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The Effect of Facebook on Body Dissatisfaction: Ethnicity as a Possible Moderator

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The Effect of Facebook on Body Dissatisfaction: Ethnicity as a Possible Moderator

Senior Project submitted to
The Division of Science, Mathematics and Computing
of Bard College

by
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Abstract

Eating disorders have demonstrated the most extreme rise in prevalence out of all the mental illnesses since 1990 (Lozano et al., 2012). However, research has largely neglected to investigate cross-cultural effects on disordered eating, and thus, findings may only apply to Western samples. Only two known prior studies have investigated effects of social media on disordered eating cross-culturally. This research helps fill a substantial research gap by examining social media effects on body image concerns in a culturally diverse sample of Australian undergraduate women ($N=185$). The effect of a ten-minute Facebook exposure on women's body dissatisfaction and appearance comparison tendencies will be investigated, while considering a possible moderating effect of ethnicity. Utilizing a pre-/post-exposure pseudo-experimental design, it was predicted that Asian Australian participants ($n=92$) would experience a ten-minute Facebook exposure differently than European Australian participants ($n=93$). Regression analyses revealed that, in general, the brief Facebook exposure pseudo-experimentally increased body image concerns for the European Australians, but the Asian Australians remained seemingly unaffected. Interestingly, the groups significantly differed in the amount of appearance comparisons to different groups; i.e. the European Australians reported significantly more appearance comparisons made on Facebook to celebrities than the Asian Australians. These findings reinforce and extend the central tenets of the Tripartite Influence Model, and suggest necessary future directions for research on social media and disordered eating across diverse populations.

Keywords: Eating disorders, body dissatisfaction, body image, appearance comparisons, cross-cultural, diverse populations, Tripartite Influence Model, social media

Introduction

Mental illnesses are the leading cause of disabilities worldwide (Lozano, Naghavi, Foreman, Lim, Shibuya, Aboyán...Murray, 2012). From the 2010 Global Burden of Disease study, the global burden of disease from eating disorders alone has increased by 65% since 1990, demonstrating the most extreme rise in global disability out of all the mental disorders (Lozano et al., 2012). Within the mental health professional community an existing bias assumes that eating disorders are illnesses associated with wealth, therefore, research has mostly investigated Western trends and has largely failed to investigate eating disorder symptoms across cultures. However, disordered eating has been reported to be on the rise across all populations and cultures studied over the past ten years (Pike, 2017).

Disordered eating is characterized by body image disturbance, pathological eating behaviors, and dangerous attempts to control body shape and/or weight (American Psychiatric Association, 2013). The *Diagnostic and Statistical Manual of Mental Disorders* (5th ed.; *DSM-5*; American Psychiatric Association) is the most widely accepted assessment tool used by clinicians and researchers to classify mental illnesses, with eating and feeding disorders representing an entire chapter. The guidelines set forth in this chapter help clinicians diagnose individuals with a categorical eating disorder (i.e. anorexia nervosa, binge eating disorder, bulimia nervosa), and then clinicians take into account the individual's spectrum of symptomology (body dissatisfaction, compensation behaviors, etc) to allow for discrete treatment plans. Importantly, symptoms of disordered eating, such as body dissatisfaction and appearance comparison behaviors, are common in the general population and are of considerable clinical concern as they are pre-cursors

to developing an eating disorder (Quick & Byrd-Bredbenner, 2013; Wade, Bergin, Tiggemann, Bulik & Fairburn, 2006). Further investigation of preventative interventions targeting pre-cursors to disordered eating is an important next step for research (Quick & Byrd-Bredbenner, 2013; Wade, Bergin, Tiggemann).

However, in terms of defining these characteristics of disordered eating, assumptions of Western ubiquity—or the idea that Western factors are the root cause of disordered eating and transcend cultures—have pervaded nosology and research. ‘Westernization’ assumes that increasing exposure to and interaction with the West results in the rise of eating disorders in non-Western places (Pike, Hoek, & Dunne, 2014). The theory of ‘Westernization’ as it relates to eating disorders has been generally accepted until recently. Most previous research on disordered eating has thus been conducted on Western, educated, industrialized, rich, and democratized (WEIRD) young women. Because of this, diagnostic criteria and the general understanding of the presentations of eating disorders may only be applicable to individuals living in WEIRD places.

Only recently has the scope of eating disorder research begun to expand to question whether cultural factors affect presentations of these disorders (Pike, 2017). Unfortunately, psychiatric nosology to this day remains Euro-centric and does not accurately capture disordered eating pathology in non-Western societies (Gordon, 2004; Pike & Borovoy, 2004). In contemporary cultural definitions, the ‘West’ includes Europe as well as countries founded on European colonization with substantial European ancestral populations, located mostly in Europe, the Americas, and Oceania (Toynbee, 1966). Indeed, there is still much investigation necessary to uncover *global trends* of a

pathology that is always fluctuating due to varying social and cultural factors. For instance, body dissatisfaction in women is a key symptom of, and pre-cursor to disordered eating, and initiatives to improve research on cross-cultural presentations of disordered eating could observe what triggers body dissatisfaction across different cultural contexts.

Body Dissatisfaction in Women

Body image has been defined as the perceptions, thoughts, and feelings about one's body (Grogan, 2008). Negative body image, or body dissatisfaction, occurs when the perception of the body is undesirable, and the individual perceives a discrepancy between their idealized body and their actual body (Cash & Szymanski, 1995; Grogan, 2008). While males also demonstrate body dissatisfaction, research in both the U.S. and Australia has demonstrated that women face higher levels of body dissatisfaction and eating pathology than their male equivalents (Ata, Ludden, & Lally, 2007; Tiggemann, 2005). Body dissatisfaction is generally attributed to women's inability to emulate unrealistic sociocultural pressures to be thin, particularly elicited from media that idealizes thin bodies despite extreme thinness being unobtainable for most women (Grabe, Ward, & Hyde, 2008). This body type has been termed the 'thin ideal,' and attempts to attain this body type is linked with body dissatisfaction and disordered eating outcomes (Ata, Thompson, & Small, 2013). Body dissatisfaction in women is so common that it has been considered a "normative discontent" for many years, a phrase used in a groundbreaking review of key risk factors for eating disorders (Rodin, Silberstein & Striegel-Moore, 1984).

Body dissatisfaction has been shown to develop as early as six years of age, and has been thought to affect maladaptive behavior across cultures, ages, income-levels, and body types (Holland & Tiggemann, 2016; Dohnt & Tiggemann, 2006; Grabe & Hyde, 2006). Body dissatisfaction can lead to negative health consequences both mentally and physically, and is implicated as a substantial risk factor for the development and maintenance of both clinical eating disorders (Stice, 2002; Stice, Marti, & Durant, 2011) and eating pathology in general community samples (Holmes, Fuller-Tyszkiewicz, Skouteris, & Broadbent, 2014). Thus, understanding what triggers body dissatisfaction may elucidate ways in which to prevent it, and subsequently ways to prevent disordered eating.

Social comparison theories. One facet of body dissatisfaction is the tendency to compare one's appearance to that of another's (van den Berg, Thompson, Obremski-Brandon, & Covert, 2002). A tendency for heightened appearance comparisons has been identified as a key risk factor for the development of disordered eating through many longitudinal studies (e.g., Rodgers, McLean, & Paxton, 2015; van den Berg, Thompson, Obremski-Brandon, & Covert, 2002). Leon Festinger's (1954) social comparison theory posited that, in general, individuals assess themselves in any area of perceived significance by comparing themselves to others in these areas. Body image researchers have elaborated on Festinger's (1954) social comparison theory for explaining the behavior of appearance comparisons. When Festinger's theory is applied to the domain of physical appearances, it is assumed that *upward* comparisons—against more subjectively attractive individuals—will elicit more negative consequences, due to the perceived unfavorable variance between the individual's appearance and the upward comparison

(Fardouly & Vartanian, 2016; Perloff, 2014). For example, if an individual views themselves as less attractive than a particular celebrity and compares their appearance to said celebrity, this act of appearance comparison is likely to result in elevated body dissatisfaction. Correspondingly, *downward* appearance comparisons against individuals subjectively judged to be less attractive should result in compensatory beneficial effects, due to a favorable discrepancy between appearances (Perloff, 2014; Walker, Thornton, De Choudhury, Teevan, Bulik, Levinson, Zerwas, 2015). Hence, upward appearance comparison behaviors are of particular interest to disordered eating research.

