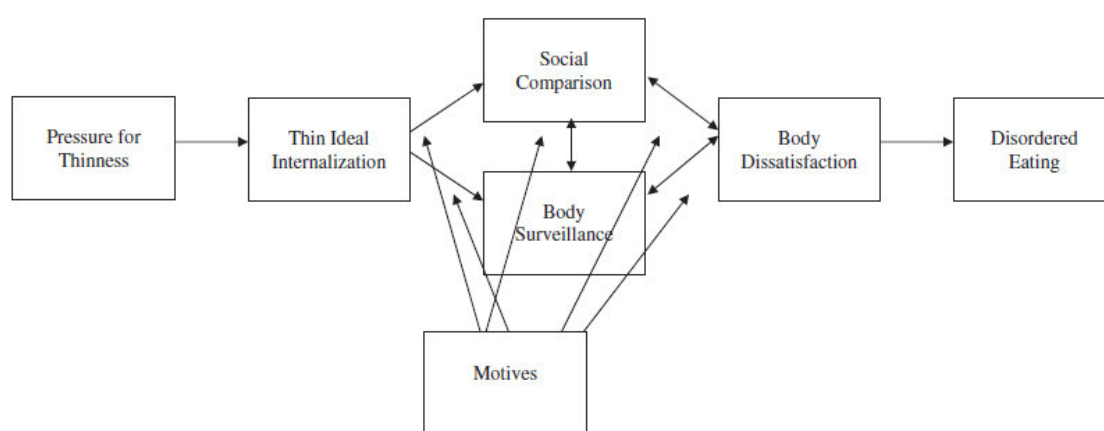
The Elaborated Sociocultural Model of Disordered Eating (Fitzsimmons-Craft, 2011) proposed an integration of theoretical frameworks from tripartite influence (Thompson et al., 1999), objectification (Fredrickson & Roberts, 1997), and uses and gratification theories (Rubin, 2009) to provide a more comprehensive understanding of sociocultural and psychological factors contributing to the development and maintenance of disordered eating in young women (Figure 4).

The Elaborated Sociocultural Model proposed several mechanisms through which internalisation of sociocultural messages regarding thin beauty ideals lead to body dissatisfaction and eating pathology. Specifically, body dissatisfaction and subsequent disordered eating are considered outcomes of internalised sociocultural thinness pressures that result in increased social appearance comparisons and body surveillance. Social comparison and body surveillance are posited to increase an individual's awareness of discrepancies between their internalised beauty standard and actual physical body, resulting in greater dissatisfaction and attempts to rectify this discrepancy. Furthermore, this model acknowledges that not all individuals consume media in a passive manner; rather, according to this model, some individuals actively choose what forms of media they are exposed to, interpret media messages in terms of underlying beliefs and motives, and choose to behave in response to these interpretations (Hesse-Biber et al., 2006). That is, some women may engage with

appearance-related media for relaxation purposes, while others may actively seek out and use this form of media as guidance on how to meet sociocultural appearance ideals. Thus, beliefs regarding the importance of appearance ideals and motivation to engage in appearance-related media may negatively impact women when they use that information in a harmful way (e.g., diet inspiration; Fitzsimmons-Craft, 2011).

Figure 4

The Elaborated Sociocultural Model of Disordered Eating



Note. Image adapted from Fitzsimmons-Craft (2011).

The Elaborated Sociocultural Model was tested in a sample of college women (Fitzsimmons-Craft et al., 2014). This study found good fit to data when tested cross-sectionally, with a significant total indirect effect recorded between thin ideal internalisation and body dissatisfaction via social comparison and body surveillance. However, only social comparison emerged as a significant, specific mediator of this relationship. Thin ideal internalisation was found to predict social comparison and body surveillance in a follow-up survey 3 months later. Furthermore, social comparison was found to account for significant unique variance in body dissatisfaction and disordered eating at follow up, while body surveillance did not (Fitzsimmons-Craft et al., 2014). Although this study recorded initial support for the Elaborated Sociocultural Model, follow-up research is yet to test and replicate these. Indeed, much of the support for this

model has been obtained from studies testing single mediated and moderated pathways. For example, studies have obtained support for the indirect relationship between internalisation of appearance ideals and body dissatisfaction via social comparison and body surveillance mediated pathways (Fitzsimmons-Craft et al., 2014; Fitzsimmons-Craft et al., 2016; Fitzsimmons-Craft, Harney, et al., 2012; Myers & Crowther, 2007; Scully et al., 2020; Seekis et al., 2020). Emerging research investigating social media also lends support to the moderation of such effects by users' beliefs and motivation to engage with such content. For example, motivations to engage with social media due to appearance and popularity purposes were more strongly related to beauty ideal internalisation compared to other forms of motivation (Rodgers et al., 2021). Furthermore, motivation to use social media to obtain appearance feedback was positively associated with active social media use (e.g., posing images) and linked with increased overvaluation of weight and shape and reduced appearance esteem (Jarman et al., 2021). Although this research provides support for individual model pathways, replication research that examines the Elaborated Sociocultural Model in its entirety remains necessary.

Limitations of Sociocultural Models

Although the general sociocultural framework and specific sociocultural models have been instrumental in outlining a sociocultural context for understanding women's body image, these models present several key limitations that warrant addressing in future research. The limitations highlighted here specifically relate to the rising influence of social media, likely interactions between sociocultural pressures and individual differences that have been neglected in model testing, and the limited investigation of reciprocal and bi-directional relationships in model testing. These

limitations are discussed in greater detail in the following section, accompanied by suggested future research directions to remedy such limitations.

Social Media

Research exploring appearance pressures emanating from media sources have typically cited the detrimental effects of exposure to traditional forms of media (i.e., television, movies, magazines; Grabe et al., 2008; Groesz et al., 2002; Thompson et al., 1999). However, recently, the research focus has shifted towards exploring the rising influence of social media as a new avenue through which culturally endorsed appearance ideals can be disseminated to mass audiences (Rodgers & Melioli, 2016; Thompson & Harriger, 2023).

The use of social media platforms is growing exponentially, in particular among young women and adolescent girls, who are now engaging with social media more frequently than traditional media sources (Bair et al., 2012; Twenge et al., 2019). The most popular social media platforms (i.e., Instagram, TikTok, Facebook) provide visual content (i.e., photographs, videos) created by users for viewing consumption by others (Statistica, 2023b). As most social media platforms incorporate software to enable easier modification and editing of content, users now commonly post images and videos they have spent considerable time editing to present idealised versions of themselves, to align with cultural appearance expectations (Fox & Vendemia, 2016; Rousseau, 2021). In particular, thin body ideals are widely featured in social media content, with edited images of young, slender women dressed in skin-revealing clothing, often in objectifying poses (Brown & Tiggemann, 2020; Ghaznavi & Taylor, 2015; Tiggemann & Zaccardo, 2018; Wick & Harriger, 2018). These images are also often publicly endorsed by other users through “likes” and positive commentary further promoting the social endorsement of idealised appearance expectations (Feltman & Szymanski, 2018).

Several systematic and meta-analytic reviews have now confirmed that the use of social media, in particular appearance-based platforms, is associated with disturbances in body image (de Valle et al., 2021; Fardouly & Vartanian, 2016; Holland & Tiggemann, 2016; Saiphoo & Vahedi, 2019). Specifically, a meta-analysis of 56 cross-sectional studies featuring 63 independent samples ($N = 36,552$) revealed a significant, positive overall effect of social media use on body image disturbances. Furthermore, larger effects were observed in younger samples for appearance-focused social media use (compared to general social media use), and on outcomes that measure cognitive and behavioural dimensions of body image (compared to general/evaluative dimensions; Saiphoo & Vahedi, 2019). A follow-up meta-analysis of experimental and longitudinal research recently explored the causal influence of social media on body image. In this review, a quantitative synthesis of 53 samples ($n = 43$ experimental design, $n = 10$ longitudinal) revealed viewing appearance-ideal social media imagery had a significant, moderate effect on body image. That is, greater engagement with social media content featuring appearance ideals was associated with greater disturbances in body image (de Valle et al., 2021). Effect sizes were similar to the influence of traditional media (Grabe et al., 2008). Overall, the findings from these reviews suggest that social media use, in particular the use of appearance-based social media, likely plays an important role in women's body image development and disturbance.

However, to date, much of the research has focused on the frequency and type of social media exposure, so it is less clear which type of social media use is most detrimental and the mechanisms through which social media is linked to body image (de Valle et al., 2021). Users can engage with social media in a variety of ways that may differentially affect their body image and wellbeing. For example, users may passively

view images and videos of friends, family, and public figures, or primarily consume neutral or artistic content. Alternatively, they may also actively engage and interact with social media through the like or comment features of the platform or through posting edited, idealised images of themselves. Studies have shown that more active engagement, in particular with appearance-related content, is associated with stronger thin ideal internalisation and frequent social comparisons and self-objectification processes (Cohen et al., 2018; Fox & Vendemia, 2016; Mingoia et al., 2017; Vandebosch et al., 2022).

Although research in this area is still in its infancy, the integration of social media variables within the dominant sociocultural models will likely improve our understanding of the mechanisms through which social media use influences body image (Tylka et al., 2023). When applied to the Tripartite Influence Model (Thompson et al., 1999), social media may be conceptualised as another sociocultural appearance pressure, alongside traditional sources (i.e., family, peers, traditional media), similarly influencing body image through indirect mediators such as thin ideal internalisation. Indeed, Roberts et al. (2022) recently demonstrated that perceived appearance pressures from social media contributed unique variance to thin ideal internalisation, even after controlling for the effects of traditional media and interpersonal appearance pressures. Furthermore, thin ideal internalisation mediated the significant relationship between social media appearance pressures and appearance esteem, suggesting an important indirect relationship and highlighting a key sociocultural mechanism (i.e., internalisation).

Social media appearance pressures may be incorporated into other sociocultural frameworks in a similar manner; however, additional consideration of the nuances of social media use could elaborate further on mechanisms of action. For example, in

terms of the Objectification Theory (Fredrickson & Roberts, 1997) and the Elaborated Sociocultural Model (Fitzsimmons-Craft, 2011; Fitzsimmons-Craft et al., 2014), social media facilitates self-objectification by enabling photo editing and manipulation that aims to invite positive peer commentary. This encourages content creators to engage in self-objectification processes, including habitual body surveillance, to ensure they meet the perceived appearance standards of their followers. Thus, when social media is considered within an objectification framework, the actual act of creating idealised self-images to be posted on social media may be the manifestation of self-objectification processes (Jarman et al., 2022; Tylka et al., 2023).

Overall, a growing body of literature suggests that social media plays an important role in body image, although less is known about the specific mechanisms through which this occurs (de Valle et al., 2021; Tylka et al., 2023). Unlike traditional media sources of appearance pressures, social media provides a unique platform through which users can now actively engage with appearance-related content in a manner that has never been possible before. Although research in this area is still emerging, inclusion of social media variables into sociocultural models is likely to increase our current understanding of factors that contribute to body image development and disturbance (Tylka et al., 2023).

Individual Differences

In current Western society, exposure to media and unrealistic appearance standards is ubiquitous and unavoidable. Given this, the sociocultural perspective on cultural factors contributing to body image would simply imply that everyone living in this environment experiences body dissatisfaction. However, research indicates that some individuals are more vulnerable to experiencing body image concerns than others, suggesting the presence of other variables that may moderate or mediate the

sociocultural impact on body dissatisfaction (Ferguson, 2013; Frederick et al., 2017; Tiggemann, 2011). The aetiology of body image and eating disturbances likely involves complex interactions between environmental, biological, and psychological risk factors (Culbert et al., 2015; Smolak & Cash, 2011). However, the dominant sociocultural models often investigate risk factors in isolation and have traditionally lacked consideration of individual differences (e.g., biological, psychological) that may increase some individuals' vulnerability to appearance pressures (Diedrichs, 2017; Tiggemann, 2011). For example, twin studies have shown that genetic influences account for almost 40% of variance in thin ideal internalisation (Suisman et al., 2012). Although this finding might imply that thin ideal internalisation is partly heritable, the researchers argued this finding likely suggests an interaction between environmental risk factors (i.e., sociocultural appearance pressures) and inherited personality traits (Suisman et al., 2012; Suisman et al., 2014).

Recent attempts have been made to extend traditional sociocultural models to include such variables. For example, Rodgers et al. (2014) proposed an extension on the Tripartite Influence Model that included the addition of psychological (i.e., negative affect) and biological factors (i.e., BMI), alongside sociocultural factors (e.g., thinness pressures, thin ideal internalisation). The model was tested in a large sample of early adolescent girls and was found to account for a significant proportion of variance in body image concerns (86%) and disordered eating (50%). In this model, thin ideal internalisation and appearance comparisons significantly mediated the indirect relationships between sociocultural influences and body image concerns, and between negative affect and body image concerns. A significant direct path between BMI and body image concerns was also observed. This study demonstrated support for a

biopsychosocial framework that incorporates broader biological, psychological, and sociocultural factors in models of body image and eating (Rodgers et al., 2014).

One individual difference factor that remains under investigated in larger risk factor models for body image and eating pathology is personality. This is despite considerable research having found certain personality traits (e.g., higher levels of neuroticism, perfectionism, reward and punishment sensitivity) appear to increase risk of body image concerns (Allen & Robson, 2020; Allen & Walter, 2016) and disordered eating (Bardone-Cone et al., 2006; Culbert et al., 2015; Fairburn et al., 2003; Lavender et al., 2015; Weydmann et al., 2022). In one way, personality may interact with sociocultural pressures by influencing the meaning, processing, and importance an individual ascribes to appearance-related messages increasing vulnerability to disordered body image and eating pathology (Dionne & Davis, 2012).

A recent systematic review and meta-analysis of 26 studies and more than 39,000 study participants explored the relationship between personality and body dissatisfaction (Allen & Robson, 2020). After controlling for the effect of BMI, a medium effect size emerged between neuroticism and body dissatisfaction. In brief, individuals reporting higher levels of neuroticism may be at greater risk for body dissatisfaction because these individuals are more likely to experience negative affectivity, to report being self-conscious (McCrae & Costa, 2008), to report greater sensitivity to perceived criticism or rejection from others (Benford & Swami, 2014; Dionne & Davis, 2012), to engage in social appearance comparisons (Roberts & Good, 2010), and to internalise the thin ideal (Martin & Racine, 2017). Similarly, women reporting higher levels of perfectionism (i.e., a trait characterised by unrelenting high standards, self-criticism, and negative self-evaluations; Shafran et al., 2002) are more vulnerable to body image concerns because they are more likely to endorse stronger thin

ideal internalisation and more frequent engagement in appearance-related social comparisons (Boone et al., 2011; Pokrajac-Bulian et al., 2008). Because exposure to appearance pressures in Western societies is unavoidable in the current media climate, understanding the role of personality, and screening for trait characteristics that increase vulnerability, may assist in identifying individuals who are at greater risk for disordered body image and eating pathology (Levine & Smolak, 2020).

Causality and Reciprocal Relationships. Surprisingly, there remains limited longitudinal and prospective investigations testing the temporal precedence and causal relationships of variables within larger sociocultural models (Ata et al., 2015; Tiggemann, 2011). This limits our understanding of the temporal order of risk factors, as well as body image development and fluctuations across the lifespan. Furthermore, the emphasis on portraying pathways as unidirectional (i.e., media exposure causes internalisation) in popular sociocultural models (e.g., Tripartite Influence Model, Thompson et al., 1999) oversimplifies the complexity of these relationships. It is likely that these relationships actually exist as an ongoing, reciprocal process (Fitzimmons-Craft, 2011; Moradi & Huang, 2008; Tylka et al., 2023), such that while Western media (and other sociocultural agents) portrays the cultural endorsement of beauty ideals, women are likely contributing to the perpetuation of these beauty ideals through their own pursuit of beauty, active consumption and interpretation of media messages, and otherwise involvement in appearance culture.

The reciprocal nature of these relationships is clearly represented in the uptake and use of social media (Tylka et al., 2023). As noted earlier, social media is well-known for its widespread dissemination of idealised imagery portraying popular beauty ideals, however importantly, this content is mostly created by the users of these platforms (Perloff, 2014; Tylka et al., 2023). Many female users are known to

frequently post edited images of themselves that have been modified in some way (e.g., edited to appear skinnier than their current self; Fox & Vendemia, 2016; Rousseau, 2021). These images are then also often publicly endorsed by other platform users, many of them women (Feltman & Szymanski, 2018). Furthermore, recent research has shown that the more women use social media and report internalisation of the thin ideal, the more likely they are to post this type of idealised and edited content (e.g., Chae, 2017; Rousseau, 2021). In a similar mutually-reinforcing manner, prospective research has found women's social media use predicts higher body dissatisfaction one year later, while body dissatisfaction predicted more frequent social media use one year later (Marques et al., 2022). It may be that women who have internalised the thin ideal are more motivated to use media images to gain information about culturally-endorsed appearance standards through social comparison processes and/or to obtain feedback from their peers and other users about how well their appearance aligns with such standards (Rousseau et al., 2017; Tiggemann, 2003).

Beyond media, adolescent girls reporting higher thin ideal internalisation are more likely to engage in appearance-related conversations with peers (Rousseau & Eggermont, 2017), while mothers reporting higher thin ideal internalisation were more likely to express negative opinions about individuals considered overweight, model dieting behaviours to their family, and influence their daughter's drive for thinness (Gagnon-Girouard et al., 2020; Jones & Young, 2021; Yamazaki et al., 2014).

Therefore, it would appear that women are not just passive consumers of sociocultural messages of beauty but that they are frequently and actively contributing to the perpetuation and evolution of these ideals. However, few studies using existing model framework have examined the temporal and reciprocal nature of these relationships thus limiting our understanding of this cyclical process (Tylka et al., 2023).

Summary of Chapter 3

Chapter 3 summarised empirical evidence supporting key sociocultural risk factor models of body image, specifically the Tripartite Influence Model, Dual Pathways Model, Objectification Theory, and the Elaborated Sociocultural Model. Overall, the evidence presented here emphasised women's internalisation of the thin ideal as the central mechanism through which sociocultural messages pertaining to the importance and value of thinness in Western society increases women's risk of body image and eating disturbances. In reviewing these sociocultural models, key limitations emerged that warrant examination in future research. Specifically, the limitations described in this chapter relate to the slow integration of variables assessing appearance pressures emanating from social media into dominant sociocultural models, the neglect of individual differences in these models that may increase or protect against sociocultural appearance pressures, and under-investigation of reciprocal relationships between model variables. Accordingly, research investigating sociocultural appearance pressures and thin ideal internalisation should seek to address these gaps in future research endeavours.

Chapter 4: Measurement of Body Image and Thin Ideal Internalisation

Introduction to Chapter 4

Chapters 2 and 3 summarised theoretical and empirical evidence emphasising the cultural importance on maintaining an attractive appearance and the centrality of thinness in contemporary Western female beauty standards. Disturbances in body image are commonplace for women living in Western societies; however, women are shown to be at greater risk when they have internalised the thin body ideal (Paterna et al., 2021; Thompson et al., 2018; Tiggemann, 2011). Indeed, as outlined in Chapter 3, thin ideal internalisation has been found to be a key mechanism through which sociocultural appearance pressures increase women's risk of body image and eating disturbances (Ata et al., 2015). That is, repeated exposure to Western appearance ideals of attractiveness become problematic when women internalise these ideals as standards they should strive to adhere to, consequently impacting their body image, eating habits, and psychopathology, when they fail to meet such impossible standards (Thompson & Stice, 2001). To date, the measurement of thin ideal internalisation in adult women has been restricted to brief, unidimensional questionnaires. The use of these questionnaires has been instrumental in supporting empirical investigations into the influence of thin ideal internalisation on women's psychopathology (Thompson et al., 2018). However, research exploring the multidimensionality of the internalisation construct (Uhlmann et al., 2020) and the psychometric properties of available questionnaires (Thompson et al., 2018) has called into question the construct validity of these questionnaires.

Uhlmann et al. (2020) recently operationalised beauty ideal internalisation as consisting of three distinct facets, specifically relating to the idealisation and overvaluation of cultural beauty ideals and internal motivation to engage with behaviours designed to adhere to internalised beauty standards. In their study, Uhlmann

et al. (2020) applied this operationalisation to the measurement of fit ideal internalisation (i.e., a female body ideal characterised by muscle tone and low body fat). Results from this study found the multidimensional operationalisation and assessment of fit ideal internalisation explained additional, unique variance in body dissatisfaction, disordered eating and exercise, and negative affectivity in women, above and beyond existing, unidimensional internalisation measures (including those purported to measure thin ideal internalisation; Uhlmann et al., 2020). Extrapolating these findings to the thin ideal, the findings from this study indicate a comprehensive assessment of thin ideal internalisation, in particular one that aims to assess all internalisation facets (i.e., idealisation, overvaluation, behavioural drive), has potential to improve the theoretical and clinical understanding of this construct. Unfortunately, the available measures of thin ideal internalisation remain limited to unidimensional questionnaires that are unlikely to capture the complex internalisation experience, thus highlighting an important gap in the literature.

The development of valid and reliable measures of body image and body image related constructs is challenging and requires careful consideration of the construct of interest and research methodology (Cash, 2011b; Krawczyk et al., 2012). Therefore, Chapter 4 seeks to provide an overview of best-practice guidelines for the development and psychometric evaluation of self-report questionnaires generally, and as it pertains to the assessment of body image. This chapter will then provide a historical overview and critique of the currently available measures of thin ideal internalisation, these being the Sociocultural Attitudes Towards Appearances Questionnaire (SATAQ; Cusumano & Thompson, 1997; Heinberg et al., 1995; Schaefer et al., 2015; Schaefer et al., 2017; Thompson et al., 2004) and the Ideal Body Stereotype Scale (IBSS; Stice et al., 1994), and highlight the need to develop a new, valid measure of thin ideal internalisation.

Measurement Development and Psychometric Validation

The scientific exploration of a subject area is only as good as the assessment tools used during the investigation (Cash, 2011b). Conceptualising, developing and psychometrically validating new questionnaires and assessment tools can be an arduous and lengthy undertaking. Because best-practice guidelines for measurement development have been covered in greater detail elsewhere (see Clark & Watson, 2019; Rosellini & Brown, 2021), the following section will only provide a brief summary of the recommended methodology. This section also aims to emphasise important considerations relevant for the measurement of body image constructs generally and thin ideal internalisation specifically.

Creating valid and reliable questionnaires requires a series of iterative steps and rigorous evaluation that typically occurs across several phases of study. In the first phase of development, a great deal of attention should be dedicated to the initial conceptualisation of the construct of interest. This requires close examination of available literature and existing theoretical underpinnings of the construct. Careful consideration of the definition and dimensionality of the construct is required (Clark & Watson, 2019; Thompson et al., 2012; Zickar, 2020). Qualitative data from focus groups and expert consultation may also inform and lend support to the proposed definition and structure of the construct being measured (Ricci et al., 2019). Empirical support for the construction of a new measurement tool that is distinct from existing measures is also required. Specifically, researchers should provide sound justification for developing a new measure (e.g., clinical need) and provide clear reasoning as to why existing measures are insufficient (e.g., poor reliability or validity; Rosellini & Brown, 2021).

In the next phase, an item pool is constructed in a manner that ensures comprehensive coverage of the construct (i.e., content validity). The item pool should aim to be overly inclusive; however, specific size of the item pool will depend on the complexity and dimensionality of the construct (Clark & Watson, 2019; Rosellini & Brown, 2021). Researchers can choose to use test-specification frameworks to support item development (see Rust et al., 2009). Often experts and members of the target population are consulted at this stage to assess content validity of proposed items (Rosellini & Brown, 2021). During this phase, researchers need to consider the most appropriate response format (e.g., Likert style, binary true/false) for the questionnaire and determine if reverse-worded items should be included. Items should be written to avoid leading, ambiguous and double-barrelled questions, and colloquial language (Clark & Watson, 2019).

Once an item pool is constructed, the next phase gathers an array of psychometric evidence to assess the validity and reliability of questionnaire items. Large, representative samples of the target population (minimum 300 participants per sample is generally recommended; Clark & Watson, 2019) are recruited at this stage. Initially, exploratory factor analytic techniques are used to extract underlying factors, refine the measurement model, and eliminate unnecessary items. Confirmatory factor analytic techniques are then used to confirm the factor structure and finalise questionnaire content. Convergent and discriminant validity of the questionnaire is explored through examination of the magnitude of correlations with relevant measures of interest. This phase should also aim to explore the internal consistency of subscales and composite scores (e.g., Cronbach's alpha), and additional analyses assessing test-retest reliability, predictive and incremental validity, and measurement invariance may also be required (Rosellini & Brown, 2021).

Body Image Assessment

Developing and psychometrically validating new questionnaires in any discipline requires careful consideration and implementation of the steps outlined in the previous section and discussed in greater detail elsewhere (e.g., Clark & Watson, 2019). The rewards from the attention and time dedicated to this form of science are great, because, when done well, measurement development can lead to a deeper understanding of theoretical and clinical constructs (Zickar, 2020). However, additional matters warrant special consideration when creating measurements that assess body image constructs. These considerations will be highlighted in greater detail in the following section and specifically relate to construct dimensionality, measurement of transient states versus stable traits, and generalisability of psychometrics (Cash, 2011b; Krawczyk et al., 2012).

As previously noted, item pools should be theoretically derived and aim to comprehensively cover all facets of the construct of interest (Clark & Watson, 2019). Body image is a complex and multidimensional construct, consisting of distinct perceptual, affective, cognitive and behavioural domains (Grogan, 2007; Thompson et al., 1999). The multidimensionality of this construct has propelled the development of a diverse range of assessments in this area (Kling et al., 2019). Indeed, a recent review found more than 150 measures of body image exist, with many having been used only once in the published literature (Kling et al., 2019). Available scales range from narrow, focused measurement of unidimensional body image constructs (e.g., 10-item Body Appreciation Scale-2; Tylka & Wood-Barcalow, 2015a) to broader, multidimensional assessments such as the Eating Disorders Examination Questionnaire (Fairburn & Beglin, 1994), which assesses body dissatisfaction, and concerns with weight and shape. Therefore, a thorough review of the available literature is necessary to a) empirically

define the construct and facets (if multidimensional), and b) obtain support for the necessity of the new scale (Clark & Watson, 2019). If the proposed scale aims to assess multiple facets of body image, items should carefully be written to ensure they align with and adequately cover the hypothesised dimensional structure (Krawczyk et al., 2012; Rosellini & Brown, 2021).

A second consideration in this field is the distinction between trait and state dimensions of body image (Krawczyk et al., 2012; Shroff et al., 2009; Thompson et al., 2012). Many body image assessment tools assess body image constructs as trait-like dimensions, recording respondents' general body image disposition (Cash, 2011b). These types of measures are well suited for cross-sectional and prevalence studies. For instance, the Sociocultural Attitudes Towards Appearance Questionnaire-4 (SATAQ-4; Schaefer et al., 2015) was recently used to assess the prevalence of trait levels of thin ideal internalisation in a large population survey ($N = 11,620$ US adults; Frederick et al., 2022). However, it is also increasingly recognised that some body image experiences can quickly and momentarily vary as a function of certain contexts and environmental conditions (Cash, 2011b; Cash et al., 2002; Colautti et al., 2011; Thompson et al., 2012). Measuring state presentations of body image are particularly relevant for experimental and ecological momentary research designs (Krawczyk et al., 2012). For example, examining fluctuations in body dissatisfaction (i.e., state dissatisfaction) in women following exposure to thin idealised images in an experimental setting (Fioravanti et al., 2022) or using ecological momentary assessment procedures to assess participants' momentary body image evaluations in real world settings (Fitzsimmons-Craft et al., 2016). Therefore, questionnaire instructions need to clearly articulate time frames that differentiate state ("how are you feeling right now") versus trait ("how do you feel on average") assessments.

Finally, clearly defining and recruiting the target population is an important consideration when developing and using body image questionnaires. Certainly, this is important for all construct measurement, however sociocultural and demographic factors particularly relevant to body image research can drastically influence the psychometrics of questionnaires (Cash, 2011b; Krawczyk et al., 2012). For example, due to differences in sociocultural appearance pressures, culturally defined gender roles and even biology (Cash, 2011b), body image measurements often need to be created differently for men versus women. The idealised male body is fundamentally different to the thinness-orientated female body ideal, in that it can manifest as a drive for weight gain in the form of muscle mass (Murray et al., 2018). Therefore, the psychometrics of an instrument designed to measure a drive for thinness may perform poorly or differently in a male sample, while simultaneously performing well in a female sample (Krawczyk et al., 2012). Furthermore, many new body image scales are initially developed and validated within primarily homogenous, college samples of young women, thereby limiting generalisability of these results to other population groups. Body image ideals and the experience of body image can differ across racial, ethnic, and cultural groups (Burnette et al., 2020; Hunter et al., 2021; Lowy et al., 2021; Warren et al., 2013). Finally, assimilation and acculturation within ethnic groups add another layer of complexity as body image may be influenced by these experiences (Warren & Akoury, 2020). Body image may also differ in members of the LGBTIQ+ population (Hazard et al., 2019; Schmidt et al., 2022) and at different stages across the lifespan (Kilpela et al., 2015). Therefore, when examining measurement psychometrics, it may be necessary to validate new and existing scales in both community and clinical samples, and across age, ethnic, and cultural groups (Cash, 2011b; Shroff et al., 2009).

Measuring Thin Ideal Internalisation

The previous section provided a summary of the recommended methodology and considerations for creating psychometrically valid and reliable questionnaires. Overall, this section highlighted the importance of thorough empirical investigation to ensure new body image measurement tools have sound evidence supporting construct validity, including structure and dimensionality, state versus trait considerations and reliability across populations. Although many body image questionnaires exist that assess general appearance investment and dissatisfaction, preoccupation with weight and shape, and psychological and affective consequences of not adhering to culturally endorsed-beauty ideals (Cash, 2011b), two questionnaires have been for the primary measurement of thin ideal internalisation in adult women, these being the SATAQ (Cusumano & Thompson, 1997; Heinberg et al., 1995; Schaefer et al., 2015; Schaefer et al., 2017; Thompson et al., 2004) and the IBSS (Stice et al., 1994). The final section of this chapter will provide a historical overview of the development and validation of the SATAQ and IBSS, offer a critique of these measures and highlight the need for developing a new measure that comprehensively assesses thin ideal internalisation.

Sociocultural Attitudes Towards Appearances Questionnaire. The SATAQ (Heinberg et al., 1995) and its several revisions (Cusumano & Thompson, 1997; Schaefer et al., 2015; Schaefer et al., 2017; Thompson et al., 2004) are among the most widely used questionnaires assessing sociocultural appearance pressures and internalisation of appearance ideals. SATAQ subscale items related to awareness and internalisation of sociocultural appearance ideals are listed in Table 1.

Table 1*Internalization and Awareness Subscales within the Sociocultural Attitudes Towards Appearance Questionnaires*

SATAQ	SATAQ-R	SATAQ-3	SATAQ-4	SATAQ-4R
<i>Internalization subscale</i>	<i>Internalization subscale</i>	<i>Internalization General subscale</i>	<i>Internalization Thin/Low Body Fat subscale</i>	<i>Internalization Thin/Low Body Fat subscale</i>
Women who appear on TV shows and movies project the type of appearance that I see as my goal.	Women who appear on TV shows and movies project the type of appearance that I see as my goal.	I would like my body to look like the people who are on TV.	I want my body to look very thin.	I want my body to look very thin.
I believe that clothes look better on thin models.	I believe that clothes look better on thin models.	I compare my body to the bodies of TV and movie stars.	I want my body to look like it has little fat.	I think a lot about looking thin.
Music videos that show thin women make me wish that I were thin.	Music videos that show thin women make me wish that I were thin.	I would like my body to look like the models who appear in magazines.	I think a lot about looking thin.	I want my body to look very lean.
I do not wish to look like the models in the magazines.	I do not wish to look like the models in the magazines.	I compare my appearance to the appearance of TV and movie stars.	I want my body to look very lean.	I think a lot about having very little body fat.
I tend to compare my body to people in magazines and on TV.	I tend to compare my body to people in magazines and on TV.	I would like my body to look like the people who are in the movies.	I think a lot about having very little body fat.	<i>Internalization Muscular subscale</i>
Photographs of thin women make me wish that I were thin.	Photographs of thin women make me wish that I were thin.	I compare my body to the bodies of people who appear in magazines.	<i>Internalization Muscular/Athletic subscale</i>	It is important for me to look muscular.
I wish I looked like a swimsuit model.	I wish I looked like a swimsuit model.	I wish I looked like the models in music videos.	It is important for me to look athletic.	I think a lot about looking muscular.
I often read magazines like Cosmopolitan, Vogue, and Glamour and compare my appearance to the models.	I often read magazines like Cosmopolitan, Vogue, and Glamour and compare my appearance to the models.	I compare my appearance to the appearance of people in magazines.	I think a lot about looking muscular.	I want my body to look muscular.
	^a I often find myself comparing my physique to		I spend a lot of time doing things to look more athletic.	I don't want my body to look muscular.
			I think a lot about looking athletic.	I would like to have a body that looks very muscular.

SATAQ	SATAQ-R	SATAQ-3	SATAQ-4	SATAQ-4R
<i>Awareness subscale</i>	that of athletes pictured in magazines.	I try to look like the people on TV.	I spend a lot of time doing things to look more muscular.	<i>Internalization General Attractiveness subscale</i>
In our society, fat people are not regarded as unattractive.	<i>Awareness subscale</i>	<i>Internalization Athletic subscale</i>		It is important for me to look good in the clothes I wear.
Attractiveness in very important if you want to get ahead in our culture.	In our society, fat people are not regarded as unattractive.	I wish I looked as athletic as the people in magazines.		I think a lot about my appearance.
It's important for people to work hard on their figures/physiques if they want to success in today's culture.	Attractiveness in very important if you want to get ahead in our culture.	I compare my body to that of people in "good shape"		I want to be good looking.
Most people do not believe that the thinner you are, the better you look.	It's important for people to work hard on their figures/physiques if they want to success in today's culture.	I wish I looked as athletic as sports stars.		I don't really think much about my appearance.
People think that the thinner you are, the better you look in clothes.	Most people do not believe that the thinner you are, the better you look.	I compare my body to that of people who are athletic.		It's important to me to be attractive.
In today's society, it's not important to always look attractive.	People think that the thinner you are, the better you look in clothes.	I try to look like sports athletes.		I don't think much about how I look.
	In today's society, it's not important to always look attractive.			
	^a In our culture, someone with a well-built body has a better chance of obtaining success.			

Note. Only subscales related to awareness and internalisation are included.

^aOnly two examples of new items were provided for the SATAQ-R. The specific wording of five items within this measure are unavailable.

Heinberg et al. (1995) developed and validated the SATAQ, a questionnaire designed to measure the extent to which participants were aware and accepting of societal standards of attractiveness for women, primarily related to thinness. Across three samples of college women ($N = 194$, $N = 150$, $N = 162$), the researchers used factor analytic techniques to develop a 14-item questionnaire, with two subscales representing Awareness (6 items) and Internalization (8 items). These subscales demonstrated acceptable internal consistency ($\alpha = .88$ and $.71$, respectively) and were shown to predict unique variance in body dissatisfaction, appearance anxiety, drive for thinness, and bulimic symptoms, beyond what was accounted for by participants' body size and self-esteem. Importantly, the Internalization subscale was found to contribute more unique variance to these outcomes compared to the Awareness subscale (i.e., 64% combined variance compared to 11%; Heinberg et al., 1995).

Cusumano and Thompson (1997) modified the original SATAQ by adding four items to the Awareness subscale and three items to the Internalisation subscale, resulting in a revised 21-item questionnaire (SATAQ-R). The revisions were proposed to address the rise of athleticism in women. While minimal information regarding development and wording of these new items was provided in published research, the researchers did report that the updated subscales had good internal consistency in a sample of college women ($\alpha = .83$ and $.89$ for Awareness and Internalization subscales, respectively). Factor analysis reportedly revealed appropriate loading of all items onto their respective subscales, although minimal information was provided on the specific results (Cusumano & Thompson, 1997). The updated Awareness and Internalization subscales were found to significantly predict variance in body image and eating disturbances, with Internalization accounting for additional unique variance beyond that explained by Awareness (Cusumano & Thompson, 1997). This provides evidence of

convergent and predictive validity of the SATAQ-R; however, the lack of information regarding the validation and psychometrics of the SATAQ-R is problematic. This is because the thin ideal and the athletic ideal can represent competing physiques (e.g., thin versus muscular) and combining items into a single subscale may reduce construct validity.

In attempts to address these validity concerns, the SATAQ-R underwent revision to separate the athletic and thin ideal into distinct subscales and to incorporate subscales measuring the media influence on appearance ideals (i.e., SATAQ-3; Thompson et al., 2004). Across two samples of female university students ($N = 175$, $N = 195$), the 30-item SATAQ-3 was developed and psychometrically tested. The SATAQ-3 contains four subscales representing Internalization–General (9 items), Internalization–Athlete (5 items), Information (9 items), and Pressures (7 items). The Information and Pressures subscales represent media as a source of information regarding endorsed appearance ideals and as a source of pressures to conform to these ideals, respectively. Internal consistency was excellent for each subscale ($\alpha = .92-.96$). Both general and athletic internalisation predicted drive for thinness and body dissatisfaction, and elevated levels were reported in eating-disturbed and eating-disordered participant groups compared to controls (Thompson et al., 2004). Its wide application in research and later validation in other population groups (e.g., patients with eating disorders [Calogero et al., 2004] male participants [Karazsia & Crowther, 2008], different ethnic groups [Warren et al., 2013]) and many language translations (e.g., Rousseau et al., 2009; Stefanile et al., 2011; Swami et al., 2015) provided evidence of the popularity of this measure.

While the SATAQ-3 demonstrated good psychometric properties and included a unique subscale representing the athletic ideal (Thompson et al., 2004), the questionnaire now placed a greater emphasis on media-driven appearance ideals in

general, rather than explicitly focusing on core physical attributes of the thin ideal (e.g., thinness, low body fat). Specifically, the items within the new Internalization–General subscale require respondents to infer their own interpretations of beauty ideals represented in the media (e.g., “I would like my body to look like the models who appear in magazines”) because the items no longer include specific reference to physiques representing the thin ideal as seen in previous versions of the SATAQ (e.g., “music videos that show thin women make me wish that I were thin”). At the time, popular media were inundated with thin ideal imagery (Sypeck et al., 2006), so much so that this might not have been an issue. However, because this subscale has been widely, and somewhat recently, used as a specific measure thin ideal internalisation (e.g., Boone et al., 2011; Johnson et al., 2014; McLean et al., 2013; Papp et al., 2013), caution is required when interpreting the findings from these studies due to potential ambiguous responding that may impact the validity of the results (Schaefer et al., 2015).

Schaefer et al. (2015) aimed to address this limitation during the development of the SATAQ-4, by placing greater emphasis on physical attributes associated specifically with the thin and “muscular/athletic” ideals. Furthermore, the revision aimed to include items assessing appearance pressures emanating from a range of sociocultural influences (i.e., family, peer, media). Following exploratory and confirmatory factor analyses and international cross-validation, a 22-item, five-factor structure was revealed (Internalization-Thin/Low Body Fat [5 items], Internalization-Muscular/Athletic [5 items], Pressures-Family [4 items], Pressures-Peers [4 items], Pressures-Media [4 items]). All subscales demonstrated excellent internal consistency ($\alpha \geq .82$) and evidence of convergent validity was obtained through significant associations between subscales and eating pathology, body dissatisfaction, and self-esteem. The wording of the items included in the Internalization-Thin/Low Body Fat subscale suggest that the

SATAQ-4 now provided a more precise measurement of thin ideal internalisation, primarily assessing women's cognitive preoccupation with attaining the thin ideal (Schaefer et al., 2015).

The final iteration of the SATAQ (i.e., SATAQ-4R) was developed in order to address several conceptual limitations of the SATAQ-4 (Schaefer et al., 2017). First, the authors wanted the SATAQ-4R to focus on the muscular ideal, arguing for the removal of items related to the athletic ideal due to the potential for ambiguous responding. Unlike the muscular ideal (a physique characterised by muscle bulk and size; McCreary & Sasse, 2000), the athletic ideal can pertain to a range of physiques and relates more to "physical prowess" (Schaefer et al., 2017; p. 105). Items designed to assess the athletic ideal in previous versions of the SATAQ (e.g., "I spend a lot of time doing things to look more athletic") require participants to infer what they perceive an athletic body to look like and therefore do not necessarily assess a muscular physique. Furthermore, the researchers highlighted that while the Internalization-Muscular/Athletic subscale of the SATAQ-4 included behavioural items that reflected engagement in activities designed to increase muscularity, the Internalization-Thin/Low Body Fat subscale only included items that assessed cognitive components of internalisation. Because there are existing measures to assess behavioural manifestations (e.g., Drive for Muscularity Scale, McCreary et al., 2004), the researchers eliminated behavioural items in the SATAQ-4R to ensure consistency between the subscales. Finally, the researchers argued for the inclusion of items that reflect a general desire for an attractive appearance (Schaefer et al., 2017).

Following exploratory and confirmatory factor analyses, the resulting SATAQ-4R consists of 31 items and seven subscales (Internalization-Thin/Low Body Fat [4 items], Internalization-Muscular [5 items], Internalization-General Attractiveness [6

items], Pressures-Family [4 items], Pressures-Media [4 items], Pressures-Peers [4 items], and Pressures-Significant Others [4 items]). Across multiple participant samples (e.g., college women and men, and adolescent girls), internal consistency was found to be acceptable for all subscales ($\alpha \geq .75$). Scores on the Internalization-Thin/Low Body Fat subscale were shown to be positively correlated with eating pathology and negatively correlated with body satisfaction and self-esteem (Schaefer et al., 2017).

Ideal Body Stereotype Scale. Unlike the SATAQ, dedicated studies providing detailed descriptions of item development and psychometric validation for the IBSS are not available. Moreover, follow-up studies with descriptions of item revisions and psychometric evaluations are absent from the literature. The IBSS was first introduced by Stice et al. (1994) as a measure of “subscription to the female ideal-body stereotype” (p. 837) created for the purposes of the study. The researchers briefly described two pilot studies: the first asked participants ($N = 20$) to generate statements related to female body stereotypes and the second ($N = 49$) validated these items. The pilot studies resulted in a 6-item questionnaire with good internal consistency ($\alpha = .86$) and a 3-week test–retest reliability coefficient of .60. Items were written to assess participants’ level of agreement with statements regarding attractive female stereotypes. Positive correlations between this questionnaire and measures of restricted eating and conformity were observed ($r = .38$ and $.37$, respectively), which provided initial evidence for convergent validity (Stice et al., 1994).

Stice et al. (1996) later revised this questionnaire by rewording items to “make them more subtle” (p. 538) and to include an additional four items. No further information about the wording or support for the inclusion of the new items was provided. The study did report that in a combined sample of high school and university students ($N = 125$), internal consistency was excellent ($\alpha = .91$), and a significant

positive correlation was found with body dissatisfaction ($r = .32$) that provided evidence of convergent validity. This questionnaire has since been used as a measure of thin ideal internalisation in several studies by the lead author (e.g., Stice, 2001; Stice et al., 2004; Stice et al., 2006; Stice et al., 2008; Stice et al., 2013). However, each study cites a different source for the questionnaire. For example, Stice et al. (2008) cites Stice et al. (2006), Stice et al. (2006) cites Stice et al. (2004), Stice et al. (2004) cites Stice (2001), and Stice (2001) cites Stice and Agras (1998). More recent studies (Stice et al., 2013; Stice et al., 2015) cite the use of a 6-item IBSS-R, again with different sources cited. However, it is unclear from the available literature when the questionnaire was shortened back to six items, nor was there any empirical evidence or reasoning provided to support the revision. Furthermore, it is unclear whether the revised 6-item questionnaire matches the original 6-item questionnaire introduced earlier by Stice et al. (1994). A copy of items reportedly included in the IBSS-R was obtained from an online webpage that featured other questionnaires created by the lead author; however, no further information was available (see Table 2, Oregon Research Institute, n.d.). Overall, the lack of published information regarding the psychometric validation and reliability of the IBSS and IBSS-R makes it challenging for researchers to determine the appropriateness of this measure for their own empirical investigations.

Table 2*Ideal Body Stereotype Scale – Revised*

Items
Slender women are more attractive
Women who are in shape are more attractive
Tall women are more attractive
Women with toned (lean) bodies are more attractive
Shapely women are more attractive
Women with long legs are more attractive

Reviewing the Construct Validity of the SATAQ and IBSS. Although development and initial validation studies of the IBSS are unavailable, the authors involved in the development of the SATAQ (i.e., Thompson et al., 2018; Thompson et al., 2004) published two studies that examined the construct validity of the IBSS-R. In an initial study using exploratory factor analytic techniques, the SATAQ-3 Internalization-General and Internalization-Athlete subscales and IBSS-R items were found to load onto separate factors with no cross-loading. This result suggests conceptual distinction between these measures, specifically that each scale is measuring a different construct (Thompson et al., 2004). A follow-up study using more advanced factor analytic techniques and a larger female sample ($N = 1,114$), compared the SATAQ-4R Internalization Thin/Low Body Fat subscale and IBSS-R (Thompson et al., 2018). A bifactor structure was revealed, with the SATAQ-4R Internalization Thin/Low Body Fat subscale and IBSS-R each contributing to a global construct, as well as each contributing uniquely to two underlying factors (i.e., titled by the authors as Internalisation and Awareness). Items within the Internalisation factor (i.e., items from the SATAQ-4R Internalization Thin/Low Body Fat) seemingly assessed the desire and

cognitive preoccupation with obtaining a thin body, while items within the Awareness factor (i.e., items from the IBSS-R) assessed general awareness of broader sociocultural ideals. Furthermore, the Internalisation factor was found to contribute more unique variance in body image concerns and eating pathology aligning with the sociocultural perspective that internalisation is more likely implicated in psychopathology and disturbances, rather than general awareness of endorsed beauty ideals (Thompson et al., 2018). Overall, the findings from these two studies (Thompson et al., 2018; Thompson et al., 2004) suggest that the SATAQ-3 Internalization-General subscale, SATAQ-4R Internalization Thin/Low Body Fat subscale and IBSS-R should not be considered interchangeable in the measurement of thin ideal internalisation. Furthermore, these findings imply that the IBSS-R is not a valid measure of thin ideal internalisation, rather the scale likely captures a related, but distinct construct (i.e., awareness of a range of beauty ideals).

Although the SATAQ and its iterations currently offer the most promising measurement of thin ideal internalisation, the SATAQ internalisation subscales have several limitations that may impact the construct validity of its measurement. First, construct overlap exists between items featured in the SATAQ-R Internalization subscale (Cusumano & Thompson, 1997), with items measuring interest in both thin and athletic ideals (e.g., “Photographs of thin women make me wish that I were thin” and “I often find myself comparing my physique to that of athletes pictured in magazines,” respectively). Second, most items included within the Internalization subscales of the SATAQ (Heinberg et al., 1995), SATAQ-R (Cusumano & Thompson, 1997), and SATAQ-3 (Thompson et al., 2004) require participants to infer the types of body ideals being represented in the media (e.g., “I would like my body to look like the people who are in the movies”). This is particularly problematic for the SATAQ-3

Internalization subscale which does not include any reference of thin body ideals in the wording of subscale items. The absence of specific mention to the thin ideal, or the measurement of distinct ideals (e.g., athleticism), may introduce ambiguous responding and bias results pertaining to relationships between variables (Lambert & Newman, 2022; Schaefer et al., 2015).

Finally, the brief 5-item SATAQ-4 (Schaefer et al., 2015) and 4-item SATAQ-4R (Schaefer et al., 2017) Internalization Thin/Low Body Fat subscales measure desire for thinness (e.g., “I want my body to look very thin”) and cognitive preoccupation with adhering to thin body standards (e.g., “I think a lot about having very little body fat”). Although these subscales are certainly capturing a component of thin ideal internalisation, the brevity and unidimensional structure of subscales suggest that they may not fully assess the multidimensional and complex nature of the internalisation construct. As described in earlier sections, the operationalisation of thin ideal internalisation extends beyond just the acceptance and idealisation of thinness that existing questionnaires currently measure. Specifically, thin ideal internalisation also relates to the affective experience associated with achieving or deviating from internalised thin standards, the strength of internalised beliefs regarding the value and importance of upholding thin body standards (i.e., overvaluation), and the drive and motivation to engage in ideal-congruent behaviours designed to approximate the thin body ideal (i.e., behavioural drive [see Uhlmann et al., 2020]).

For evidence of construct validity, items within a measure should aim to assess all dimensions of a construct (Clark & Watson, 2019); however, no measure currently exists that assesses all domains of the thin ideal internalisation construct, highlighting an important gap in the literature. As noted earlier, previous research has found support for improved construct validity with the use of a multidimensional assessment tool

assessing fit ideal internalisation (a distinct female beauty ideal), compared to existing unidimensional assessment tools including the SATAQ-4R (Uhlmann et al., 2020).

Therefore, addressing a recent call to continue evaluation of the construct validity of thin ideal internalisation measures (Thompson et al., 2018), the development of a new multidimensional tool may further our empirical and clinical understanding regarding the impact of thin ideal internalisation on women's body image. This may also enable the exploration of which dimensions of thin ideal internalisation are particularly problematic for women and support targeted prevention and intervention efforts.

Summary of Chapter 4

Chapter 4 summarised best-practice guidelines for the development and psychometric evaluation of new self-report questionnaires. In addition, this chapter considered the application of these procedures to address nuances in the assessment of body image constructs. First, it was highlighted that the body image literature already offers a variety of measurement tools that assess distinct perceptual, affective, cognitive, and behavioural components of body image (Kling et al., 2019). Due to the widespread availability of these measurement tools, it is necessary to approach body image assessment with careful operationalisation of the construct and its underlying facets, and to determine if a valid and reliable measure is already available to measure the construct or facet of interest. Second, the consideration of transient state versus stable trait presentation of constructs is necessary when deciding on an appropriate measure and research methodology. Third, consideration of the sociocultural influences (e.g., gender roles, acculturation to Western cultures from culturally diverse populations) that may impact the generalisability of psychometrics from existing assessment body image tools and newly developed tools to populations of interest was discussed. Finally, Chapter 4 provided a summary of the historical development and psychometric testing of available

measures of thin ideal internalisation. In doing so, concerns regarding the construct validity of such measures were discussed, highlighting an empirical need to develop a new questionnaire that comprehensively assesses all domains of thin ideal internalisation.

SECTION 2

Chapter 5: Introduction to the Current Series of Studies

The current program of research was designed to address the aforementioned gaps in the literature. First, Study 1 (Chapter 6) aimed to provide a comprehensive operationalisation of thin ideal internalisation informed by previous theoretical and empirical investigation of the construct. Addressing the need for valid and reliable measurement of the thin ideal internalisation construct, this study then aimed to develop and psychometrically validate a new, comprehensive measure of thin ideal internalisation. This was achieved across two phases of research. The first phase involved the construction of a large item pool following a thorough review of relevant literature. This item pool was then tested using exploratory factor analysis. The second phase used confirmatory factor analysis to confirm the underlying factor structure of the questionnaire items and further analyses were conducted to obtain evidence of reliability and convergent, discriminant and incremental validity.

Study 2 (Chapter 7) utilised structural equation modelling to test an extension to the Elaborated Sociocultural Model of Disordered Eating that incorporated additional sociocultural appearance pressures from social media and the consequences women may experience when they fail to meet internalised appearance standards (i.e., body shame and psychological distress). A second key aim of this study was to establish the utility of the new questionnaire constructed in Study 1 when testing larger sociocultural models.

Finally, Study 3 (Chapter 8) aimed to assess the influence of enduring personality traits on thin ideal internalisation and core eating disorder symptomology, addressing a key limitation of sociocultural research that has traditionally lacked inclusion of individual differences. Specifically, this study explored the indirect pathways between sensitivities in the behavioural inhibition system and core eating

disorder symptomology (i.e., restraint, eating concern, weight and shape concerns), mediated via thin ideal internalisation.

The three studies included in this thesis have been written for publication. Study 1 has been published in *Body Image*. Study 2 has been submitted for publication and is currently under peer review. Study 3 has been published in *Eating Behaviors*. These studies offer a novel program of research that utilises and extends the sociocultural framework to explore predictors, underpinnings, and consequences of thin ideal internalisation when operationalised and measured as a multidimensional construct. The findings from this research may have important theoretical and clinical implications for the conceptualisation of thin ideal internalisation and the prevention and treatment of body image concerns in women.

Chapter 6: Thin Ideal Internalization Assessment (THIINA): Development and Psychometric Validation of a New Measure of Female Body Image

Statement of Contribution to Co-Authored Published Paper

This chapter includes a co-authored paper. The bibliographic details of the co-authored paper, including all authors, are:

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My contribution to the paper involved: Study conceptualisation and literature review, data cleaning, data scoring and data analyses, data interpretation and critical appraisal. Further contributions include the writing of the manuscript, conducting all changes and implementing all feedback provided from the secondary authors, as well as the feedback obtained throughout the journal submission process.

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Abstract

Thin ideal internalization is widely implicated in women's body image and eating disturbances. A recently proposed multidimensional operationalization of internalization suggests the brevity and construct validity of existing questionnaires may limit the assessment of thin ideal internalization. Therefore, this research aimed to develop a new questionnaire (i.e., Thin Ideal Internalization Assessment; THIINA) to comprehensively assess thin ideal internalization. In Study 1, 301 female participants were administered the THIINA. Exploratory factor analyses revealed the 17-item THIINA had a stable 3-factor structure reflecting thin idealization, thin overvaluation, and thin behavioral drive. In Study 2, 337 female participants were administered the THIINA and validation measures. Confirmatory factor analysis confirmed stability of the 3-factor structure and findings supported convergent, discriminant, and incremental validity of the THIINA. Support for temporal stability was found within a sub-sample of participants ($n = 132$). The THIINA demonstrated strong psychometric properties, a stable three-factor structure representing theoretically-driven domains, and support for the creation of a composite score representing overall thin ideal internalization. These findings suggest the multidimensional operationalization and measurement of thin ideal internalization could improve theoretical and clinical understanding of the impact of thin ideal internalization on women's body image and eating.

Keywords: thin ideal, body image, internalization, measurement, psychometrics

Highlights

- We introduce the Thin Ideal Internalization Assessment (THIINA).
- THIINA was designed to capture multidimensional facets of internalization.
- Strong psychometric properties were recorded across three studies.
- THIINA demonstrated incremental validity above existing internalization measures.
- THIINA aims to support clinical and theoretical research in female body image.

Thin Ideal Internalization Assessment (THIINA): Development and Psychometric Validation of a New Measure of Female Body Image

1. Introduction

The thin ideal, a feminine physique characterised by slenderness and low body fat, is one of the leading beauty standards endorsed by women in Western, urbanized nations (Swami, 2015). Sociocultural theories emphasize the role of *thin ideal internalization* (or the degree to which one accepts, overvalues, or ‘buys into’ the thin ideal) as a key risk factor contributing to women’s body image and eating disturbances (Ata et al., 2015; Thompson et al., 1999). Indeed, women’s internalization of the thin ideal has been linked with a range of problematic outcomes, including body dissatisfaction, appearance anxiety, low self-esteem, weight and shape concerns, social appearance comparison, self-objectification, and dieting and bulimic behaviours (Christian et al., 2012; Culbert et al., 2015; Donovan et al., 2020; Fitzsimmons-Craft et al., 2014; Hoffmann & Warschburger, 2019; Paterna et al., 2021; Schaefer et al., 2017). Furthermore, thin ideal internalization has been implicated in the onset and maintenance of eating disorders (Barakat et al., 2023; Culbert et al., 2015), thus rendering it an important treatment focus in body image and disordered eating interventions (Stice et al., 2015). Given the abundance of research demonstrating adverse impacts of thin ideal internalization, valid and reliable measurement of this construct is necessary to inform further empirical investigations and targeted clinical interventions (Thompson et al., 2018; Mol et al., 2023).

Although there are many body image questionnaires available that assess related constructs (e.g., appearance investment, preoccupation with weight; Cash et al., 2011; Kling et al., 2019), two self-report questionnaires are currently used for the specific measurement of thin ideal internalization in adult women (Diedrichs, 2017; Thompson

et al., 2018). These are the Sociocultural Attitudes Towards Appearances Questionnaire (SATAQ) and Ideal Body Stereotype Scale (IBSS). The SATAQ, currently in its fifth iteration (i.e., SATAQ-4R; Schaefer et al., 2017), contains a 4-item Internalization Thin/Low Body Fat subscale. Similarly, the IBSS has undergone several revisions, with the latest version consisting of six items (i.e., IBSS-R; Stice et al., 2008). Across the previous two decades, the brevity and accessibility of these questionnaires have propelled research exploring the impact of women's internalization of the thin ideal. However, recent research examining the multidimensional nature of internalization (Uhlmann et al., 2020) and the construct validity of the above questionnaires (Mol et al., 2023; Thompson et al., 2018), suggests that these questionnaires may not provide adequate measurement of the thin ideal internalization construct. Therefore, the aim of the current research was to develop and psychometrically validate a theoretically derived, comprehensive measure of thin ideal internalization.

1.1. Operationalizing Thin Ideal Internalization

According to Uhlmann et al. (2020), internalization of a beauty ideal occurs when an individual (1) accepts and desires to conform to the ideal, (2) integrates the value and meaning of adhering to that ideal into their personal value and belief system, and (3) engages in ideal-congruent behaviors. These internalization domains, termed *idealization*, *overvaluation*, and *behavioral drive* respectively, were empirically established and confirmed by Uhlmann et al. (2020) in their development of the Fit Ideal Internalization Test (FIIT). While the fit body ideal is distinct from the thin ideal in that it idealizes muscle tone and fitness, both beauty ideals emphasize a female body that is thin and difficult to achieve, and are associated with poorer body image and eating outcomes (Donovan et al., 2020). The following sections outline the applicability

of each of the three internalization domains proposed by Uhlmann et al. (2020) to the thin body ideal.

The first domain, *idealization*, describes the acceptance of a socially endorsed beauty standard, demonstrated through the adoption of an ideal as one's own. Personal adoption should lead to a cognitive-affective desire to conform to a particular body ideal and an internalized view that ideal-congruent appearances and behaviors are important to uphold (Uhlmann et al., 2020). The rise of the thin ideal as the predominant female beauty standard coincided with the pervasive propagation of this aesthetic through all forms of media. In particular, the prolific rise of social media has provided a new platform through which idealized and digitally manipulated images of thin body ideals are frequently consumed by users (Holland & Tiggemann, 2016). Repeated exposure to thin ideal imagery communicates that it is an endorsed societal norm, considered attractive and desirable by others (Gerbner et al., 2002; Mingoia et al., 2017). Thus, women internalizing the thin ideal are likely to consider it important to attain to ensure group conformity and acceptance (Vartanian & Hopkinson, 2010). Imagery is also often paired with messaging that a slim physique can be achieved by anyone willing to engage in restrictive diets and exercise (Carrotte et al., 2017). Therefore, not only is the thin ideal prescribed as normative and valued by society, but it is also marketed as a realistic goal, attainable by those who engage in aesthetically-motivated nutrition and fitness (Calogero et al., 2007). Therefore, when a woman internalizes this societal norm, she adopts the thin ideal physique as a personally important and achievable standard to uphold. Consequently, she may experience increased cognitive preoccupation with ensuring adherence to ideal-congruent appearances (i.e., thinness) and behaviors (e.g., diet, exercise) and will likely experience negative affect, such as guilt and shame, in response to actual or perceived non-congruence with the slim body norm (Gilbert, 1997;

McKinley & Hyde, 1996). The cognitive and affective adoption of thinness as a personal standard in turn represents thin idealization.

The second domain of internalization, *overvaluation*, reflects integration of the societal attitudes and meanings prescribed to a particular body standard, into one's own belief and value system (Uhlmann et al., 2020). Culturally-defined beauty ideals provide information about an individual that extends beyond external physical appearances (Calogero et al., 2007). Researchers have long established that external indicators of attractive stereotypes are associated with socially-desirable personality characteristics and positive life outcomes (Dion et al., 1972). Regarding thinness, frequent messaging of positive sociocultural attitudes and beliefs are delivered and reinforced via traditional and social medias, all of which underpin the value that society places on the attainment of this standard (Calogero et al., 2007). For example, thin female characters are more likely to be portrayed as attractive (Mastro & Figueroa-Caballero, 2018) and happier (Herbozo et al., 2004), and depicted having successful social interactions and romantic relationships (Greenberg et al., 2003). Thinness, and by extension the behaviors intended to adhere to this ideal (e.g., dieting, exercise), is often equated with self-control and discipline (Bordo, 2004). Research has also shown that women who have internalized the thin ideal are more likely to associate thinness with psychological (e.g., happiness, confidence), social (e.g., improved romantic and interpersonal relationships), and professional/financial benefits (Engeln-Maddox, 2006). Therefore, women who have internalized the thin ideal are likely driven to emulate this ideal, not just for aesthetic purposes, but also to obtain perceived social, psychological, and practical rewards associated with it (Engeln-Maddox, 2006; Uhlmann et al., 2020). The integration of these types of societal values into one's own value and belief system would therefore represent thin overvaluation.

The third internalization domain, *behavioral drive*, reflects the extent to which women engage in ideal-congruent behaviors (Uhlmann et al., 2020). The rise of thin ideal representation in the media was synonymous with an increase in magazine articles and advertisements endorsing dieting and exercise for weight-loss purposes (Calogero et al., 2007; Wiseman et al., 1992). The media presents the female body as malleable and thinness as achievable (Calogero et al., 2007). Therefore, women who internalize the thin ideal are likely to be more driven to engage in aesthetically-motivated dieting and exercise behaviors to achieve and/or adhere to this ideal. This is supported by research demonstrating that women who report stronger thin ideal internalization also endorse higher levels of drive for thinness and greater engagement in body-shaping behaviors (Uhlmann et al., 2020). Such behavioral manifestations would be representative of thin behavioral drive.

1.2. Limitations of Existing Internalization Questionnaires

Researchers argue that no other body image construct has demonstrated the promise that thin ideal internalization has shown in the investigation of risk factors contributing to women's psychopathology (Thompson et al., 2018). Indeed, as described earlier, thin ideal internalization has been widely implicated as an important predictor of body image disturbances and disordered eating (Barakat et al., 2023; Culbert et al., 2015; Paterna et al., 2021). The above discussion highlighted thin ideal internalization as a complex and multidimensional construct likely consisting of three internalization domains (i.e., thin idealization, thin overvaluation, and thin behavioral drive). However, the brevity and unidimensional structure of existing questionnaires used to measure thin ideal internalization (i.e., 4-item SATAQ-4R Internalization Thin/Low Body Fat subscale, 6-item IBSS-R) limits the comprehensive assessment of this construct (Clark & Watson, 2019; Thompson et al., 2018). For example, although

the SATAQ-4R subscale items assess desire and cognitive preoccupation with thinness (i.e., idealization domain of thin ideal internalization), items fail to capture women's overvaluation of thinness and drive to adhere to such internalized standards. In their testing of the FIIT, Uhlmann et al. (2020) found that the multidimensional assessment of fit ideal internalization (designed to assess all internalization domains) explained additional variance in outcomes of disordered eating, exercise and psychological distress in women, above and beyond that of brief internalization measures, including the SATAQ-4R Internalization Thin/Low Body Fat subscale (Uhlmann et al., 2020). This suggests, in part, that the multidimensional assessment of internalization offers increased explanatory power above that of previous unidimensional operationalizations of the construct. Finally, several studies have questioned the construct validity of the IBSS-R, with findings from this body of research suggesting this questionnaire is measuring general awareness of broader sociocultural ideals, a related but distinct construct (Mol et al., 2023; Thompson et al., 2004; Thompson et al., 2018). Currently, no questionnaire that assesses all domains of thin ideal internalization exists, highlighting an important gap in the literature. The development of a new multidimensional assessment of thin ideal internalization may further our empirical and clinical understanding regarding the impact of internalization on women's body image. Therefore, the current research developed and psychometrically validated a new comprehensive measure of thin ideal internalization, the Thin Ideal Internalization Assessment (THIINA).

Across two studies, it was hypothesized that the THIINA would contain three factors aligning with internalization domains and that these factors would load onto a single, general factor representing overall thin ideal internalization. To provide support for convergent validity, it was expected that scores on the THIINA would be positively

correlated with scores on existing thin ideal internalization measures and with scores representing fit ideal internalization (Donovan et al., 2020; Uhlmann et al., 2020). Furthermore, it was expected that the THIINA would be positively correlated with scores representing social comparison, with women who have internalized the thin ideal expected to engage in more frequent comparisons with peers and media imagery as a means to assess their adherence to internalized standards (Fitzsimmons-Craft, 2011). To demonstrate discriminant validity, it was expected that THIINA scores would be uncorrelated with social desirability bias (i.e., dishonest impression management; Cash & Labarge, 1996, Uhlmann et al., 2020). Finally, with respect to incremental validity, it was hypothesized that the THIINA composite score would explain additional unique variance in empirically established body-image related outcomes (i.e., body dissatisfaction, self-esteem, restrained eating, and bulimic behaviors and food preoccupation), above and beyond that of existing thin ideal internalization measures. Finally, the new questionnaire was expected to demonstrate good test-retest reliability, showing temporal stability across a two-week period.

2. Study 1

Study 1 aimed to first generate an item pool reflecting the three theoretically derived internalization domains of thin idealization, thin overvaluation, and thin behavioral drive, and then to explore the underlying factor structure of the developed items.

2.1. Method

2.1.1. Item Pool Development

A pool of 35 items was generated following a review of the body image literature, consultation with experts in the field, and a critical examination of existing body-image questionnaires. To ensure all domains of internalization were represented, a

test specification procedure was followed as a framework for item development (Rust et al., 2009). A scale blueprint was constructed with theoretically-driven domains listed along the horizontal axis (i.e., idealization, overvaluation, behavioral drive) and manifestations of each area (i.e., cognitive, affective, behavioral) listed along the vertical axis. Items were generated for each cell, ensuring comprehensive coverage of the construct (see Supplementary Table). Once the item pool was compiled, an expert panel of researchers ($N = 11$), who have published research in the body image and disordered eating area, were invited to comment on the wording and relevance of items. Nine experts responded to this invitation, providing anonymous feedback. Clarity of the items was confirmed with participant feedback obtained from six adult women (Age in years, $M = 23.67$, $SD = 3.39$, Range = 20-30). Minor edits were made to the wording of some items in response to expert and participant feedback.

Questionnaire instructions were as follows: “Listed below are a series of statements regarding female body ideals. Many of the statements in this questionnaire describe the thin ideal body, a body that is characterized by ultra-slenderness, low body fat and minimal muscle tone. Please read each of the statements carefully and indicate your level of agreement with each one (from 1 = Strongly Disagree to 5 = Strongly Agree). Please answer as honestly as possible, and do not spend too much time on any statement.” Item responses were designed to be summed.

2.1.2. Procedure

Ethical clearance was granted by the University’s Human Research Ethics Committee (HREC). Participants were recruited through an online research participant pool open to undergraduate students enrolled in first year psychology courses and via social networking (i.e., Facebook and Instagram). Study data were collected online using REDCap, a secure web-based software platform for online data collection (Harris

et al., 2009; Harris et al., 2019). Study participation was open between May to June 2020. Potential participants were directed to an online participant information sheet and consent form. Participants were required to be female and 17 years or older. HREC gave approval for all participants to provide their own consent for this research on the assumption that participants of 17-year-old or older will be at a level of maturity at which they are able to make an informed decision about participation and that there were no significant ethical issues or risks involved in this research. Those meeting this criteria and who provided informed consent were asked to create a unique identification code and to complete the online survey. As an incentive, participants were invited to enter a draw to win a gift card and to provide their student details to gain course credit for participation (if applicable) after completing the survey.

2.1.3. Participants

Demographics for each sample used in this research are outlined in Table 1. Of the 331 female participants initially recruited for Study 1, 29 were excluded due to exiting early from the survey (i.e., created an identification code or provided demographics but failed to complete any questionnaires) and one was removed for being an extreme outlier on body mass index (BMI). The final sample therefore consisted of 301 women, aged between 17 and 57 years ($M = 22.48$, $SD = 6.72$), with 90.7% of the sample aged 30 years or younger. Participants' self-reported height and weight were used to calculate their BMI (kg/m^2). On average, participants fell within the "normal" BMI range ($M = 23.26$, $SD = 4.46$) (World Health Organisation, 2021), and most were Caucasian (82.72%), heterosexual (81.10%), in a relationship or married (52.80%) and a current university student (90%).

Table 1*Participant Demographic Characteristics Across Studies*

	Study 1 EFA	Study 2 CFA	Study 2 Test-Retest Sample
<i>N</i>	301	337	132
Age, <i>M (SD)</i> ^a	22.48 (6.72)	23.22 (7.07)	24.28 (8.33)
Age, Range	17-57	17-55	18-55
Body mass index, <i>M (SD)</i> ^a	23.26 (4.46)	24.26 (5.38)	24.29 (5.39)
Body mass index, Range	14.70-40.30	16.65-46.66	16.65-43.10
Relationship status, <i>n (%)</i>			
Single	137 (45.5)	182 (54.0)	70 (53.0)
In a relationship	142 (47.2)	123 (36.5)	49 (37.1)
Married	17 (5.6)	27 (8.0)	11 (8.3)
Divorced/Separated	5 (1.7)	5 (1.5)	2 (1.5)
Sexual orientation, <i>n (%)</i>			
Heterosexual	244 (81.1)	238 (70.6)	98 (74.2)
Lesbian	2 (0.7)	10 (3.0)	1 (0.8)
Bisexual	39 (13.0)	64 (19)	22 (16.7)
Queer	7 (2.3)	10 (3.0)	4 (3.0)
Asexual	2 (0.7)	10 (3.0)	5 (3.8)
Sexual Orientation Not Specified	7 (2.3)	5 (1.5)	2 (1.5)
Ethnicity, <i>n (%)</i>			
Caucasian	249 (82.72)	251 (74.48)	93 (70.45)
Australian Aboriginal/Torres Strait Islander	3 (1.0)	11 (3.26)	2 (1.5)
Asian	22 (7.31)	39 (11.57)	22 (16.7)
Pacific Islander	4 (1.33)	9 (2.67)	4 (3.0)
Mixed Ethnicity Reported	10 (3.32)	13 (3.86)	6 (4.55)

	Study 1 EFA	Study 2 CFA	Study 2 Test-Retest Sample
Different Ethnicity Reported	13 (4.32)	14 (4.15)	5 (3.78)
Current University Student, <i>n</i> (%)			
Yes	271 (90.0)	337 (100)	132 (100)
No	30 (10.0)	0 (0)	0 (0)

Note. *M* = Mean, *SD* = Standard Deviation.

^a Pairwise comparisons compared key sociodemographic variables (i.e., age, body mass index; BMI) between Study 1 and Study 2 participant samples. No significant difference was recorded for age ($p = .18$). A significant difference ($p = .006$) was recorded for BMI. However, this difference is not considered clinically meaningful as both samples fall within the “Normal” weight category on average, according to the World Health Organisation (2021) categorization of BMIs.

2.1.4. Data Analysis

Prior to the EFA, items were considered for removal if they met any of the following criteria: (1) item redundancy or low correlations with other items (i.e., inter-item correlations of $r > .80$ or $< .30$ respectively); (2) poor item statistics (i.e., if all response options were not utilised, there was significant skew, or there were corrected item-total correlations of $r < .40$); and (3) age or BMI bias (i.e., if an item correlated $> .35$ with either construct). The R package ‘*psych*’ (v. 2.0.7.; Revelle, 2020) was used to conduct a series of EFAs, using polychoric correlations and specifying principal axis factoring with oblique rotation (i.e., direct oblimin). This rotation technique was selected as factors of internalization are likely correlated (Uhlmann et al., 2020). Factorability of items was verified using Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett’s test of sphericity. Adequate factorability can be concluded when the KMO value is greater than .60 and Bartlett’s test is significant (Tabachnick & Fidell, 2007). The number of factors retained was established using

parallel analysis (Horn, 1965), examination of the scree plot (Cattell, 1966), the Kaiser-Guttman criterion (i.e., retention of factors with eigenvalues ≥ 1.0 ; Guttman, 1954; Kaiser, 1960), and inspection of the pattern matrix. Both theoretical and data-driven decisions were made regarding the retention of items. During factor extraction, items were assessed for poor primary-factor loading (i.e., $< .40$) or small communalities (i.e., $< .40$), cross-loading (i.e., secondary factor loadings of $\geq .30$ or difference $\leq .20$ between the primary- and secondary-factor loadings), lack of conceptual/face validity (i.e., loading of an item on a factor that did not align with theory or hypothesized blueprint), and whether or not they formed part of a non-robust factor (i.e., a factor with less than three items). Theory and the scale blueprint guided final decisions on item and factor retention (Clark & Watson, 2019; Rust et al., 2009). Internal consistency was assessed using Cronbach's alpha (α) and McDonald's omega (ω) coefficients, with acceptable reliability indicated by values above $.70$ (Dunn et al., 2014).