The proposed damaging effects of appearance comparisons are well established. Survey research has found that the tendency for appearance comparisons is associated with greater body image disturbance, body dissatisfaction, and disordered eating (e.g., Calogero, Davis, & Thompson, 2005; Carey, Donaghue, & Broderick, 2013; Fardouly, Diedrichs, Vartanian, & Halliwell, 2015; Moradi, Dirks, & Matteson, 2005; Myers & Crowther, 2009; Noll & Fredrickson, 1998; Rancourt, Schaefer, Bosson, & Thompson, 2016). Experimental procedures have demonstrated increased negative mood, disordered eating cognitions, body shame, appearance-related anxiety, and decreases in self-esteem following exposures to the thin-ideal (e.g., Blechert, Nickert, Caffier, & Tuschen-Caffier, 2009; Harper & Tiggemann, 2008; Legenbauer, Ruhl, & Vocks, 2008; Lindner, Hughes, & Fahy, 2008). Consequently, the act of appearance comparisons may reinforce negative body image concerns and provide incentive for thin ideal attainment through disordered eating behaviors.

Hence, individuals with pre-existing eating pathology, or trait disordered eating behaviors, may be especially vulnerable to appearance comparisons. These individuals

may be especially at-risk for negative impacts of appearance comparisons because they have internalized the thin ideal and strive for it (Cooper & Fairburn, 2011), and may have cognitive biases that encourage attention to appearance-related stimuli (Thompson & Stice, 2001). The term ‘trait’ refers to any measure that observes an individual’s habitual, or pre-existing levels of a specific variable, and classification of high trait disordered eating is determined when individuals score highly for disordered eating (on any number of scales but specifically the EAT-26), with or without a clinical diagnosis. Accordingly, the act of appearance comparisons may emphasize body image concerns and escalate disordered eating behaviors in women with high trait disordered eating. For example, one study found a significant correlation between appearance comparisons and restrictive eating, but only for women with high trait disordered eating (Leahey et al., 2011). In other words, appearance comparison behaviors were directly related to disordered eating symptoms, but only for women demonstrating existing disordered eating tendencies.

In contrast, Fittsimmons-Craft, Ciao, and Accurso (2016) found in an undergraduate sample that appearance comparisons did not predict increased disordered eating behaviors. However, these null effects may have been due to the operationalization of appearance comparisons, as the authors observed the frequency of comparisons, not the direction of comparisons, as a predictor. As discussed previously, there is a lack of evidence that downward-directed appearance comparisons affect body image (e.g., Leahey & Crowther, 2008; Leahey et al., 2011; Leahey et al., 2007; Myers et al., 2012), and hence, the results may have been muddled by failure to separate downward comparisons from upward comparisons.

Recent social comparison theories have investigated what may be triggers of appearance comparison behavior in women, including the largely influential and heavily researched Tripartite Influence Model (Thompson, Coover, & Stormer, 1999). This model suggests that three primary influencing factors (*parents, peers, and media*) form the basis for the development of body image concerns and disordered eating. A crucial hypothesis of the model suggests that those with existing high rates of upward appearance comparison tendencies may experience worsened disordered eating outcomes, in comparison to those with low rates of appearance comparison tendencies. Recently, researchers investigating the model have suggested that sociocultural influences may provide a direct path to disordered eating outcomes (Keery, van den Berg, & Thompson, 2004). A comprehensive review Tripartite model was recently conducted to determine the role of the media factor. Compiled findings were complicated, preliminary, and inconclusive: the authors suggest that currently, *media* may be considered as a variable risk for disordered eating, that, with future research, may be confirmed as a causal risk (Levine & Murnen, 2009).

Media: Sources of Body Dissatisfaction

Sociocultural hypotheses posit that media (television, websites, magazines, etc.) positions thin, idealistic bodies as the most desirable (Thompson et al., 1999; Tiggemann, 2013). The media encourages women to attain bodies exemplifying these ideals, and associates these body types with the attainment of success and happiness (Becker, 2004). Despite the fact that achieving the thin ideal is largely impossible for the majority of women, this portrayal encourages appearance comparisons in women that result in body dissatisfaction (Ata, Thompson, & Small, 2013; Keery, Van Den Berg, & Thompson,

2004; Tiggemann, 2002; Stice, 1994). Decades of research have shown that female bodies are routinely subjected to judgment based on their appearances (Stice, 1994). Fredrickson and Roberts' (1997) objectification theory posits that the sexual objectification of the female body in Westernized societies acculturates women to develop a third-person perspective of their bodies as objects to be looked at. This objectification often becomes internalized and can lead to habitual body scrutiny. This phenomenon is termed 'self-objectification' (Loughnan et al., 2015), and can lead to negative psychological consequences that are key risk factors for disordered eating, such as body shame, body dissatisfaction, thin-ideal internalization, and anxiety (Dakanalis et al., 2015; Tiggemann, 2013; Vandebosch & Eggermont, 2012; Tylka & Hill, 2004). Despite encouraging self-objectification, there remains little understanding of *what* makes media images such a compelling model for women, specifically for individuals who are at high-risk for disordered eating and likely more susceptible to media influences (Becker & Hamburg, 1996).

Social factors are largely attributed as the culprit of body dissatisfaction, with traditional mass media often implicated as the most pervasive influence (e.g., Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999; Tiggemann, 2011). Emerging literature has begun to focus on the usage of social media and effects on women's body satisfaction and disordered eating. To date, both positive and negative outcomes are implicated (Holland & Tiggemann, 2016). For instance, social media usage has been related to greater social connectedness and increased subjective well-being (Kim & Lee, 2011; Valkenberg & Peter, 2009). However, social media usage has also been linked to an increased drive for thinness, increased internalization of the thin-ideal, increased self-

objectification, and more appearance comparison tendencies than non-users (Tiggemann & Slater, 2013; Meier & Gray, 2014). Thus, with the recent growth of social media, future research in this direction is necessary to uncover if social media has as similar effect to traditional media on body image.

Social media. Social media platforms on the Internet have been growing in popularity exponentially. Since January 2017 (just over one year), the global increase in social media usage is already 13%. Currently, 42% of the world are active social media users (Kemp, 2018). Social media allows for individuals to create profiles to share publicly or privately with friends. Facebook is currently the most popular social networking site, with over 3.196 billion users worldwide (Kemp, 2018). Correlational studies have explored the possibility of a link between social media usage and disordered eating, with reports of more time spent on social media associated with increased levels of body surveillance, drive for thinness, appearance comparisons, and body dissatisfaction among women (Tiggemann & Miller, 2010; Tiggemann & Slater, 2014; Fardouly & Vartanian, 2014). In a sample of 11,000 New Zealanders, comparisons between Facebook users and non-users suggested that merely having a Facebook profile is associated with more body dissatisfaction, even across gender and age (Stronge, Greaves, Milojev, West-Newman, Barlow, Sibley, 2015).

Moreover, the number of friends one has on their Facebook has been investigated for its plausible relation to women's psychological health, and has been shown to be a key factor influencing body image (Kim & Chock, 2015; Slater & Tiggemann, 2015; Tiggemann & Slater, 2013). For example, in a recent two-year prospective investigation by Tiggemann and Slater (2017), the number of Facebook friends predicted the observed

increase in drive for thinness, and internalization of the thin ideal predicted the observed increase in number of Facebook friends. Thus, more Facebook friends initially predicted an increased drive for thinness two years later, and a high internalization of the thin-ideal initially predicted more Facebook behavior two years later (assuming more friends on Facebook indicates more usage). Indeed, Facebook's relation to body image may then be two-fold: Facebook usage seems to influence internalization of the thin ideal, and internalization of the thin-ideal seems to encourage Facebook use. Similarly, the overall amount of time spent with social media may alone induce body image concerns. In two longitudinal studies, conducted by De Vries and colleagues, more frequent social media usage (a Dutch version) predicted higher body dissatisfaction eighteen months later. The authors concluded that social media use is temporally antecedent to body image concerns, consistent with a proposed causal role of social networking site usage in relation to body image disturbance (De Vries, Peter, de Graaf, & Nikken, 2016). However, research has yet to implement longitudinal experimental designs, and thus, claims of causality must be regarded as preliminary. Investigation into the factors of social media platforms that may encourage body image concerns might elucidate possible practical intervention strategies for reducing the negative impacts of social media usage.

Appearance-based media. Hence, tracking the individual's personal usage on social media has been of particular interest for disordered eating research. Social media usage encourages active usage over passive consumption (Holland & Tiggemann, 2016). For example, Facebook will often notify a user to actively participate on the site, with prompts such as "It's been a while since you updated your profile picture. Choose a recent photo of yourself so people can find you easily" (<http://www.facebook.com>).

Instagram is a social networking site that is based solely on photo and appearance content, and it is now twice the size of Twitter (700 million active accounts; Constine, 2017). While Facebook still majorly dominates social networking site usage, over the past two years, Instagram has doubled its user base and is continuing to grow.

Importantly, eighty percent of Instagram users are outside the U.S., with Brazil holding the company's second-leading market, suggesting that the rise of appearance-based social media may be a global phenomenon (Constine, 2017). Studies investigating these appearance-based platforms have found that frequency of Instagram usage is related to physical appearance anxiety, body dissatisfaction, drive for thinness, and depressive symptoms (Hendrickse, Arpan, Clayton, & Ridgway, 2017; Sherlock & Wagstaff, 2018).

Consequently, some studies have investigated whether specifically the appearance-based aspect of social media may be the factor influencing body dissatisfaction in women. Drawing on social comparison theory, one recent study found that a simple exposure to social media did not relate to negative body image concerns; however, the study found that online 'social grooming', or *active* social networking usage, was significantly related to drive for thinness (Kim & Chock, 2015). Social networking is distinct from passive traditional media consumption (television, magazines, etc.)—social media is an interactive process that allows for individuals to improve their reputation and social status through online social grooming (Kim & Chock, 2015), suggesting that the way in which one uses social media (active grooming vs. passive consumption) may be of particular interest for disordered eating outcomes. Another study examined Facebook activity components individually, and researchers found that overall time spent on Facebook was unrelated to body image concerns (Meier & Gray, 2014), as overall time

spent may not entirely capture the ways in which social media is used. The authors found that more sharing and posting of photos led to greater endorsement of appearance-based self worth and the thin ideal. Additionally, viewing others' photos was related to higher weight dissatisfaction, drive for thinness, thin-idealization, and self-objectification (Meier & Gray, 2014). Hence, the appearance-based activities that individuals engage with while on social media are of particular interest for eliciting body image concerns in women.

Individuals at high-risk. Research has investigated if women with high trait appearance comparison tendencies on social media may be especially vulnerable to body image concerns. A recent experimental exposure found that individuals who used Facebook for ten minutes (vs. a control website), reported an increased negative affect after exposure, but women who were high in trait appearance comparison tendencies reported significantly more body image discrepancies (Fardouly et al., 2015).

In recent research, appearance comparisons have been broken into *whom* the individual experiences the most comparisons with: family members, close friends, distant peers, and celebrities. In one study, researchers found that upward comparisons with close friends, distant peers, and celebrities predicted the relationship between time spent on Facebook and body image disturbance (Fardouly & Vartanian, 2014). The authors concluded that women who spend more time on Facebook might feel more concerned about their bodies because they experience more appearance comparisons (especially to their peers) on Facebook. One recent study observed through an Ecological Momentary Assessment the effect of appearance comparisons in women's everyday lives (Fardouly, Pinkus, & Vartanian, 2017). The authors found that upward appearance comparisons made on social media—in comparison to in person—resulted in the most negative

outcomes on almost all measures. Thus, in reference to the Tripartite Influence Model, future research is necessary to expose whether social media outweighs peers, traditional media, and parents for their impact on body image disturbances in women.

Cultural Relativism and Disordered Eating

To date, there is very limited evidence regarding body image issues elicited from media in women cross-culturally, or in diverse populations. Assumptions in research have largely been made that eating disorders occur throughout European societies, and countries that have “been strongly exposed to and have actively absorbed Western cultural influences” (Gordon, 2000, p. 79). However, with the rapid spread of media throughout non-Western areas of the world (initially thought to be immune to disordered eating), researchers have begun to identify cultural differences in the presentations of disordered eating. In many societies where increased incidences of eating disorders have recently been investigated, key symptoms described in the psychiatric criteria of eating disorders are absent. For instance, a key symptom of anorexia nervosa is ‘*fat phobia*’, but this symptom has not been reported in women with the disorder in Singapore, Japan, Hong Kong, Korea, China, and India (Gordon, 2000), most likely due to the general lack of obesity in those cultures. Thus, the criteria of disordered eating dictated by Western nosology are Euro-centric, and do not capture presentations of the disorders across non-Western societies (Lee, Chiu, & Chen, 1989; Pike & Borovoy, 2004). In a 2004 review of the presentations of disordered eating in Japan, Kathleen Pike and Amy Borovoy describe how disordered eating may merely represent a characteristic reaction to adolescent psychological distress, and this distress does not follow similar courses across cultures. These authors suggest that to study eating disorders without a discussion of culture is

metaphorically analogous “to watching actors on a stage with no set design” (Pike and Borovoy, 2004, p.494).

Context is imperative to understanding eating disorders in a specific time and place, as triggers of disordered eating are always in-flux due to ever-changing social and cultural influences. In the context of social media usage and body image, there have only been two cross-cultural studies conducted thus far (Lee, Lee, Choi, Kim, & Han, 2014; Lee, Taniguchi, Modica, & Park, 2013), both of which compare students attending a Korean university to students attending a Hawaiian university. The first study evaluated why individuals use social networking, and found similar body image concerns across both Korean and American participants (Lee, Lee, Choi, Kim, & Han, 2014). In the other study, the authors found only Korean participants—and not American subjects—experienced lower body satisfaction after exposure to pictures of underweight peers on Facebook compared to overweight peers (Lee, Taniguchi, Modica, & Park, 2013). However, the only stimuli used were photographs of Asian women and thus, as supported by social comparison theory (Festinger, 1954; Miller, Turnbull, & McFarland, 1988), the Korean participants were more likely to experience appearance comparisons. In reference to representations of women in media, however, the Korean students experienced body image concerns from images of women representing their ethnic identity. This suggests that the Korean students’ own cultural media—non-Western media—strongly influenced body image disturbances in participants. This finding prods further critique of the assumption that Western media is the culprit of the rise of disordered eating in non-Western places.

Cultural case studies. In broader reference to the global spread of media, there exists extremely limited research investigating how media exposure impacts women of diverse cultural backgrounds in their construction of identity. Due to medias' omnipresence from youth to adulthood in Western societies, methodologies have been limited in investigating causal effects of media imagery on women in these places (Becker, 2004). A pioneering quasi-experimental study observed the impact of the introduction of television (1995-1998) on Fijian schoolgirls' body satisfaction and disordered eating attitudes (Becker, Burwell, Gilman, Herzog, & Hamburg, 2002). Given the extremely low prevalence of disordered eating (only one case reported prior), and that the majority of traditional cultural norms encourage hearty appetites and body shapes in the Fijian population, this cohort was of specific interest to determine if the introduction of Western television had an effect on women's body dissatisfaction.

The study demonstrated a marked increase in disordered eating attitudes and behaviors among these schoolgirls, with most female students indicating that television had influenced their attitudes about weight and body shape (Becker, Burwell, Gilman, Herzog, & Hamburg, 2002). The lead investigator of the Fiji study posited that the juxtaposition of the portrayal of wealth and attainment on television and the materially impoverished Fijians provided a link between the deceptive promise of economic success and the idealization of a thin body (Becker, 2004). In other words, media positions a thin female body as the most ideal, and this idealized body is tied to the success and happiness depicted in television characters (Becker, 2004). This naturalistic research was extremely innovative, with dramatic implications for the scholarly field. On the other hand, these

findings also reinforced many assumptions: one being that Western media was causing the increase in body disturbances in non-Western places.

Even before Becker's groundbreaking investigation, the assumption had been made that Western influences are the source of the increased rate of eating disorders in non-Western cultures. To investigate this, Pike and Borovoy (2004) conducted an analytic review of eating disorders in Japan and the underlying contexts in which the disorders present uniquely in this non-Western, socioeconomically stable sample. The researchers emphasize that the processes of increased consumerism do not follow the same courses in every culture and lead to different societal consequences. For instance, one key cultural difference that may have a direct influence on disordered eating habits—and in specific reference to contemporary Japanese media—is the emphasis on a 'culture of cuteness' (*kawwii bunka*) for women. The researchers posit that this cultural ideal pressures women to conform to a similarly unrealistic body type, but in this case one that is either childlike and/or maternal (Pike & Borovoy, 2004). Similar to Western conceptions of the aetiology of eating disorders, women internalize this objectification as a way to disrupt traditional Japanese gender roles. Some researchers have argued that the transcendence of gender roles in Japanese media (e.g. the portrayal of young, homosexual boys in comic books most often consumed by young women) may allow women to identify with characters possessing desirable traits of both sexes, including thin bodies (Buckley 1994; Suzuki 1998). In summary, both of these cultural case studies (Fiji and Japan) highlight that further investigation is necessary to uncover global trends of media's impact on women's body image concerns.