2.2. Results

Initial item-reduction based on the criteria listed above, resulted in the removal of five items due to low correlations with several other items. Several item-pairs also recorded inter-item correlations indicative of item redundancy. To determine which items should be retained, the item with a higher standardised skew statistic above the significant cut-off value, lower corrected item-total correlation, and/or age and BMI bias was removed, resulting in the removal of an additional ten items. As only one reverse-scored item remained, and reverse-scored items have previously demonstrated potential problems with careless responding (Roszkowski & Soven, 2010), the reverse-scored item was also removed at this stage.

The first EFA was conducted with the remaining 19 items. Bartlett's test of sphericity was significant ($\chi^2 = 4065.22$, $df = 171$, $p < .001$) and the KMO value was

.95, indicating these items were appropriate for factor analysis. The scree plot, Kaiser-Guttman criterion, and parallel analysis all converged on a three-factor solution, and inspection of the pattern matrix revealed three factors with primary factor loadings that typically aligned with the hypothesized blueprint. One item failed to load onto any factor and a second item cross-loaded on two factors. These items were removed and a second EFA was conducted revealing a three-factor solution that aligned with the hypothesized blueprint, and that explained 70% of the total variance. The final 17 items and scale statistics are presented in Table 2. All items loaded strongly onto their primary factor with no cross-loadings. The first factor consisted of eight items with loadings ranging between .56 and .87 that reflected Thin Overvaluation. The second factor consisted of six items with loadings between .65 and .91 that reflected Thin Idealization, while the third factor consisted of three items with loadings between .73 and .80 that reflected Thin Behavioral Drive. As expected, the three factors were moderately to strongly correlated with each other ($r = .47 - .73$), and internal consistency was high for each factor (Cronbach's $\alpha = .86 - .92$; McDonald's $\Omega = .86 - .92$) and for all 17 items ($\alpha = .95$; $\Omega = .94$).

Table 2

Extracted Communalities, Oblique-Rotated Exploratory Factor Loadings, and Confirmatory Factor Analysis Standardized Loadings

	h^2	Study 1 EFA Factor Loadings			Study 2 CFA Standardized Loadings		
		Thin O	Thin I	Thin D	Thin O	Thin I	Thin D
1. Having a thin body is a good way to gain respect from other people.	0.70	.87	.00	-.08	.76		
2. Working towards having a thin body is a good way to feel accomplished in life.	0.76	.84	-.07	.16	.75		
3. Working towards having a thin body is a good way to improve your life.	0.66	.75	-.07	.20	.67		
4. If I had a thin body, I would have more successful romantic relationships.	0.66	.72	.22	-.20	.74		
5. If I had a thin body, I would be more popular with my peers.	0.65	.71	.18	-.11	.75		
6. Having a thin body is a good way to show others you are in control of your life.	0.62	.71	-.07	.23	.71		
7. If I had a thin body, other areas of my life would also improve.	0.66	.65	.21	-.03	.81		
8. I would feel very satisfied with my life if I had a thin body.	0.66	.56	.27	.07	.73		
9. I spend time daydreaming about how I would look with a thin body.	0.80	.02	.91	-.07		.79	
10. I am preoccupied with the idea of having a body that is thin.	0.78	-.02	.85	.09		.85	
11. I feel ashamed when I notice parts of my body that are not thin enough.	0.68	.03	.77	.06		.71	
12. I envy women who have a thin body.	0.71	.09	.79	-.02		.77	
13. I aspire to have a thin body.	0.74	.13	.67	.16		.85	
14. I feel guilty if I do things (e.g., eat junk food) that could prevent me from having a thin body.	0.65	-.02	.65	.26		.77	
15. I spend time doing things (e.g., diet, exercise) to achieve a body that is thin.	0.74	-.03	.14	.80			.85
16. My exercise routine is shaped by my desire to have a thin body.	0.74	.17	.04	.75			.81

	Study 1 EFA Factor Loadings			Study 2 CFA Standardized Loadings			
	h^2	Thin O	Thin I	Thin D	Thin O	Thin I	Thin D
17. My dietary choices are shaped by my desire to have a thin body.	0.73	.07	.14	.73			.79
Eigenvalues		4.95	4.55	2.42	-	-	-
Item variance explained		29%	27%	14%	-	-	-
Cronbach's α / McDonald's ω		.92/ .92	.92/ .92	.86/ .86	.91/ .90	.91/ .91	.86/ .86
Mean		22.61	20.47	8.98	21.94	20.20	8.98
Standard deviation		8.17	6.69	3.46	8.21	6.64	3.55

Note. EFA = Exploratory factor analysis. CFA = Confirmatory factor analysis. h^2 = Communalities. Thin O = Thin Overvaluation. Thin I = Thin Idealization. Thin D = Thin Behavioral Drive. According to the Flesch reading ease formula, the final 17-item version of the THIINA was at a grade reading level of 5.4 (Flesch, 1948). Subscale item responses are summed along a 5-point Likert scale from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*) to provide subscale scores. Subscale scores can be summed to create a composite score representing overall thin ideal internalization. Full questionnaire and scoring key also available in Supplemental Materials.

3. Study 2

Study 2 aimed to confirm the factor structure of the 17-item THIINA and to investigate the possibility of a general factor structure representing overall thin ideal internalization in an independent sample of female university students. The psychometric properties of the THIINA were also explored through the examination of the questionnaire's internal consistency, convergent and discriminant validity, and incremental validity. Test-retest reliability across a two-week period was also examined in a sub-sample of participants.

3.1. Method

3.1.2. Procedure and Participants

The same recruitment methods as Study 1 were used in Study 2. Study participation was available between July to September 2020. Of the 391 female participants initially recruited, 21 were excluded due to exiting the survey early (e.g., provided demographics but failed to complete the questionnaires) and 29 who had previously participated in Study 1 were removed. An extreme outlier on BMI and three multivariate outliers were also removed. The primary sample therefore consisted of 337 women aged between 17 and 55 years ($M = 23.22$, $SD = 7.07$), with 88.6% of the sample aged 30 years or younger. On average, participants were within the “normal” BMI range ($M = 24.26$, $SD = 5.38$) (World Health Organisation, 2021), and most were Caucasian (74.48%), heterosexual (70.6%), single (54%), and employed in casual or part-time work (59.10%).

To assess test-retest reliability, participants who consented to be contacted again were invited via email to complete only the THIINA a second time, re-administered two weeks later. Responses recorded at Time 1 and Time 2 were matched using the unique participant identification code. Only participants who completed the repeated assessment within the two-week retest period were included. This subsample consisted of 132 female university students aged between 18 and 55 years ($M = 24.28$, $SD = 8.33$) whose average BMI fell within the “normal” range ($M = 24.29$, $SD = 5.39$).

3.2. Measures

3.2.1. Thin Ideal Internalization

The SATAQ-4R Internalization Thin/Low Body Fat subscale (Schaefer et al., 2017) and the IBSS-R (Stice et al., 2008) were used to establish convergent and incremental validity. The SATAQ-4R Internalization Thin/Low Body Fat subscale

contains four items scored along a 5-point Likert scale ranging from 1 (*Definitely Disagree*) to 5 (*Definitely Agree*). A total score (ranging from 4 to 20) is obtained by summing the responses to each item, with higher total scores indicating greater internalization. The IBSS-R contains six items scored along a 5-point scale from 1 (*Definitely Disagree*) to 5 (*Definitely Agree*). Based on previous research, one item (“Shapely women are more attractive”) was removed due to its inclusion reducing internal consistency of the scale in previous studies (Stice et al., 2013; Stice et al., 2015). Responses are averaged (ranging between 1 and 5) with higher averaged scores indicating greater thin ideal internalization (Stice et al., 2008). Both questionnaires have demonstrated acceptable internal consistency in previous research (SATAQ-4R $\alpha = .82$, Schaefer et al., 2017; IBSS-R $\alpha = .64$, Stice et al., 2015).

3.2.2. Fit Ideal Internalization

Fit ideal internalization was measured using the 20-item Fit Ideal Internalization Test (FIIT) for convergent validity purposes (Uhlmann et al., 2020). Participants rated their agreement with each item along a 5-point Likert scale from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*) and responses were summed to provide a total score ranging between 20 to 100, with higher total scores indicating greater fit ideal internalization. The FIIT has demonstrated good psychometric properties in previous research and excellent internal consistency ($\alpha = .95$; Uhlmann et al., 2020).

3.2.3. Social Comparison

Social comparison was measured with the revised 9-item Body, Eating, and Exercise Comparison Orientation Measure (BEECOM-R) (Saunders et al., 2019) for convergent validity purposes. Participants rated the frequency with which they engaged in comparisons with their peers along a 7-point scale from 1 (*Never*) to 7 (*Always*). Responses were summed to provide a total score, with higher scores indicating greater

comparison. The BEECOM-R has demonstrated good psychometric properties in clinical and non-clinical samples, including a stable factor structure, incremental validity, and internal consistency ($\alpha = .96$; Saunders et al., 2019).

3.2.4. Social Desirability Bias

The Social Desirability Scale – 17 (SDS-17) consists of 17 statements related to dishonesty, dissimulation, and impression management (Stöber, 2001) and was included for discriminant validity purposes. Participants rated each statement on a dichotomous scale (0 = *False*, 1 = *True*). In line with recommendations, one item was removed due to a low corrected item-total correlation in the original study (Stöber, 2001). Following recoding of six reverse-scored items, responses were summed to produce a total score, with higher scores indicating greater bias. The SDS-17 has demonstrated sound psychometric properties (Stöber, 2001), and has been previously used to establish discriminant validity for body image-related questionnaires (e.g., Cash & Labarge, 1996; Uhlmann et al., 2020).

3.2.5. Body Dissatisfaction

Body dissatisfaction was measured with the 22-item Body-Image Ideals Questionnaire (BIQ; Cash & Szymanski, 1995) and was included for incremental validity purposes. Participants rated how close 11 physical attributes were to their personal ideal from 0 (*Exactly as I am*) to 3 (*Very unlike me*), providing a measure of self-ideal discrepancy. Participants then rated how important each physical ideal was to them from 0 (*Not important*) to 3 (*Very important*), providing a measure of ideal importance (e.g., “How important to you is your ideal hair texture and thickness?”). In line with scoring requirements (Cash & Szymanski, 1995), responses to the self-ideal discrepancy items recorded as 0 were recoded to -1 and then a cross-product between item-pairs for self-ideal discrepancy and ideal importance were calculated. The cross-

products between the 11 item-pairs were then averaged to provide a measure of total weighted discrepancy. Computed scores ranged between -3 to 9, with higher scores representing greater self-ideal disparity with strongly held physical ideals (i.e., body dissatisfaction). This measure has demonstrated acceptable internal consistency ($\alpha = .76$) and validity in previous studies (Cash & Szymanski, 1995).

3.2.6. Self-Esteem

Self-esteem was assessed using the 10-item Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965) for incremental validity purposes. Participants rated their agreement with each item along a 4-point scale from 1 (*Strongly Disagree*) to 4 (*Strongly Agree*). Following recoding of four reverse-coded items, responses were summed to provide a total score that could range between 10 to 40, with higher scores representing higher self-esteem. This measure has demonstrated good internal consistency in previous research ($\alpha = .88$; Gray-Little et al., 1997).

3.2.7. Disordered Eating

Disordered eating was assessed with the Restrained Eating subscale of the Dutch Eating Behavior Questionnaire (DEBQ; Van Strien et al., 1986) and the Bulimia and Food Preoccupation subscale of the Eating Attitudes Test-26 (EAT-26; Garner et al., 1982) respectively. For the DEBQ Restrained Eating subscale, participants rated their level of agreement with 10 statements along a 5-point Likert scale from 1 (*Never*) to 5 (*Very Often*). A total score, calculated by averaging the items, could range between 1 and 5, with higher scores indicating more frequent restrained eating behaviors. This subscale has demonstrated excellent internal consistency ($\alpha = .95$) and a stable factor structure in previous research (Allison et al., 1992; Bohrer et al., 2015; Van Strien et al., 1986). For the EAT-26 Bulimia and Food Preoccupation subscale, participants rated the extent to which six statements applied to them from 0 (*Never*) to 5 (*Always*). Scores 2

and below were recoded to zero and scores from 3 to 5 were recoded as '1', '2', and '3' respectively. Following recoding, scores were summed to provide a total score (ranging between 0 to 18), with higher scores indicating greater severity of bulimic behaviors (e.g., bingeing, purging) and preoccupation with food (e.g., "Given too much time and thought to food"). The EAT-26 has been validated for use in both clinical and non-clinical samples and has demonstrated good internal consistency in previous research ($\alpha = .83$; Garner et al., 1982; Mintz & O'Halloran, 2000).

3.3. Data Analysis

The R package 'lavaan' (v. 0.6.7.) (Rosseel, 2012) was used to conduct a CFA with a robust maximum likelihood estimation to confirm the factor structure identified in the previous study. This estimation method was chosen as it is robust against the effects of skew that may be present in the data (Li, 2016). Model fit was determined using robust variants of χ^2 , root mean square error of association (RMSEA), standardised root-mean-square residual (SRMR), comparative fit index (CFI), and the Tucker-Lewis Index (TLI). Indicators of "good" model fit were RMSEA values $< .05$, SRMR values $\leq .08$, and CFI/TLI values ≥ 0.95 . Although a nonsignificant χ^2 is also indicative of "good" model fit, this statistic is sensitive to large sample sizes, such as the one used in the present study. Bollen (1989) therefore recommends dividing χ^2 by the degrees of freedom with ratios of 2-3 indicative of "good" model fit. Indicators of "fair" and "acceptable" model fit included RMSEA values between .05 and .08 and CFI/TLI values > 0.90 respectively (Bentler, 1990; Hu & Bentler, 1999; Kaplan, 2000). In line with recommendations (McDonald & Ho, 2002) and internalization theory, the hypothesized measurement model was also compared to plausible, alternative models. Specifically, the model was compared to a general-factor model (i.e., whereby all 17 items are allowed to load onto a single latent factor) using the Akaike Information

Criterion (AIC). Lower AIC values indicate a better-fitting, parsimonious model (Akaike, 1987).

Internal consistency was assessed using Cronbach's α and McDonald's ω coefficients, and bivariate correlations were used to assess convergent and discriminant validity. Incremental validity was assessed using hierarchical multiple regression analyses, whereby BMI was entered at Step 1 as a potential covariate, SATAQ-4R Internalization Thin/Low Body Fat subscale and the IBSS- R were entered at Step 2, and the THIINA composite score at Step 3. Body dissatisfaction, restrained eating, bulimic behaviors and food preoccupation, and self-esteem, were entered as dependent variables. Evidence of incremental validity is demonstrated with a significant β and change in R^2 at Step 3. Some missing data were recorded on questionnaire items with item-level missingness ranged from 0% to 6.8%. No missingness was recorded for THIINA items. Little's Missing Completely at Random analysis was not significant ($\chi^2(251) = 246.22, p = .57$) indicating that the data were missing completely at random and that the missingness should not be problematic for planned analyses. Pairwise and listwise deletion was used for bivariate correlation and hierarchical multiple regression analyses respectively.

Finally, test-retest reliability was calculated for the THIINA composite score and subscales using intraclass correlation coefficient estimates and their 95% confidence intervals based on an absolute-agreement, 2-way mixed-effects model. Confidence interval values less than 0.5 suggest poor test-retest reliability, values between 0.5 and 0.75 suggest moderate reliability, values between 0.75 and 0.9 suggest good reliability, and values greater than 0.90 indicate excellent reliability (Koo & Li, 2016).

3.4. Results

3.4.1. Confirmatory Factor Analysis

CFA was performed with items constrained to load onto their respective factors, and factors were allowed to covary as per the EFA results and a priori theory.

According to model fit indices, the hypothesized measurement model had acceptable to good fit to the data in this sample, $\chi^2 (116, N = 336) = 288.62, p < .001, \chi^2/df = 1.74$, CFI = .95, TLI = .95, RMSEA = .07 (CI90 = 0.06, 0.08), SRMR = .05, and AIC = 16090.028. Table 2 presents the standardised confirmatory factor loadings for each item (ranging between .67 and .85). High Cronbach's α and McDonald's Ω coefficients for each subscale ($\alpha = .86 - .91$; $\Omega = .86 - .91$) and the composite score ($\alpha = .94$; $\Omega = .94$) were recorded. Correlations between each subscale were moderate to strong ($r = .56 - .76$). A general factor model was also examined, whereby all 17 items were allowed to load onto a single latent factor. This model had poor fit to data, $\chi^2 (136, N = 336) = 630.60, p < .001, \chi^2/df = 5.30$, CFI = .86, TLI = .84, RMSEA = .11 (CI90 = .11, .12), SRMR = .07, AIC = 16498.27. Comparison of the AIC revealed that the general factor model had poorer fit compared to the measurement model, although standardized loadings for each item were moderate to strong, ranging between .61 and .82. Overall, the findings support the independent use of the three THIINA subscales and provide preliminary support for the creation of a composite score representing overall thin ideal internalization.

3.4.2. Convergent and Discriminant Validity

Table 3 displays the Cronbach's alphas, means and standard deviations, and bivariate correlations between the THIINA composite score and subscales, and the validity measures. Correlations between the THIINA and convergent validity measures were significant, of moderate to high strength, and in the predicted direction.

Furthermore, correlations between the THIINA Composite and Thin Overvaluation and Thin Behavioral Drive subscale scores with the SDS-17 were not significant as predicted. A small negative correlation was observed between Thin Idealization subscale and social desirability.

Table 3

Correlations between the THIINA and Measures of Convergent, Discriminant and Incremental Validity

Measures	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. THIINA Overvaluation	.91/90												
2. THIINA Idealization	.76***	.91/91											
3. THIINA Behavioral Drive	.55***	.65***	.86/.86										
4. THIINA Composite	.93***	.92***	.76***	.94/.94									
5. SATAQ-4R-T	.73***	.85***	.61***	.84***	.89/.90								
6. IBSS-R	.54***	.46***	.36***	.53***	.46***	.88/.88							
7. Fit Ideal Internalization	.72***	.75***	.70***	.82***	.74***	.48***	.94/.94						
8. Social Comparison	.64***	.77***	.58***	.76***	.71***	.40***	.71***	.96/.95					
9. Social Desirability Bias	-.10	-.14*	-.003	-.11	-.08	-.10	-.03	-.10	.69/.68				
10. Body Dissatisfaction	.58***	.58***	.41***	.62***	.56***	.35***	.53***	.57***	-.08	.87/.86			
11. Restrained Eating	.67***	.77***	.72***	.80***	.68***	.39***	.72***	.74***	-.03	.53***	.96/.96		
12. Bulimic Behaviours and Food Preoccupation	.48***	.56***	.33***	.54***	.52***	.24***	.47***	.62***	-.06	.43***	.58***	.87/.89	
13. Self-Esteem	.51***	-.57***	-.27***	-.55***	-.54***	-.28***	-.44***	-.58***	.19**	-.56***	-.45***	-.44***	.91/.91

Note. Cronbach's α /McDonald's $\hat{\omega}$ coefficients (reported along the diagonal) for each scale. THIINA = Thin Ideal Internalization Assessment. SATAQ =

Sociocultural Attitudes Towards Appearances Questionnaire Forth Revision - Internalization-Thin/Low Body Fat subscale. IBSS-R = Ideal Body Stereotype Scale –

Revised. * $p < .05$, ** $p < .01$. *** $p < .001$.

3.4.3. Incremental Validity

Table 4 displays the results of the four hierarchical multiple regression models testing the incremental validity of the THIINA composite score compared to the SATAQ-4R and IBSS-R, in the prediction of body dissatisfaction, restrained eating, bulimic behaviors and food preoccupation, and self-esteem. While the SATAQ-4R remained a significant predictor of body dissatisfaction, bulimic behaviors and food preoccupation, and self-esteem (but not restrained eating) when the THIINA was included in the model, the IBSS-R failed to account for any unique variance in the criterion variables. When controlling for the effects of the other predictors, the THIINA composite score explained additional unique variance in each criterion variable, as evidenced by a significant increase in R^2 . Overall, these results provide evidence for incremental validity of the THIINA.

Table 4

Incremental Variance in Body Dissatisfaction, Disordered Eating and Self-Esteem accounted for by THIINA Composite Score

Variable	R^2 and ΔR^2	F and F -change (df)	B	β	t	95% CI for B	sr^2
<i>DV = Body Dissatisfaction</i>							
Step 1	$R^2 = .03$	$F = 10.63^{**}$ (1, 311)					
BMI			.05	.18	3.26 ^{**}	.02, .08	.18
Step 2	$\Delta R^2 = .32$	$\Delta F = 74.74^{***}$ (2, 309)					
BMI			.04	.15	3.17 ^{**}	.02, .07	.15
IBBS-R			.18	.11	2.15 [*]	.02, .35	.10
SATAQ-4R-T			.17	.50	9.74 ^{***}	.13, .20	.45
Step 3	$\Delta R^2 = .05$	$\Delta F = 24.82^{***}$ (1, 308)					
BMI			.03	.09	1.99 [*]	< .001, .05	.09
IBBS-R			.06	.03	0.65	-.11, .22	.03
SATAQ-4R-T			.06	.17	2.05 [*]	.002, .11	.09
THIINA			.04	.44	4.98 ^{***}	.03, .06	.22
<i>DV = Restrained Eating</i>							
Step 1	$R^2 = .05$	$F = 15.31^{***}$ (1, 311)					
BMI			.05	.22	3.91 ^{***}	.02, .07	.22
Step 2	$\Delta R^2 = .46$	$\Delta F = 143.71^{***}$ (2, 309)					
BMI			.04	.17	4.33 ^{***}	.02, .05	.17
IBBS-R			.11	.09	2.09 [*]	.01, .22	.08

Variable	R^2 and ΔR^2	F and F -change (df)	B	β	t	95% CI for B	sr^2
SATAQ-4R-T			.15	.63	14.03***	.13, .18	.56
Step 3	$\Delta R^2 = .15$	$\Delta F = 131.45*** (1, 308)$					
BMI			-.02	.08	2.25*	.002, .03	.08
IBBS-R			-.05	-.04	-1.04	-.14, .04	-.04
SATAQ-4R-T			.01	.05	0.82	-.02, .04	.03
THINA			.05	.77	11.47***	.05, .06	.38
<i>DV = Bulimic Behaviors and Food Preoccupation^a</i>							
Step 1	$R^2 = .03$	$F = 10.46**(1, 311)$					
BMI			.01	.18	3.24**	.01, .02	.18
Step 2	$\Delta R^2 = .30$	$\Delta F = 70.40*** (2, 309)$					
BMI			.01	.15	3.15**	.004, .02	.15
IBBS-R			.01	.02	0.45	-.03, .05	.02
SATAQ-4R-T			.05	.54	10.35***	.04, .05	.48
Step 3	$\Delta R^2 = .05$	$\Delta F = 24.60*** (1, 308)$					
BMI			.01	.09	1.97	< .001, .01	.09
IBBS-R			-.02	-.05	-1.03	-.06, .02	-.05
SATAQ-4R-T			.02	.21	2.45*	.003, .03	.11
THINA			.01	.44	4.96***	.01, .02	.22
<i>DV = Self-Esteem</i>							
Step 1	$R^2 = .01$	$F = 3.73 (1, 310)$					

Variable	R^2 and ΔR^2	F and F -change (df)	B	β	t	95% CI for B	sr^2
BMI			-.13	-.11	-1.93	-.25, .002	-.11
Step 2	$\Delta R^2 = .29$	$\Delta F = 64.75^{***}$ (2, 308)					
BMI			-.09	-.07	-1.56	-.19, .02	-.07
IBBS-R			-.28	-.04	-0.79	-.97, .41	-.04
SATAQ-4R-T			-.70	-.52	-9.75 ^{***}	-.85, -.56	-.46
Step 3	$\Delta R^2 = .02$	$\Delta F = 9.82^{**}$ (1, 307)					
BMI			-.04	-.04	-0.78	-.15, .07	-.04
IBBS-R			.06	.01	0.17	-.65, .78	.01
SATAQ-4R-T			-.41	-.30	-3.41 ^{***}	-.64, -.17	-.16
THIINA			-.11	-.29	-3.13 ^{**}	-.19, -.04	-.15

Note. BMI = Body mass index. IBSS-R = Ideal Body Stereotype Scale – Revised. SATAQ-4R-T = Sociocultural Attitudes Towards Appearances Questionnaire Forth Revision - Internalization-Thin/Low Body Fat subscale. THIINA = Thin Ideal Internalization Assessment Composite Score. ^a Variable with log transformation to reduce positive skew.

* $p < .05$. ** $p < .01$. *** $p < .001$.

3.4.4. Test-Retest Reliability

Intraclass correlation coefficient estimates (Table 5) revealed that test-retest reliability over a two-week period for the THIINA composite score and subscales were good to excellent.

Table 5

Intraclass Correlation Coefficient Estimates and 95% Confidence Intervals

Demonstrating Two Week Test-Retest Reliability

	Intraclass Correlation	95% CI	<i>F</i> Test (<i>df</i> 1, <i>df</i> 2)
Thin Overvaluation	.89	[.85, .91]	9.05 (130, 910)***
Thin Idealization	.89	[.85, .91]	9.39 (130, 650)***
Thin Behavioral Drive	.85	[.79, .89]	6.83 (130, 260)***
Composite Score	.93	[.91, .95]	15.45 (130, 2080)***

Note. True Value = 0. CI = Confidence Intervals.

*** $p < .001$.

4. General Discussion

The aim of this research was to develop and psychometrically validate the scores of the Thin Ideal Internalization Assessment (THIINA), a new measure of thin ideal internalization in women. The brevity of existing questionnaires measuring thin ideal internalization likely limits their ability to comprehensively assess the multidimensional nature of the construct. The THIINA was designed to address this by comprehensively measuring three theoretically-driven domains of internalization, specifically: Thin Overvaluation, Thin Idealization, and Thin Behavioral Drive. Across two studies, the psychometric properties of the 17-item THIINA were evaluated. Results of these studies suggest that the items form a stable three-factor structure, with strong psychometric properties and temporal stability.

Study 1 established three theoretically derived factors from the item pool. The first subscale, Thin Overvaluation, assesses the extent to which participants integrate cultural values and meaning ascribed to the thin ideal into their own personal values and belief systems. Specifically, retained items assess the degree to which women internalize beliefs that attaining a thin body will result in feelings of success, accomplishment and life satisfaction. These items align with previous study findings noting that when women internalize the thin ideal, they develop appearance-related cognitive schemas that connect thinness with positive characteristics (Cash & Labarge, 1996; Engeln-Maddox, 2006). Notably, some items within the Thin Overvaluation subscale reflect a strong social component, suggesting women may internalize the belief that adherence to the thin ideal will result in greater peer acceptance, respect, and romantic relationship success. This aligns with perspectives that humans are driven by an innate need to attain group status, which may be achieved through conforming to group norms and displaying societally valued qualities and attributes (i.e., embodying societal standards of beauty; Anderson et al., 2001; Gilbert, 1997; Uhlmann et al., 2020).

The second subscale, Thin Idealization, assesses the extent to which participants have personally adopted the thin ideal as their own beauty standard and experience an increased desire to ensure ideal-congruence. Several items on this subscale are similar to the SATAQ-4R Internalization Thin/Low Body Fat subscale, reflecting cognitive preoccupation with obtaining a thin physique. However, the Thin Idealization subscale of the THIINA expands on these definitions by also including items capturing cognitive-affective consequences (e.g., guilt, shame, envy) that ensue when women perceive a personal deviation from the thin ideal, both in terms of physical appearance and behaviors not conducive to attaining it (e.g., eating junk food).

The third subscale, Thin Behavioral Drive, assesses the extent to which women are motivated to engage in behaviours that align with the thin ideal. For several decades, Western media has normalised women's pursuit of thinness through diet and exercise. The female body has been presented as malleable and the thin ideal has been marketed as a realistic, attainable goal for women (Bordo, 2004; Calogero et al., 2007). Accordingly, true embodiment of the thin ideal may not be restricted to just having a slender body, but likely also extends to the behavioural actions that are representative of that ideal (i.e., diet and exercise). Certainly, there are many reasons why a woman would engage in certain diet and exercise routines. However, it appears that for women who have internalized the thin ideal, their motivation stems from a desire to adhere to ideal-congruent behaviours, marketed as one avenue through which to achieve the desired body shape. This was represented by items retained in the Thin Behavioral Drive subscale, with these items specifically assessing the extent to which women's dietary choices and motivation to engage in exercise was led by their desire to adhere to the thin body standard. Finally, preliminary support for a total thin ideal internalization score was also obtained through high correlations between the three subscales and composite score, excellent internal consistency, and moderate to strong standardized loadings of all items in the general factor model.

Study 2 confirmed the factor structure from Study 1 and provided further support for the reliability and validity of the THIINA composite and subscale scores. Supporting our hypotheses and providing evidence of convergent validity, the THIINA composite and subscale scores were significantly correlated with measures of thin and fit ideal internalization and social comparison. Importantly, the THIINA composite score demonstrated a stronger relationship with social comparison, compared to the SATAQ-4R Internalization Thin/Low Body Fat subscale and IBSS-R. This was

particularly evident for the IBSS-R, which is perhaps not surprising given that previous research has argued the IBSS-R may only capture awareness of broader beauty ideals, rather than thin ideal internalization specifically (Thompson et al., 2018). From a sociocultural perspective, social comparison represents an important behavioral manifestation of thin ideal internalization. From this perspective, women who have internalized the thin ideal may be more likely to compare themselves to peers and idealized media imagery, as one way to assess their adherence to this ideal (Fitzsimmons-Craft, 2011). Indeed, previous research has identified social comparison as a significant mediator underlying the relationship between thin ideal internalization and negative body image (Fitzsimmons-Craft et al., 2014; Fitzsimmons-Craft et al., 2016). Providing support for discriminant validity, the THIINA composite and Thin Overvaluation and Thin Behavioral Drive subscale scores were not significantly correlated with a measure of social desirability bias as predicted, while a very weak negative correlation was observed between the Thin Idealization subscale score and social desirability bias. Taken together, the results of the convergent and discriminant validity analyses support the conclusion that the THIINA scores are valid representations of the construct of interest.

As a means of investigating the utility of the multidimensional operationalization of internalization, the incremental validity of the THIINA composite score was also examined. Results revealed the composite score explained significant and unique variance in empirically-related outcome variables (i.e., body dissatisfaction, restrained eating, bulimic behaviors and food preoccupation, and self-esteem), above and beyond that of two widely used measures of thin ideal internalization (i.e., SATAQ-4R Internalization-Thin/Low Body Fat subscale and IBSS-R). Importantly, when all three internalization measures were included in the regression models, the IBSS-R was

no longer a significant predictor of any outcome variable, while the SATAQ-4R Internalization-Thin/Low Body Fat subscale no longer predicted restrained eating. Together, these results highlight how broadening the operationalization of thin ideal internalization can improve the prediction of disturbances in body image and eating in women. Given that extant research has relied on versions of the SATAQ and IBSS-R to measure internalization, these findings have important implications for theoretical and clinical research. Furthermore, as the THIINA allows for the measurement of distinct facets of thin ideal internalization, researchers and clinicians may now be able to use the subscales to determine the particular facets of internalization that are particularly problematic on an individual and larger population level, and target prevention and intervention strategies accordingly.

Finally, the THIINA composite and subscale scores demonstrated excellent test-retest reliability across a two-week period providing evidence of temporal stability. This aligns well with Uhlmann et al. (2020) conceptualisation of internalization that suggests that beauty ideal internalization is more likely a stable, schema-like trait, rather than a transient, state-based process. That is, when a woman has internalized the thin beauty ideal as an important appearance standard to uphold, she has integrated this ideal, and associated sociocultural attitudes and values, into her own value and belief system. The formation of these stable appearance-related schemas may increase engagement with certain behaviors (e.g., comparison, body-shaping behaviors including eating and exercise) and shape affective experiences of body image (e.g., shame, guilt, dissatisfaction).

4.1. Limitations

Despite its strengths, this research has several limitations. Participants consisted primarily of young, heterosexual, Caucasian women, thus limiting the generalizability

of results. Given that previous research has found thin ideal internalization to be present across the lifespan (Carrard et al., 2020; Hockey et al., 2021), and that it is reported by women from different cultural backgrounds (Fuller-Tyszkiewicz et al., 2022; Shagar et al., 2019) and sexual orientations (Hazzard et al., 2019), additional research examining the psychometric properties of this questionnaire in other population groups is vital.

Second, due to the cross-sectional design, this body of research was unable to investigate predictive validity. Prospective and longitudinal research in both community and clinical populations is required to examine the THIINA's usefulness in predicting disturbances and symptom burden, particularly in comparison to existing measures.

Third, a two-week test-retest period is common when developing body image questionnaires (Fitzsimmons-Craft, Bardone-Cone, et al., 2012; Uhlmann et al., 2020), however a longer time period between assessments would provide greater evidence for the stability of the THIINA items, and the thin ideal internalization construct more generally.

4.2. Conclusions

In sum, this body of research aimed to develop a more comprehensive measure of the multidimensional construct of thin ideal internalization. The Thin Ideal Internalization Assessment (THIINA) was developed to assess three theoretically derived domains of internalization, specifically: overvaluation, idealization, and behavioral drive. The THIINA composite score and subscales representing these domains demonstrated strong psychometric properties, including a stable factor structure, convergent validity, discriminant validity, and test-retest reliability.

Furthermore, the THIINA composite score demonstrated incremental validity in models predicting body dissatisfaction, self-esteem, and disordered eating, over and above existing measures of thin ideal internalization. These findings support broadening the

operationalization and measurement of thin ideal internalization to capture multiple domains of internalization. Future research should aim to replicate these findings, investigate the predictive validity of the THIINA, and examine its psychometric properties in more diverse population groups. Together, these findings suggest the THIINA provides a valid, multidimensional assessment of thin ideal internalization that may better inform our theoretical and clinical understanding of factors contributing to negative body image and disordered eating in women compared to existing measures of internalization previously available.

**Chapter 7: Integrating Social Media, Body Shame, and Psychological Distress
within the Elaborated Sociocultural Model of Disordered Eating**

Statement Of Contribution To Co-Authored Published Paper

This chapter includes a co-authored paper. The bibliographic details of the co-authored paper, including all authors, are:

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My contribution to the paper involved: Study conceptualization and literature review, data cleaning, data scoring and data analyses, data interpretation and critical appraisal. Further contributions include the writing of the manuscript, conducting all changes and implementing all feedback provided from the secondary authors, as well as the feedback obtained throughout the journal submission process.

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Prelude to Chapter 7

Study 1 developed and psychometrically validated a new measure of thin ideal internalisation in women, the Thin Ideal Internalisation Assessment (THIINA). This study demonstrated the THIINA subscales (Thin Idealisation, Thin Overvaluation, Thin Behavioural Drive) and composite score provide reliable and valid assessment of thin ideal internalisation. Furthermore, the THIINA was found to outperform existing measures of thin ideal internalisation (i.e., SATAQ-4R, IBSS-R) when predicting body dissatisfaction, disordered eating and self-esteem. Although the findings from Study 1 provided initial empirical evidence supporting the reliability and validity of the THIINA, the utility of the new questionnaire when testing larger sociocultural models of body image and eating is yet to be tested. Therefore, Study 2 aimed to address this by testing the Elaborated Sociocultural Model of Disordered Eating (Fitzsimmons-Craft et al., 2014) using the THIINA as a multidimensional assessment of thin ideal internalisation. Study 2 also aimed to address a key limitation of sociocultural research (outlined in Chapter 3) by extending the Elaborated Sociocultural Model to incorporate a measure of social media appearance pressures, alongside traditional sources of appearance pressures (i.e., traditional media, interpersonal relationships). This model was also extended through the inclusion of additional affective consequences women can experience when they fail to meet internalised appearance standards (i.e., body shame and psychological distress). By extending the Elaborated Sociocultural Model to include the assessment of multiple internalisation domains and additional predictors and consequences of women's thin ideal internalisation, this study aimed to provide a more complete picture of women's body image.

Abstract

The Elaborated Sociocultural Model proposes exposure to sociocultural appearance pressures increases women's internalisation of the thin ideal, their engagement in social comparison and body surveillance, and their experience of body dissatisfaction and disordered eating (Fitzsimmons-Craft et al., 2011). Although this model has received some empirical support, it is limited in that it does not currently account for social media as a contemporary source of appearance pressure, nor include additional known outcomes of thin ideal internalisation (i.e., body shame, psychological distress). The current study tested the integration of these variables within the Elaborated Sociocultural Model. Using structural equation modelling with latent variables, the extended model provided acceptable fit to the data in a sample of 310 female participants. A latent variable representing sociocultural appearance pressures originating from social media, traditional media, family and peers was found to significantly predict thin ideal internalisation and body image concerns. Furthermore, both social comparison and body surveillance emerged as indirect mediators of the relationship between thin ideal internalisation and body image concerns, which in turn, increased report of dietary restraint and psychological distress. Aligning with previous research, this extended model offers a useful and comprehensive framework for investigating women's body image.