From a recent comprehensive review of global cultural trends and eating disorders, researchers posit that the rise of eating disorders worldwide is due to processes of ‘cultures in transition’ (Pike, Hoek, & Dunne, 2014). Economic developmental processes including industrialization and urbanization drive societal changes in the context of the global market. As individuals move into cities—lifestyles change, including less activity and an ease of access to non-nutritional foods. Specifically in reference to global media, cultures experiencing these transitions may also experience shifting gender roles and ideals of beauty caused by globalization. Kathleen Pike and colleagues defend that this globalization is not evidence of ‘Westernization’, but rather, evidence of ‘industrialization, urbanization, and modernization’ in cultures in transition. They argue that Western influences do not overtake local culture, but rather Western influences may fuse with individual cultures, “producing a unique hybrid that cannot be adequately accounted for simply by ‘Westernization’” (Pike et al., 2014). The rise of disordered eating is linked to processes of globalization: as Western foods high in fat and sugar infiltrate markets and increase incidences of obesity, so in tandem do disordered eating incidences rise (Pike et al., 2014).

However, the presentations of these disorders may differ clinically across cultures, and suggest that further research is necessary to uncover global trends of disordered eating and refine psychiatric nosology for non-WEIRD societies, and diverse populations. For example, from a study conducted in China, Chinese women reported they were more likely to receive pressure from, comparisons with, and preferences for the physical appearances in Chinese/Asian media than in Western media (Jackson, Jiang, & Chen, 2016). This suggests that the participant’s own cultural media—non-Western

media—more strongly influenced body image disturbances in participants. Effectively, as most previous research has been conducted on WEIRD populations, findings regarding triggers of body image concerns (i.e. Western media images) may not extend to non-WEIRD populations. As suggested by Katzman and Lee (1997), a further investigation of how individual cultures attribute social meaning to disordered eating will offer clarity for various paths of aetiology, and will serve to avoid Euro-centric interpretations and misattributions.

Eluding ‘acculturation’ effects. Regarding diverse ethnicities in Western societies, studies have attempted to observe the individual’s ‘degree of acculturation’ and effects on disordered eating. It has been posited that persons of different racial groups in Western societies “internalize Caucasian norms of thinness as the ideal” (Pate, Pumariega, Hester, Garner, 1992), termed ‘acculturation’. Some studies have demonstrated a strong acculturation effect for eating disorders in different ethnic groups in Western places (Ball & Kenardy, 2002; Schooler & Lowry, 2011), suggesting that the longer an individual spends in Western culture, the more likely they are to internalize Western values of thinness. However, many studies have found the degree of acculturation to be unrelated to patterns of disordered eating (e.g. Akan & Grilo, 1995; Button, Reveley, & Palmer, 1998; Furnham & Patel, 1994; Hill & Bhatti, 1995). In Australian and U.S. samples, ethnicity in general has been found to be unrelated to proportions of body dissatisfaction and disordered eating (Wang, Byrne, Kenardy, & Hills, 2005; Van Den Berg, Mond, Eisenberg, Ackard, & Neumark-Sztainer, 2010; White & Warren, 2013). Thus, research on acculturation effects is largely inconclusive.

As suggested by Lester (2004), acculturation effects may be unconvincing due to culture existing outside the realm of anything bound or linear. The definition of acculturation assumes a measure of low to high, and is indicated by nominal items such as generation and/or time spent in country, language use, clothing preference, and so forth (Lester, 2004). However, classifying individuals based on these categorical items does not account for the complex and multidimensional development of culture and the individual. Hence, ‘acculturation effects’ may be a poor proxy for understanding the construction of self for individuals of diverse identities.

‘Culture clash’ or ‘double consciousness.’ Debates on cultural relativism in regards to disordered eating nosology are common as of late, as studies have accumulated to suggest that eating disorders are shaped by psycho-social *and* cultural phenomena. From a 2014 study conducted in the United States, researchers found significant ethnic variations in body image and predictors of eating pathology in Asian American versus European American women (Chang, Yu, & Kahle, 2014). The authors suggest that Asian Americans have to actively balance a cultural combination of their Eastern heritage with the daily demands of Westernized culture, as has been supported by previous research investigating the idea of a ‘culture clash’ (McCourt & Waller, 1996; Gordon, 2000). A ‘culture clash’ is an experience assumed of any individual with a cultural heritage that does not match—or is not representative of—the individual’s cultural setting. In reference to this phenomenon, W.E.B. Du Bois—an American sociologist, historian, civil rights activist, Pan-Africanist, and author—coined the term ‘double-consciousness’ in his 1897 paper titled “Strivings of the Negro People”. This term referred to the experience of

a marginalized individual in society, specifically African American men, who experience a sense of two-ness:

Two warring ideals in one dark body...longing to attain self-conscious manhood, to merge his double self into a better and truer self. In this merging he wishes neither of the older selves to be lost. He does not wish to Africanize America, for America has too much to teach the world and Africa; he does not wish to bleach his Negro blood in a flood of white Americanism, for he believes—foolishly, perhaps, but fervently—that Negro blood has yet a message for the world. (Du Bois, 1897)

Thus, ‘double consciousness’ or the idea of a ‘culture clash’ is not a new phenomenon. Some form of a ‘double consciousness’ is likely applicable to any person living in a cultural setting that does not match their cultural heritage, or any person with more than one cultural heritage. In terms of the development of the self, or an individual’s self-presentation, individuals who experience double consciousness may have differing life experiences to those who do not experience double consciousness. As Du Bois highlights, a double consciousness suggests an individual has unique insight for the world in comparison to those who do not experience this ‘culture clash’, and this double-sided insight has social and psychological implications. For instance, those who experience double consciousness in a Western setting may experience interactions on social media differently than those who do not experience double consciousness. In this study, double consciousness is considered for women of Asian heritage living in Australia—a Western setting. Specifically of interest is to determine how social media may impact body image

concerns uniquely for women who experience double consciousness, in comparison to those who do not.

The Current Study

From these previous analyses it becomes clear that research investigating body image concerns elicited from social media in ethnically diverse women is lacking. Effects of Facebook and other social media platforms implicate social media as a predictor of body image concerns in women (Fardouly & Vartanian, 2015; Meier & Gray, 2014). However, previous research has largely neglected to investigate links between body image and media cross-culturally, and the two studies that have done so have yielded inconclusive findings (Lee, Lee, Choi, Kim, & Han, 2014; Lee, Taniguchi, Modica, & Park, 2013), .

In light of these limited and inconsistent prior findings, the present study sought to help fill a substantial research gap in regards to social media and body dissatisfaction by using a culturally diverse sample (comprised of Asian Australian and European Australian women). Furthermore, the effect of Facebook on women's body dissatisfaction and upward appearance-comparison tendencies was evaluated to further explore the role of social media on body image concerns. Considering the scarce applicability of attempting to define an individual's 'degree of acculturation', this study only observed self-reported ethnic identity for the basis of understanding ethnic variation for individuals living in a Western place.

Consistent with social comparison theories including the Tripartite Influence Model, it was predicted that Facebook would pseudo-experimentally increase body dissatisfaction from pre-exposure to post-exposure for the entire sample, and ethnicity

would moderate this relationship. It was hypothesized that pre-exposure body dissatisfaction would predict 1) post-exposure body dissatisfaction and 2) the amount of appearance comparisons made during the Facebook exposure (combined term: *post-exposure body image concerns*). The amount of appearance comparisons made on Facebook was measured post-exposure with a scale from 0-100 and the prompt, “Indicate the level of body comparison behaviour you engaged in while on Facebook”. The amount of upward appearance comparison behavior measured pre-exposure was hypothesized to predict post-exposure body image concerns. Trait levels of disordered eating (measured by the EAT-26) were hypothesized to predict post-exposure body image concerns. Lastly, internalization of the thin ideal was hypothesized to predict post-exposure body image concerns. Furthermore, ethnicity was expected to moderate the effect of all the above predictors.

Finally, as it was predicted that the two ethnicity groups would experience the Facebook exposure differently, it was predicted that this might be due to different activities engaged with during the exposure. This prediction was based on previous research demonstrating that engaging with more photo-based activities on social media leads to exacerbated body image concerns (Meier & Gray, 2014).

Methods

Participants

Female participants were recruited from the University of Melbourne. The sample was a group of 185 undergraduate women, aged 18-32 ($M = 19.08$, $SD = 1.70$), who received course credit for participation. This research was approved by the University of

Melbourne's Human Research Ethics Community (Appendix B), and data was collected at the University of Melbourne during the 2016-2017 academic year. This current project utilized only the baseline data of a larger study that was conducted for Ms. Brianna Hollis' PhD thesis. This larger study included an Ecological Momentary Assessment (EMA), to understand the ecological effects of social media on women's body satisfaction. For the purpose of the current research, just the baseline data was analyzed, which included: pre-exposure questionnaires, a ten-minute Facebook exposure, and post-exposure questionnaires. Hence, the study did not include a control group, and the design was pre-determined before the current research project commenced.

The baseline included a self-report for ethnic/cultural identity, with a range of descriptors: Caucasian or European, African Australian (Aus.) or Black, Eastern Asian Aus., Southern Asian Aus., Western Asia Aus., Indigenous Australian, Southeast Asian Aus., or Other (specify). The individuals who selected 'Other' ($n = 9$) were then placed into one of the above groups (Appendix A). The sample obtained was 47.1% ($n = 92$) Asian and Asian Australian (collapsed across the four Asian subgroups), and 49.7% ($n = 93$) European and European Australian. These two groups will from now on be referred to solely as "Asian Australian" and "European Australian", and will be analyzed as such for the ethnicity moderator.

Materials

Pre-exposure measures.

Demographic characteristics. Participants recorded their age, height, weight, ethnic/cultural background, main language spoken at home, marital status, education and employment status (Appendix E).

Pre-exposure body dissatisfaction. Participants were asked “How satisfied are you with your appearance right now?” on a scale from 0 (*Completely dissatisfied*) to 10 (*Completely satisfied*). This item was reverse scored to aid interpretation, such that higher scores indicated higher body dissatisfaction (Appendix E). This measure was adapted from the Body Image States Scale (Cash et al., 2002). This question was repeated post-exposure for easy interpretation of change in body dissatisfaction from pre- to post-exposure.

Pre-exposure appearance comparison tendencies. Participants were asked to indicate the level of body comparison behavior they normally engage in on Facebook, where 0=*no body comparisons* and 100=*constantly making body comparisons* (Appendix E). Higher scores indicated higher frequency of appearance comparison behavior. Additionally, participants were asked to indicate the direction of their appearance comparison behavior, with the prompt: “Do you think that compared to other individuals on Facebook you look:” Responses were rated on a 5-point Likert scale from 1 (*much worse*) to 5 (*much better*). Only those who reported a 1 (*much worse*) and a 2 (*worse*) were included in analyses, as engaging in upward appearance comparisons are particularly of interest for body dissatisfaction and disordered eating behaviors (Fardouly & Vartanian, 2016; Perloff, 2014).

Facebook Appearance Comparison Scale. Additionally, the Facebook Appearance Comparison Scale (Fardouly & Vartanian, 2015; Appendix E) was implemented. Participants reported whom they most often compare themselves to by responding to the prompt: “When looking at the Facebook photos of the following groups of people, how often do you compare your body to theirs?” The groups comprised four

separate items, and were described as close friends (defined as “friends on Facebook who you regularly hang out with”), Facebook friends (defined as “friends on Facebook who you do not regularly hang out with”), friends of friends (defined as “people you know but are not friends with on Facebook and do not hang out”), and celebrities. Responses were on a 5-point Likert scale from 1 (*never*) to 5 (*always*). Participants were then asked, “When comparing your body to each of the following on Facebook, how do you rate yourself?” and the four comparison groups were again repeated with individual items. Responses were on a 5-point Likert scale from 1 (*much worse*) to 5 (*much better*).

Trait disordered eating. The Eating Attitudes Test-26 (Eat-26, Appendix F) comprises 26 items about eating attitudes and behaviors rated on 6-point Likert scale from 1 (*Never*) to 5 (*Always*) (Garner, Olmsted, Bohr, & Garfinkel, 1982). Higher scores on the EAT-26 indicate greater levels of eating pathology, with scores of 20 or above indicating a high level of risk for problematic eating behavior. In the current study only the total EAT-26 score was used. Good internal consistency ($\alpha = .83-.90$), and test–retest reliability ($r = .84$) have been demonstrated in samples of young women for this total EAT-26 scale (Carter & Moss, 1984; Garner et al., 1982). The scale has good internal consistency and construct validity in female samples (Koslowky et al., 1992; Mintz & O’Halloran, 2000). In this study, Cronbach’s alpha was .84, demonstrating a high correlation between items in this sample.

Thin-Ideal Internalization. Participants completed the Thin-ideal internalization scale (Fuller-Tyszkiewicz et al., 2012; Appendix E), an 8-item scale determining the level of internalization of the thin ideal, with items such as “A thin body is an ideal body shape” and responses from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Two items were

reverse coded. A total score was summed, such that higher scores indicated more internalization of the thin ideal.

Post-exposure measures.

Appearance comparisons on Facebook. The participants responded on a scale from 0 (*no body comparisons*) to 100 (*constant body comparisons*) to the prompt: “Indicate the level of body comparison behaviour you engaged in while on Facebook” (Appendix E).

Facebook activities. As appearance-based activities on Facebook and other social media platforms has been shown to contribute to body image concerns (Meier & Gray, 2014), this study included an 11-item questionnaire after the Facebook exposure evaluating what each individual did while on Facebook. Participants were asked “What activities did you undertake on Facebook during the last 10 minutes?” There were 11 items that included many broad options for possible Facebook activities, such as: use Facebook chat, play games, send/receive private messages, etc. The items of importance for this research were the following appearance-based activities: view friends’ photos that they have added, tag myself in a friends’ photo, and untag myself in a friends’ photo. These three items were summed for a single “photo-based activity” subscale.

Procedure

All participants from the original study were included in the following analyses. Participants signed up for a time slot for an experiment on “Facebook and body dissatisfaction”. The induction was completed in a computer lab in the psychology building at the University of Melbourne. During the induction, participants read a plain language statement (Appendix C), provided informed consent (Appendix D), and then

completed the questionnaires and Facebook exposure in Qualtrics, an online survey format (Appendix E). The survey first asked demographic questions, and continued with three pre-exposure survey blocks, the ten-minute Facebook exposure, and the post-exposure questionnaire.

The first block of the survey included the following: the Facebook Appearance Comparison Scale (Fardouly & Vartanian, 2015). The second block included the body dissatisfaction scale (Fuller-Tyszkiewicz et al., 2012), the Thin-ideal Internalization scale (Fuller-Tyszkiewicz et al., 2012), and self-report scales on mood and personality. The third block consisted of the EAT-26 (Appendix F), which was administered prior to the ten-minute Facebook exposure. After completing the three blocks, the survey prompted the participants to go onto their personal Facebook page, while keeping an eye to the 10-minute countdown presented on their survey screen. After the ten-minute exposure, participants resumed the survey. For the final block, participants reported what activities they engaged with while on Facebook, self-reported mood, and the amount of appearance comparisons they enacted during the exposure. After completing the study, all participants were sent a debrief form (Appendix G). The lead investigator of the original study, Professor Isabel Krug, notified and sent resources to individuals who scored highly for disordered eating (Appendix H).

Results

Baseline Measures

EAT-26. Analyses of the baseline characteristics suggested that of the entire sample, 32 participants (17%) experienced trait disordered eating attitudes and behaviors, as measured by those scoring a 20 or higher on the EAT-26 (Garner, Olmsted, Bohr, &

Garfinkel, 1982). Of these 32 participants scoring highly for trait disordered eating, half were Asian Australian and half were European Australian, with 16 people in each group respectively. Ethnicity was not a significant predictor of disordered eating for the whole sample, $t(163)=-.62$, $p=.30$, such that European Australian participants ($M=11.63$, $SD=8.57$) did not differ from Asian Australian participants ($M=12.55$, $SD=10.30$) for the prevalence or degree of disordered eating.

Pre-exposure body dissatisfaction and internalization of the thin-ideal. The groups did not differ on their pre-exposure body dissatisfaction $t(185)=.43$, $p=.67$, with the European Australians scoring very similarly ($M=4.56$, $SD=1.82$) to the Asian Australians ($M=4.45$, $SD=1.77$). For the degree of thin-ideal internalization, the European Australians ($M=25.02$, $SD=4.44$) did not differ from the Asian Australians ($M=24.38$, $SD=4.19$), $t(179)=1.00$, $p=.32$. This suggests that, at baseline, the amount of body dissatisfaction and the degree to which the thin ideal was internalized was similar across groups.