Keywords: thin ideal internalisation, social comparison, body surveillance, body image, disordered eating, sociocultural model

Highlights

- We present empirical support for an extension to the Elaborated Sociocultural Model.
- Model included social media along with traditional sources of appearance pressures.
- Model also incorporated body shame, dietary restraint and psychological distress.
- The extended model had acceptable fit to data among adult female participants.

Integrating Social Media, Body Shame, and Psychological Distress within the Elaborated Sociocultural Model of Disordered Eating

1. Introduction

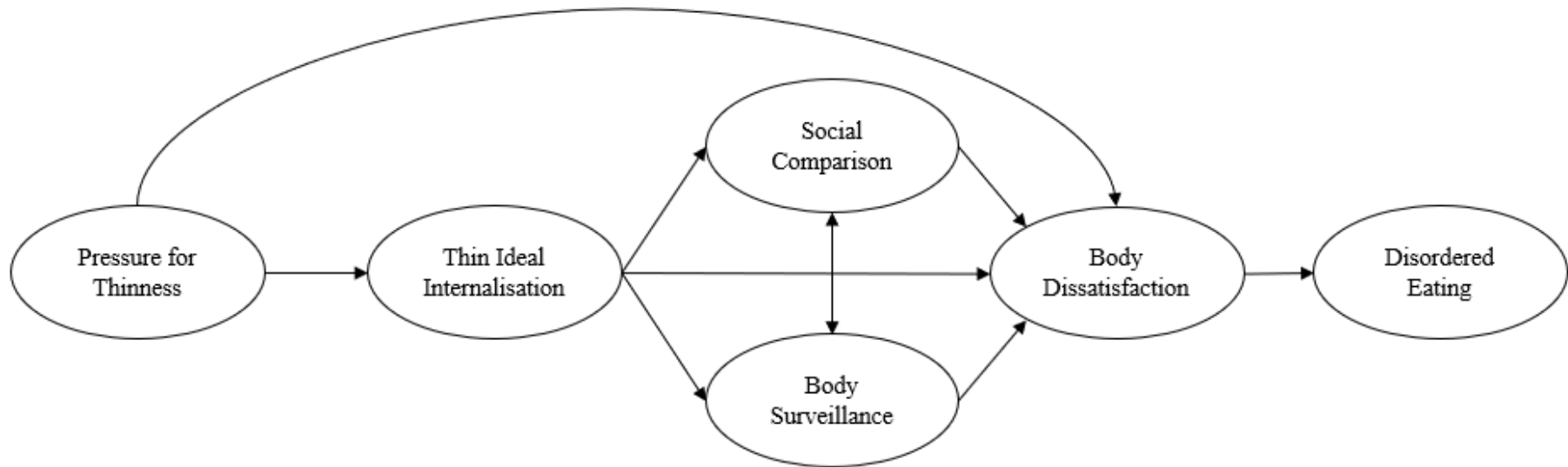
Extensive empirical investigation has shown women's internalisation of sociocultural messages endorsing female beauty ideals that emphasise thinness (i.e., the thin ideal) increases their vulnerability to body image concerns (Paterna et al., 2021) and disordered eating (Barakat et al., 2023). That is, the more a woman accepts and values the thin ideal as a personal beauty standard to strive for, and judge herself against, the more likely she will feel dissatisfied with her body and engage in disordered eating to adhere to such standards (Thompson et al., 1999; Kidd et al., 2023). According to sociocultural and feminist theoretical frameworks, women who have internalised the thin ideal are more likely to engage in social comparison (Festinger, 1954; Thompson et al., 1999) and body surveillance (Fredrickson & Roberts, 1997; McKinley & Hyde, 1996) to assess their adherence to this ideal. It is through these processes that women are proposed to become aware of discrepancies between their own physical body and their internalised thin standard. Consequently, because the thin ideal is an unattainable beauty standard for most women to achieve (Brownell, 1991), women who internalise the thin ideal and engage in these comparison and surveillance processes are at greater risk of experiencing body image and eating disturbances (Fitzsimmons-Craft, 2011). Although social comparison and body surveillance are typically examined in separate sociocultural models (i.e., respectively represented in the Tripartite Influence Model [Thompson et al., 1999] and Objectification Theory [Moradi & Huang, 2008]), the Elaborated Sociocultural Model of Disordered Eating (Fitzsimmons-Craft, 2011) integrated these mechanisms into a single model to provide a model that accounts for the multiple mediating processes underlying the relationship between sociocultural

appearance pressures and body dissatisfaction (see Figure 1). Fitzsimmons-Craft et al. (2014) later tested and found initial empirical support for the overall model in a sample of young women attending college.

Although Fitzsimmons-Craft et al. (2014) was the first to provide evidence for the Elaborated Sociocultural Model, to our knowledge, the full model is yet to be tested and replicated in follow-up studies. Replication of the full model would offer further support to the reproducibility and generalisability of these findings (Open Science Collaboration, 2015). Furthermore, the model presented with several limitations that, if addressed, would contribute to the expanding literature on women's body image. First, despite the increasingly important influence that social media is now considered to play in women's body image disturbance (see Harrigar et al., 2023; Tylka et al., 2023), this study did not include specific measurement of this important sociocultural variable. Second, this model limited the assessment of the consequences of sociocultural appearance pressures and thin ideal internalisation to measures of body dissatisfaction and disordered eating. Certainly, these are important variables to capture within models of women's body image and eating, however, there is increasing evidence to suggest other psychological sequelae (e.g., body shame, psychological distress) may also be important outcomes to consider. Therefore, the aim of the current study was to replicate and extend the Elaborated Sociocultural Model to include additional measures of social media appearance pressures, body shame and psychological distress to obtain a more complete theoretical representation of women's body image. Further justification for the importance of integrating each of these new variables into the Elaborated Sociocultural Model is provided in the following sections.

Figure 1

Elaborated Sociocultural Model of Disordered Eating



Note. Image adapted from Fitzsimmons-Craft et al. (2014)

1.1. Social Media Thinness Pressures

Sociocultural models of women's body image, including the Elaborated Sociocultural Model, typically include the influence of traditional media sources (e.g., television, magazines) and interpersonal relationships (e.g., family and peers) when investigating internalised pressures to adhere to the thin ideal (Ata et al., 2015). However, the prolific rise of social media has provided a new avenue through which messages of endorsed beauty ideals are delivered (Perloff, 2014), and therefore may represent an additional important sociocultural influence to consider in models of women's body image (Choukas-Bradley et al., 2022; Tylka et al., 2023). Indeed, popular social media platforms (e.g., Instagram) are primarily image focused, with content frequently depicting posed, edited and distorted imagery of thin and slender women that are publicly endorsed by users through "likes" and positive commentary (Feltman & Szymanski, 2018; Rodgers, 2016). Importantly, young women are engaging with social media platforms more often than traditional media sources (e.g., print media; Bair et al., 2012; Twenge et al., 2019) and are consequently regularly exposed to these images.

Social media use, and awareness of appearance pressures emanating from social media, have been found associated with thin ideal internalisation and greater body image disturbances in recent studies (de Valle et al., 2021; Donovan et al., 2020; Feltman & Szymanski, 2018). However, despite its clearly influential role, limited studies have included social media when testing larger sociocultural models of women's body image (Tylka et al., 2023). Thus, the integration of social media within the Elaborated Sociocultural Model (alongside traditional sociocultural influences) will likely support the growing theoretical literature by ensuring a range of sociocultural factors that are known contributors to women's body image are accounted for in model

testing. Furthermore, the inclusion of social media within this model will allow for the exploration of key mechanisms that underlie the relationship between social media and body image disturbance, these likely being thin ideal internalisation, social comparison and body surveillance (Feltman & Szymanski, 2018; Jung et al., 2022).

1.2. Body Image Concerns

In the original testing of the Elaborated Sociocultural Model, Fitzsimmons-Craft et al. (2014) found that only social comparison emerged as a significant indirect mediator underlying the relationship between thin ideal internalisation and body dissatisfaction. Unexpectedly, body surveillance was not a significant mediator of this relationship. The authors argued this finding may be due to the inclusion of broader social comparison domains (i.e., body, eating, exercise comparisons) in the model that resulted in a more “potent” mediator compared to body surveillance (Fitzsimmons-Craft et al., 2014). While not discounting this conclusion, an additional explanation may be in how body image disturbance was conceptualised within this model. The original testing of the Elaborated Sociocultural Model included only body dissatisfaction as the proximal consequence of the social comparison and body surveillance processes (Fitzsimmons-Craft et al., 2014). The questionnaires included in this study assessed participants’ dissatisfaction with their weight and shape. While body image research frequently extrapolates dissatisfaction with specific physical features (e.g., weight/shape) to women’s overall body image experience, body image is more complex than this (Cash, 2002). This is not a criticism of the Elaborated Sociocultural Model, but rather provides an opportunity through which the explanatory power of this model could be improved.

Body image consists of cognitive, evaluative, attitudinal, and affective components (Cash & Pruzinsky, 1990). Body dissatisfaction reflects the negative

cognitive appraisal and attitude towards one's physical appearance (Heider et al., 2018) and has been closely associated with social comparison processes (Myers & Crowther, 2009). Alternatively, body shame reflects the negative affective body image experience of failing to meet culturally endorsed appearance ideals (Miner-Rubino et al., 2002). Body shame has been linked with both social comparison (Siegel et al., 2021; Tylka & Sabik, 2010) and body surveillance (Fredrickson & Roberts, 1997; Roberts et al., 2018). Although these body image constructs are conceptually distinct, they are closely related, and thus it is likely beneficial to measure both when considering a more global experience of women's body image. This claim is further supported by a previous study that found both social comparison and body surveillance significantly predicted a negative body image latent variable that included measures of body dissatisfaction and body shame (Linder et al., 2012). Overall, these findings suggest extending the Elaborated Sociocultural Model to include both body dissatisfaction and body shame as proximal consequences of thin ideal internalisation and associated mediating process (i.e., social comparison and body surveillance) may offer a more comprehensive understanding of disturbances in women's body image.

1.3. Psychological Distress

Finally, much of the research to date has focused on disordered eating as the main consequence of sociocultural appearance pressures, thin ideal internalisation and body image disturbances in women (Ata et al., 2015). However, researchers have argued for the importance of broadening the focus of consequences to other psychological outcomes, including psychological distress (Choukas-Bradley et al., 2022). Body image represents a core component of an individual's self-concept and when this is judged negatively or as inadequate according to internalised appearance standards, it can lead to psychological distress (Cash, 2005). Indeed, a host of studies

have found a negative impact of thin ideal internalisation and body image disturbances on negative affectivity, depression, and anxiety symptoms (Jones & Griffiths, 2015; Stice & Bearman, 2001; Stice et al., 2011). Given the significant impact of negative body image on psychological wellbeing, extending the Elaborated Sociocultural Model to include psychological consequences, which go beyond disordered eating, may provide a more complete understanding of the widespread impact of body image disturbance.

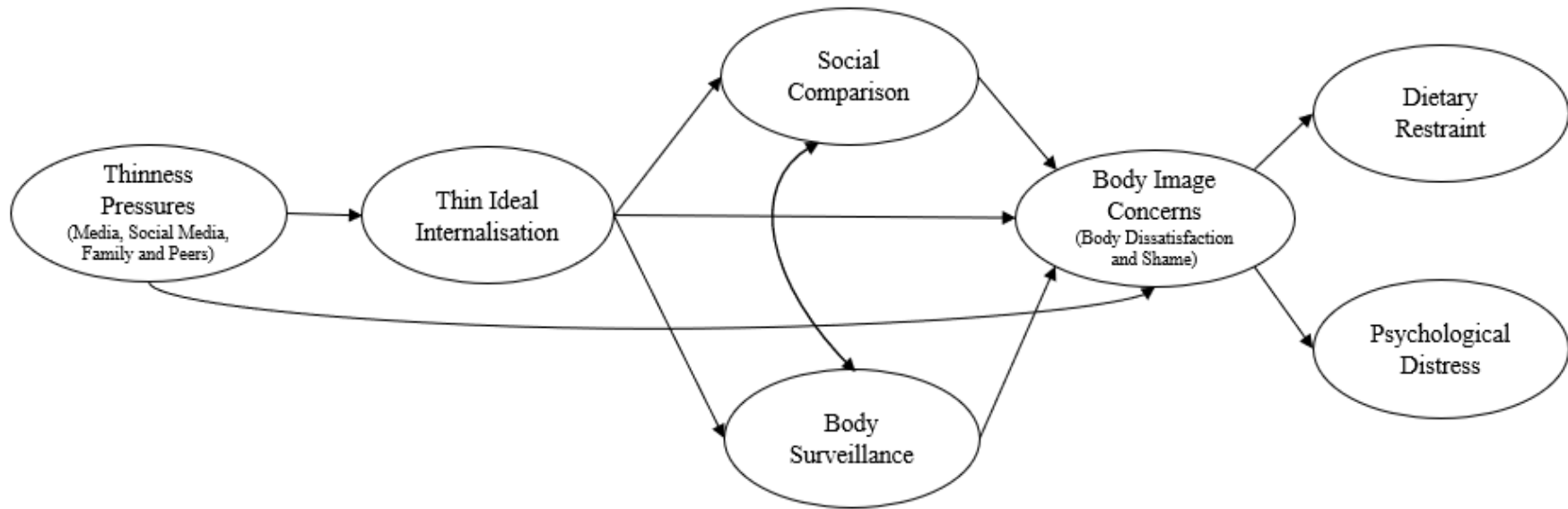
1.4. The Current Study

The Elaborated Sociocultural Model of Disordered Eating provided initial empirical support for the simultaneous examination of social comparison and body surveillance as mechanisms underlying the relationship between thin ideal internalisation and body dissatisfaction in college women (Fitzsimmons-Craft et al., 2014). While elements of this model have been tested and supported in recent studies (e.g., Donovan & Uhlmann, 2022; Fitzsimmons-Craft et al., 2015), to our knowledge, the full model is yet to be replicated in published research beyond the original empirical study (Fitzsimmons-Craft et al., 2014). Therefore, the first aim of the current study was replicate the full model in a sample of adult women. In addition, this study sought to extend the model in several ways. First, to acknowledge the rising and important influence of social media on women's body image (Tylka et al., 2023), this study included appearance pressures emanating from social media, alongside the traditional sources of these pressures originally tested by Fitzsimmons-Craft et al. (2014) and other popular sociocultural models (i.e., traditional media, family members and peers). Next, this study incorporated measures of both body dissatisfaction and body shame to capture the complex cognitive, attitudinal, and affective experience of women's body image. Finally, this model was extended to examine the impact of thin ideal

internalisation and body image disturbances on psychological wellbeing, alongside the impact on disordered eating. The proposed extension to the Elaborated Sociocultural Model was tested using a cross-sectional design and latent variables, and all pathways were grounded in previous empirical findings and theory (see Figure 2). It was hypothesised that this model would provide a good fit to data and that both social comparison and body surveillance would mediate the pathway between thin ideal internalisation and body image concerns.

Figure 2

Hypothesised Elaborated Sociocultural Model Integrating Social Media, Body Shame, and Psychological Distress



2. Method

2.1. Procedure

Ethical clearance was granted by the University's Human Research Ethics Review Committee. Recruitment occurred online using a research participant pool open to undergraduate students enrolled in first-year psychology subjects and via social media. Potential participants were provided a link directing them to a participant information sheet. Participants were eligible to apply for course credit (if applicable) and invited to enter a draw to win a gift card after completing the survey. Willing participants provided informed consent and completed the online survey hosted by REDCap (Harris et al., 2019).

2.2. Participants

Initially, 359 female participants were recruited; however, 48 were excluded due to exiting the survey prematurely (i.e., provided demographic information but failed to complete questionnaires), and one participant was removed for being an extreme outlier on body mass index (BMI). Therefore, the final sample included 310 female participants, aged between 18 and 69 years ($M = 23.13$, $SD = 8.32$). On average, participants' BMI fell within the "normal" weight range ($M = 24.54$, $SD = 5.74$; World Health Organization, 2021).

2.3. Measures

2.3.1. Sociocultural Thinness Pressures

Sociocultural thinness pressures were measured using the Peer, Family, and modified Media Pressure subscales of the Sociocultural Attitudes Towards Appearance Questionnaire – Version 4 Revised (SATAQ-4R; Schaefer et al., 2017). The original 4-item Peer and Family Pressure subscales were used to assess thinness pressures from participants' interpersonal relationships. As per previous research (Donovan et al.,

2020), the original 4-item Media Pressure subscale was modified to include an additional four items where the word “media” was replaced with “social media”, in order to capture sociocultural pressures originating from both traditional (e.g., TV, magazines) and social media platforms. Participants rated their agreement with items along a 5-point Likert scale ranging from “1” (*Definitely disagree*) to “5” (*Definitely agree*). Responses were summed to provide total subscale scores, with higher scores indicating stronger sociocultural pressures for thinness originating from peers, family, and media. Because a very strong correlation ($r = .93, p < .001$) was recorded between the traditional and social media subscales, the items were collapsed into a combined subscale to represent thinness pressures originating from all forms of media. These subscales have demonstrated strong psychometric properties in previous research (Schaefer et al., 2017) and excellent internal consistency in this study ($\alpha = .94-.97$).

2.3.2. Thin Ideal Internalisation

Thin ideal internalisation was measured using the Thin Ideal Internalization Assessment (THIINA; Kidd et al., 2023). This measure includes 17-items, rated along at 5-point Likert scale from “1” (*Strongly Disagree*) to “5” (*Strongly Agree*). Responses are summed to provide three subscale scores representing distinct, but related, facets of internalisation: Thin Idealisation, Thin Overvaluation, and Thin Behavioural Drive. Subscales can be used to create a composite score representing overall thin ideal internalisation. This measure has demonstrated excellent psychometric properties in recent research (Kidd et al., 2023) and additional evidence of construct validity (e.g., strong correlations with related concepts including social comparison and body dissatisfaction) and excellent internal consistency was found in the current study ($\alpha = .90-.94$).

2.3.3. Social Comparison

Social comparison was measured with the Body, Eating, and Exercise Comparison Orientation Measure (BEECOM; Fitzsimmons-Craft, Bardone-Cone, et al., 2012). This measure includes 18-items, rated along a 7-point Likert scale from “1” (*Never*) to “7” (*Always*). Responses are summed to provide three subscale scores (possible range 6–42) representing distinct facets of eating disorder-related social comparison: Body Comparison Orientation, Eating Comparison Orientation, and Exercise Comparison Orientation. This measure has demonstrated excellent psychometric properties in previous research, including construct validity and internal consistency, and subscale scores have been shown to be positively associated with body dissatisfaction and disordered eating (Fitzsimmons-Craft & Bardone-Cone, 2014; Fitzsimmons-Craft, Bardone-Cone, et al., 2012). Internal consistency was excellent in the current study ($\alpha = .95-.96$).

2.3.4. Body Surveillance

Body surveillance was measured using the 8-item Surveillance subscale from the Objectified Body Consciousness Scale (OBCS; McKinley & Hyde, 1996). Items are rated along a 7-point Likert scale from “1” (*Strongly Disagree*) to “7” (*Strong Agree*). Following reverse-scoring of applicable items, responses were averaged to provide a subscale score, with higher values representing greater habitual monitoring of one’s body from an observer’s perspective. The individual items that comprise this subscale were used as indicators of the body surveillance latent variable. This subscale has demonstrated construct validity in past research, with positive correlations recorded between body surveillance and thin ideal internalisation, body shame, appearance anxiety, and disordered eating (McKinley & Hyde, 1996; Moradi & Varnes, 2017;

Tiggemann & Lynch, 2001). Internal consistency was excellent in the current study ($\alpha = .85$).

2.3.5. Body Image Concerns

The cognitive-affective and self-evaluative components of body image concerns were measured using three questionnaires. First, the Body Dissatisfaction subscale of the Eating Disorder Inventory-3 (EDI3-BD; Garner, 2004) was used to assess participants' cognitions regarding the perceived size of their specific body parts (e.g., hips, buttocks). This subscale contains 10 items, rated along a 5-point scale ("0" = *Never/Rarely*, "1" = *Sometimes*, "2" = *Often*, "3" = *Usually*, "4" = *Always*). Following reverse scoring of several items, item responses were summed to provide a total score, with higher scores indicating greater cognitive preoccupation with body shape.

Next, the 22-item Body-Image Ideals Questionnaire (BIQ; Cash & Szymanski, 1995) was used to assess body image investment and perceived discrepancy with internalised beauty ideals that extend broader than weight and shape. On this measure, participants rated how close 11 physical attributes were to their internalised ideal from "0" (*Exactly as I am*) to "3" (*Very unlike me*), providing a measure of self-ideal discrepancy. Participants then rated how important each physical ideal was to them from "0" (*Not important*) to "3" (*Very important*), providing a measure of ideal importance. Responses to the self-ideal discrepancy items recorded as 0 were recoded to -1 and then a cross-product between item-pairs for self-ideal discrepancy and ideal importance were calculated. The cross-products between the 11 item-pairs were then averaged to provide a measure of total weighted discrepancy. Computed scores can range between -3 and 9, with higher scores representing greater self-ideal disparity with strongly held physical ideals (Cash & Szymanski, 1995).

Finally, the affective experience of body shame was measured using the 8-item Shame subscale from OBCS (McKinley & Hyde, 1996). Items within this subscale are rated along a 7-point Likert scale from “1” (*Strongly Disagree*) to “7” (*Strong Agree*). Responses were averaged to provide a total score, with higher scores representing the experience of body shame as an affective-consequence of perceived internalised-ideal discrepancy. All three questionnaires have demonstrated strong psychometric properties in previous research and good internal consistency in the current study ($\alpha = .86-.96$).

2.3.6. Retrained Eating

Cognitive, affective, and behavioural components of restrictive eating were measured using two questionnaires. First, the 10-item Restrained Eating subscale of the Dutch Eating Behaviour Questionnaire (DEBQ; Van Strien et al., 1986) was presented to participants who rated each item along a 5-point Likert scale ranging from “1” (*Never*) to “5” (*Always*) and responses were averaged with higher scores indicating greater endorsement of dieting attitudes and behaviours. The subscale has demonstrated excellent internal consistency in previous research (Van Strien et al., 1986) and the current study ($\alpha = .95$).

Next, cognitive preoccupation with dieting and affective consequences was measured using the 7-item Drive for Thinness subscale from the Eating Disorder Inventory-3 (EDI3-DFT; Garner, 2004). Participants rated the extent each item applied to them along a 5-point scale (“0” = *Never/Rarely*, “1” = *Sometimes*, “2” = *Often*, “3” = *Usually*, “4” = *Always*). Following reverse scoring of one item, responses were summed to provide a total score (possible range between 0 and 28), with higher scores indicating greater pursuit of thinness and preoccupation with dieting and weight gain. This subscale has demonstrated excellent internal consistency in the current study ($\alpha = .93$).

and is validated for use with young female participants (Garner, 2004; Rodgers et al., 2011).

2.3.7. Psychological Distress

Psychological distress was assessed using the 21-item Depression Anxiety Stress Scale (DASS-21; Lovibond & Lovibond, 1995). The DASS-21 contains three subscales representing depression, anxiety, and stress. Participants rated the degree to which each item applied to them across the previous week along a 4-point Likert scale ranging from “0” (*Did not apply to me*) to “3” (*Applied to me very much or most of the time*). This scale has demonstrated excellent psychometric properties in previous research (Antony et al., 1998; Lovibond & Lovibond, 1995) and good internal consistency in the current study ($\alpha = .89-.95$).

2.4. Data Analysis

Data screening, descriptive statistics, and correlations among study variables were conducted using SPSS v.27 (IBM Corp., 2020). The model was tested using AMOS v.27 (Arbuckle, 2021) using the covariance matrices and maximum likelihood estimation. A two-step approach to modelling was undertaken. First, tests of one-factor congeneric measurement models were undertaken. This was done prior to fitting the hypothesised structural equation model to test expected relationships between indicator and latent variables and to identify sources of poor fit due to mis-specified measurement. Evidence of construct validity was obtained if observed variables specified to measure a common underlying factor showed acceptable standardised loadings onto that factor. If poor fit was observed, modification indices were used to assess whether freeing parameter constraints would improve overall fit of the measurement models. Once support was obtained for the measurement models, the structural equation model (Figure 3) was tested. Relying on strict cut-off scores to

indicate goodness-of-fit for models has been discouraged and may be best considered as a guide or general “rules of thumb” (see Marsh et al., 2004). Therefore, goodness-of-fit for the models were evaluated by examining a range of indices, including χ^2 , root-mean-square-error of association (RMSEA), standardised root-mean-square residual (SRMR), comparative fit index (CFI), and the Tucker-Lewis Index (TLI). Values suggesting “good” model fit are typically defined as normed χ^2 (χ^2/df) values ranging between 1.00 to 3.00, RMSEA values $< .05$, SRMR values $\leq .08$, and CFI/TLI values ≥ 0.95 . Values indicating “fair” and “acceptable” model fit are typically defined as RMSEA values between .05 and .08 and CFI/TLI values > 0.90 respectively (Bentler, 1990; Bollen, 1989; Carmines & McIver, 1981; Hu & Bentler, 1999; Kaplan, 2000). Given our interest in exploring the indirect relationship between internalisation and body image concerns, bias-corrected 95% confidence intervals (BC 95CI; bootstrapped $n = 10,000$) were examined using user-defined estimands within AMOS, with significant indirect effects indicated by the absence of zero within the BC95CI (Preacher & Hayes, 2008).

3. Results

3.1. Data Screening

Prior to testing the model, all study variables were screened for accuracy of data entry, missing values, normality, and univariate and multivariate outliers. Fifty participants recorded some missing data on questionnaire items (item-level missingness ranged from 0% to 1.3%). Little’s Missing Completely at Random (MCAR) analysis was not significant ($\chi^2(7853) = 8040.64$ $p = .068$) indicating that missingness was missing completely at random. Therefore, missing data was estimated using Expectation Maximisation. Mahalanobis Distance identified six multivariate outliers that demonstrated an effect on overall model fit and therefore were removed from the final

analysis. Moderate levels of skew were evident on sociocultural pressures, social comparison, restriction, and psychological distress, as expected.

3.2. Descriptives and Bivariate Correlations

Descriptive statistics, internal consistency of questionnaires, and bivariate correlations are reported in Table 1. Cronbach's alpha revealed the good to excellent internal consistency for all measures included in this study. Due to non-normality, Spearman's rho correlations are reported between observed variables. All correlations between observed variables were significant and in the expected direction based on previous literature.

Table 1*Descriptive Statistics, Internal Consistency and Bivariate Correlations*

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	<i>M (SD)</i>
1. Family Pressures	.94																		10.57 (5.36)
2. Peers Pressures	.63	.94																	8.12 (4.33)
3. Media Pressures	.44	.39	.97																28.47 (9.61)
4. Thin Idealisation	.43	.38	.65	.94															19.04 (7.34)
5. Thin Overvaluation	.43	.44	.51	.76	.93														20.56 (8.61)
6. Thin Beh. Drive	.25	.30	.43	.63	.57	.90													8.16 (3.59)
7. Body Comparison	.42	.42	.61	.76	.63	.48	.96												25.27 (10.35)
8. Eating Comparison	.47	.48	.60	.73	.63	.55	.84	.96											22.17 (10.61)
9. Exercise Comparison	.39	.44	.51	.68	.60	.57	.78	.82	.95										19.91 (10.04)
10. Body Surveillance	.32	.24	.63	.62	.48	.36	.68	.56	.50	.85									4.69 (1.16)
11. Body Shame	.42	.42	.54	.72	.62	.49	.71	.68	.61	.59	.89								3.82 (1.34)
12. EDI3-BD	.37	.39	.56	.69	.59	.40	.63	.58	.50	.50	.67	.86							17.46 (8.93)
13. BIQ	.45	.33	.51	.55	.54	.28	.57	.47	.42	.55	.56	.63	.88						2.22 (1.50)
14. EDI3-DFT	.38	.38	.64	.81	.68	.59	.76	.76	.69	.59	.72	.72	.53	.93					11.38 (8.77)
15. DEBQ-Restraint	.32	.68	.58	.76	.64	.66	.65	.74	.65	.50	.64	.60	.43	.80	.95				2.54 (1.08)

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	<i>M (SD)</i>
16. Depression	.39	.38	.33	.36	.38	.16	.37	.38	.34	.29	.47	.34	.36	.44	.31	<i>.94</i>			6.62 (5.62)
17. Anxiety	.32	.37	.33	.39	.35	.17	.42	.39	.38	.28	.45	.30	.30	.45	.32	.77	.89		6.47 (5.18)
18. Stress	.32	.34	.40	.41	.39	.17	.44	.40	.37	.31	.46	.36	.32	.46	.35	.79	.81	.88	8.48 (4.98)

Note. All correlations were significant at $p < .05$. Cronbach's alpha (α) for questionnaires reported in italics along diagonal. EDI3-BD = Eating Disorder Inventory – Body Dissatisfaction subscale. BIQ = Body Image Ideals Questionnaire. EDI3-DFT = Eating Disorder Inventory – Drive for Thinness subscale. DEBQ-Restraint = Dutch Eating Behaviour Questionnaire Restraint subscale.

3.3. Structural Equation Modelling

A two-step approach was used with congeneric measurement models tested first, followed by a test of the structural model. Latent variables were created for (a) Thinness Pressures, (b) Thin Ideal Internalisation, (c) Social Comparison, (d) Body Surveillance, (e) Body Image Concerns, (f) Dietary Restraint, and (g) Psychological Distress.

Thinness Pressures was created from the Peer, Family and modified Media Pressure subscales of the SATAQ-4R (Schaefer et al., 2017) and demonstrated good fit across most indices, $\chi^2 (1) = 6.33$ $p < .001$, CFI = 0.98, TLI = 0.93, SRMR = 0.03, except RMSEA = 0.13 CI90 = 0.05, 0.24. Examination of modification indices did not suggest freeing covariances between error terms, and model fit was considered good according to most indices, this model was retained. Thin Ideal Internalisation was created using the Thin Idealisation, Thin Overvaluation, and Thin Behavioural Drive subscales of the THINA (Kidd et al., 2023), and demonstrated good fit, $\chi^2 (1) = 0.14$, $p > .05$, CFI = 1.00, TLI = 1.01, SRMR = 0.003, RMSEA = 0.00 CI90 = 0.00, 0.01. Social Comparison was created using the Body Comparison Orientation, Eating Comparison Orientation, and Exercise Comparison Orientation subscales from BEECOM (Fitzsimmons-Craft, Bardone-Cone, et al., 2012) and demonstrated good fit across most indices, $\chi^2 (1) = 8.86$ $p < .001$, CFI = 0.99, TLI = 0.98, SRMR = 0.01, except RMSEA = 0.13 CI90 = 0.04, 0.23. Similar to Thinness Pressures, modification indices did not suggest freeing covariances and therefore this model was retained. Body Surveillance was created using the eight body surveillance items from the OBCS (McKinley & Hyde, 1996). Initially, the Body Surveillance measurement model demonstrated poor fit to data across most indices, $\chi^2 (21) = 162.04$ $p < .001$, CFI = 0.85, TLI = 0.80, SRMR = 0.08, except RMSEA = 0.15 CI90 = 0.13, 0.17. Exploration of modification indices identified large residual covariances, suggesting freeing covariances for the following errors terms due

to overlap in item content: between Item 5 (“During the day, I think about how I look many times.”) and Item 6 (“I often worry about whether the clothes I am wearing make me look good.”), between reversed-scored Item 3 (“I think more about how my body feels than how my body looks.”) and Item 8 (“I am more concerned with what my body can do than how it looks.”), and between Item 2 (“I think it is more important that my clothes are comfortable than whether they look good on me.”) and Item 3. Covariances between errors for item pairs were sequentially freed, resulting in improved fit, $\chi^2 (18) = 51.71$ $p < .001$, CFI = 0.96, TLI = 0.94, SRMR = 0.05, RMSEA = 0.08 CI90 = 0.05, 0.10. Body Image Concerns was created using the EDI3-BD subscale (Garner, 2004), BIQ (Cash & Szymanski, 1995), and Shame subscale of the OBCS (McKinley & Hyde, 1996), and demonstrated acceptable fit, $\chi^2 (1) = 0.74$, $p < .001$, CFI = 1.00, TLI = 1.01, SRMR = 0.003, RMSEA = 0.000 CI90 = 0.00, 0.11.

Dietary Restraint was created using the EDI3-DFT (Garner, 2004) and DEBQ Restraint subscale (Van Strien et al., 1986). Because only two indicators were used to create Dietary Restraint, to address identification issues, this measurement model was assessed with Body Image Concerns, in which indicator variables were only allowed to load onto their own respective latent variable. Latent variables were allowed to correlate. The model demonstrated good fit across most indices, $\chi^2 (4) = 19.61$ $p < .001$, CFI = 0.98, TLI = 0.96, SRMR = 0.03, and poor fit on one, RMSEA = 0.11 CI90 = 0.07, 0.16. Exploration of modification indices suggested freeing covariances for the error terms attached to the BIQ and EDI3-BD. Given theoretical support connecting these constructs (i.e., specific and generalised dissatisfaction with appearance, separate from affective experience), covariances were freed and model fit was acceptable to good across indices, $\chi^2 (3) = 7.50$, $p > .05$, CFI = 1.00, TLI = 0.99, SRMR = 0.02, RMSEA = 0.07 CI90 = 0.00, 0.14. Finally, Psychological Distress was created using the

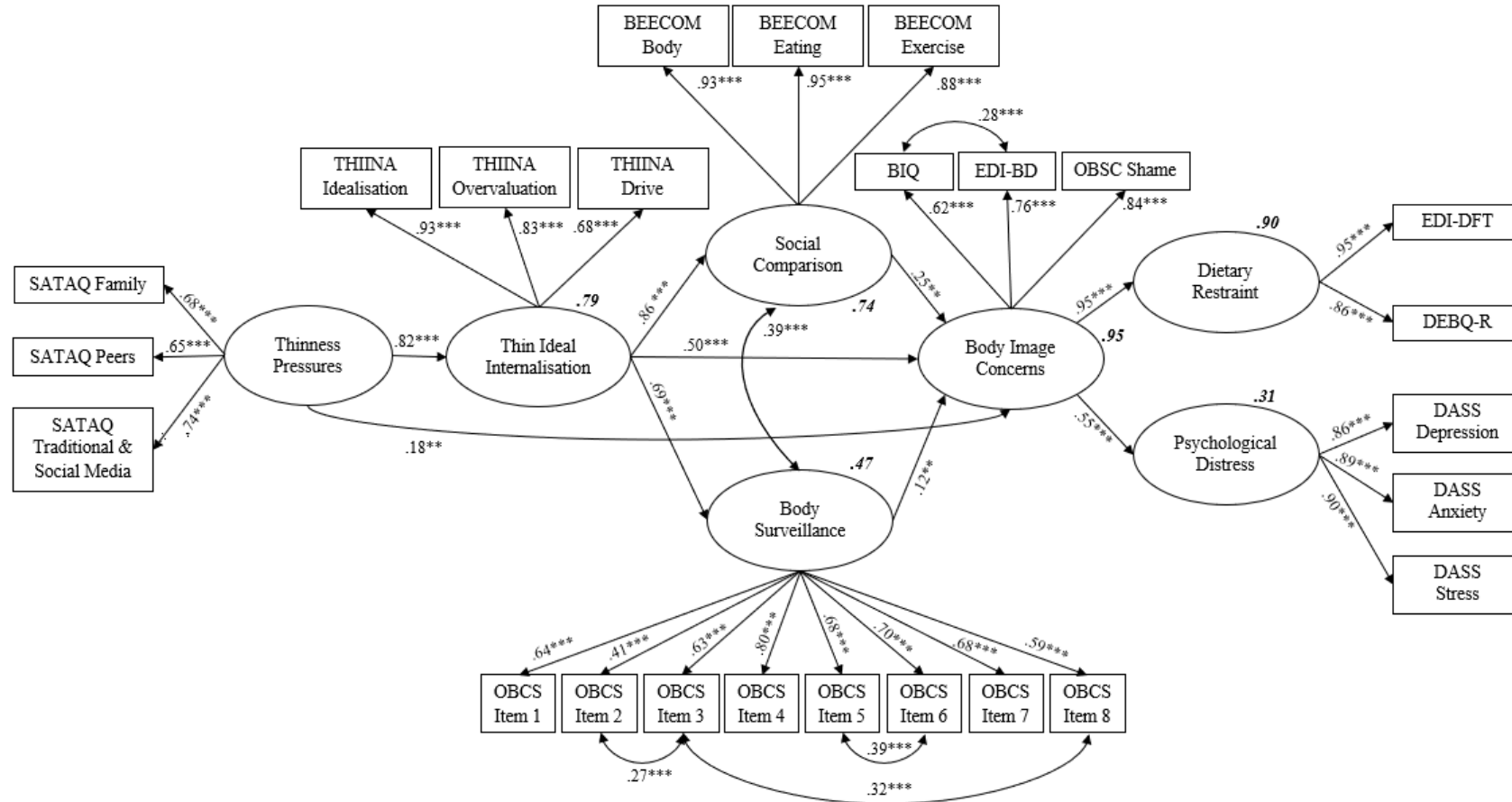
DASS-21 Depression, Anxiety, and Stress subscales (Lovibond & Lovibond, 1995), and demonstrated good fit, CFI = 1.00, TLI = 1.00, SRMR = 0.003, RMSEA = 0.00, CI90 = 0.00, 0.13. All indicator variables loaded strongly onto their respective latent factors (i.e., ranging between .52 and .96) suggesting the latent factors were adequately operationalised.

The hypothesised structural equation model was then tested and revealed acceptable to good fit to the data across indices, $\chi^2 (261) = 714.47, p < .001, \chi^2/df = 2.73, CFI = 0.92, TLI = 0.91, SRMR = 0.06, RMSEA = 0.08, CI90 0.07-0.08$. All model paths were positive and significant (Figure 3). Controlling for BMI did not affect the model fit and therefore, was not retained in final model. The final model explained 67% of variance in thin ideal internalisation, 74% of social comparison, 47% of body surveillance, 95% of body image concerns, 90% of dietary restraint and 31% of psychological distress.

Examination of indirect effects using the user-defined estimands in AMOS revealed a significant total indirect effect of thin ideal internalisation on body image concerns via social comparison and body surveillance ($B = 0.04, B_{SE} = 0.01, BC\ 95CI: 0.03, 0.06$). Specific indirect effects of each mediator showed that both social comparison ($B = 0.03, B_{SE} = 0.01, BC95CI: 0.01, 0.05$) and body surveillance ($B = 0.01, B_{SE} = 0.01, BC95CI: 0.002, 0.02$) were unique and significant mediators of the indirect relationship between internalisation and body image concerns in the context of this model.

Figure 3

Structural Equation Model Testing an Extension to the Elaborated Sociocultural Model



Note. Standardised path coefficients and factor loadings reported. Bolded values represent R² (i.e., variance explained). ** $p < .01$. *** $p < .001$.

4. Discussion

The current study aimed to test an extension of the Elaborated Sociocultural Model of Disordered Eating (Fitzsimmons-Craft et al., 2014) using cross-sectional, structural equation modelling with latent variables. Specifically, this study tested if social comparison and body surveillance acted as mediators of the thin ideal internalisation–body image relationship within the broader context of a sociocultural framework. The study extended upon the original model through the additional measurement of social media thinness pressures, body shame, and psychological distress. Results indicated the extended model provided overall acceptable fit to data and a significant total indirect effect from thin ideal internalisation to body image concerns via social comparison and body surveillance. Furthermore, social comparison and body surveillance both emerged as significant, unique mediators of this relationship.

4.1. Sociocultural Thinness Pressures

Consistent with our hypotheses, and with considerable empirical research conducted in this area (Ata et al., 2015), the pathway between the sociocultural thinness pressures latent variable to thin ideal internalisation was significant and in the expected direction. In the current study however, the latent variable consisted of thinness pressures emanating from both social and traditional medias, as well as from peers and family members. The strength of the standardised path coefficient between thinness pressures to thin ideal internalisation was stronger than that reported by Fitzsimmons-Craft et al. (2014; i.e., .82 versus .64 respectively). Indeed, sociocultural thinness pressures in the current study accounted for more than 50% more variance in thin ideal internalisation compared to the original model (i.e., 79% versus 40%). The additional variance explained in the current study, compared to the original model by

Fitzsimmons-Craft et al. (2014), most likely speaks to the increasing relevance of social media influence on women's body image (Perloff, 2014). Appearance-focused social media provides a unique catch-all platform in which idealised and frequently edited photos of peers, family and media personalities (e.g., celebrities, influencers) are available in one location for viewing at any time of day. Furthermore, rather than passive consumption of appearance ideals through traditional media sources (i.e., television shows, advertising), social media allows users to actively engage with these images with very few restrictions. Given social media use is increasing among young women (Yellow, 2020), users are now likely exposed to a stream of idealised thin imagery at rates not previously achieved through traditional media sources (Perloff, 2014). Thus, the inclusion of social media appearance pressures in the current model likely underlies the increased explanatory power in this model and highlights the importance of including social media in broader sociocultural frameworks to account for this powerful, modern delivery of culturally endorsed appearance ideals (Choukas-Bradley et al., 2022; Tylka et al., 2023).

4.2. Social Comparison and Body Surveillance

Supporting our hypotheses, it was found that both social comparison and body surveillance acted as unique mediators of the indirect relationship between thin ideal internalisation and body image concerns. With respect to social comparison, the current study conceptualised this latent variable using three social comparison dimensions, specifically body, eating, and exercise comparisons (measured using the BEECOM; Fitzsimmons-Craft, Bardone-Cone, et al., 2012). Beyond narrowly focusing on appearance-only comparisons, broadening measurement provided greater insight regarding the way social comparison may contribute to body image concerns and disordered eating (Fitzsimmons-Craft & Bardone-Cone, 2014; Fitzsimmons-Craft,

Harney, et al., 2012). Aligning with Fitzsimmons-Craft et al. (2014) and other recent research (Donovan & Uhlmann, 2022) that used this questionnaire, social comparison acted as a key mechanism underlying the relationship between thin ideal internalisation and body image concerns in the current study. Specifically, this study found that participants reporting stronger thin ideal internalisation were more likely to engage in physical appearance comparisons (primarily concerning weight and shape) and eating and exercise comparisons (associated with adhering to the thin aesthetic). According to social comparison theory, women who have internalised the thin ideal more frequently engage in upwards-directed comparisons with peers and idealised media imagery (i.e., comparisons with others that are perceived as thinner and more attractive; Leahey et al., 2007; Rodgers et al., 2015; Scully et al., 2020). Therefore, it may be that participants in the current study who engaged more frequently in social comparisons, were more at risk of noticing wider discrepancies between themselves and others that they perceived as more closely embodying the thin ideal standard. In turn, this wider perceived discrepancy likely increased their risk of experiencing greater body dissatisfaction and body shame.

In the current model, body surveillance also emerged as a significant, unique mechanism underlying the relationship between thin ideal internalisation and body image concerns. That is, among women in the current sample, stronger thin ideal internalisation led to more frequent self-monitoring of physical appearance, and consequently, greater body image discontent. Although these findings were similar to those reported in recent research (e.g., Donovan & Uhlmann, 2022), the results are in contrast to Fitzsimmons-Craft et al. (2014) who failed to find a significant indirect relationship between thin ideal internalisation and body dissatisfaction via body surveillance within the Elaborated Sociocultural Model. The significant indirect

relationship in the current study may be explained by the extension of this model to include a measure of body shame, alongside measures of body dissatisfaction (as per the original study), into a single latent variable. Previous empirical research was used to justify the creation of this latent variable (see Lindner et al., 2012) and further support was obtained in the current study through the moderate to strong bivariate correlations between body shame and dissatisfaction measures and acceptable fit to data for the measurement model. Although body shame and body dissatisfaction are typically treated as distinct constructs in research, it may be debated that it may not be possible to fully disentangle the two experiences from a sociocultural context. Indeed, the results from the current study, and previous research (e.g., Lindner et al., 2012) suggest that it is likely that if a woman experiences negative affective consequences (i.e., body shame) when she perceives that her body fails to meet societal standards of attractiveness, it is likely that she would also experience some dissatisfaction with her body. Thus, it may be advisable that future research investigating the female body image experience to consider measuring both body dissatisfaction and body shame to provide a more comprehensive understanding of the experience.

A finding of interest in the current study, was that the direct path between thin ideal internalisation and body image concerns remained significant, even in the presence of significant social comparison and body surveillance mediators. This direct path has been commonly reported in other research (e.g., Donovan et al., 2020; Rodgers et al., 2020) and may suggest that women's idealisation, overvaluation and drive to embody the thin ideal may have a direct and negative impact on their body image, irrespective of associated behavioural processes (i.e., comparison and surveillance). This finding may also suggest that additional mechanisms underlying this relationship were not captured in the current study. Perhaps an important avenue for future research would be to

continue exploration and identification of additional mediating and moderating mechanisms underlying this relationship.

4.3. Consequences of Body Image Concerns

The extended Sociocultural Elaborated Model accounted for substantial variance in dietary restraint, conceptualised using two measures assessing cognitive preoccupation with dieting, fear of weight gain, and restricted eating behaviours (i.e., EDI3-DFT, Garner, 2004; DEBQ-R, Van Strien et al., 1986). This finding aligns with extant literature that argues women's engagement with restricted eating may be, at least partially, motivated by a need to reduce or avoid body dissatisfaction and body shame by rectifying perceived discrepancies between internalised thin body standards and their physical body (Fredrickson & Roberts, 1997; Thompson et al., 1999). Furthermore, the current study extended the Elaborated Sociocultural Model with the inclusion of psychological distress as an additional consequence of body image disturbance. This model accounted for 31% of variance in this latent variable, conceptualised using DASS-21 subscales measuring depression, anxiety and stress symptoms (Lovibond & Lovibond, 1995). These findings support the increasing recognition that the consequences of sociocultural thinness pressures and negative body image extend beyond just the usual eating and exercise behaviours typically included and tested in sociocultural frameworks. Continued consideration of psychological distress in these frameworks is warranted, particularly given high rates of comorbidity between eating, mood and anxiety disorders (Barakat et al., 2023; Garcia et al., 2020) and potential reciprocal relationships between psychological distress and body image disturbances (Fitzsimmons-Craft et al., 2019).

4.4. Limitations

Several limitations are present within this study. First, although the structural equation model implies causal relationships through path analysis, the cross-sectional design limits any inferences regarding causality. Prospective and longitudinal research designs are required to establish predictive validity and the temporal order of variables, including potential bidirectional relationships (e.g., Marques et al., 2022). Furthermore, the largely homogeneous, female sample limits generalisability of the study findings. Although high levels of body image concerns and disordered eating are common among this population (Rodgers et al., 2011), replication of this research in more diverse samples of women (e.g., different ethnicities, age groups, sexual orientations) and clinical samples is required. Importantly, the current study differed from the original model tested by Fitzsimmons-Craft et al. (2014), in that we did not include an assessment of bulimic behaviours. These disordered eating behaviours also feature prominently in other sociocultural models (e.g., Tripartite Influence Model; Thompson et al., 1999), thus re-examining this extended model with these variables integrated is recommended. Finally, while the current study highlights several sociocultural and psychological factors contributing to body image in women, there are a range of other aetiological and moderating variables (e.g., personality, self-concept clarity, fit and muscular ideal internalisation) not measured. Moving forward, it will be important for future research to continue developing and testing larger models that aim to integrate influential variables from a range of perspectives (e.g., sociocultural, individual differences, cognitive) to provide a more complete picture of women's body image.

5. Conclusion

The current study extended the Elaborated Sociocultural Model of Disordered Eating to include measures of social media appearance pressures, body shame, and

psychological distress. Findings from this study provide support for a dual mediation pathway from thin ideal internalisation to body image concerns via social comparison and body surveillance. These findings indicate that women who internalise cultural messages of thin beauty ideals, transmitted via traditional and social media sources and interpersonal relationships, are more likely to engage in social comparisons and body surveillance to assess their adherence to this ideal. These processes subsequently appear to increase women's body image disturbance, engagement in restricted eating, and experience of psychological distress. Furthermore, a direct relationship between thin ideal internalisation and body image concerns was observed suggesting thin ideal internalisation may be harmful for women's body image, irrespective of their engagement in social comparison and body surveillance processes. Clinically, the findings from this study lend support to the continued development and evaluation of body image interventions targeting social media literacy (Tiggemann, 2022) and thin ideal internalisation (Stice et al., 2019). Additionally, the findings from this study suggested that extending these clinical interventions to target and reduce social comparison and body surveillance behaviours are likely important endeavours to undertake. To support further theoretical investigations of sociocultural models of body image and eating, research should aim to replicate this model in more diverse populations and explore the temporal order of model variables using longitudinal research designs.

Chapter 8: Motivational Processes Contributing to Disturbances in Women's Body

Image and Eating

Statement Of Contribution To Co-Authored Published Paper

This chapter includes a co-authored paper. The bibliographic details of the co-authored paper, including all authors, are:

Kidd, C., Loxton, N. L., Uhlmann, L., & Donovan, C. L. (2024). Motivational processes contributing to disturbances in women's body image and eating. *Eating Behaviors*, 52, 101826. <https://doi.org/10.1016/j.eatbeh.2023.101826>

My contribution to the paper involved: Study conceptualization and literature review, data cleaning, data scoring and data analyses, data interpretation and critical appraisal. Further contributions include the writing of the manuscript, conducting all changes and implementing all feedback provided from the secondary authors, as well as the feedback obtained throughout the journal submission process.

(Signed) _____ (Date) 27/09/2023

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(Associate Supervisor and Co-Author)

Prelude to Chapter 8

Study 2 tested and found support for an extension to the Elaborated Sociocultural Model (Fitzsimmons-Craft et al., 2014), incorporating additional measures of social media appearance pressures, body shame and psychological distress. Social comparison and body surveillance were identified as key mechanisms underlying the relationship between thin ideal internalisation and body image concerns. Furthermore, the results of Study 2 supported the utility of the THIINA in testing larger sociocultural models of women's body image and eating. Overall, Study 2 provided additional empirical support to the research studies that have reported on the sociocultural origins of women's body image. Notably, a limitation of Study 2, and sociocultural research more broadly, relates to the exclusion of individual differences that could further increase women's vulnerability to sociocultural appearance pressures (Diedrichs, 2017; Tiggemann, 2011). As outlined in Chapter 3, exposure to media imagery and cultural messages endorsing thin appearance ideals is likely unavoidable in current Western society. However, research has shown that some people are more vulnerable to the effects of these messages than others (Frederick et al., 2017), suggesting a potential additional contribution of individual differences.

One individual difference that remains under investigated in popular risk factor models (such as the Elaborated Sociocultural Model) is personality. It has been proposed that personality may increase risk of body image and eating disturbances by influencing the meaning and importance some individuals place on cultural messages of appearance ideals (Dionne & Davis, 2012). However few studies have explored the relationship between personality and thin ideal internalisation and the potential impact of this relationship on disordered body image and eating outcomes. Therefore, the final study in this thesis aimed to address this gap by examining the relationships between

personality systems of reward and behavioural inhibition, thin ideal internalisation, and core symptomology of eating disorders (i.e., restraint, eating concerns, weight and shape concerns).

Abstract

Reinforcement Sensitivity Theory (RST) provides a neurobiological personality framework for understanding approach and avoidance behavioural patterns. Recent research suggests an association between RST personality traits (reward interest and behavioural inhibition system [BIS]) and women's body image and eating behaviours. The current study aimed to extend this research by testing for indirect relationships between reward interest and BIS and eating disorder symptoms, as mediated through thin ideal internalisation. Adult female participants ($N = 354$, $M = 22.06$ years of age, $SD = 6.78$) completed self-report measures of reward interest, BIS, thin ideal internalisation, and eating disorder symptoms (i.e., restraint, eating concerns, weight and shape concerns). Indirect relationships were tested using bootstrapped mediation analyses. Results showed thin ideal internalisation mediated the pathway between the BIS and restraint, eating concern, and weight and shape concerns. Reward interest was not associated with thin ideal internalisation, nor with eating disorder symptoms. Although the application of RST to women's body image is an emerging research area, these novel findings suggest BIS trait sensitivity may increase women's risk of body image concerns and restricted eating, via increased levels of thin ideal internalisation. Overall, these findings provide preliminary support for inclusion of individual differences in BIS sensitivity in risk factors models of body image and eating disturbances. Future research should aim to replicate these findings in more diverse samples, using longitudinal designs.

Keywords: reinforcement sensitivity theory, thin ideal internalisation, body image, personality, dietary restraint

Highlights

- Heightened BIS sensitivity was associated with stronger thin ideal internalisation.
- Heightened BIS sensitivity was associated with eating disorder symptoms.
- Thin ideal internalisation mediated pathways from BIS to eating disorder symptoms.
- Future research should test moderation of BIS on sociocultural risk factor pathways.

Motivational Processes Contributing to Disturbances in Women's Body Image and Eating

1. Introduction

It is well established that internalisation of the thin ideal (i.e., referring to the acceptance, overvaluation and drive to embody the thin ideal) increases women's risk of body image and eating disturbances (Ata et al., 2015; Kidd et al., 2023). Stronger thin ideal internalisation is associated with higher levels of body dissatisfaction (Paterna et al., 2021), weight and shape concerns (Hoffmann & Warschburger, 2019), and eating disorder symptoms (Christian et al., 2021). Given these robust associations, researchers have prioritised investigations of risk factors that increase women's propensity to internalise appearance ideals. Such research has traditionally examined theoretical models featuring sociocultural appearance pressures from family, peers and media to adhere to social norms of attractiveness (Ata et al., 2015). However, a limitation of these models is that they typically lack inclusion of individual differences that may increase women's vulnerability to these pressures. Despite ubiquitous exposure to idealised thin imagery, not all women internalise thin beauty standards and experience body dissatisfaction to the same extent (Frederick et al., 2017), suggesting that, at least in part, individual differences may act as additional important contributors to risk pathways. In particular, personality traits may interact with sociocultural pressures by influencing the meaning and importance individuals ascribe to sociocultural messages (Dionne & Davis, 2012). Recent research suggests that Reinforcement Sensitivity Theory (RST), a neurobiological-based personality model, provides a potential framework for understanding the role of personality in women's body image (Loxton et al., 2022).

1.1. Reinforcement Sensitivity Theory

RST proposes that three distinct neurobiological systems (Behavioural Approach System [BAS], Fight/Flight/Freeze System [FFFS] and Behavioural Inhibition System [BIS]) govern approach and avoidance behaviours, motivated in response to environmental stimuli (Gray & McNaughton, 2000). Distinct from descriptive trait theory (e.g., Five Factor Model), RST provides a causal framework for understanding personality as stable emotional and behavioural manifestations of these systems. The BAS governs approach behaviours towards appetitive, rewarding stimuli in the environment, and consists of four dimensions that have distinct roles in motivating individuals during pursuit of potential reward: 1) reward interest (anticipatory reward expectation and initial desire to obtain reward), 2) goal-drive persistence (maintaining motivation when reward is delayed), 3) reward reactivity (pleasure response when reward obtained), and 4) impulsivity (rapid behaviours to obtain reward; Krupic & Corr, 2017).

The FFFS, or fear system, facilitates active avoidance of aversive stimuli (flight) or defensive distance if stimuli is not easily avoided (fight, freeze). The BIS activates when feared stimuli cannot be avoided and therefore must be faced, and when there is goal conflict between or within the BAS/FFFS systems (e.g., presence of competing rewards). BIS activation increases physiological arousal and rumination underlying trait anxiety and motivates avoidance (if threat outweighs reward) or cautious approach towards stimuli (if reward value outweighs threat or aversive stimuli cannot be avoided; see Corr & Cooper, 2016). Individuals reporting heightened sensitivity within RST traits may be more likely to notice appetitive or aversive environmental stimuli and be more likely to experience stronger approach or avoidance motivation respectively, compared to those with lower sensitivity.

Considerable research supports an association between RST traits and disordered eating. Higher self-reported trait levels in BAS (i.e., heightened BAS sensitivity) is associated with bingeing-type behaviours and disorders, while heightened sensitivities in the BIS (and FFFS to a lesser extent), are associated with restricted eating behaviours and disorders (Weydmann et al., 2022; Wilson et al., 2019). There is evidence to suggest that RST traits are also associated with women's body image. Although this is an understudied area, studies have reported positive associations between BAS and BIS traits and body dissatisfaction (Jappe et al., 2011; Loxton et al., 2022), and an association between these traits and total scores on the Eating Disorder Examination Questionnaire (EDE-Q), a measure assessing preoccupation and dissatisfaction with weight and shape (Fairburn & Beglin, 1994; Glashouwer et al., 2014). However, limited studies have investigated specific mechanisms underlying the relationships between RST traits and women's body image and eating. Internalisation of appearance ideals is proposed as one potential mechanism, given its strong association with both disordered eating and body image (Loxton et al., 2022).

As RST offers a framework for understanding behavioural patterns of approach and avoidance in terms of personality, RST traits may be associated with thin ideal internalisation via the distinct characteristics of appearance ideal internalisation. Thin ideal internalisation occurs when a woman desires to conform to the thin ideal, integrates cultural values and meaning of the thin ideal into her personal belief system, and engages in ideal-congruent behaviours (Kidd et al., 2023). Largely driven by exposure to Western media's propagation of the thin ideal (Calogero, 2007), thinness is implicitly associated with a range of positive outcomes, including social acceptance, success, happiness, self-esteem and confidence (Hohlstein et al., 1998; Rodgers et al., 2022). When considering this within the RST framework, women with heightened sensitivity

to stimuli that indicate potential reward (i.e., those reporting higher levels of reward interest) may be more likely to notice the value society places on thinness and its potential rewards, and therefore may be more likely to internalise the thin ideal as an important appearance standard to uphold. Conceptually, reward interest is the BAS trait most likely associated with thin ideal internalisation given its role in the initial pursuit and desire for perceived rewards. Aligning with this, a recent study found female undergraduates who displayed an approach bias towards thin ideal imagery, suggesting heightened reward interest, reported stronger thin ideal internalisation (Dondzilo et al., 2019).

Conversely, while thinness is associated with perceived rewards, deviation from this ideal, in the form of higher weight and obesity, is often perceived negatively in Western societies that idealise thinness. Stereotypes associate higher weight and obesity with laziness, lacking discipline, and moral failure (Grogan, 2021). Weight stigmatisation is also evident in discrimination and prejudicial behaviours directed towards people with higher weight and obesity (Mussap et al., 2016; Puhl & Heuer, 2009). Thus, women with heightened FFFS/BIS sensitivities may be more likely to notice these stigmatised attitudes and be more vigilant of discrepancies between their bodies and social norms of attractiveness. Women with heightened BIS sensitivity may also be more sensitive to conflict arising between potential rewards and threats associated with adhering to the thin ideal (e.g., social acceptance versus health implications) and threats associated with not adhering (e.g., discrimination). This internal conflict is supported by qualitative research demonstrating that women often hold both positive and negative attitudes towards thinness (Ahern et al., 2011). To cope with perceived threats and/or conflict, women reporting heightened FFFS/BIS may be more likely to internalise the thin ideal and be motivated to inhibit eating, with an aim to

reduce negative affective experiences of fear (FFFS activation) and anxiety (BIS activation).

The potential relationship between RST and internalisation of beauty ideals has been supported in previous research. Using an older RST conceptualisation, Mussap (2006) reported significant indirect effects between RST traits and extreme body-shaping behaviours via muscular ideal internalisation in men. Via internalisation, participants with heightened BIS sensitivity reported greater preoccupation with weight loss and fasting/purging behaviours (i.e., drive for thinness), while those with heightened BAS sensitivity reported greater engagement with muscle building strategies (i.e., drive for muscularity). Mussap (2007) subsequently found similar indirect effects between BAS and BIS sensitivities and disordered eating and exercise behaviours, via thin ideal internalisation in women. Loxton et al. (2022) found that internalisation of the fit ideal (a thin and toned female physique) mediated the relationships between reward interest, BIS and exercise and eating behaviours. Specifically, participants reporting higher levels of reward interest were more likely to internalise the fit ideal and, consequently engage in more frequent compulsive exercise to achieve this ideal. Furthermore, participants reporting higher levels of BIS also reported stronger fit ideal internalisation, leading to greater restricted eating and compulsive exercise. Importantly, after controlling for the effects of BIS and reward interest, FFFS and other BAS traits (i.e., goal-drive persistence, reward reactivity, impulsivity) were not associated with fit internalisation, body image or restricted eating (Loxton et al., 2022).

The above studies provided preliminary support for the consideration of RST when examining risk pathways to body image and eating disturbances. The findings suggest individuals reporting heightened reward interest may be more likely to notice positive societal attitudes and rewards associated with culturally endorsed beauty ideals.

Furthermore, these findings suggest individuals reporting heightened BIS sensitivity may be more vigilant of negative repercussions stemming from beauty ideal deviation (e.g., obesity) and/or more aware of conflicts that can arise between adherence versus non-adherence to the ideal. Therefore, the findings indicate women reporting higher levels of reward interest and/or BIS may more strongly internalise the thin ideal and attempt to ensure adherence to this internalised standard to either obtain perceived rewards associated with thinness (e.g., social acceptance) or to avoid negative repercussions (e.g., rejection). As the thin ideal is challenging for most women to adhere to (Brownell et al., 1991), internalisation of the thin ideal may consequently increase women's risk of eating disorder symptoms, including increased engagement with restricted eating and greater preoccupation with body weight and shape.

Although this emerging research area highlights the potential role of neurobiological personality systems in understanding women's body image, the available studies have several limitations that require addressing. Firstly, while Mussap (2006, 2007) reported an association between BAS, BIS and internalisation, these studies used a questionnaire derived from earlier conceptualisations of RST. Concerns regarding the construct validity of this questionnaire have been raised due to its failure to differentiate between BIS and FFFS traits and between BAS traits (collapsed across two subscales; see Corr & Cooper, 2016; Krupic & Corr, 2017). Therefore, conclusions drawn from these studies are limited by the use of this questionnaire as it does not allow investigation of the unique relationships between each trait and internalisation. Loxton et al. (2022) addressed this limitation by using a questionnaire that allowed specific measurement of each trait while investigating fit ideal internalisation. This study found that only traits of reward interest and BIS were independently associated with internalisation. Although conceptually, it was not unexpected that only reward interest

and BIS emerged as significant predictors of fit ideal internalisation, the relationships between these specific RST traits and thin ideal internalisation remain untested, highlighting a gap in the literature.

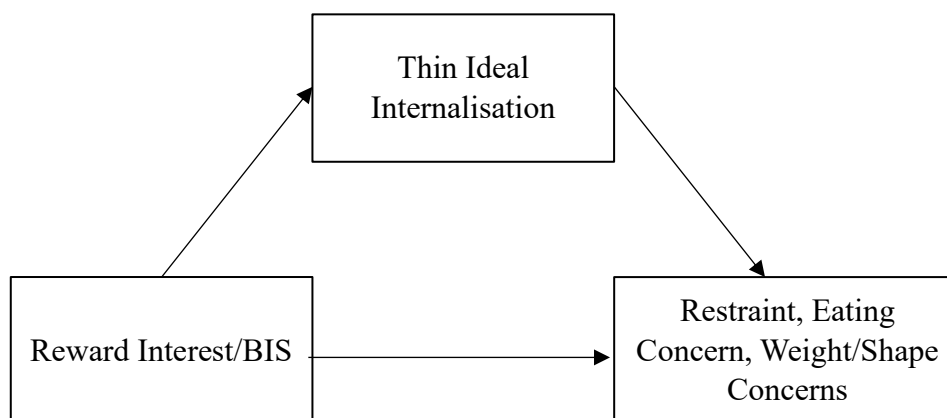
1.2. Study Aims

Therefore, the current study aimed to explore relationships between reward interest, BIS and thin ideal internalisation using a questionnaire that allows for the specific assessment of these traits. Furthermore, this study aimed to test thin ideal internalisation as a potential mediator underlying the relationships between these traits and disordered symptoms related to the pursuit of thinness (i.e., restraint, eating concerns and preoccupation with weight and shape). It was hypothesised that both reward interest and BIS would be positively associated with thin ideal internalisation. Second, it was hypothesised that thin ideal internalisation would mediate the relationships between reward interest, BIS and eating disorder symptoms. Given that FFFS and other BAS traits have not been found to predict internalisation, these variables were not included in model testing¹.

¹ Additional screening revealed non-significant bivariate relationships between FFFS and model variables in the current study, supporting exclusion of this trait from further analysis.

Figure 1

Hypothesised Indirect Relationships Between RST Traits (Reward Interest and BIS) and EDE-Q subscales, via Thin Ideal Internalisation

**2. Method****2.1. Participants and Procedure**

Ethical approval was granted by University's Human Ethics Review Committee. Adult female participants were recruited through social media and via a research participant pool open to undergraduate students attending an Australian University. Upon informed consent, participants completed the anonymous online survey using REDCap (Harris et al., 2019). Participants were invited to enter a draw to win a gift card and to provide details to gain course credit upon survey completion. The recruited sample consisted of 354 participants, aged between 18 and 57 years ($M = 22.06$, $SD = 6.78$). On average, participant's BMI fell within the "normal" weight range ($M = 23.93$, $SD = 5.31$). Most participants were Caucasian (77.1%), heterosexual (78.5%) and single (52.3%).

2.2. Measures

2.2.1. Personality

The RST Personality Questionnaire – Short version (RST-PQ-S; Vecchione & Corr, 2021) measured Reward Interest (3 items; example item “I am always finding new and interesting things to do”) and BIS (5 items; example item “I often worry about letting down other people”). Participants rated the accuracy with which each item described them along a 4-point scale ranging from 1 (*Not at all*) to 4 (*Highly*). Responses for each subscale were summed, with higher subscale scores representing higher levels of the respective trait. This measure has a stable factor structure and sound psychometric properties (Vecchione & Corr, 2021) and good internal consistency in this study ($\alpha = .78-.84$).

2.2.2. Thin Ideal Internalisation

The Thin Ideal Internalisation Assessment (THIINA; Kidd et al., 2023) measured idealisation, overvaluation, and behavioural drive domains of thin ideal internalisation. An example item includes “I am preoccupied with the idea of having a body that is thin.” Participants rated their agreement with 17 items along a 5-point scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Responses to each item were summed to provide a total score, with higher scores representing stronger thin ideal internalisation. The THIINA has excellent psychometric properties (Kidd et al., 2023) and good internal consistency in this study ($\alpha = .96$).

2.2.3. Eating Disorder Symptoms

The 22-item EDE-Q assessed attitudinal and behavioural aspects of eating disorder psychopathology, across the previous 28 days (Fairburn & Beglin, 1994). Items comprising four subscales (Restraint, Eating Concern, Weight Concern, and Shape Concern) are rated along a 7-point scale from 0 to 6. Scales are averaged, with higher

scores indicating higher symptom levels in that domain. Due to high correlations ($r = .94$) and supported by previous research (Rand-Giovannetti et al., 2020), the Weight and Shape Concern subscales were collapsed into a single subscale representing preoccupation and dissatisfaction with weight and shape. Example items include “Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)” (Restraint), “Have you had a definite fear of losing control over eating?” (Eating Concern), “Has your weight influenced how you think about (judge) yourself as a person?” (Weight/Shape Concern). The EDE-Q has excellent psychometric properties (Berg et al., 2012; Mond et al., 2006) and all subscales have good internal consistency in this study ($\alpha = .87-.96$).

2.3. Data Analytic Plan

Data was analysed using SPSS v.27 (IBM Corp., 2020). Mediation models were tested with PROCESS Macro Model 4 (Hayes, 2017), using bias-corrected 95% confidence intervals (BC 95CI; bootstrapped $n = 10,000$). Significant indirect effects are indicated by the absence of zero within BC 95CI. Reward interest and BIS were entered as predictor variables, thin ideal internalisation as mediator and EDE-Q subscales as outcome variables. For each model, BMI was included as a covariate. Thirty-six participants recorded missing data on items (item-level missingness $\leq 1.1\%$). Little’s MCAR test was not significant ($\chi^2(1850) = 1889.37, p = .257$) indicating the missingness was missing completely at random. Missing data was estimated using Expectation Maximization. Mahalanobis Distance identified three multivariate outliers; however, removal of these participants had no impact on results and were therefore retained in final analysis.

3. Results

3.1. Descriptive Statistics and Correlations

Table 1 displays descriptive statistics and correlations between key study variables. BIS was significantly positively associated with internalisation and EDE-Q subscales. Reward interest was not significantly associated with any mediator or outcome variable. Thin ideal internalisation was significantly positively associated with all EDE-Q subscales.

3.2. Indirect Effects

Three models were tested with BIS as the predictor, thin ideal internalisation as mediator, and EDE-Q subscales as outcome variables (Table 2, Figure 2). Due to the lack of significant associations between reward interest and mediator and outcome variables, models with this predictor variable were not tested. BIS was found to significantly predict higher thin ideal internalisation. A significant indirect effect of BIS on Restraint via thin ideal internalisation was observed ($B = 0.09$, $B_{SE} = 0.02$, BC 95CI: 0.06, 0.12). The total model accounted for 44% variance in Restraint. A significant indirect effect of BIS on Eating Concern via thin ideal internalisation was observed ($B = 0.08$, $B_{SE} = 0.01$, BC 95CI: 0.05, 0.10). The total model accounted for 52% variance in Eating Concerns. Finally, a significant indirect effect of BIS on Weight/Shape Concerns via thin ideal internalisation was also observed ($B = 0.09$, $B_{SE} = 0.01$, BC 95CI: 0.06, 0.12). The total model accounted for 65% variance in Weight/Shape Concerns.

Table 1*Descriptive Statistics, Internal Consistency, and Bivariate Correlations*

Variables	<i>M</i> (<i>SD</i>)	1.	2.	3.	4.	5.	6.	7.
1. BMI	23.93 (5.31)	-						
2. Reward Interest	7.08 (2.15)	-.01	.78					
3. BIS	14.86 (3.66)	.05	.17**	.84				
4. Thin Ideal Internalisation	50.09 (17.02)	.28***	.04	.34***	.96			
5. Restraint	1.91 (1.76)	.22***	.07	.35***	.66***	.89		
6. Eating Concern	1.62 (1.58)	.27***	.02	.47***	.70***	.74***	.87	
7. Weight/Shape Concerns	2.89 (1.75)	.36***	.04	.50***	.73***	.74***	.85***	.96

Note. Cronbach's alphas reported along diagonal. Due to skewed distributions on EDE-Q subscales, Spearman's rho correlations reported. BMI = Body Mass Index.

BIS = Behavioural Inhibition System. EDE-Q = Eating Disorder Examination Questionnaire.

* $p < .05$ ** $p < .01$ *** $p < .001$

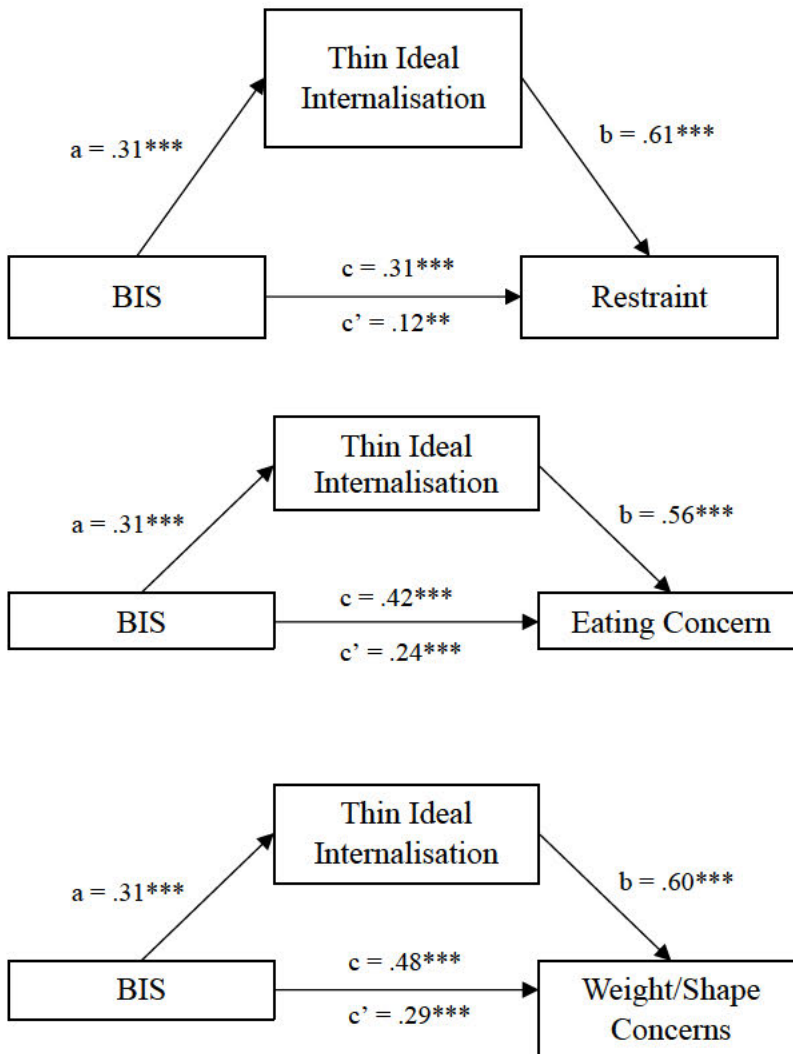
Table 2*Unstandardised Path Coefficients*

Path Analysis	<i>B</i>	<i>SE</i>	95CI	<i>p</i>
BIS → THIINA (<i>a path</i>)	1.45	0.23	1.00, 1.89	< .001
BIS → Restraint (<i>c' path</i>)	0.06	0.02	0.20, 0.10	.004
THIINA → Restraint (<i>b path</i>)	0.06	0.01	0.05, 0.07	< .001
BIS → Eating Concern (<i>c' path</i>)	0.11	0.02	0.07, 0.14	< .001
THIINA → Eating Concern (<i>b path</i>)	0.05	0.004	0.04, 0.06	< .001
BIS → Weight/Shape Concerns (<i>c' path</i>)	0.14	0.02	0.11, 0.17	< .001
THIINA → Weight/Shape Concerns (<i>b path</i>)	0.06	0.01	0.05, 0.07	< .001

Note. Unstandardised coefficients reported. BMI entered as covariate. BIS = Behavioural Inhibition System. THIINA = Thin Ideal Internalisation Assessment. EDE-Q = Eating Disorder Examination Questionnaire.