Rate and Direction of Appearance Comparisons. The groups significantly differed on their reported rate of appearance comparisons pre-exposure, $t(181)=1.96$, $p=.052$, such that the European Australians reported significantly more appearance-comparison tendencies overall ($M=53.05$, $SD=23.63$) than did the Asian Australians ($M=45.82$, $SD=26.30$). An independent samples t-test indicated that for those who engaged mostly in upward appearance comparisons (considered themselves less attractive than others), the Asian Australians ($n=41$; $M=56.07$, $SD=26.10$) did not significantly differ from the European Australians ($n=39$; $M=59.74$, $SD=25.17$), $t(78)=.64$, $p=.52$.

Main Analyses

Change in Body Dissatisfaction. To test the hypothesis that there would be an increase in body dissatisfaction from pre-Facebook exposure to post-exposure, change in body dissatisfaction was explored with respect to the sample as a whole, and between ethnicity. A two (pre-exposure body dissatisfaction/post-exposure body dissatisfaction) by two (ethnicity: European Aus./Asian Aus.) repeated measures mixed model ANOVA was utilized. There was no significant main effect of pre-exposure body dissatisfaction ($M=4.50$, $SD=1.79$) and post-exposure body dissatisfaction ($M=4.44$, $SD=1.88$), $F(1,183)=.41$, $p=.53$, partial $\eta^2=.002$, suggesting that the whole sample did not experience a significant increase in body dissatisfaction from pre- to post-exposure. Additionally, there was no main effect of ethnicity $F(1,183)=2.04$, $p=.16$, with European Australians ($M=4.48$, $SD=1.79$) scoring similarly to Asian Australians ($M=4.32$, $SD=1.65$) for body dissatisfaction in general. However, the interaction between pre- and post-exposure body dissatisfaction and ethnicity was significant $F(1,183) = 5.65$, $p<.02$, partial $\eta^2=.03$, indicating that when split into two by ethnicity the groups experienced a change in body dissatisfaction significantly differently, with a moderate effect size (Figure 1). For the Asian Australians, the level of body dissatisfaction actually went down from pre- ($M=4.45$, $SD=1.77$) to post-exposure ($M=4.18$, $SD=1.77$). For the European Australians, the level of body dissatisfaction rose from pre- ($M=4.56$, $SD=1.82$) to post-exposure ($M=4.75$, $SD=1.93$).

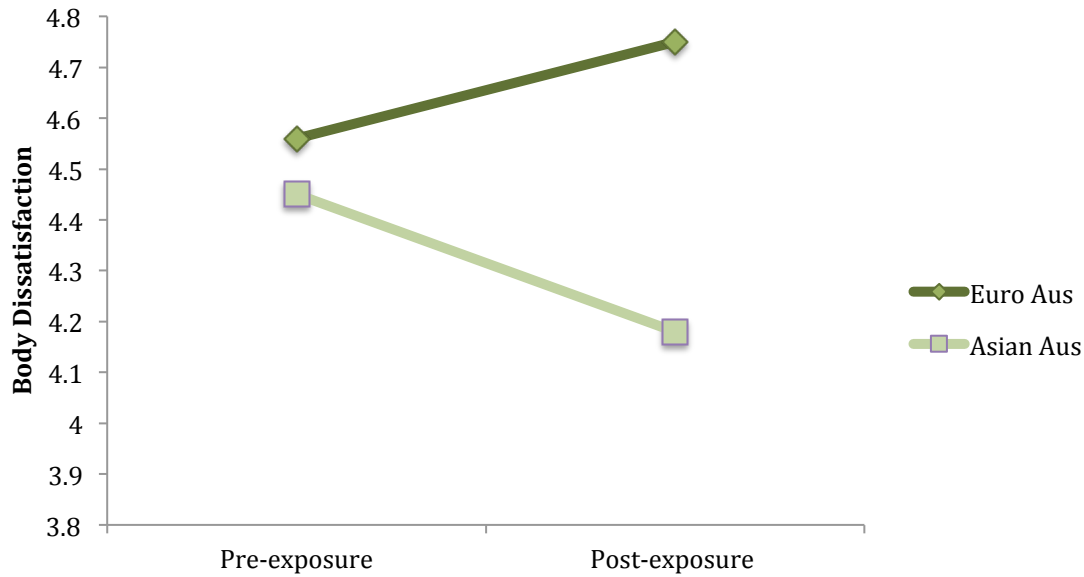


Figure 1. Change in body dissatisfaction from pre-exposure to post-exposure.

Pre-exposure body dissatisfaction and ethnicity predict post-exposure body dissatisfaction. To test the hypothesis that pre-exposure body dissatisfaction would predict post-exposure body dissatisfaction after the Facebook exposure, and more specifically whether ethnicity moderates the relationship between body dissatisfaction and the Facebook exposure, a linear regression analysis was conducted. In the first block, two independent variables were included: pre-exposure body dissatisfaction and ethnicity. Pre-exposure body dissatisfaction significantly predicted post-exposure body dissatisfaction, $\beta = 1.41$, $t(182) = 4.09$, $p < .001$, and accounted for a significant amount of variance in post-exposure body dissatisfaction, $R^2 = .635$, $F(2, 182) = 158.54$, $p < .001$ (Table 1a). This moderately high R^2 value demonstrates that knowing the amount of pre-exposure body dissatisfaction allows for an accurate estimate of post-exposure body dissatisfaction.

To avoid potentially problematic high multicollinearity (which occurs when variables may be highly correlated to each other), the variables were centered and an interaction term between ethnicity and pre-exposure body dissatisfaction was created. This interaction term was added to the regression model, which approached significance for accounting for variance in post-exposure body dissatisfaction than did just ethnicity and pre-exposure body dissatisfaction by themselves, $\Delta R^2 = .008$, $\Delta F(1, 181) = 3.81$, $p = .052$, $\beta = -.24$ (Table 1a.). The positive change in the R^2 value suggests that including ethnicity as a moderator better predicted post-exposure body dissatisfaction by about ~1%, indicating that there is a very small moderation effect of ethnicity on post-exposure body dissatisfaction. The interaction term indicated a moderately significant interaction between ethnicity and pre-exposure body dissatisfaction, suggesting that the relationship between pre- to post-exposure body dissatisfaction was greater for European Australians than for Asian Australians. As shown in Figure 1, the Asian Australians actually tended to decrease in body dissatisfaction from pre- to post-exposure, while the European Australians tended to increase as expected.

Pre-exposure body dissatisfaction and ethnicity predict level of appearance comparisons on Facebook. Regression analyses were run to test the hypothesis that pre-exposure body dissatisfaction would predict the level of appearance comparisons on Facebook, and to test the question of whether ethnicity moderates the relationship between body dissatisfaction and level of appearance comparisons on Facebook. Pre-exposure body dissatisfaction alone accounted for a significant amount of variance in the post-exposure level of appearance comparisons, $R^2 = .083$, $F(2, 165) = 7.43$, $p < .001$,

and significantly predicted post-exposure level of appearance comparisons, $\beta = 25.08$, $t(165) = 3.01$, $p = .003$ (Table 1b.).

An interaction term between ethnicity and pre-exposure body dissatisfaction was added to the regression model, but did not account for more variance in the level of appearance comparisons on Facebook, $\Delta R^2 = .01$, $\Delta F(1, 164) = 5.58$, $p = .18$, $\beta = -3.06$, suggesting ethnicity did not moderate the relationship between pre-exposure body dissatisfaction and the level of appearance comparisons on Facebook (Table 1b.). Two separate basic models were run for Asian Australians ($\beta = .17$, $p = .12$) and European Australians ($\beta = .38$, $p < .001$) respectively, suggesting a main effect of ethnicity. The separate analyses by ethnicity indicated that the relationship between pre-exposure body dissatisfaction and the level of appearance comparisons on Facebook was significantly positive for European Australians, but this was non-significant for Asian Australians.

Table 1

Linear regressions on pre-exposure body dissatisfaction and ethnicity.

		a.			b.		
		Post-BD			Post-AC		
Predictor		β	t	p	β	t	p
Model 1	Pre-BD	1.41	4.09	<.001**	25.08	3.01	.003*
	Ethnicity	-.568	-2.08	.039*	-3.78	-.902	.36
Model 2	Pre-BD x Ethnicity	-.249	-1.95	.052 ⁺	-3.06	-1.35	.180

Note. Two separate linear regressions with pre-exposure body dissatisfaction and ethnicity predicting (a.) post-exposure body dissatisfaction (Post-BD) and (b.) post-exposure amount of appearance comparisons (Post-AC) entered as the dependent variable, respectively. Model 2 represents the addition of the interaction term between centered pre-exposure body dissatisfaction and ethnicity. $p^+ = .052$. Significance tested at $p < .05^*$ and $p < .001^{**}$ to control Type I error rate.