Figure 2

Mediation Models Testing Indirect Effects of BIS on EDE-Q Subscales, via Thin Ideal Internalisation



Note. Standardised effects reported. Each 'a path' is the effect of BIS on thin ideal internalisation (mediator) and each 'b path' represents the effect of thin ideal internalisation on EDE-Q subscale scores. Each 'c path' represents the total effect of BIS on EDE-Q subscale scores and each 'c' path' represents the direct effect of BIS on EDE-Q subscale scores. BIS = Behavioural Inhibition System. EDE-Q = Eating Disorder Examination Questionnaires.

* $p < .05$ ** $p < .01$ *** $p < .001$.

4. Discussion

This study was the first to investigate the revised conceptualisation of RST traits, reward interest and BIS, as predictors of thin ideal internalisation. This study also tested thin ideal internalisation as a mediator of the indirect relationships between these traits and eating disorder symptoms. Findings offer preliminary support for the inclusion of personality in risk models exploring women's body image and eating disturbances.

4.1. BIS

Consistent with our hypothesis, heightened BIS sensitivity was positively associated with restraint, eating concerns and weight/shape concerns. This finding is consistent with previous research that reports relationships between BIS, body dissatisfaction and disordered eating (Loxton et al., 2022; Mussap, 2007). Heightened BIS has been recorded in populations with restrictive-type eating disorders, and concerns regarding eating, weight and shape are considered transdiagnostic maintaining processes of eating disorders (Lampard et al., 2013; Wilson et al., 2019). Therefore, BIS sensitivity could represent an important vulnerability factor that warrants further consideration in theoretical risk models. As BIS sensitivity is considered a stable trait (Gray & McNaughton, 2000), these findings also suggest that screening for BIS sensitivity may offer early identification of at-risk groups for prevention programs targeting body image and eating.

As hypothesised, thin ideal internalisation significantly mediated the relationships between BIS and eating disorder symptoms. This finding is consistent with previous research demonstrating significant indirect relationships between BIS and unhealthy body-shaping behaviours, via thin and fit ideal internalisation (Loxton et al., 2022; Mussap, 2007). Although the role of BIS in women's body image is likely

complex, heightened BIS sensitivity may increase women's sensitivity to intrapersonal conflict arising between social rewards associated with ideal congruence (BAS activation), possible negative health complications with ideal congruence, and/or social-related threats associated with non-congruence (FFFS activation). This aligns with research showing distinct approach and avoidance processes underlie drive for thinness and fear of fatness respectively (Rodgers et al., 2022). Thus, according to RST, women with greater BIS sensitivity may be more likely to notice the conflicts between these reward and threat processes and experience greater anxiety as a result. These women may then experience greater motivation to internalise the thin ideal and restrict their eating to reduce this negative affective experience.

4.2. Reward Interest

Contrary to our hypothesis, reward interest was not significantly associated with thin ideal internalisation. As reward interest represents individual differences in anticipatory reward expectation (Corr & Cooper, 2016), this finding might suggest sensitivity to perceived rewards associated with thinness are not sufficient to increase body image concerns. This is further supported by the lack of a significant relationship between reward interest and weight and shape concerns in the current study. However, in contrast to our results, previous research has found BAS sensitivity to be associated with thin ideal internalisation (Mussap, 2007), as well as internalisation of other beauty ideals (i.e., fit ideal, Loxton et al., 2022; muscular ideal, Mussap, 2006). Several factors may be contributing to these mixed findings. First, Mussap (2006, 2007) used a questionnaire based on an outdated conceptualisation of RST. Furthermore, Mussap (2007) used an internalisation measure that emphasised desire to adhere to general media-driven appearance ideals, rather than explicitly referencing thin physiques (e.g., "I would like my body to look like the people who are on TV"; Thompson et al., 2004).

Therefore, the findings from these studies may be unduly influenced by measurement limitations. The current study addressed these limitations by using theoretically derived measures of RST and thin ideal internalisation that have shown good psychometric strength in previous studies (Kidd et al., 2023; Vecchione & Corr, 2021). The use of these valid and reliable measures in the current study may account for the lack of association between reward interest and thin ideal internalisation.

While not found to be associated with thin ideal internalisation in this study, reward interest was however associated with fit ideal internalisation in previous research (Loxton et al., 2022). The fit ideal is distinct from the thin ideal in that it incorporates both muscle and thinness, rather than thinness alone. Given reward interest was found to be associated with fit ideal internalisation and not thin ideal internalisation, this discrepant finding might contribute to our understanding as to *why* some women are motivated to work towards certain ideals, despite likely being exposed to all forms in the media. Although additional research is required to replicate these findings, it appears that reward interest is more closely associated with activities aimed at building muscle and fitness (e.g., exercise) and less frequently associated with behaviours aimed at decreasing weight (e.g., dieting). This may suggest women reporting higher levels of reward interest are more attuned to the potential rewards associated with fitness and/or that fitness and muscle building represent reward-driven approach behaviours. In contrast, BIS sensitivity appears to be a more consistent predictor of dieting behaviours. These behaviours may represent avoidance or behavioural inhibition, driven by a desire to reduce anxiety that occur due to perceived social threats or intrapersonal conflict (Wilson et al., 2021).

4.3. Limitations

The cross-sectional design of the present study limits causality testing. Future longitudinal research is required to determine if RST traits are predictive of internalisation and changes in body image and eating over time. The homogenous sample, consisting of young, Caucasian students, limits generalisability to clinical populations, older women, and women belonging to different cultural backgrounds and sexual orientations. In particular, clinical populations with eating disorders report higher levels of RST traits (Wilson et al., 2019) and stronger internalisation (Schaefer et al., 2019). Therefore, replication of this research in other populations, particularly clinical populations, is warranted. RST traits are proposed to influence interpretation and processing of sociocultural appearance pressures, thus acting as potential moderators increasing women's vulnerability. Future research examining potential moderation by RST traits is recommended.

5. Conclusion

Although the application of RST to body image is an emerging area, the findings of this study provide preliminary support for incorporating personality into risk models of body image and eating. Together, the findings suggest heightened BIS sensitivities are predictive of body image concerns and disordered eating in women, and that thin ideal internalisation may act as a psychological mechanism between BIS and these outcomes. BIS sensitivity may represent an important individual difference that increases vulnerability to body image disturbances and suggests a potential target for screening of at-risk groups for prevention and treatment interventions.

SECTION 3

Chapter 9: General Discussion

Overview of Thesis and Findings

Body image concerns and eating pathology are disproportionately experienced by women (Hay et al., 2023; Swami et al., 2010). The widespread cultural endorsement and overvaluation of thinness has been strongly implicated in the development of such problematic outcomes (Bordo, 2004; Calogero et al., 2007). Women have been shown to be most at risk when they have internalised cultural messages pertaining to thinness and adopted the thin ideal as a personal beauty standard to pursue and compare themselves against (Thompson & Stice, 2001). Indeed, studies have continuously shown detrimental effects of thin ideal internalisation on women's psychopathology (Barakat et al., 2023; Culbert et al., 2015; Paterna et al., 2021). Furthermore, thin ideal internalisation features as a central mechanism in prominent sociocultural models of body image and disordered eating (e.g., Elaborated Sociocultural Model [Fitzsimmons-Craft et al., 2011], Dual Pathway Model, [Stice, Nemeroff, et al., 1996], and Tripartite Influence Model [Thompson et al., 1999]) and is considered an important treatment target in dissonance-based interventions for body image and eating disturbances (e.g., Stice et al., 2015). However, research examining the multidimensional structure of beauty ideal internalisation (Uhlmann et al., 2020) and the construct validity of available internalisation questionnaires (Mol et al., 2023; Thompson et al., 2018; also see Chapter 4), suggests that available measures are likely limited in the measurement of the thin ideal internalisation construct.

Therefore, the primary objective of this thesis was to develop a new, multidimensional measure of thin ideal internalisation that assesses cognitive, affective and behavioural components of internalisation, as outlined by Uhlmann et al. (2020). In doing so, this research aimed to address the following research questions. First, could

operationalising and assessing thin ideal internalisation as a multidimensional construct improve measurement compared to existing unidimensional questionnaires? Second, could a measure that captures the multidimensional components of thin ideal internalisation be used to explore and add to current understandings of the key predictors and outcomes of women's desire to embody the thin ideal? These questions were addressed in a series of three studies featured within this thesis. This final chapter will provide a summary of results, highlight theoretical and clinical implications of study findings, consider strengths and limitations of this research, and offer suggestions for future research endeavours.

Study 1 developed and psychometrically validated a new, multidimensional assessment of thin ideal internalisation, the THIINA. This study was conducted in two phases using independent cross-sectional samples of adult women. Overall, the study found psychometric support for the reliability and validity of a three-factor operationalisation of thin ideal internalisation. Phase 1 of this study developed an item-pool and provided initial evidence of a three-factor structure, represented by Thin Overvaluation (8 items), Thin Idealisation (6 items) and Thin Behavioural Drive (3 items) subscales. Phase 2 confirmed the 3-factor structure and obtained empirical evidence supporting the construct validity and reliability of the subscale scores and composite score representing overall thin ideal internalisation. The following two studies in this thesis aimed to continue examination of the utility of this new questionnaire when investigating key predictors and outcomes of thin ideal internalisation in women.

Study 2 found support for the utility of the new questionnaire when testing larger sociocultural models. Using structural equation modelling with latent variables, this study tested an extension to the Elaborated Sociocultural Model of Disordered

Eating (Fitzsimmons-Craft, 2011; Fitzsimmons-Craft et al., 2014) using the THIINA as an assessment of thin ideal internalisation. This study further extended the Elaborated Sociocultural Model with the additional measurement and integration of social media thinness pressures (alongside traditional sources of appearance pressures) and inclusion of body shame and psychological distress as outcomes of thin ideal internalisation and associated processes (i.e., social comparison and body surveillance). Results indicated the extended model provided acceptable fit to data overall and a significant total indirect effect from thin ideal internalisation to body image concerns via social comparison and body surveillance. The findings from this study contributes to existing research that has previously highlighted key sociocultural transmitters of culturally endorsed beauty ideals (i.e., traditional media, social media, family and peers) and elucidated key mechanisms underlying the relationships between women's internalisation of the thin ideal, body image, and eating disturbances.

Study 3 aimed to extend the sociocultural focus in body image literature by exploring potential personality predictors of thin ideal internalisation, when measured with the THIINA, in a cross-sectional sample of adult women. This study found greater self-reported sensitivity in the Behavioural Inhibition System (BIS) was associated with stronger thin ideal internalisation. Furthermore, thin ideal internalisation was found to mediate the pathways between BIS and core eating disorder symptomology (i.e., restraint, eating concerns, weight and shape concerns). Together, the novel findings presented in this final study suggested heightened BIS sensitivity may be associated with increased negative attitudes and behavioural features of eating disorders, and that thin ideal internalisation may act as an important mechanism underlying these relationships. Although the application of neurobiological personality frameworks to women's body image is an emerging area, the findings of this study provided

preliminary support for considering personality in theoretical models of body image and eating pathology.

Summary of Key Findings

In sum, this body of research revealed seven key findings highlighted below:

Study 1: Thin Ideal Internalisation Assessment

- 1) Scores on the THIINA provided a valid and reliable multidimensional assessment of women's internalisation of the thin body ideal.
- 2) The THIINA explained additional and unique variance in body dissatisfaction, self-esteem, restrained eating and bulimic behaviours, beyond existing unidimensional measures of internalisation of the thin ideal.

Study 2: Extending the Elaborated Sociocultural Model of Disordered Eating

- 3) Empirical support was obtained for the utility of the THIINA when testing larger sociocultural models of body image and eating.
- 4) Extending the Elaborated Sociocultural Model to include measures of social media thinness pressures, body shame and psychological distress provided acceptable fit to data.
- 5) Social comparison and body surveillance are significant mediators, explaining how thin ideal internalisation may lead to disturbances in body image.

Study 3: Motivational Processes Contributing to Women's Body Image and Eating

- 6) Women reporting greater sensitivity in their BIS reported stronger thin ideal internalisation and more severe eating disorder attitudes and behaviours (i.e., restraint, eating concern, weight and shape concerns).
- 7) Thin ideal internalisation significantly mediated the indirect relationships between BIS and restraint, eating concern and weight and shape concerns.

Each of these key findings are discussed in greater detail below, accompanied by clinical and theoretical implications and suggestions for future research.

Study 1: Thin Ideal Internalisation Assessment

The first key finding from this body of research, is that scores on the THIINA provide valid and reliable assessment of women's internalisation of the thin body ideal. As highlighted earlier, the operationalisation and measurement of thin ideal internalisation has been restricted to unidimensional questionnaires, with these measures purported to assess general awareness of beauty ideals and preoccupation and desire to look thin (Schaefer et al., 2017; Stice et al., 2008). Prior to the current research, no measure of thin ideal internalisation existed that assessed all cognitive, affective and behavioural components of beauty ideal internalisation proposed by Uhlmann et al. (2020). Study 1 found empirical support for the application of this broader, multidimensional operationalisation to thin ideal internalisation, allowing for the most comprehensive measure of thin ideal internalisation constructed to date.

The second main finding from Study 1 relates to increased explanatory power of the THIINA when predicting key problematic outcomes experienced by many women. That is, the THIINA explained significant, unique variance in body dissatisfaction, self-esteem and disordered eating, above and beyond existing unidimensional measures of thin ideal internalisation (i.e., SATAQ-4R Internalization Thin/Low Body Fat subscale, Schaefer et al., 2017; IBSS-R, Stice et al., 2008). As outlined in Chapter 6, when the THIINA, SATAQ-4R and IBSS-R were included in the same regression model, the IBSS-R failed to predict any outcome variable. This finding is consistent with previous studies that have found operationalising thin ideal internalisation with measures of awareness (i.e., IBSS-R), rather than with measures of internalisation (e.g., SATAQ-4R), produces weaker effect sizes when predicting treatment efficacy and key

intervention outcomes (e.g., weight and shape concerns, disordered eating; Mol et al., 2023; Thompson et al., 2018). Aligning with the sociocultural perspective (see Chapters 2 and 3), these findings provide additional empirical support that disturbances in women's body image and eating are more likely due to acceptance and internalisation of thin beauty ideals, rather than simply being aware that such an ideal exists within Western society (Thompson et al., 2018; Thompson & Stice, 2001). Furthermore, the IBSS-R is commonly used as an outcome measure in many randomised controlled trials (RCTs) implying that prevention and intervention programs designed to target internalisation are efficacious and effective (Mol et al., 2023). However, given the IBSS-R captures awareness rather than internalisation, this may reduce the credibility of the findings from these studies. Thus, an important avenue for future research would be to re-examine outcomes of these programs using a comprehensive and valid measure of thin ideal internalisation (i.e., the THIINA).

The SATAQ-4R Internalization Thin/Low Body Fat subscale also failed to predict restrained eating when the THIINA was included in the final regression model. Given thin ideal internalisation is considered one of the most important predictors of eating pathology in women (Griffiths et al., 1999; Stice, 2002; Stice & Van Ryzin, 2019), with this claim mostly supported by research using the SATAQ and various iterations, this is an important finding to highlight. The Idealisation subscale of the THIINA closely resembles the items within the SATAQ-4R Thin/Low Body Fat subscale, in that they both measure preoccupation and desire for a thin body. However, as the THIINA composite score also incorporates affective indicators of this desire, as well as overvaluation and internal drive for thinness, this finding may suggest these other components of internalisation are more influential when predicting women's dieting behaviours. For example, overvaluation of weight and shape has long been

considered a transdiagnostic indicator of eating disorder psychopathology (Fairburn et al., 2003). This might suggest that while many women want to be thin, this desire may only become problematic, in terms of engagement in dieting and restricted eating, when women also overvalue thinness as being important to their identity and self-worth. Similarly, this finding might also suggest that while women may experience a desire to be thin (i.e., thin idealisation), this may only translate into problematic eating when they also experience an internal drive or motivation to restrict food consumption to adhere to such thin body standards (i.e., thin behavioural drive). Thus, an important avenue for future research would be to use the THIINA subscales to examine the individual and cumulative effects of these thin ideal internalisation domains (i.e., idealisation, overvaluation, behavioural drive) on women's vulnerability to this form of disordered eating. This approach could also be extended to exploring the effects of these domains on women's body dissatisfaction and other outcomes previously attributed, at least in part, to thin ideal internalisation (e.g., reduced self-esteem, appearance anxiety, body shame, bingeing/purging behaviours). Overall, these findings imply that the multidimensional operationalisation and assessment of thin ideal internalisation is an improvement upon traditional conceptualisation and measurement of the construct. With this in mind, future research should continue exploring the predictive utility of the THIINA, in comparison to existing measures of thin ideal internalisation, to support the use of the THIINA in theoretical and clinical investigations.

Study 2: Extending the Elaborated Sociocultural Model of Disordered Eating

Extensive research investigations position thin ideal internalisation as a key mechanism explaining the link between sociocultural appearance pressures and women's experience of body dissatisfaction and engagement in disordered eating (see Chapter 3; Tiggemann, 2011). In this literature, thin ideal internalisation has been

measured using iterations of the SATAQ and IBSS. However, the third main finding from the current research (Study 2) provides preliminary support for the utility of the THIINA when testing these sociocultural models, thus providing an alternative option for the measurement of thin ideal internalisation in this literature. Future research should continue testing the utility of the THIINA composite and subscale scores in other sociocultural models of body image and eating (e.g., Dual Pathway Model [Stice, Nemeroff, et al., 1996], Tripartite Influence Model [Thompson et al., 1999]). Furthermore, future research could examine the predictive validity of the THIINA when testing these sociocultural models using prospective and longitudinal research designs.

Aligning with the sociocultural perspective (outlined in Chapter 3), this study found appearance pressures delivered through key sociocultural agents (i.e., media, family, peers) accounted for a large proportion of variance in thin ideal internalisation overall. This is not a surprising finding given substantial empirical evidence supporting the temporal sequencing of the transmission of cultural influences on body image (de Valle et al., 2021; Grabe et al., 2008; Groesz et al., 2002). However, notably, closer examination of bivariate correlations reveals positive associations between appearance pressures from family, peers, and media and each domain of thin ideal internalisation (i.e., idealisation, overvaluation, behavioural drive). This implies that pressure to conform to the thin body ideal, whether delivered through family and peer interactions or via media consumption, is likely exerting influence on each internalisation domain. An important avenue of future research would be to continue exploring the nuances of these relationships using the THIINA subscales to determine the differential effects of each internalisation domain and if potential moderators (e.g., individual differences in personality) of these relationships are present.

The fourth key finding of this research provided empirical support for extending the Elaborated Sociocultural Model to include measures of social media appearance pressures, body shame and psychological distress. This study was the first to replicate the model since the original study (Fitzsimmons-Craft et al., 2014) and found good support for the integration of these new variables to provide a more complete picture of women's body image. Social media has been increasingly recognised as having an important role to play in the development and disturbance of body image (de Valle et al., 2021; Tylka et al., 2023), however only a few studies to date have incorporated social media variables in larger sociocultural models of body image (e.g., Donovan et al., 2020; Roberts et al., 2022). Social media use is increasing, and young women are now engaging with social media platforms more frequently than traditional medias (Twenge et al., 2019). Furthermore, such platforms provide users with direct access to countless images showing thin and slender women, featured alongside hashtags and online trends that glorify diet culture and unrealistic appearance expectations (Ghaznavi & Taylor, 2015; Talbot et al., 2017; Wick & Harriger, 2018). Thus, unsurprisingly, social media was identified in Study 2 as an additional important contributor to women's thin ideal internalisation, alongside traditional sociocultural agents (i.e., family, peers, print media, television). This finding highlights the importance of considering inclusion of social media in future testing of sociocultural models exploring disturbances in women's body image and eating.

This study also recorded significant relationships between thin ideal internalisation, body shame and psychological distress. Although not included in the original testing of the Elaborated Sociocultural Model (Fitzsimmons-Craft et al., 2011), body shame, psychological distress, and negative affectivity more generally, are featured in other sociocultural models (e.g., Objectification Theory [Moradi et al.,

2005], Dual Pathway Model [Stice, Nemeroff, et al., 1996], Tripartite Influence Model [Thompson et al., 1999]) as outcomes of women's internalisation of the thin ideal.

Rather than testing these outcomes in separate models (as has been done previously), this study supports the integration of these variables into a single sociocultural model to provide a more complete picture of detrimental outcomes of thin ideal internalisation.

The fifth finding in this research provided evidence for two key mediating mechanisms offering an explanation as to how thin ideal internalisation elevates risk of negative body image. Specifically, this study revealed both social comparison and body surveillance act as significant mediators of this relationship. Consistent with previous studies (Fitzsimmons-Craft et al., 2016; Fitzsimmons-Craft et al., 2015; Fitzsimmons-Craft, Harney, et al., 2012), this finding implies that when women internalise the thin ideal, they are more likely to observe and compare themselves to others and self-monitor their own bodies in an effort to assess to their adherence to this internalised standard. However, as outlined in Study 2, this inward and outward monitoring is associated with the greater likelihood that women will notice discrepancies between their body and this impossible beauty standard, and thus be more vulnerable to experience their body image negatively. Of note, a direct path between thin ideal internalisation and body image disturbance was still observed in Study 2, suggesting an important avenue for future research will be the investigation of other potential mediating mechanisms underlying this relationship.

Study 3: Motivational Processes Contributing to Women's Body Image and Eating

The sixth finding from this research relates to the potential role of personality in women's body image and eating disorder psychopathology. Women who reported greater sensitivity in their BIS also reported stronger thin ideal internalisation and more severe eating disorder symptoms (i.e., restraint, eating concern, weight and shape

concerns). Furthermore, the seventh and final key finding from this research identified thin ideal internalisation as a significant mediator of the relationship between BIS and these symptoms. As described in earlier sections, BIS underlies trait anxiety, negative affectivity, cognitive rumination, and avoidance of threat-related stimuli (Gray & McNaughton, 2000). It may be that women reporting greater BIS sensitivity are more attuned to the widespread discrimination and negative stigmatisation of overweight and obesity in Western societies (Bordo, 2004; Pont et al., 2017; Puhl & Heuer, 2009), and experience increased anxiety and rumination about the possibility of negative social repercussions if they were to deviate from social ideals of attractiveness (i.e., thinness). To avoid such negative outcomes, these women may then be more likely to internalise and pursue the thin ideal and subsequently be at greater risk for a range of attitudinal and behavioural features of eating disorders. Certainly, the findings from Study 3 align with previous research that has linked measures of negative affectivity, rumination and fear of negative evaluation with thin ideal internalisation, poorer body image, and symptoms of eating disorders (DeBoer et al., 2013; Maraldo et al., 2016; Rodgers et al., 2014; Rodgers et al., 2020; Smith et al., 2018). However, this was the first study to investigate the application of a neurobiological framework of personality that underpins such mechanisms (i.e., BIS) to understanding women's vulnerability to disordered eating attitudes and behaviours, and the first to identify the mediating role of thin ideal internalisation using updated theory and measurement. Overall, this finding provides preliminary support to consider inclusion of BIS within more popular sociocultural models of body image and eating.

Clinical Implications

The findings from this research have several clinical implications worth highlighting. First and foremost, this research has provided good evidence that the

endorsement and internalisation of the thin body ideal continues to be reported by women across the lifespan ($N = 1302$, full age range in years = 17-69). This is despite recent research asserting new and alternate beauty ideals are increasingly marketed and endorsed in media imagery (see Chapter 2; Tiggemann & Zaccardo, 2018) and internalised by women with similar detrimental effects (Hunter et al., 2021; Uhlmann et al., 2020). In particular, the rise in women's internalisation of the fit body ideal has become emphasised in sociocultural research (Bozsik et al., 2018; Calogero et al., 2007; Uhlmann et al., 2020; Wagner et al., 2021). Some studies have even found that women often hold ambivalent, and even negative views, towards the thin ideal (Ahern et al., 2011), expressing a preference for a toned and thin body (i.e., the fit ideal) over thinness alone (Bozsik et al., 2018; Uhlmann et al., 2018). Somewhat in contrast, however, the findings from the current research suggests that many women across the lifespan continue to endorse the thin ideal as a desirable aesthetic to pursue. Because the THIINA now offers a comparable measure to the FIIT (Uhlmann et al., 2020), in that they both measure the cognitive, affective, and behavioural components of thin and fit ideal internalisation respectively, future research will be better positioned to compare differences in subgroups of women who internalise a thin versus fit body ideal. The findings of this body of research also align with research linking thin ideal internalisation with a range of problematic outcomes, including poor body image, disordered eating and psychological distress. Overall, these findings indicate that thin ideal internalisation remains an important clinical target for prevention and intervention efforts. In addition, the THIINA provides a new, comprehensive screening tool to assess for problematic body image attitudes, including idealisation and overvaluation of thinness, that may indicate need for intervention and/or be used as an assessment of treatment progress, in particular for dissonance-based programs that target thin ideal

internalisation as a mechanism contributing to symptom change (e.g., Stice et al., 2019; Stice et al., 2015).

With respect to prevention efforts, the findings from this research lend support to the importance of continued development and implementation of media literacy programs targeting body image concerns (Tiggemann, 2022). A range of media literacy programs have been created to reduce the impact of media on body image. These programs aim to teach participants to critically evaluate and challenge media content and media imagery pertaining to unhealthy beauty ideals (Kurz et al., 2022; Paxton et al., 2022). The findings from Study 2 highlighted that social media, alongside traditional media sources, is likely an additional important target of these programs. Providing additional support to this, several recent studies examining the effectiveness of targeted social media literacy interventions have found these interventions lead to improvements in body satisfaction and body esteem and reduced engagement in disordered eating in female participants (Bell et al., 2022; McLean et al., 2017; Tamplin et al., 2018).

Furthermore, the findings from Study 2 suggested that treatment interventions targeting social comparison and body surveillance processes are likely important endeavours. Certainly, promising research has examined the outcomes of cognitive-behaviour and dissonance-based programs that challenge idealistic cultural messages of attractiveness, unrealistic thin body standards, and subscriptions to the thin ideal (Stice et al., 2008). These interventions demonstrate reductions in body image concerns and thin ideal internalisation, although effect sizes are modest (Mol et al., 2023). Extending this research to target women's tendency to make upwards-directed social comparisons in relation to their appearance and eating and exercise behaviours may be one way to improve intervention effects. Although more research is needed, interventions can

potentially target this process by providing psychoeducational materials on the negative consequences of social comparisons (Fitzsimmons-Craft et al., 2014), and challenging unhelpful cognitions that occur following comparisons to reduce the impact on women's body image. Cognitive behavioural strategies targeting body surveillance and body checking behaviours may also increase women's awareness of this behaviour and its impact (Fairburn, 2008). Incorporating feminist ideology and positive embodiment approaches into body image interventions may also facilitate women's ability to challenge cultural messages of unhealthy body ideals, reduce social comparison and body surveillance, and protect against body image disturbance (Burychka et al., 2021; Grogan, 2021).

Finally, the findings from Study 3 add to growing literature that suggest individual differences in certain personality traits may increase women's risk of body image and eating disturbances. Although more research is required, the findings from this study suggest that screening for BIS sensitivity may support identification of at-risk groups for prevention programs and treatment interventions.

Strengths and Limitations

Specific strengths and limitations of each individual study were summarised in Chapters 5, 6, and 7. Therefore, this section will only provide brief commentary regarding the overall strengths and limitations of this body of research. Notable strengths were a) being the first study to publish an application of the multidimensional operationalisation of internalisation to the measurement of thin ideal internalisation, b) being the first study to demonstrate that valid and reliable multidimensional assessment of thin ideal internalisation is possible and likely improves upon traditional unidimensional assessments of this construct, c) being the first study to replicate and extend the Elaborated Sociocultural Model of Disordered Eating to address the growing

influence of social media, and d) being the first study to explore the relationship between sensitivities in reward and behavioural inhibition personality systems, thin ideal internalisation, and eating disorder symptomology using revised theory.

Several key limitations are present. First, due to convenience sampling methodology used, the studies included in this thesis have sampled predominantly young, heterosexual, Caucasian women attending university. Certainly, this is a limitation of most body image scale development papers and sociocultural research (Ata et al., 2015; Tiggemann, 2011). Sampling of this population may be warranted given college and university represent risky environments that may induce and perpetuate body image and eating disturbances (Fitzsimmons-Craft, 2011). In particular, higher rates of body dissatisfaction (Heatherton et al., 1995; Neighbors & Sobal, 2007) and disordered eating (Berg et al., 2009; Fitzsimmons-Craft, 2011; Laboe et al., 2023) are reported by women in these settings, compared to the general population. Nonetheless, the lack of diversity within these samples limits generalisability and negates any impact of important macro-level influences, such as culture, ethnicity, and socioeconomic status, or individual differences, such as age, gender, and sexual orientation (Rodgers et al., 2023; Smolak & Cash, 2011). Replicating and extending this research into more diverse populations will provide support for the generalisability of research findings and may also elucidate protective factors against body dissatisfaction and eating pathology. For example, recent studies have found that endorsing a stronger ethnic identity within the African American community protects against Eurocentric thinness pressures and body dissatisfaction (Frederick et al., 2022; Rakhkovskaya & Warren, 2016). Given sociocultural research has traditionally been deficit-focused, exploring how culture, ethnicity, and race can protect and promote positive body image may support

interventions aimed at reducing maladaptive investment in appearances (Rodgers et al., 2023; Tylka & Wood-Barcalow, 2015b).

Second, the studies comprising this thesis relied on cross-sectional data.

Findings across all three studies imply there may be increased risk of disturbances in body image due to sociocultural and psychological factors. However, the cross-sectional nature of these studies limited the ability to draw firm conclusions about causal effects and temporal sequencing of these variables. Furthermore, evidence suggests some sociocultural and psychological risk factors and eating pathology exist within reciprocal processes. For example, a longitudinal study with pre-adolescent girls found internalisation of media ideals predicted social comparison and body dissatisfaction 8 months later, while body dissatisfaction at 8 months predicted stronger media internalisation at 14 months (Rodgers et al., 2015). Reciprocal relationships have also been observed between peer appearance conversations and internalisation (Rousseau & Eggermont, 2018), and between dietary restriction and negative affectivity (Dakanalis et al., 2014). Given that relationships between risk factors and body image are likely complex and multi-determined (Tiggemann, 2011), further longitudinal research is warranted to elucidate the causal sequence of risk factors and potential bi-directional relationships.

Conclusions

In sum, the findings from this compendium of research highlight that the thin body ideal continues to be idealised, overvalued, and pursued by women living in modern, Western society. This thesis provided a novel contribution to the extant literature on women's body image to date in that it provides the first validated, multidimensional assessment of thin ideal internalisation (i.e., THIINA). Consistent with a large body of previous research, the studies included in this thesis used the

THIINA to show that when women internalise sociocultural appearance pressures pertaining to the importance of adhering to a thin physique (delivered through traditional and social media consumption and through interpersonal interactions), they continue to be at greater risk for experiencing poorer body image (e.g., body dissatisfaction, body shame, weight and shape concerns), psychological distress (e.g., depression, anxiety, and stress symptoms, reduced self-esteem), and disordered eating (e.g., dieting, bulimic behaviours). Given the extensive focus on thin ideal internalisation in the research literature to date, it is hoped that this new questionnaire will support researchers and clinicians to continue their investigations into the impact of cultural endorsement and idealisation of thinness on women's body image.

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Appendices

Appendix A: Information Sheets and Consent Forms for Study 1



PARTICIPANT INFORMATION SHEET

Preliminary Validation of the Thin Ideal Internalisation Questionnaire

<p>Who is conducting the research?</p>	<p>Dr. Natalie Loxton (Psychologist, PhD) Assoc. Prof Caroline Donovan (Clinical Psychologist, PhD) Ms. Chloe Kidd (Provisional Psychologist, PhD student)</p> <p>GU Ethics Reference Number: 2020/280</p> <p>Griffith University School of Applied Psychology, Mt Gravatt Campus</p> <p>Email: [REDACTED] [REDACTED] [REDACTED]</p>
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Why is the research being conducted?

Many women feel pressure to ascribe to certain beauty ideals, and consequently many are dissatisfied with the way their body looks. This research is being conducted by Griffith University to validate a new questionnaire that measures the extent to which women ascribe to the thin ideal (a feminine physique characterised by ultra-slenderness, low body fat and minimal muscle tone). Such research could have important theoretical and clinical implications for measuring and predicting body image concerns and eating and exercise behaviour in women, and for improving body esteem in the wider community. This research will be used to form part of a student Ph.D. research project supervised by Dr Loxton and Associate Professor Caroline Donovan.

What you will be asked to do

If you agree to participate, you will be provided with instructions on how to complete an online questionnaire. If you proceed with the study, you will be asked to complete the online questionnaire (approximately 10 minutes in length) that includes questions related to your body image and your eating and exercise behaviours.

If you agree to participate, you will also be required to create an anonymous code (known only to you) that will enable us to confirm if you participate in future related research studies.

All those who complete this online questionnaire will be given the choice to enter a draw to win a prize. In order to receive this prize, you will be required to provide your contact details in the form of an email address. This email address will be collected and stored separately from your survey responses to ensure anonymity.

Who should complete this questionnaire?

We are interested in hearing from women over the age of 17 years. If you fit this description, then we would love to hear your opinion! If you are under the age of 18 then we recommend that you consult with your parent/guardian before you complete this study.

Risks and Benefits of the research

There are no negative effects expected to result from participating in this study. However, should you become concerned or distressed by the content of any questions, please discontinue the survey immediately. If you continue to experience distress, you can contact one of these services, who will be able to assist you:

Lifeline: 13 11 14

Eating Disorders Helpline (Victoria): 1300 550 236 or (03) 9417 6598

Eating Disorders Association Inc (Queensland): (07) 3394 3661

Butterfly National Support Line and Web Counselling Service: 1800 33 4673 Website: www.thebutterflyfoundation.org.au/web-counselling

By participating in this research, you will help to ensure that empirical research into female beauty aesthetics remains up to date with the current societal standards of beauty. In turn, findings from this study may help improve both empirical and clinical knowledge and treatment in the areas of body image and eating behaviours.

In addition, to show our appreciation for your time, all those who agree to complete the questionnaire will be entered into a draw to win one \$50 Coles Myers Gift Voucher. The terms and conditions of this prize draw are listed below:

1. The prize draw is being run by Dr Natalie Loxton and Ms Chloe Kidd of Griffith University, to encourage research study participation.
2. By electing to participate, you accept these terms and conditions as governing the prize draw. Instructions on how to enter the prize draw and details advertising the survey form part of the conditions. Any personal information you provide to us in the course of entering the prize draw will be dealt with by us in accordance with our privacy policy (published at: <http://www.griffith.edu.au/aboutgriffith/governance/plans-publications/griffith-university-privacy-plan>).
3. The Voucher will be awarded in a prize draw. This prize is worth \$50 (AUS). Should the advertised prize become unavailable as a result of circumstances beyond our control, we are free (at our sole discretion) to substitute a cash prize equivalent to the value of the prize advertised.