Pre-exposure appearance comparisons and ethnicity predict post-exposure body dissatisfaction. Linear regression was performed to test the hypothesis that the direction

and rate of appearance comparisons would predict post-exposure body dissatisfaction after the Facebook exposure, and more specifically whether ethnicity moderates the relationship. Prior to analyses, individuals who reported engaging mostly in downward appearance comparisons, or considering themselves more attractive than others, were excluded in order to only observe those who engage regularly with upward appearance comparisons. As reported prior, the Asian Australians ($n=41$; $M=56.07$, $SD=26.10$) did not significantly differ from the European Australians ($n=39$; $M=59.74$, $SD=25.17$) in the rate of upward appearance comparisons. In the first model, the amount of pre-exposure appearance comparisons accounted for a significant amount of variance in post-exposure body dissatisfaction, $R^2 = .06$, $F(1, 77) = 5.09$, $p < .001$, and significantly predicted post-exposure body dissatisfaction, $\beta = 4.73$, $t(77) = 8.78$, $p < .001$ (Table 2a.).

An interaction term between ethnicity and the level of pre-exposure appearance comparisons significantly accounted for more of the variance in post-exposure body dissatisfaction, $\Delta R^2 = .146$, $\Delta F(3, 75) = 6.58$, $p < .001$, and better predicted post-exposure body dissatisfaction, $\beta = 0.30$, $t(77) = 2.05$, $p = .043$ (Table 2a.). The positive change in the R^2 value suggests that including ethnicity as a moderator better predicted post-exposure body dissatisfaction by about ~15%, suggesting that the two ethnicity groups differentially experienced pre-exposure appearance comparison behavior, the Facebook exposure, and effects on body dissatisfaction. For the European Australians, the amount of pre-exposure appearance comparisons was positively correlated with post-exposure body dissatisfaction, $r(92) = .39$, $p < .001$. However, the level of pre-exposure amount of appearance comparisons was unrelated to post-exposure body dissatisfaction for Asian Australians, $r(89) = .13$, $p = .22$.

Pre-exposure appearance comparisons and ethnicity predict level of appearance comparisons on Facebook. Regression analyses were performed to test the hypothesis that pre-exposure appearance comparisons would predict the level of appearance comparisons made on Facebook, and if ethnicity moderated the relationship between the Facebook exposure and appearance comparison behavior. Prior to analyses, those engaging in mostly downward appearance comparisons were excluded. In the first block, pre-exposure appearance comparison level accounted for a significant amount of variance in the post-exposure level of appearance comparisons, $R^2 = .24$, $F(1, 72) = 23.34$, $p < .001$, and predicted the level of appearance comparisons, $\beta = 44.16$, $t(72) = 15.70$, $p < .001$ (Table 2b.).

An interaction term between ethnicity and pre-exposure appearance comparison level was added to Model 2, but did not account for more variance in the level of appearance comparisons on Facebook, $\Delta R^2 = .001$, $\Delta F(1, 71) = .051$, $p = .82$, $\beta = .11$ (Table 2b.). Thus, including ethnicity as a moderator did not better predict the level of appearance comparisons on Facebook. Two separate basic models were run for Asian Australians ($\beta = 43.56$, $p < .001$) and European Australians ($\beta = 44.79$, $p < .001$) respectively, suggesting that for both groups, pre-exposure level of appearance comparisons positively predicted level of appearance comparisons on Facebook.

Table 2

Linear regressions on pre-exposure appearance comparison behavior and ethnicity.

		a. Post-BD			b. Post-AC		
Predictor		β	t	p	β	t	p
Model 1	Pre-AC	4.73	8.78	<.001**	44.17	15.70	<.001**
	Ethnicity	-.568	-2.08	.039*	-3.78	-.902	.36
Model 2	Pre-AC x	.301	2.06	.04*	.112	1.05	.822
	Ethnicity						

Note. Two separate linear regressions with pre-exposure appearance comparison behavior and ethnicity predicting (a.) post-exposure body dissatisfaction (Post-BD) and (b.) post-exposure amount of appearance comparisons (Post-AC) entered as the dependent variable, respectively. Model 2 represents the addition of the interaction term between centered pre-exposure appearance comparison behavior and ethnicity. *Significance tested at $p < .05$ * and $p < .001$ ** to control Type I error rate.

Trait disordered eating and ethnicity predict post-exposure body dissatisfaction.

To test the hypothesis that high trait disordered eating would predict body dissatisfaction after the Facebook exposure, and that ethnicity would moderate the relationship, linear regression analyses were conducted. Prior to analyses, individuals who scored less than a score of 20 on the EAT-26 were excluded, in order to only observe those who had high trait disordered eating. As mentioned prior, each group included 16 participants scoring highly for disordered eating. In the first block, high trait disordered eating accounted for a significant amount of variance in post-exposure body dissatisfaction, $R^2 = .46$, $F(2, 28) = 3.90$, $p = 0.03$, and significantly predicted post-exposure body dissatisfaction, $\beta = 6.72$, $t(176) = 12.21$, $p < .001$.

An interaction term between ethnicity and high trait disordered eating was added to the regression model, which did not significantly account for proportion of the variance in post-exposure body dissatisfaction, $\Delta R^2 = .000$, $\Delta F(1, 27) = .017$, $p = .08$, and did not better predict post-exposure body dissatisfaction, $\beta = 6.75$, $t(27) = 11.63$, $p = .89$.

The lack of change in the R^2 value suggests that including ethnicity as a moderator did not better predict post-exposure body dissatisfaction, suggesting that those with high trait disordered eating did not experience the Facebook exposure differently by ethnicity.

Linear regression was then performed across EAT-26 scores, indicating that the level of trait disordered eating significantly accounted for the amount of variance in post-exposure body dissatisfaction, $R^2 = .12$, $F(2, 160) = 10.70$, $p < .001$, and predicted post-exposure body dissatisfaction, $\beta = 4.08$, $t(160) = 15.16$, $p < .001$ (Table 3a.). An interaction term between ethnicity and trait disordered eating was added to the regression model, and accounted for more variance in post-exposure body dissatisfaction, $\Delta R^2 = .05$, $\Delta F(1, 159) = 9.40$, $p = .003$, and better predicted post-exposure body dissatisfaction, $\beta = -.092$, $t(159) = -3.06$, $p < .001$ (Table 3a.). For the European Australians, the level of trait disordered eating strongly predicted post-exposure body dissatisfaction, $r(82) = .502$, $p < .001$. However, for the Asian Australians, the level of trait disordered eating was unrelated to post-exposure body dissatisfaction, $r(81) = .130$, $p = .25$.

Trait disordered eating and ethnicity predict level of appearance comparisons on Facebook. Linear regression analyses were conducted to test the hypothesis that high trait disordered eating would predict the level of appearance comparisons on Facebook, and whether ethnicity moderates the relationship between trait disordered eating and the Facebook exposure. Prior to analyses, individuals who scored less than a score of 20 on the EAT-26 were excluded, in order to only observe those who had high trait disordered eating. In the first block, high trait disordered eating and ethnicity did not account for the amount of variance in the level of appearance comparisons on Facebook, $R^2 = .19$, $F(2, 24) = 2.79$, $p = .081$, $\beta = 69.88$. An interaction term between ethnicity and trait

disordered eating was added to the regression model, which did not significantly account for the proportion of variance in the level of appearance comparisons on Facebook, $\Delta R^2 = .095$, $\Delta F(1, 23) = .011$, $p = .57$, $\beta = 69.34$. This suggested those with high trait disordered eating did not differ by ethnicity for the level of appearance comparisons on Facebook.

Linear regression was performed across EAT-26 scores, and the level of trait disordered eating accounted for a significant amount of variance in the level of appearance comparisons on Facebook, $R^2 = .35$, $F(2, 146) = 10.415$, $p < .001$, and predicted the level of appearance comparisons, $\beta = 69.88$, $t(146) = 8.11$, $p < .001$ (Table 3b.). An interaction term between ethnicity and trait disordered eating was added to the regression model, and significantly accounted for more variance in the level of appearance comparisons on Facebook, $\Delta R^2 = .026$, $\Delta F(1, 145) = 4.50$, $p = .036$, and better predicted the level of appearance comparisons on Facebook, $\beta = -.96$, $t(145) = -2.12$, $p = .036$ (Table 3b.). Trait disordered eating was only moderately related to the level of appearance comparisons on Facebook for Asian Australians, $r(74) = .22$, $p = .054$. This relationship was much stronger for the European Australians, suggesting the level of trait disordered eating strongly predicted level of appearance comparisons on Facebook, $r(75) = .48$, $p < .001$.

Table 3

Linear regressions on trait disordered eating and ethnicity.