4. Entry is free (other than the cost of accessing the website). Entry is open for as long as the study is available to access and complete online. Entries received after the closing date will not be accepted.
5. To enter the prize draw, you must: (a) be a participant in the proposed research study; (b) complete the proposed online questionnaire; and (c) provide a valid email address.
6. You may not enter the prize draw if you are an employee of ours or an immediate family member of an employee of ours or otherwise associated with the competition
7. You may only submit one entry in the prize draw.
8. All survey and other materials provided by you become our property. No responsibility is taken for late, lost or misdirected surveys or entries.
9. Following the closing date, the prize winner will be selected randomly from valid entries received. Each entry can only be drawn once.
10. Subject to system malfunction, the draw will occur no later than December 1st, 2020. If the systems supporting the draw are not functioning as they should when the draw is due, the draw will be held as soon as possible once the systems become functional again. Prize winner do not need to be present at the time of the draw.
11. Prize winner names will not be published.
12. The relevant prize will be sent to each prize winner at the email address captured within the survey instrument. If an address has not been supplied, the entry will be treated in accordance with clause 14. The prize will be e-mailed within two weeks of the draw.
13. The right to a prize is not transferable or assignable to another person.
14. If any prize winner cannot be contacted within three (3) months of the draw, then that person's right to the prize is forfeited and the prize will be treated as an unclaimed prize.
15. Only one redraw of unclaimed prizes will take place, and other existing prizes are not affected. The redraw prize winner(s) will be randomly selected from remaining valid entries and notified within two (2) weeks of the redraw. If the redraw prize winner(s) cannot be contacted within three (3) months of the redraw, then we may determine that the relevant prize(s) will not be awarded.
16. Prizes cannot be substituted for another prize at the election of the prize-winner.
17. We are not liable for any loss, expense, damage or injury sustained by any entrant in connection with this prize draw, the prize or redemption of the prize, except for any liability, which cannot be excluded by law (in which case, that liability is limited to the minimum allowable by law).
18. We may suspend the promotion if we determine that the integrity or administration of the promotion has been adversely affected due to circumstances beyond its control. We may disqualify any individual who tampers with the entry process.

Your confidentiality

All information collected as part of this study will be completely anonymous. No identifying information will be collected in the study, and any identifying information collected as part of the prize incentive will not be linked to your data. All contact information will be deleted after the prize has been drawn.

Your responses to the questionnaire will form part of a large data response set, which will be stored online, on a password protected research storage platform, endorsed by Griffith University. This data will only be accessible by members of the research team. As required by Griffith University, all research data (survey responses and analysis) will be retained in a password-protected electronic file for a minimum period of five years before being destroyed.

Research results will be reported in academic theses and may also be disseminated via journal articles and/or conference presentations. Any publications that result from this research will only report group statistics, and no individualised data will be presented. Participants' data will not be identifiable in any publication or reporting. In the interest of researcher transparency, a strictly de-identified version of the research data may be prepared and made available on the online open data repository Open Science Framework (<https://osf.io/>).

Please note that there is a potential danger of accidental public exposure when commenting and interacting on social media on posts related to this research project. In order to respect and maintain your privacy, and the privacy of others, it is recommended that you do not make comments in relation to this research project and study online.

Your participation is voluntary

Participation in this study is voluntary, and you may withdraw your consent to participate at any time, with no explanation required. If you are currently affiliated with Griffith University in any way, then your participation or withdrawal from this study will in no way impact upon your relationship with the University. Please note that, due to the anonymity of the questionnaire, once responses are submitted, then withdrawal from the study will not be possible, as your data will not be identifiable. Please consider this before completing the questionnaire.

Questions / further information

If you would like to receive a summary of the results of the research, have any questions, or require any further information, then please email Ms Chloe Kidd at chloe.kidd@griffithuni.edu.au

The ethical conduct of this research

The research being conducted by Griffith University is in accordance with the *National Statement on Ethical Conduct in Human Research*. If you have any concerns or complaints about the ethical conduct of the research project, please contact the Research Ethics Manager on 3735 4375 or email; research-ethics@griffith.edu.au.

Thank you for your time.

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CONSENT FORM

Preliminary Validation of the Thin Ideal Internalisation Questionnaire

<p>Who is conducting the research?</p>	<p>Dr. Natalie Loxton (Psychologist, PhD) Assoc. Prof Caroline Donovan (Clinical Psychologist, PhD) Ms. Chloe Kidd (Provisional Psychologist, PhD student)</p> <p>GU Ethics Reference Number: 2020/280</p> <p>Griffith University School of Applied Psychology, Mt Gravatt Campus</p> <p>Email: [REDACTED] [REDACTED] [REDACTED]</p>
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By participating in this study, I confirm that I have read and understood the information package and in particular have noted that:

- I understand that my involvement in this research will include the completion of one online questionnaire approximately 10 minutes to complete;
- I have had any questions answered to my satisfaction;
- I understand the risks involved;
- I understand that my participation in this research is voluntary, and that my participation or withdrawal will in no way impact upon the service I receive from Griffith University currently, or in the future;
- I understand that as this is an anonymous survey, once my responses are submitted, they cannot be withdrawn;
- I understand that I may cease answering the survey questions at any time and may skip questions I do not wish to answer;
- I understand that information I provide will be stored as de-identified data and may be used in future studies;
- I understand that my personal email details will be collected for notification of the prize and that the collection of this information will occur on a separate form collected and stored independent of my questionnaire responses.
- I understand that if I have any additional questions I can contact the research team;
- I understand that I can contact the Manager, Research Ethics, at Griffith University Human Research Ethics Committee on 3735 4375 (or

research-ethics@griffith.edu.au) if I have any concerns about the ethical conduct of the project; and

- I agree to participate in the project.

Completion of this survey will be taken as your consent to participate in the research.

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PARTICIPANT INFORMATION SHEET

Further Psychometric Validation of the Thin Ideal Internalisation Questionnaire

Who is conducting the research?	<p>Dr. Natalie Loxton (Psychologist, PhD) Assoc. Prof. Caroline Donovan (Clinical Psychologist, PhD) Ms. Chloe Kidd (Provisional Psychologist, PhD student)</p> <p>GU Ethics Reference Number: 2020/280</p> <p>Griffith University School of Applied Psychology, Mt Gravatt Campus</p> <p>Email: [REDACTED] [REDACTED] [REDACTED]</p>
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Why is the research being conducted?

Many women feel pressure to ascribe to certain beauty ideals, and consequently many are dissatisfied with the way their body looks. This research is being conducted by Griffith University to validate a new questionnaire that measures the extent to which women ascribe to the thin ideal (a feminine physique characterised by ultra-slenderness, low body fat and minimal muscle tone). Such research could have important theoretical and clinical implications for measuring and predicting body image concerns and eating and exercise behaviour in women, and for improving body esteem in the wider community. This research will be used to form part of a student Ph.D. research project supervised by Dr Loxton and Associate Professor Caroline Donovan.

What you will be asked to do

If you agree to participate, you will be provided with instructions on how to complete an online questionnaire. If you proceed with the study, you will be asked to complete two versions of this questionnaire. A longer version (approximately 30 minutes) at Time 1 and a shorter version (approximately 10 minutes) at Time 2, two weeks later. Questions will relate to your body image and satisfaction and your eating and exercise behaviours.

If you agree to participate, you will be required to create an anonymous code (known only to you) that will enable us to confirm if you have participated in related research studies conducted previously and to enable us to match your responses in this study across Time 1 and Time 2. You will also be required to provide your contact details in the form of an email address so we can contact you with a link to complete the questionnaire at Time 2.

This email address will be collected and stored separately from your survey responses to ensure your anonymity.

All those who complete this online questionnaire at Time 1 will be given the choice to enter a draw to win a prize. In order to receive this prize, you will be required to provide your contact details in the form of an email address. This email address will be collected and stored separately from your survey responses to ensure anonymity.

If you are a student of Griffith University currently undertaking 1001PSY, 1002PSY or 1003PSY you may also be eligible to obtain course credit for participation in this study. By completing the questionnaire at Time 1 you will be eligible for 0.5% course credit and a further 0.5% course credit for completing the questionnaire at Time 2. In order to receive this course credit, you will be required to provide your name and student number. This information will be collected and stored separately from your survey responses to ensure anonymity.

Who should complete this questionnaire?

We are interested in hearing from women over the age of 17 years. If you fit this description, then we would love to hear your opinion! If you are under the age of 18 then we recommend that you consult with your parent/guardian before you complete this study.

Risks and Benefits of the research

There are no negative effects expected to result from participating in this study. However, should you become concerned or distressed by the content of any questions, please discontinue the survey immediately. If you continue to experience distress, you can contact one of these services, who will be able to assist you:

Lifeline: 13 11 14

Eating Disorders Helpline (Victoria): 1300 550 236 or (03) 9417 6598

Eating Disorders Association Inc (Queensland): (07) 3394 3661

Butterfly National Support Line and Web Counselling Service: 1800 33 4673 Website: www.thebutterflyfoundation.org.au/web-counselling

By participating in this research, you will help to ensure that empirical research into female beauty aesthetics remains up to date with the current societal standards of beauty. In turn, findings from this study may help improve both empirical and clinical knowledge and treatment in the areas of body image and eating behaviours.

In addition, to show our appreciation for your time, all those who agree to complete the questionnaire will be entered into a draw to win one of three \$50 Coles Myers Gift Vouchers. The terms and conditions of this prize draw are listed below:

1. The prize draw is being run by Dr Natalie Loxton and Ms Chloe Kidd of Griffith University, to encourage research study participation.

2. By electing to participate, you accept these terms and conditions as governing the prize draw. Instructions on how to enter the prize draw and details advertising the survey form part of the conditions. Any personal information you provide to us in the course of entering the prize draw will be dealt with by us in accordance with our privacy policy (published at: <http://www.griffith.edu.au/aboutgriffith/governance/plans-publications/griffith-university-privacy-plan>).
3. The Voucher will be awarded in a prize draw. This prize is worth \$50 (AUS). Should the advertised prize become unavailable as a result of circumstances beyond our control, we are free (at our sole discretion) to substitute a cash prize equivalent to the value of the prize advertised.
4. Entry is free (other than the cost of accessing the website). Entry is open for as long as the study is available to access and complete online. Entries received after the closing date will not be accepted.
5. To enter the prize draw, you must: (a) be a participant in the proposed research study; (b) complete the proposed online questionnaire; and (c) provide a valid email address.
6. You may not enter the prize draw if you are an employee of ours or an immediate family member of an employee of ours or otherwise associated with the competition
7. You may only submit one entry in the prize draw.
8. All survey and other materials provided by you become our property. No responsibility is taken for late, lost or misdirected surveys or entries.
9. Following the closing date, the prize winner will be selected randomly from valid entries received. Each entry can only be drawn once.
10. Subject to system malfunction, the draw will occur no later than December 1st, 2020. If the systems supporting the draw are not functioning as they should when the draw is due, the draw will be held as soon as possible once the systems become functional again. Prize winner do not need to be present at the time of the draw.
11. Prize winner names will not be published.
12. The relevant prize will be sent to each prize winner at the email address captured within the survey instrument. If an address has not been supplied, the entry will be treated in accordance with clause 14. The prize will be e-mailed within two weeks of the draw.
13. The right to a prize is not transferable or assignable to another person.
14. If any prize winner cannot be contacted within three (3) months of the draw, then that person's right to the prize is forfeited and the prize will be treated as an unclaimed prize.
15. Only one redraw of unclaimed prizes will take place, and other existing prizes are not affected. The redraw prize winner(s) will be randomly selected from remaining valid entries and notified within two (2) weeks of the redraw. If the redraw prize winner(s) cannot be contacted within three (3) months of the redraw, then we may determine that the relevant prize(s) will not be awarded.
16. Prizes cannot be substituted for another prize at the election of the prize-winner.
17. We are not liable for any loss, expense, damage or injury sustained by any entrant in connection with this prize draw, the prize or redemption of the prize, except for any liability, which cannot be excluded by law (in which case, that liability is limited to the minimum allowable by law).
18. We may suspend the promotion if we determine that the integrity or administration of the promotion has been adversely affected due to circumstances beyond its control. We may disqualify any individual who tampers with the entry process.

Your confidentiality

All information collected as part of this study will be completely anonymous. No identifying information will be collected in the study, and any identifying information collected as part of the prize incentive, course credit or contact for Time 2 data collection will not be linked to your data. All contact information will be deleted after the prize has been drawn.

Your responses to the questionnaire will form part of a large data response set, which will be stored online, on a password protected research storage platform, endorsed by Griffith University. This data will only be accessible by members of the research team. As required by Griffith University, all research data (survey responses and analysis) will be retained in a password-protected electronic file for a minimum period of five years before being destroyed.

Research results will be reported in academic theses and may also be disseminated via journal articles and/or conference presentations. Any publications that result from this research will only report group statistics, and no individualised data will be presented. Participants' data will not be identifiable in any publication or reporting. In the interest of researcher transparency, a strictly de-identified version of the research data may be prepared and made available on the online open data repository Open Science Framework (<https://osf.io/>).

Please note that there is a potential danger of accidental public exposure when commenting and interacting on social media on posts related to this research project. In order to respect and maintain your privacy, and the privacy of others, it is recommended that you do not make comments in relation to this research project and study online.

Your participation is voluntary

Participation in this study is voluntary, and you may withdraw your consent to participate at any time, with no explanation required. If you are currently affiliated with Griffith University in any way, then your participation or withdrawal from this study will in no way impact upon your relationship with the University. Please note that, due to the anonymity of the questionnaire, once responses are submitted, then withdrawal from the study will not be possible, as your data will not be identifiable. Please consider this before completing the questionnaire.

Questions / further information

If you would like to receive a summary of the results of the research, have any questions, or require any further information, then please email Ms Chloe Kidd at chloe.kidd@griffithuni.edu.au

The ethical conduct of this research

The research being conducted by Griffith University is in accordance with the *National Statement on Ethical Conduct in Human Research*. If you have any concerns or complaints about the ethical conduct of the research project, please contact the Research Ethics Manager on 3735 4375 or email; research-ethics@griffith.edu.au.

Thank you for your time.

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CONSENT FORM

Further Psychometric Validation of the Thin Ideal Internalisation Questionnaire

<p>Who is conducting the research?</p>	<p>Dr. Natalie Loxton (Psychologist, PhD) Assoc. Prof Caroline Donovan (Clinical Psychologist, PhD) Ms. Chloe Kidd (Provisional Psychologist, PhD student)</p> <p>GU Ethics Reference Number: 2020/280</p> <p>Griffith University School of Applied Psychology, Mt Gravatt Campus</p> <p>Email: [REDACTED] [REDACTED] [REDACTED]</p>
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By participating in this study, I confirm that I have read and understood the information package and in particular have noted that:

- I understand that my involvement in this research will include the completion of two online questionnaires completed two weeks apart that will take approximately 30 minutes (Time 1) and 10 minutes (Time 2) to complete;
- I have had any questions answered to my satisfaction;
- I understand the risks involved;
- I understand that my participation in this research is voluntary, and that my participation or withdrawal will in no way impact upon the service I receive from Griffith University currently, or in the future;
- I understand that as this is an anonymous survey, once my responses are submitted, they cannot be withdrawn;
- I understand that I may cease answering the survey questions at any time and may skip questions I do not wish to answer;
- I understand that information I provide will be stored as de-identified data and may be used in future studies;
- I understand that my personal email details will be collected for notification of the prize and that the collection of this information will occur on a separate form collected and stored independent of my questionnaire responses.
- I understand that my name and student number may be collected for allocation of course credit (if applicable) and that the collection of this

information will occur on a separate form collected and stored independent of my questionnaire responses

- I understand that if I have any additional questions I can contact the research team;
- I understand that I can contact the Manager, Research Ethics, at Griffith University Human Research Ethics Committee on 3735 4375 (or research-ethics@griffith.edu.au) if I have any concerns about the ethical conduct of the project; and
- I agree to participate in the project.

Completion of this survey will be taken as your consent to participate in the research.

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Appendix B: Study 1 Measures

Unique Participant Identification Code

To create your unique participant identification code, combine the first three letters of your mother's maiden name, the first three letters of your father's first name, and the first three letters of the name of the street you lived first lived on: _____

EXAMPLE: Mother's maiden name is Smith, Father's first name is Leonard, and the name of the first street lived on was Newham Road. Therefore, my unique participant identification code will be: SMILEONEW

Demographics Questionnaire

1. What gender do you identify with? Female; Male; Transgender Female (Male-to-Female); Transgender Male (Female-to-Male); Non-Binary; Rather not Say; Other
2. What is your year of birth? _____
3. What is your sexual identity? Heterosexual; Lesbian; Gay; Bisexual; Queer; Asexual; Other
4. What is your relationship status? Single; In a relationship/De facto; Married; Divorced/Separated
5. What is your current employment status? Unemployed; Part-Time; Full-Time; Casual
6. What is your combined household income? Under \$20,000; \$20 000 - \$29 000; \$30 000 - \$45 000; \$45 001 - \$65 000; \$65 001 - \$75 000; \$75 001 - \$90 000; \$90 001 - \$125 000; \$125 001 - \$150 000; \$150 001 - \$200 000; Over \$200 000
7. What is your ethnicity? Caucasian; Indigenous Australian/Torres Strait Islander; Asian; Pacific Islander; African; Other (please specify)
8. What is your highest level of education? Year 10 (or equivalent); Year 11 (or equivalent); Year 12 (or equivalent); Trade Certificate; Bachelor Degree; Postgraduate Degree, Other (please specify)
9. Have you even been diagnosed with an eating disorder? Yes; No
 - a. If yes, please select all that apply: Anorexia Nervosa (restrictive type), Anorexia Nervosa (binge-purge type), Bulimia Nervosa, Binge Eating Disorder, Eating Disorder Not Otherwise Specified, Other (please specify)
10. What is your current weight (in kilograms)? _____
11. What is your height (in cm)? _____
12. Are you a current university student? Yes; No
 - a. If you are a current Griffith University student, which campus do you normally attend? Mt Gravatt, Gold Coast, Logan, South Bank, Nathan

Thin Ideal Internalisation Assessment (THIINA)

Listed below are a series of statements regarding female body ideals. Many of the statements in this questionnaire describe the thin ideal body, a body that characterised by ultra-slenderness, low body fat and minimal muscle tone. Please read each of the statements carefully and indicate your level of agreement with each one (from 1 = *strongly disagree* to 5 = *strongly agree*). Please answer as honestly as possible, and do not spend too much time on any statement.

1. I think a lot about what it would be like to have a very thin body.
2. I think a lot about what I could be doing (e.g., exercising, dieting) to achieve a thin body.
3. I am preoccupied with the idea of having a body that is thin.
4. I spend time obsessing about parts of my body that are not thin enough.
5. I spend time daydreaming about how I would look with a thin body.
6. It is important to me that my body looks thin.
7. Having a thin body is not important to me. (R)
8. I aspire to have a thin body.
9. I envy women who have a thin body.
10. I feel ashamed when I notice parts of my body that are not thin enough.
11. I often feel concerned I am not making enough progress towards achieving a thin body.
12. I feel guilty if I do things (e.g., eat junk food) that could prevent me from having a thin body.
13. I often feel concerned I am not thin enough.
14. I don't normally worry if my body is thin enough. (R)
15. Having a thin body is a good way to gain respect from other people.
16. Working towards having a thin body is a good way to improve your life.
17. If I had the ideal thin body, I would have more successful romantic relationships.
18. If I had the ideal thin body, I would be more popular with my peers.
19. Having a thin body is a good way to show others how disciplined you are.
20. If I had the ideal thin body, others would find me attractive.
21. Having a thin body is a good way to show others you are in control of your life.
22. Being thin is not important for my physical health. (R)
23. Being thin is not important for getting ahead in life. (R)
24. If I had a thin body, other areas of my life would also improve.
25. If I had a thin body, others would find me more desirable.
26. I would be completely happy if I had a thin body.
27. I would feel very satisfied with my life if I had a thin body.
28. Working towards having a thin body is a good way to feel successful.
29. Working towards having a thin body is a good way to feel accomplished in life.
30. I spend time doing things (e.g., diet, exercise) to achieve a body that is thin.
31. I am motivated to do things (e.g., diet, exercise) to achieve a thin body.
32. My dietary choices are shaped by my desire to have a thin body.
33. My exercise routine is shaped by my desire to have a thin body.
34. I make sure to wear clothing that makes my body look thin.
35. I don't feel motivated to do things (e.g., diet, exercise) to achieve a thin body. (R)

Fit Ideal Internalisation Questionnaire (FIIT)

Listed below are a series of statements regarding female body ideals. Many of the statements in this questionnaire describe a 'fit' body, or a body that is both lean (low body fat) and toned (with muscle definition). Please read each of the statements carefully and indicate your level of agreement with each one (from 1 = strongly disagree to 5 = strongly agree). Please answer as honestly as possible, and do not spend too much time on any statement.

1. I often feel concerned about the progress I am making towards achieving a perfectly lean and toned body
2. I spend time fixating on parts of my body that are not very lean and toned
3. I actively compare my body to people with bodies that are both lean and toned
4. I spend time daydreaming about how I would look with a very lean and very toned body
5. I think a lot about what I could be doing to make my body look both lean and toned
6. To achieve the body I want, it is important to combine a strict diet with a strict exercise regime
7. I feel guilty when I am not doing things (e.g., dieting, exercising) that help me achieve a body that is both lean and toned
8. I am preoccupied with the idea of having a body that looks both lean and toned
9. Having a body that is both lean and toned, is a good way to gain respect from other people
10. Having a body that is both very lean and very toned, is a good way to show people you are in control of your life
11. The more I do things (e.g., exercise, diet) to keep my body looking both lean and toned, the more highly other people regard me
12. Having a lean and toned looking physique says something important about who you are as a person
13. Having a body that is both lean and toned, makes you feel successful in life
14. It says something good about me as a person, If I can have a body that is both lean and toned
15. Maintaining a body that is both lean and toned, is a good way to show people how hard working I am
16. If I had a body that was very lean and very toned, I would be more popular with my same aged peers
17. I spend time doing things (e.g., exercising, dieting, taking supplements) to develop visible muscle tone
18. I spend time doing things (e.g., exercising, dieting, taking supplements) to ensure my body looks both lean and toned
19. I spend time doing things (e.g., exercising, dieting, taking supplements) to ensure my body looks very lean
20. I spend time doing things (e.g., exercising, dieting, taking supplements) to burn fat

Sociocultural Attitudes Toward Appearance Questionnaire-4R (SATAQ-4R)

Participants were asked to indicate their level of agreement with each statement using a five-point Likert scale with response options of 1 (definitely disagree), 2 (mostly disagree), 3 (neither agree nor disagree), 4 (mostly agree), and 5 (definitely agree).

1. I want my body to look very thin
2. I think a lot about looking thin
3. I want my body to look very lean
4. I think a lot about having very little body fat
5. I feel pressure from family members to look thinner
6. I feel pressure from family members to improve my appearance
7. Family members encouraged me to decrease my level of body fat
8. Family members encourage me to get in better shape
9. My peers encourage me to get thinner
10. I feel pressure from my peers to improve my appearance
11. I feel pressure from my peers to look in better shape
12. I get pressure from my peers to decrease my level of body fat
13. Significant others encourage me to get thinner
14. I feel pressure from significant others to improve my appearance
15. I feel pressure from significant others to look in better shape
16. I get pressure from significant others to decrease my level of body fat
17. I feel pressure from social media to look in better shape.
18. I feel pressure from social media to look thinner
19. I feel pressure from social media to improve my appearance
20. I feel pressure from social media to decrease my level of body fat
21. I feel pressure from the media to look in better shape
22. I feel pressure from the media to look thinner
23. I feel pressure from the media to improve my appearance
24. I feel pressure from the media to decrease my level of body fat

Ideal Body Stereotype Scale – Revised (IBSS-R)

How much do you agree with these statements:

Rating scale: (1) strongly disagree (2) disagree (3) neutral (4) agree (5) strongly agree

1. Slender women are more attractive
2. Women who are in shape are more attractive
3. Tall women are more attractive
4. Women with toned (lean) bodies are more attractive
5. Shapely women are more attractive
6. Women with long legs are more attractive

Social Desirability Scale

Below you will find a list of statements. Please read each statement carefully and decide if that statement describes you or not. If it describes you, check the word “true”; if not, check the word “false.”

1. I sometimes litter.
2. I always admit my mistakes openly and face the potential negative consequences. (SDS_2)
3. In traffic I am always polite and considerate of others.
4. I always accept others' opinions, even when they don't agree with my own.
5. I take out my bad moods on others now and then.
6. There has been an occasion when I took advantage of someone else.
7. In conversations I always listen attentively and let others finish their sentences.
8. I never hesitate to help someone in case of emergency.
9. When I have made a promise, I keep it – no ifs, ands or buts.
10. I occasionally speak badly of others behind their back.
11. I would never live off other people
12. I always stay friendly and courteous with other people, even when I am stressed out.
13. During arguments I always stay objective and matter- of-fact.
14. There has been at least one occasion when I failed to return an item that I borrowed.
15. I always eat a healthy diet.
16. Sometimes I only help because I expect something in return.

Body, Eating, and Exercise Comparison Orientation Measure-Revised (BEECOM-R)

Rating Scale: Never (1) Rarely (2) Occasionally (3) About half the time (4) Often (5) Nearly always (6) Always (7)

1. In social situations, I think about how my figure “matches up” to the figures of those around me.
2. I notice how I compare with my peers in terms of specific body parts (e.g., stomach, hip, breast)
3. I compare my body shape to that of my peers.
4. During meals, I compare what I am eating to what others are eating.
5. I find myself thinking about how my food choices compare with the food choices of my peers.
6. When I go to the dining hall or out to eat, I pay attention to how much I am eating compared to other people.
7. I pay close attention when I hear peers talking about exercise in order to determine if I am exercising as much as they are.
8. I like to know how often my friends are working out so I can figure out if the number of times I work out “matches up”
9. When I exercise, I pay attention to the intensity level of the workouts of those around me.

Dutch Eating Behavioural Questionnaire (DEBQ) - Restrained Eating subscale

Read each statement and circle the number of the response which most closely matches your level of agreement. There are no right or wrong answers, or trick questions.

Remember to answer all the questions and to give only one response to each question.

Not relevant	Never	Seldom	Sometimes	Often	Very Often
0	1	2	3	4	5

1. If you have put on weight, do you eat less than you usually do?
2. Do you try to eat less at mealtimes than you would like to eat?
3. How often do you refuse food or drink offered because you are concerned about your weight?
4. Do you watch exactly what you eat?
5. Do you deliberately eat foods that are slimming?
6. When you have eaten too much, do you eat less than usual the following days?
7. Do you deliberately eat less in order not to become heavier?
8. How often do you try not to eat between meals because you are watching your weight?
9. How often in the evening do you try not to eat because you are watching your weight?
10. Do you take into account your weight with what you eat?

Eating Attitudes Test – 26 (EAT-26) - Bulimic Symptoms subscale

Please answer the following questions as accurately, honestly and completely as possible. There are no right or wrong answers

Always	Usually	Often	Sometimes	Rarely	Never
3	2	1	0	0	0

1. Have the impulse to vomit after meals.
2. Vomit after I have eaten.
3. Have gone on eating binges where I feel that I may not be able to stop.
4. Give too much time and thought to food.
5. Find myself preoccupied with food.
6. Feel that food controls my life.

Rosenburg's Self-Esteem Scale

Below is a list of statements dealing with your general feelings about yourself. Please indicate how strongly you agree or disagree with each statement (Strongly Agree [4], Agree [3], Disagree [2], Strongly Disagree [1]).

1. On the whole, I am satisfied with myself.
2. At times I think I am no good at all.
3. I feel that I have a number of good qualities.
4. I am able to do things as well as most other people.
5. I feel I do not have much to be proud of.
6. I certainly feel useless at times.
7. I feel that I'm a person of worth, at least on an equal plane with others
8. I wish I could have more respect for myself.
9. All in all, I am inclined to feel that I am a failure.
10. I take a positive attitude toward myself.

Body Image Ideals Questionnaire (BIIQ)



Appendix C: Study 1 Supplemental Materials

Scale Blueprint Identifying the Hypothesized Factor Structure of the Original 35

Items for the Thin Ideal Internalization Assessment (THIINA)

Key Content Areas of Internalization		
Idealization of thinness and internalized desire for congruence	Internalized and overvaluation thin ideal values, attitudes, and beliefs	Behaviors to achieve the thin ideal
<i>I think a lot about what it would be like to have a very thin body.</i>	Having a thin body is a good way to gain respect from other people.	I spend time doing things (e.g., diet, exercise) to achieve a body that is thin.
<i>I think a lot about what I could be doing (e.g., exercising, dieting) to achieve a thin body.</i>	Working towards having a thin body is a good way to improve your life.	<i>I am motivated to do things (e.g., diet, exercise) to achieve a thin body.</i>
I am preoccupied with the idea of having a body that is thin.	If I had a thin body, I would have more successful romantic relationships.	My dietary choices are shaped by my desire to have a thin body.
<i>I spend time obsessing about parts of my body that are not thin enough.</i>	If I had a thin body, I would be more popular with my peers.	My exercise routine is shaped by my desire to have a thin body.
I spend time daydreaming about how I would look with a thin body.	<i>Having a thin body is a good way to show others how disciplined you are.</i>	<i>I make sure to wear clothing that makes my body look thin.</i>
<i>It is important to me that my body looks thin.</i>	<i>If I had a thin body, others would find me attractive.</i>	<i>I don't feel motivated to do things (e.g., diet, exercise) to achieve a thin body.^R</i>
<i>Having a thin body is not important to me.^R</i>	Having a thin body is a good way to show others you are in control of your life.	
I aspire to have a thin body.		
I envy women who have a thin body.	<i>Being thin is not important for my physical health.^R</i>	
I feel ashamed when I notice parts of my body that are not thin enough.	<i>Being thin is not important for getting ahead in life.^R</i>	
<i>I often feel concerned I am not making enough progress towards achieving a thin body.</i>	If I had a thin body, other areas of my life would also improve.	

I feel guilty if I do things (e.g., eat junk food) that could prevent me from having a thin body.	<i>If I had a thin body, others would find me more desirable.</i>
<i>I often feel concerned I am not thin enough.</i>	<i>I would be completely happy if I had a thin body.</i>
<i>I don't normally worry if my body is thin enough.</i> ^R	I would feel very satisfied with my life if I had a thin body.
	<i>Working towards having a thin body is a good way to feel successful.</i>
	Working towards having a thin body is a good way to feel accomplished in life.

Note. Italicized items are items that were not retained in the final scale following exploratory and confirmatory factor analysis. ^R represents reverse-worded items.

Thin Ideal Internalization Assessment (THIINA) and Scoring Key

Instructions: Listed below are a series of statements regarding female body ideals.

Many of the statements in this questionnaire describe the thin ideal body, a body that is characterized by ultra-slenderness, low body fat and minimal muscle tone. Please read each of the statements carefully and indicate your level of agreement with each one (from 1 = Strongly Disagree to 5 = Strongly Agree). Please answer as honestly as possible, and do not spend too much time on any statement.

	Strongly Disagree	Somewhat Disagree	Neither Agree nor Disagree	Somewhat Agree	Strongly Agree
1. Having a thin body is a good way to gain respect from other people.	1	2	3	4	5
2. Working towards having a thin body is a good way to feel accomplished in life.	1	2	3	4	5
3. Working towards having a thin body is a good way to improve your life.	1	2	3	4	5
4. If I had a thin body, I would have more successful romantic relationships.	1	2	3	4	5
5. If I had a thin body, I would be more popular with my peers.	1	2	3	4	5
6. Having a thin body is a good way to show others you are in control of your life.	1	2	3	4	5
7. If I had a thin body, other areas of my life would also improve.	1	2	3	4	5
8. I would feel very satisfied with my life if I had a thin body.	1	2	3	4	5
9. I spend time daydreaming about how I would look with a thin body.	1	2	3	4	5
10. I am preoccupied with the idea of having a body that is thin.	1	2	3	4	5
11. I feel ashamed when I notice parts of my body that are not thin enough.	1	2	3	4	5

12. I envy women who have a thin body.	1	2	3	4	5
13. I aspire to have a thin body.	1	2	3	4	5
14. I feel guilty if I do things (e.g., eat junk food) that could prevent me from having a thin body.	1	2	3	4	5
15. I spend time doing things (e.g., diet, exercise) to achieve a body that is thin.	1	2	3	4	5
16. My exercise routine is shaped by my desire to have a thin body.	1	2	3	4	5
17. My dietary choices are shaped by my desire to have a thin body.	1	2	3	4	5

Scoring Key: *Sum items for Total & Subscale scores*

Thin Ideal Internalization Assessment (THIINA) Total Score (17 items)

Thin Overvaluation (8 items): Items 1, 2, 3, 4, 5, 6, 7, 8

Thin Idealization (6 items): Items 9, 10, 11, 12, 13, 14

Thin Behavioral Drive (3 items): Items 15, 16, 17

Appendix D: Information Sheet and Consent Form for Study 2



PARTICIPANT INFORMATION SHEET

Investigating the Effects of Social Media Engagement on Body Image and Problematic Body Shaping Behaviours

Who is conducting the research?	Dr. Natalie Loxton (Psychologist, PhD) Assoc. Prof Caroline Donovan (Clinical Psychologist, PhD) Ms. Chloe Kidd (Provisional Psychologist, PhD student) Ms. Caitlin McDowell (Honours Psychology Student) GU Ethics Reference Number: 2021/278 Griffith University School of Applied Psychology, Mt Gravatt Campus Email: [REDACTED] [REDACTED] [REDACTED]
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Why is the research being conducted?

Many women feel pressure to ascribe to certain beauty ideals, and consequently many are dissatisfied with the way their body looks. This dissatisfaction has been shown to lead to problematic eating behaviours. This research is being conducted by Griffith University to measure how women engage with photo-based social media platforms, specifically Instagram, YouTube and TikTok, and examine if this engagement predicts stronger internalisation of beauty ideals, leading to problematic body image and eating behaviours.

Such research could have important theoretical and clinical implications for measuring social media use and identification of users that may be at risk of dysfunctional body shaping behaviours. This research will be used to form part of a student Ph.D. research project supervised by Dr Loxton and Associate Professor Caroline Donovan and a student Honours research project supervised by Dr Loxton.

What you will be asked to do

If you agree to participate, you will be provided with instructions on how to complete an online questionnaire. If you proceed with the study, you will be asked to complete the online questionnaire (approximately 30 minutes in length). Questions will relate to your body image and satisfaction, social media use, aspects of your personality, and your eating behaviours.

All those who complete this online questionnaire will be given the choice to enter a draw to win a prize. In order to receive this prize, you will be required to provide your contact details in the form of an email address. This email address will be collected and stored separately from your survey responses to ensure anonymity.

If you are a student of Griffith University currently undertaking 1001PSY, 1002PSY or 1003PSY you may also be eligible to obtain course credit for participation in this study. By completing the questionnaire, you will be eligible for 0.5% course credit. In order to receive this course credit, you will be required to provide your name and student number. This information will be collected and stored separately from your survey responses to ensure anonymity.

Who should complete this questionnaire?

We are interested in hearing from women over the age of 17 years. If you fit this description, then we would love to hear your opinion! If you are under the age of 18 then we recommend that you consult with your parent/guardian before you complete this study.

Risks and Benefits of the research

There are no negative effects expected to result from participating in this study. However, should you become concerned or distressed by the content of any questions, please discontinue the survey immediately. If you continue to experience distress, you can contact one of these services, who will be able to assist you:

Lifeline: 13 11 14

Eating Disorders Helpline (Victoria): 1300 550 236 or (03) 9417 6598

Eating Disorders Association Inc (Queensland): (07) 3394 3661

Butterfly National Support Line and Web Counselling Service: 1800 33 4673 Website: www.thebutterflyfoundation.org.au/web-counselling

By participating in this research, you will help to ensure that empirical research into female beauty aesthetics remains up to date with the current societal standards of beauty. In turn, findings from this study may help improve both empirical and clinical knowledge and treatment in the areas of body image and eating behaviours.

In addition, to show our appreciation for your time, all those who agree to complete the questionnaire will be entered into a draw to win one of three \$50 Coles Gift Vouchers. The terms and conditions of this prize draw are listed below:

1. The prize draw is being run by Dr Natalie Loxton and Ms Chloe Kidd of Griffith University, to encourage research study participation.

2. By electing to participate, you accept these terms and conditions as governing the prize draw. Instructions on how to enter the prize draw and details advertising the survey form part of the conditions. Any personal information you provide to us in the course of entering the prize draw will be dealt with by us in accordance with our privacy policy (published at: <http://www.griffith.edu.au/aboutgriffith/governance/plans-publications/griffith-university-privacy-plan>).
3. The Voucher will be awarded in a prize draw. This prize is worth \$50 (AUS). Should the advertised prize become unavailable as a result of circumstances beyond our control, we are free (at our sole discretion) to substitute a cash prize equivalent to the value of the prize advertised.
4. Entry is free (other than the cost of accessing the website). Entry is open for as long as the study is available to access and complete online. Entries received after the closing date will not be accepted.
5. To enter the prize draw, you must: (a) be a participant in the proposed research study; (b) complete the proposed online questionnaire; and (c) provide a valid email address.
6. You may not enter the prize draw if you are an employee of ours or an immediate family member of an employee of ours or otherwise associated with the competition
7. You may only submit one entry in the prize draw.
8. All survey and other materials provided by you become our property. No responsibility is taken for late, lost or misdirected surveys or entries.
9. Following the closing date, the prize winner will be selected randomly from valid entries received. Each entry can only be drawn once.
10. Subject to system malfunction, the draw will occur no later than December 1st, 2020. If the systems supporting the draw are not functioning as they should when the draw is due, the draw will be held as soon as possible once the systems become functional again. Prize winner do not need to be present at the time of the draw.
11. Prize winner names will not be published.
12. The relevant prize will be sent to each prize winner at the email address captured within the survey instrument. If an address has not been supplied, the entry will be treated in accordance with clause 14. The prize will be e-mailed within two weeks of the draw.
13. The right to a prize is not transferable or assignable to another person.
14. If any prize winner cannot be contacted within three (3) months of the draw, then that person's right to the prize is forfeited and the prize will be treated as an unclaimed prize.
15. Only one redraw of unclaimed prizes will take place, and other existing prizes are not affected. The redraw prize winner(s) will be randomly selected from remaining valid entries and notified within two (2) weeks of the redraw. If the redraw prize winner(s) cannot be contacted within three (3) months of the redraw, then we may determine that the relevant prize(s) will not be awarded.
16. Prizes cannot be substituted for another prize at the election of the prize-winner.
17. We are not liable for any loss, expense, damage or injury sustained by any entrant in connection with this prize draw, the prize or redemption of the prize, except for any liability, which cannot be excluded by law (in which case, that liability is limited to the minimum allowable by law).
18. We may suspend the promotion if we determine that the integrity or administration of the promotion has been adversely affected due to circumstances beyond its control. We may disqualify any individual who tampers with the entry process.

Your confidentiality

All information collected as part of this study will be completely anonymous. No identifying information will be collected in the study, and any identifying information collected as part of the prize incentive or course credit will not be linked to your data. All contact information will be deleted after the prize has been drawn.

Your responses to the questionnaire will form part of a large data response set, which will be stored online, on a password protected research storage platform, endorsed by Griffith University. This data will only be accessible by members of the research team. As required by Griffith University, all research data (survey responses and analysis) will be retained in a password-protected electronic file for a minimum period of five years before being destroyed.

Research results will be reported in academic theses and may also be disseminated via journal articles and/or conference presentations. Any publications that result from this research will only report group statistics, and no individualised data will be presented. Participants' data will not be identifiable in any publication or reporting. In the interest of researcher transparency, a strictly de-identified version of the research data may be prepared and made available on the online open data repository Open Science Framework (<https://osf.io/>).

Please note that there is a potential danger of accidental public exposure when commenting and interacting on social media on posts related to this research project. In order to respect and maintain your privacy, and the privacy of others, it is recommended that you do not make comments in relation to this research project and study online.

Your participation is voluntary

Participation in this study is voluntary, and you may withdraw your consent to participate at any time, with no explanation required. If you are currently affiliated with Griffith University in any way, then your participation or withdrawal from this study will in no way impact upon your relationship with the University. Please note that, due to the anonymity of the questionnaire, once responses are submitted, then withdrawal from the study will not be possible, as your data will not be identifiable. Please consider this before completing the questionnaire.

Questions / further information

If you would like to receive a summary of the results of the research, have any questions, or require any further information, then please email Ms Chloe Kidd at chloe.kidd@griffithuni.edu.au

The ethical conduct of this research

The research being conducted by Griffith University is in accordance with the *National Statement on Ethical Conduct in Human Research*. If you have any concerns or complaints about the ethical conduct of the research project, please contact the Research Ethics Manager on 3735 4375 or email; research-ethics@griffith.edu.au.

Thank you for your time.



CONSENT FORM

Investigating the Effects of Social Media Engagement on Body Image and Problematic Body Shaping Behaviours

<p>Who is conducting the research?</p>	<p>Dr. Natalie Loxton (Psychologist, PhD) Assoc. Prof Caroline Donovan (Clinical Psychologist, PhD) Ms. Chloe Kidd (Provisional Psychologist, PhD student) Ms. Caitlin McDowell (Honours Psychology Student)</p> <p>GU Ethics Reference Number: 2021/278</p> <p>Griffith University School of Applied Psychology, Mt Gravatt Campus</p> <p>Email: [REDACTED] [REDACTED] [REDACTED]</p>
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By participating in this study, I confirm that I have read and understood the information package and in particular have noted that:

- I understand that my involvement in this research will include the completion of one online questionnaire approximately 30 minutes to complete;
- I have had any questions answered to my satisfaction;
- I understand the risks involved;
- I understand that my participation in this research is voluntary, and that my participation or withdrawal will in no way impact upon the service I receive from Griffith University currently, or in the future;
- I understand that as this is an anonymous survey, once my responses are submitted, they cannot be withdrawn;
- I understand that I may cease answering the survey questions at any time and may skip questions I do not wish to answer;
- I understand that information I provide will be stored as de-identified data and may be used in future studies;
- I understand that my personal email details will be collected for notification of the prize and that the collection of this information will occur on a separate form collected and stored independent of my questionnaire responses.
- I understand that my name and student number may be collected for allocation of course credit (if applicable) and that the collection of this

information will occur on a separate form collected and stored independent of my questionnaire responses. I understand that if I have any additional questions I can contact the research team;

- I understand that I can contact the Manager, Research Ethics, at Griffith University Human Research Ethics Committee on 3735 4375 (or research-ethics@griffith.edu.au) if I have any concerns about the ethical conduct of the project; and
- I agree to participate in the project.

Completion of this survey will be taken as your consent to participate in the research.

Appendix E: Study 2 Measures

Demographics Questionnaire

1. What gender do you identify with? Female; Male; Transgender Female (Male-to-Female); Transgender Male (Female-to-Male); Non-Binary; Rather not Say; Other
2. What is your year of birth? _____
3. What is your sexual identity? Heterosexual; Lesbian; Gay; Bisexual; Queer; Asexual; Other
4. What is your relationship status? Single; In a relationship/De facto; Married; Divorced/Separated
5. What is your current employment status? Unemployed; Part-Time; Full-Time; Casual
6. What is your combined household income? Under \$20,000; \$20 000 - \$29 000; \$30 000 - \$45 000; \$45 001 - \$65 000; \$65 001 - \$75 000; \$75 001 - \$90 000; \$90 001 - \$125 000; \$125 001 - \$150 000; \$150 001 - \$200 000; Over \$200 000
7. What is your ethnicity? Caucasian; Indigenous Australian/Torres Strait Islander; Asian; Pacific Islander; African; Other (please specify)
8. What is your highest level of education? Year 10 (or equivalent); Year 11 (or equivalent); Year 12 (or equivalent); Trade Certificate; Bachelor Degree; Postgraduate Degree, Other (please specify)
9. Have you even been diagnosed with an eating disorder? Yes; No
 - a. If yes, please select all that apply: Anorexia Nervosa (restrictive type), Anorexia Nervosa (binge-purge type), Bulimia Nervosa, Binge Eating Disorder, Eating Disorder Not Otherwise Specified, Other (please specify)
10. What is your current weight (in kilograms)? _____
11. What is your height (in cm)? _____
12. Are you a current university student? Yes; No
 - a. If you are a current Griffith University student, which campus do you normally attend? Mt Gravatt, Gold Coast, Logan, South Bank, Nathan

Thin Ideal Internalisation Assessment (THIINA)

Listed below are a series of statements regarding female body ideals. Many of the statements in this questionnaire describe the thin ideal body, a body that characterised by ultra-slenderness, low body fat and minimal muscle tone. Please read each of the statements carefully and indicate your level of agreement with each one (from 1 = *strongly disagree* to 5 = *strongly agree*). Please answer as honestly as possible, and do not spend too much time on any statement.

1. I think a lot about what it would be like to have a very thin body.
2. I think a lot about what I could be doing (e.g., exercising, dieting) to achieve a thin body.
3. I am preoccupied with the idea of having a body that is thin.
4. I spend time obsessing about parts of my body that are not thin enough.
5. I spend time daydreaming about how I would look with a thin body.
6. It is important to me that my body looks thin.
7. Having a thin body is not important to me. (R)
8. I aspire to have a thin body.
9. I envy women who have a thin body.
10. I feel ashamed when I notice parts of my body that are not thin enough.
11. I often feel concerned I am not making enough progress towards achieving a thin body.
12. I feel guilty if I do things (e.g., eat junk food) that could prevent me from having a thin body.
13. I often feel concerned I am not thin enough.
14. I don't normally worry if my body is thin enough. (R)
15. Having a thin body is a good way to gain respect from other people.
16. Working towards having a thin body is a good way to improve your life.
17. If I had the ideal thin body, I would have more successful romantic relationships.
18. If I had the ideal thin body, I would be more popular with my peers.
19. Having a thin body is a good way to show others how disciplined you are.
20. If I had the ideal thin body, others would find me attractive.
21. Having a thin body is a good way to show others you are in control of your life.
22. Being thin is not important for my physical health. (R)
23. Being thin is not important for getting ahead in life. (R)
24. If I had a thin body, other areas of my life would also improve.
25. If I had a thin body, others would find me more desirable.
26. I would be completely happy if I had a thin body.
27. I would feel very satisfied with my life if I had a thin body.
28. Working towards having a thin body is a good way to feel successful.
29. Working towards having a thin body is a good way to feel accomplished in life.
30. I spend time doing things (e.g., diet, exercise) to achieve a body that is thin.
31. I am motivated to do things (e.g., diet, exercise) to achieve a thin body.
32. My dietary choices are shaped by my desire to have a thin body.
33. My exercise routine is shaped by my desire to have a thin body.
34. I make sure to wear clothing that makes my body look thin.
35. I don't feel motivated to do things (e.g., diet, exercise) to achieve a thin body. (R)

Sociocultural Attitudes Toward Appearance Questionnaire-4R (SATAQ-4R)

Participants were asked to indicate their level of agreement with each statement using a five-point Likert scale with response options of 1 (definitely disagree), 2 (mostly disagree), 3 (neither agree nor disagree), 4 (mostly agree), and 5 (definitely agree).

1. I want my body to look very thin
2. I think a lot about looking thin
3. I want my body to look very lean
4. I think a lot about having very little body fat
5. I feel pressure from family members to look thinner
6. I feel pressure from family members to improve my appearance
7. Family members encouraged me to decrease my level of body fat
8. Family members encourage me to get in better shape
9. My peers encourage me to get thinner
10. I feel pressure from my peers to improve my appearance
11. I feel pressure from my peers to look in better shape
12. I get pressure from my peers to decrease my level of body fat
13. Significant others encourage me to get thinner
14. I feel pressure from significant others to improve my appearance
15. I feel pressure from significant others to look in better shape
16. I get pressure from significant others to decrease my level of body fat
17. I feel pressure from social media to look in better shape.
18. I feel pressure from social media to look thinner
19. I feel pressure from social media to improve my appearance
20. I feel pressure from social media to decrease my level of body fat
21. I feel pressure from the media to look in better shape
22. I feel pressure from the media to look thinner
23. I feel pressure from the media to improve my appearance
24. I feel pressure from the media to decrease my level of body fat

Objectified Body Consciousness Scale

Please rate your level of agreement with each item along a 7-point scale from 1 (strongly disagree) to 7 (strongly agree) or select “non-applicable” if the item does not apply.

1. I rarely think about how I look.
2. I think it is more important that my clothes are comfortable than whether they look good on me.
3. I think more about how my body feels than how my body looks.
4. I rarely compare how I look with how other people look.
5. During the day, I think about how I look many times
6. I often worry about whether the clothes I am wearing make me look good.
7. I rarely worry about how I look to other people.
8. I am more concerned with what my body can do than how it looks.
9. When I can't control my weight, I feel like something must be wrong with me
10. I feel ashamed of myself when I haven't made the effort to look my best
11. I feel like I must be a bad person when I don't look as good as I could
12. I would be ashamed for people to know what I really weigh
13. I never worry that something is wrong with me when I am not exercising as much as I should
14. When I am not exercising enough, I question whether I am a good enough person
15. Even when I can't control my weight, I think I'm an okay person
16. When I am not the size I think I should be, I feel ashamed

Body, Eating, and Exercise Comparison Orientation Measure (BEECOM)

Please rate each of the following items regarding how often you compare yourself to your same-sex peers in terms of appearance, exercise, and eating. Remember, there are no right or wrong answers, so please be as honest as possible. Regarding the items that refer to comparisons you might make when you are exercising (e.g., running outside, playing an organized sport, using a cardio machine at a gym): If you are not currently exercising, think back to times when you have exercised (e.g., participated in gym class, played an organized sport, walked or ran outside) and answer accordingly.

Rating Scale: Items are rated on a 1–7 scale with the following anchors: never, almost never, seldom, sometimes, often, almost always, and always.

1. I look at the amount of food my peers leave on their plate in comparison to me when they are finished eating.
2. I pay attention to whether or not I am as thin as, or thinner, than my peers.
3. During meals, I compare what I am eating to what others are eating.
4. In social situations, I think about how my figure “matches up” to the figures of those around me.
5. When I am exercising (e.g., at the gym, running outdoors), I pay attention to the length of time that those around me work out.
6. I pay close attention when I hear peers talking about exercise (in order to determine if I am exercising as much as they are).
7. I find myself thinking about how my food choices compare with the food choices of my peers.
8. I am quick to notice how healthy (or unhealthy) my peers’ food choices are compared to my own food choices.
9. I notice how I compare with my peers in terms of specific parts of the body (e.g., stomach, hips, breasts, etc.).
10. When working out around other people, I think about how many calories I am burning in comparison to my peers.
11. When I go to a food court or out to eat, I pay attention to how much I am eating compared to other people.
12. I compare my body shape to that of my peers.
13. When I see a peer who is wearing revealing clothing, I have thoughts of how my own body compares.
14. I like to know how often my friends are working out so I can figure out if the number of times I work out “matches up”.
15. When I exercise (e.g., at the gym, running outdoors), I pay attention to the intensity level of the workouts of those around me.
16. I pay attention to how much junk food my peers eat compared to me.
17. I pay attention to whether or not I am as toned as my peers.
18. When I work out, I evaluate how hard my workout was compared to how hard my friends say they worked out.

Eating Disorder Inventory-3 - Body Dissatisfaction subscale



Eating Disorder Inventory-3 - Drive for Thinness Subscale



Dutch Eating Behavioural Questionnaire (DEBQ) - Restrained Eating subscale

Read each statement and circle the number of the response which most closely matches your level of agreement. There are no right or wrong answers, or trick questions.

Remember to answer all the questions and to give only one response to each question.

Not relevant	Never	Seldom	Sometimes	Often	Very Often
0	1	2	3	4	5

1. If you have put on weight, do you eat less than you usually do?
2. Do you try to eat less at mealtimes than you would like to eat?
3. How often do you refuse food or drink offered because you are concerned about your weight?
4. Do you watch exactly what you eat?
5. Do you deliberately eat foods that are slimming?
6. When you have eaten too much, do you eat less than usual the following days?
7. Do you deliberately eat less in order not to become heavier?
8. How often do you try not to eat between meals because you are watching your weight?
9. How often in the evening do you try not to eat because you are watching your weight?
10. Do you take into account your weight with what you eat?

Depression and Anxiety Stress Scale - 21

Please read each statement and circle a number 0, 1, 2 or 3 which indicates how much the statement applied to you *over the past week*. There are no right or wrong answers. Do not spend too much time on any statement.

0 = Did not apply to me at all

1 = Applied to me to some degree or some of the time

2 = Applied to me a considerable degree, or a good part of the time

3 = Applied to me very much, or most of the time

1. I found it hard to wind down
2. I was aware of dryness of my mouth
3. I couldn't seem to experience any positive feeling at all
4. I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)
5. I found it difficult to work up the initiative to do things
6. I tended to over-react to situations
7. I experienced trembling (eg, in the hands)
8. I felt that I was using a lot of nervous energy
9. I was worried about situations in which I might panic and make a fool of myself
10. I felt that I had nothing to look forward to
11. I found myself getting agitated
12. I found it difficult to relax
13. I felt down-hearted and blue
14. I was intolerant of anything that kept me from getting on with what I was doing
15. I felt I was close to panic
16. I was unable to become enthusiastic about anything
17. I felt I wasn't worth much as a person
18. I felt that I was rather touchy
19. I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat)
20. I felt scared without any good reason
21. I felt that life was meaningless

Appendix F: Information Sheet and Consent Form for Study 3



PARTICIPANT INFORMATION SHEET

Investigating the Effects of Instagram Usage on Body Image and Problematic Body Shaping Behaviours

Who is conducting the research?	<p>Dr. Natalie Loxton (Psychologist, PhD) Assoc. Prof Caroline Donovan (Clinical Psychologist, PhD) Ms. Chloe Kidd (Provisional Psychologist, PhD student) Ms. Charlie-jean Seeto (Honours Psychology Student)</p> <p>GU Ethics Reference Number: 2020/280</p> <p>Griffith University School of Applied Psychology, Mt Gravatt Campus</p> <p>Email: [REDACTED] [REDACTED] [REDACTED]</p>
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Why is the research being conducted?

Many women feel pressure to ascribe to certain beauty ideals, and consequently many are dissatisfied with the way their body looks. This dissatisfaction has been shown to lead to problematic eating and exercise behaviours. This research is being conducted by Griffith University to measure how women engage with photo-based social media platforms, specifically Instagram, and examine if these engagement styles increase acceptance and internalisation of beauty ideals leading to problematic eating and exercise behaviours. Further, this research will measure how reward-related personality traits impact engagement with Instagram and determine if this increases vulnerability to the problematic outcomes listed above.

Such research could have important theoretical and clinical implications for measuring Instagram use and identification of a type of Instagram user that may be at-risk of dysfunctional body shaping behaviours. This research will be used to form part of a student Ph.D. research project supervised by Dr Loxton and Associate Professor Caroline Donovan and a student Honours research project supervised by Dr Loxton.

What you will be asked to do

If you agree to participate, you will be provided with instructions on how to complete an online questionnaire. If you proceed with the study, you will be asked to complete the online questionnaire (approximately 30 minutes in length). Questions will relate to your body image and satisfaction, social media use, aspects of your personality, and your eating and exercise behaviours.

If you agree to participate, you will be required to create an anonymous code (known only to you) that will enable us to confirm if you have participated in related research studies.

All those who complete this online questionnaire will be given the choice to enter a draw to win a prize. In order to receive this prize, you will be required to provide your contact details in the form of an email address. This email address will be collected and stored separately from your survey responses to ensure anonymity.

If you are a student of Griffith University currently undertaking 1001PSY, 1002PSY or 1003PSY you may also be eligible to obtain course credit for participation in this study. By completing the questionnaire, you will be eligible for 0.5% course credit. In order to receive this course credit, you will be required to provide your name and student number. This information will be collected and stored separately from your survey responses to ensure anonymity.

Who should complete this questionnaire?

We are interested in hearing from women over the age of 17 years. If you fit this description, then we would love to hear your opinion! If you are under the age of 18 then we recommend that you consult with your parent/guardian before you complete this study.

Risks and Benefits of the research

There are no negative effects expected to result from participating in this study. However, should you become concerned or distressed by the content of any questions, please discontinue the survey immediately. If you continue to experience distress, you can contact one of these services, who will be able to assist you:

Lifeline: 13 11 14

Eating Disorders Helpline (Victoria): 1300 550 236 or (03) 9417 6598

Eating Disorders Association Inc (Queensland): (07) 3394 3661

Butterfly National Support Line and Web Counselling Service: 1800 33 4673 Website: www.thebutterflyfoundation.org.au/web-counselling

By participating in this research, you will help to ensure that empirical research into female beauty aesthetics remains up to date with the current societal standards of beauty. In turn, findings from this study may help improve both empirical and clinical knowledge and treatment in the areas of body image and eating behaviours.

In addition, to show our appreciation for your time, all those who agree to complete the questionnaire will be entered into a draw to win one of three \$50 Coles Myers Gift Vouchers. The terms and conditions of this prize draw are listed below:

1. The prize draw is being run by Dr Natalie Loxton and Ms Chloe Kidd of Griffith University, to encourage research study participation.
2. By electing to participate, you accept these terms and conditions as governing the prize draw. Instructions on how to enter the prize draw and details advertising the survey form part of the conditions. Any personal information you provide to us in the course of entering the prize draw will be dealt with by us in accordance with our privacy policy (published at: <http://www.griffith.edu.au/aboutgriffith/governance/plans-publications/griffith-university-privacy-plan>).
3. The Voucher will be awarded in a prize draw. This prize is worth \$50 (AUS). Should the advertised prize become unavailable as a result of circumstances beyond our control, we are free (at our sole discretion) to substitute a cash prize equivalent to the value of the prize advertised.
4. Entry is free (other than the cost of accessing the website). Entry is open for as long as the study is available to access and complete online. Entries received after the closing date will not be accepted.
5. To enter the prize draw, you must: (a) be a participant in the proposed research study; (b) complete the proposed online questionnaire; and (c) provide a valid email address.
6. You may not enter the prize draw if you are an employee of ours or an immediate family member of an employee of ours or otherwise associated with the competition
7. You may only submit one entry in the prize draw.
8. All survey and other materials provided by you become our property. No responsibility is taken for late, lost or misdirected surveys or entries.
9. Following the closing date, the prize winner will be selected randomly from valid entries received. Each entry can only be drawn once.
10. Subject to system malfunction, the draw will occur no later than December 1st, 2020. If the systems supporting the draw are not functioning as they should when the draw is due, the draw will be held as soon as possible once the systems become functional again. Prize winner do not need to be present at the time of the draw.
11. Prize winner names will not be published.
12. The relevant prize will be sent to each prize winner at the email address captured within the survey instrument. If an address has not been supplied, the entry will be treated in accordance with clause 14. The prize will be e-mailed within two weeks of the draw.
13. The right to a prize is not transferable or assignable to another person.
14. If any prize winner cannot be contacted within three (3) months of the draw, then that person's right to the prize is forfeited and the prize will be treated as an unclaimed prize.
15. Only one redraw of unclaimed prizes will take place, and other existing prizes are not affected. The redraw prize winner(s) will be randomly selected from remaining valid entries and notified within two (2) weeks of the redraw. If the redraw prize winner(s) cannot be contacted within three (3) months of the redraw, then we may determine that the relevant prize(s) will not be awarded.
16. Prizes cannot be substituted for another prize at the election of the prize-winner.
17. We are not liable for any loss, expense, damage or injury sustained by any entrant in connection with this prize draw, the prize or redemption of the prize, except for any liability, which cannot be excluded by law (in which case, that liability is limited to the minimum allowable by law).
18. We may suspend the promotion if we determine that the integrity or administration of the promotion has been adversely affected due to circumstances beyond its control. We may disqualify any individual who tampers with the entry process.

Your confidentiality

All information collected as part of this study will be completely anonymous. No identifying information will be collected in the study, and any identifying information collected as part of the prize incentive or course credit will not be linked to your data. All contact information will be deleted after the prize has been drawn.

Your responses to the questionnaire will form part of a large data response set, which will be stored online, on a password protected research storage platform, endorsed by Griffith

University. This data will only be accessible by members of the research team. As required by Griffith University, all research data (survey responses and analysis) will be retained in a password-protected electronic file for a minimum period of five years before being destroyed.

Research results will be reported in academic theses and may also be disseminated via journal articles and/or conference presentations. Any publications that result from this research will only report group statistics, and no individualised data will be presented. Participants' data will not be identifiable in any publication or reporting. In the interest of researcher transparency, a strictly de-identified version of the research data may be prepared and made available on the online open data repository Open Science Framework (<https://osf.io/>).

Please note that there is a potential danger of accidental public exposure when commenting and interacting on social media on posts related to this research project. In order to respect and maintain your privacy, and the privacy of others, it is recommended that you do not make comments in relation to this research project and study online.

Your participation is voluntary

Participation in this study is voluntary, and you may withdraw your consent to participate at any time, with no explanation required. If you are currently affiliated with Griffith University in any way, then your participation or withdrawal from this study will in no way impact upon your relationship with the University. Please note that, due to the anonymity of the questionnaire, once responses are submitted, then withdrawal from the study will not be possible, as your data will not be identifiable. Please consider this before completing the questionnaire.

Questions / further information

If you would like to receive a summary of the results of the research, have any questions, or require any further information, then please email Ms Chloe Kidd at chloe.kidd@griffithuni.edu.au

The ethical conduct of this research

The research being conducted by Griffith University is in accordance with the *National Statement on Ethical Conduct in Human Research*. If you have any concerns or complaints about the ethical conduct of the research project, please contact the Research Ethics Manager on 3735 4375 or email; research-ethics@griffith.edu.au.

Thank you for your time.

***** You can download a copy of this information from this link*****



CONSENT FORM

Investigating the Effects of Instagram Usage on Problematic Body Shaping Behaviours

<p>Who is conducting the research?</p>	<p>Dr. Natalie Loxton (Psychologist, PhD) Assoc. Prof Caroline Donovan (Clinical Psychologist, PhD) Ms. Chloe Kidd (Provisional Psychologist, PhD student) Ms. Charlie-jean Seeto (Honours Psychology Student)</p> <p>GU Ethics Reference Number: 2020/280</p> <p>Griffith University School of Applied Psychology, Mt Gravatt Campus</p> <p>Email: [REDACTED] [REDACTED] [REDACTED]</p>
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By participating in this study, I confirm that I have read and understood the information package and in particular have noted that:

- I understand that my involvement in this research will include the completion of one online questionnaire approximately 45 30 minutes to complete;
- I have had any questions answered to my satisfaction;
- I understand the risks involved;
- I understand that my participation in this research is voluntary, and that my participation or withdrawal will in no way impact upon the service I receive from Griffith University currently, or in the future;
- I understand that as this is an anonymous survey, once my responses are submitted, they cannot be withdrawn;
- I understand that I may cease answering the survey questions at any time and may skip questions I do not wish to answer;
- I understand that information I provide will be stored as de-identified data and may be used in future studies;
- I understand that my personal email details will be collected for notification of the prize and that the collection of this information will occur on a separate form collected and stored independent of my questionnaire responses.
- I understand that my name and student number may be collected for allocation of course credit (if applicable) and that the collection of this

information will occur on a separate form collected and stored independent of my questionnaire responses.

-
- I understand that if I have any additional questions I can contact the research team;
- I understand that I can contact the Manager, Research Ethics, at Griffith University Human Research Ethics Committee on 3735 4375 (or research-ethics@griffith.edu.au) if I have any concerns about the ethical conduct of the project; and
- I agree to participate in the project.

Completion of this survey will be taken as your consent to participate in the research.

***** You can download a copy of this information from this link*****

Appendix G: Study 3 Measures

Demographics Questionnaire

1. What gender do you identify with? Female; Male; Transgender Female (Male-to-Female); Transgender Male (Female-to-Male); Non-Binary; Rather not Say; Other
2. What is your year of birth? _____
3. What is your sexual identity? Heterosexual; Lesbian; Gay; Bisexual; Queer; Asexual; Other
4. What is your relationship status? Single; In a relationship/De facto; Married; Divorced/Separated
5. What is your current employment status? Unemployed; Part-Time; Full-Time; Casual
6. What is your combined household income? Under \$20,000; \$20 000 - \$29 000; \$30 000 - \$45 000; \$45 001 - \$65 000; \$65 001 - \$75 000; \$75 001 - \$90 000; \$90 001 - \$125 000; \$125 001 - \$150 000; \$150 001 - \$200 000; Over \$200 000
7. What is your ethnicity? Caucasian; Indigenous Australian/Torres Strait Islander; Asian; Pacific Islander; African; Other (please specify)
8. What is your highest level of education? Year 10 (or equivalent); Year 11 (or equivalent); Year 12 (or equivalent); Trade Certificate; Bachelor Degree; Postgraduate Degree, Other (please specify)
9. Have you even been diagnosed with an eating disorder? Yes; No
 - a. If yes, please select all that apply: Anorexia Nervosa (restrictive type), Anorexia Nervosa (binge-purge type), Bulimia Nervosa, Binge Eating Disorder, Eating Disorder Not Otherwise Specified, Other (please specify)
10. What is your current weight (in kilograms)? _____
11. What is your height (in cm)? _____
12. Are you a current university student? Yes; No
 - a. If you are a current Griffith University student, which campus do you normally attend? Mt Gravatt, Gold Coast, Logan, South Bank, Nathan

Thin Ideal Internalisation Assessment (THIINA)

Listed below are a series of statements regarding female body ideals. Many of the statements in this questionnaire describe the thin ideal body, a body that characterised by ultra-slenderness, low body fat and minimal muscle tone. Please read each of the statements carefully and indicate your level of agreement with each one (from 1 = *strongly disagree* to 5 = *strongly agree*). Please answer as honestly as possible, and do not spend too much time on any statement.

1. I think a lot about what it would be like to have a very thin body.
2. I think a lot about what I could be doing (e.g., exercising, dieting) to achieve a thin body.
3. I am preoccupied with the idea of having a body that is thin.
4. I spend time obsessing about parts of my body that are not thin enough.
5. I spend time daydreaming about how I would look with a thin body.
6. It is important to me that my body looks thin.
7. Having a thin body is not important to me. (R)
8. I aspire to have a thin body.
9. I envy women who have a thin body.
10. I feel ashamed when I notice parts of my body that are not thin enough.
11. I often feel concerned I am not making enough progress towards achieving a thin body.
12. I feel guilty if I do things (e.g., eat junk food) that could prevent me from having a thin body.
13. I often feel concerned I am not thin enough.
14. I don't normally worry if my body is thin enough. (R)
15. Having a thin body is a good way to gain respect from other people.
16. Working towards having a thin body is a good way to improve your life.
17. If I had the ideal thin body, I would have more successful romantic relationships.
18. If I had the ideal thin body, I would be more popular with my peers.
19. Having a thin body is a good way to show others how disciplined you are.
20. If I had the ideal thin body, others would find me attractive.
21. Having a thin body is a good way to show others you are in control of your life.
22. Being thin is not important for my physical health. (R)
23. Being thin is not important for getting ahead in life. (R)
24. If I had a thin body, other areas of my life would also improve.
25. If I had a thin body, others would find me more desirable.
26. I would be completely happy if I had a thin body.
27. I would feel very satisfied with my life if I had a thin body.
28. Working towards having a thin body is a good way to feel successful.
29. Working towards having a thin body is a good way to feel accomplished in life.
30. I spend time doing things (e.g., diet, exercise) to achieve a body that is thin.
31. I am motivated to do things (e.g., diet, exercise) to achieve a thin body.
32. My dietary choices are shaped by my desire to have a thin body.
33. My exercise routine is shaped by my desire to have a thin body.
34. I make sure to wear clothing that makes my body look thin.
35. I don't feel motivated to do things (e.g., diet, exercise) to achieve a thin body. (R)

Reinforcement Sensitivity Therapy Personality Questionnaire (RST-PQ) Short Form

How accurately does this statement describe you? Please answer the following questions as accurately, honestly and completely as possible. There are no right or wrong answers.

Participants responded to each question using a four-point Likert style scale with the following response options: not at all (1), slightly (2), moderately (3), and highly (4).

1. I would run quickly if fire alarms in a shopping mall started ringing
2. I would instantly freeze if I opened the door to find a stranger in the house
3. I would leave the park if I saw a group of dogs running around barking at people
4. I would freeze if I was on a turbulent aircraft
5. I would not hold a snake or spider
6. I sometime feel “blue” for no good reason
7. I often worry about letting down other people
8. My behavior is easily interrupted
9. It’s difficult to get some things out of my mind
10. I often wake up with many thoughts running through my mind
11. I regularly try new activities just to see if I enjoy them
12. I get carried away by new projects
13. I am always finding new and interesting things to do
14. I am motivated to be successful in my personal life
15. I am very persistent in achieving my goals
16. I will actively put plans in place to accomplish goals in my life
17. Good news makes me feel over joyed
18. I get a special thrill when I am praised for something I’ve done well
19. I always celebrate when I accomplish something important
20. I sometimes cannot stop myself talking when I know I should keep my mouth closed
21. I often do risky things without thinking of the consequences
22. I find myself doing things on the spur of the moment

Eating Disorder Examination Questionnaire (EDE-Q)

Instructions: The following questions are concerned with the past four weeks (28 days) only. Please read each question carefully. Please answer all the questions. Thank you.

Questions 1 to 12: Please select the appropriate number. Remember that the questions only refer to the past four weeks (28 days) only.

Rating Scale: 0 (no days), 1 (1-5 days), 2 (6-12 days), 3 (13-15 days), 4 (16-22 days), 5 (23-27 days), 6 (every day)

On how many of the past 28 days....

1. Have you been deliberately trying to limit the amount of food you eat to influence your shape or weight (whether or not you have succeeded)?
2. Have you gone for long periods of time (8 waking hours or more) without eating anything at all in order to influence your shape or weight?
3. Have you tried to exclude from your diet any foods that you like in order to influence your shape or weight (whether or not you have succeeded)?
4. Have you tried to follow definite rules regarding your eating (for example, a calorie limit) in order to influence your shape or weight (whether or not you have succeeded)?
5. Have you had a definite desire to have an empty stomach with the aim of influencing your shape or weight?
6. Have you had a definite desire to have a totally flat stomach?
7. Has thinking about food, eating or calories made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?
8. Has thinking about shape or weight made it very difficult to concentrate on things you are interested in (for example, working, following a conversation, or reading)?
9. Have you had a definite fear of losing control over eating?
10. Have you had a definite fear that you might gain weight?
11. Have you felt fat?
12. Have you had a strong desire to lose weight?

Questions 13-18: Please fill in the appropriate number of days. Remember that the questions only refer to the past four weeks (28 days).

Over the past four weeks (28 days)....

13. Over the past 28 days, how many times have you eaten what other people would regard as an unusually large amount of food (given the circumstances)?
14. On how many of these times did you have a sense of having lost control over your eating (at the time you were eating)?
15. Over the past 28 days, on how many DAYS have such episodes of overeating occurred (i.e. you have eaten an unusually large amount of food and have had a sense of loss of control at the time)?
16. Over the past 28 days, how many times have you made yourself sick (vomit) as a means of controlling your shape or weight?
17. Over the past 28 days, how many times have you taken laxatives as a means of controlling your shape or weight?

18. Over the past 28 days, how many times have you exercised in a “driven” or “compulsive” way as a means of controlling your weight, shape or amount of fat, or to burn off calories?

Questions 19 to 21: Please circle the appropriate number. Please note that for these questions the term “binge eating” means eating what others would regard as an unusually large amount of food for the circumstances, accompanied by a sense of having lost control over eating.

Rating Scale #19: 0 (no days), 1 (1-5 days), 2 (6-12 days), 3 (13-15 days), 4 (16-22 days), 5 (23-27 days), 6 (every day)

19. Over the past 28 days, on how many days have you eaten in secret (ie, furtively)? ... Do not count episodes of binge eating

Rating Scale #20: 0 (none of the times), 1 (a few of the times), 2 (Less than half), 3 (half of the times), 4 (More than half), 5 (Most of the time), 6 (every time)

20. On what proportion of the times that you have eaten have you felt guilty (felt that you’ve done wrong) because of its effect on your shape or weight? ... Do not count episodes of binge eating.

Rating Scale #21: 0 - 6 (Not at all, slightly, Moderately, Markedly)

21. Over the past 28 days, how concerned have you been about other people seeing you eat? ... Do not count episodes of binge eating.

Questions 22 to 28: Please circle the appropriate number on the right. Remember that the questions only refer to the past four weeks (28 days).

Rating Scale: 0 (not at all), 1, 2 (slightly), 3 (moderately), 4, 5 (markedly), 6

On how many over the past 28 days....

22. Has your weight influenced how you think about (judge) yourself as a person?

23. Has your shape influenced how you think about (judge) yourself as a person?

24. How much would it have upset you if you had been asked to weigh yourself once a week (no more, or less, often) for the next four weeks?

25. How dissatisfied have you been with your weight?

26. How dissatisfied have you been with your shape?

27. How uncomfortable have you felt seeing your body (for example, seeing your shape in the mirror, in a shop window reflection, while undressing or taking a bath or shower)?

28. How uncomfortable have you felt about others seeing your shape or figure (for example, in communal changing rooms, when swimming, or wearing tight clothes)?