	Predictor	a. Post-BD			b. Post-AC		
		β	t	p	β	t	p
Model 1	EAT-26 (total)	4.08	15.16	<.001**	69.88	8.12	<.001**
	Ethnicity	-.568	-2.08	.039*	-3.78	-.902	.36
Model 2	EAT-26 (total)	-.029	-3.06	<.001**	-.96	-2.12	.036*
	x Ethnicity						

Note. Two separate linear regressions with trait disordered eating and ethnicity predicting (a.) post-exposure body dissatisfaction (Post-BD) and (b.) post-exposure amount of appearance comparisons (Post-AC) entered as the dependent variable, respectively. Model 2 represents the addition of the interaction term between centered trait disordered eating and ethnicity. *Significance tested at $p < .05$ * and $p < .001$ ** to control Type I error rate.

Thin-ideal internalization and ethnicity predict post-exposure body

dissatisfaction. Linear regression was performed to test the hypothesis that

internalization of the thin ideal would predict post-exposure body dissatisfaction after the Facebook exposure, and if ethnicity would moderate the relationship. In the first block, thin-ideal internalization and ethnicity accounted for a significant amount of variance in post-exposure body dissatisfaction, $R^2 = .118$, $F(2, 176) = 11.82$, $p < .001$, and significantly predicted post-exposure body dissatisfaction, $\beta = 4.73$, $t(176) = 25.27$, $p < .001$ (Table 4a.).

An interaction term between ethnicity and thin-ideal internalization was added to the regression model, which accounted for a significant proportion of variance in post-exposure body dissatisfaction, $\Delta R^2 = .004$, $\Delta F(1, 175) = 8.13$, $p < .001$, but did not better predict post-exposure body dissatisfaction, $\beta = 0.06$, $t(175) = .88$, $p = .37$ (Table 4a.). The small change in the R^2 value suggests that including ethnicity as a moderator better explained post-exposure body dissatisfaction, suggesting that the two ethnicity groups differentially experienced internalization of the thin-ideal, the Facebook exposure, and

effects on body dissatisfaction, but likely to a very small degree. The lack of significance for the change in β -value suggests that the change in R-squared was likely too small of an effect for the interaction term to better predict post-exposure body dissatisfaction.

Thin-Ideal Internalization and ethnicity predict level of appearance

comparisons on Facebook. Regression analyses were conducted to test the hypothesis that internalization of the thin ideal would predict the level of appearance comparisons on Facebook, and whether ethnicity moderates the relationship between internalization of the thin ideal and the Facebook exposure. In the first block, thin-ideal internalization accounted for a significant amount of variance in the level of appearance comparisons on Facebook, $R^2 = .074$, $F(2, 161) = 6.42$, $p = .002$, and predicted the level of appearance comparisons on Facebook, $\beta = 40.01$, $t(161) = 13.95$, $p < .001$ (Table 4b.).

An interaction term between ethnicity and thin-ideal internalization was added to the regression model, but did not account for more variance in the level of appearance comparisons on Facebook, $\Delta R^2 = .013$, $\Delta F(1, 160) = 2.28$, $p = .133$, $\beta = -1.46$, $t(175) = -.15$, $p = .13$ (Table 4b.). These results suggest that including ethnicity as a moderator did not better predict the level of appearance comparisons on Facebook, suggesting that the two ethnicity groups experienced internalization of the thin-ideal, the Facebook exposure, and levels of appearance comparisons on Facebook similarly.

Table 4

Linear regressions on internalization of the thin ideal and ethnicity.

		a. Post-BD			b. Post-AC		
Predictor		β	t	p	β	t	p
Model 1	Thin-Ideal	4.73	25.27	<.001**	40.02	13.95	<.001**
	Ethnicity	-.568	-2.08	.039*	-3.78	-.902	.36
Model 2	Thin-Ideal x Ethnicity	.063	.886	.377	-1.46	-.156	.133

Note. Two separate linear regressions with internalization of the thin ideal and ethnicity predicting (a.) post-exposure body dissatisfaction (Post-BD) and (b.) post-exposure amount of appearance comparisons (Post-AC) entered as the dependent variable, respectively. Model 2 represents the addition of the interaction term between centered internalization of the thin ideal and ethnicity. *Significance tested at $p < .05$ * and $p < .001$ ** to control Type I error rate.

Engagement with photo-based activities on Facebook. From items assessed post-exposure, analyses were conducted to determine if the European Australians ($M=.77$, $SD=.42$) reported engaging with significantly more photo-based activities than the Asian Australians ($M=.77$, $SD=.50$) during the Facebook exposure. Notably, the range of scores was 0-3, indicating that individuals mostly reported engaging with only one of the three items. An independent sample t-test indicated there were no differences between groups, $t(182) = .073$, $p=.14$.

Types and directions of appearance comparison behavior. Participants were asked to complete the Facebook appearance comparison scale (Fardouly, & Vartanian, 2015). Prior to the exposure, they reported to whom they most often compare themselves to and how they rate themselves in regards to each group listed. Results from an independent samples t-test indicated that the Asian Australians ($M=2.71$, $SD=.99$) and European Australians ($M=2.90$, $SD=1.02$) reported similar amounts of appearance comparisons with close friends on Facebook, $t(183) = 1.30$, $p=.19$ (Table 5). However,

the groups were significantly different for comparisons with Facebook friends $t(183) = 3.61, p < .001$, friends of friends $t(183) = 2.47, p = .01$, and celebrities $t(183) = 2.37, p = .019$; in all instances the Asian Australians reported significantly lower amounts of appearance comparisons with these groups (Table 5). The participants reported in which direction they compared themselves to each group, with the two groups rating their appearances as similarly attractive to Facebook friends, friends of friends, and celebrities. However, the Asian Australians ($M = 2.77, SD = .74$) reported a higher attractiveness rating of themselves compared to their close friends, than did the European Australians ($M = 2.99, SD = .74$). This finding was moderately significant $t(183) = -1.99, p = .048$.

Table 5

t-test results comparing Asian Australians and European Australians on type and direction of appearance comparisons made on Facebook.

	Asian Aus.		European Aus.		<i>t</i> -test
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
Type:					
Close friends	2.71	.99	2.90	1.02	.130
Facebook Friends	2.89	1.05	3.40	.87	<.001**
Friends of friends	2.75	1.11	3.15	1.09	.014*
Celebrities	2.69	1.16	3.11	1.25	.019*
Direction:					
Close friends	2.99	.74	2.77	.74	.048*
Facebook Friends	2.70	.77	2.73	.74	.793
Friends of friends	2.69	.75	2.59	.79	.372
Celebrities	1.88	.88	1.77	.68	.344

Note. *M*= Mean. *SD*= Standard Deviation. Type (how often to whom) rated from 1 (*never*) to 5 (*always*). Direction (how do you rate yourself in comparison) rated from 1 (*much worse*) to 5 (*much better*). *Significance tested at $p < .05$ * and $p < .001$ ** to control Type I error rate.

Discussion

This project was an examination of the effect of a ten-minute Facebook exposure on women's body dissatisfaction and appearance comparison tendencies, observing ethnicity as a possible moderator in a culturally diverse sample of Australian undergraduate women. These findings should contribute to the substantial gap in regards to how social media impacts women of diverse backgrounds. Analyses revealed that pre-exposure body dissatisfaction, appearance comparison behavior, internalization of the thin ideal, and trait disordered eating were predictive of post-exposure body dissatisfaction and appearance comparisons on Facebook. This finding demonstrates that Facebook had the expected effect of increasing women's body image concerns from pre- to post-exposure. In support of the hypotheses, ethnicity was found to moderate the influence of pre-exposure body dissatisfaction, pre-exposure appearance comparisons, and trait disordered eating on post-exposure body image concerns. Interestingly, the two groups (Asian Australian and European Australian) significantly differed in the amount of appearance comparisons on Facebook to different groups: i.e. the European Australians reported significantly more comparisons to celebrities than the Asian Australians. The contributions of these findings to the existing empirical base and to theory are discussed below.

The Effect of Pre-Exposure Body Dissatisfaction on Post-Exposure Body Image Concerns

Results demonstrated that ethnicity significantly moderated the effect of pre-exposure body dissatisfaction on post-exposure body dissatisfaction. Interestingly, the Asian Australians actually experienced a decrease in body dissatisfaction from pre- to

post-exposure, while the European Australians experienced the expected rise in body dissatisfaction from pre- to post-exposure. In brief, the groups experienced the Facebook exposure and subsequent change in body dissatisfaction differently.

Additionally, results indicated a main effect of ethnicity on the relationship between pre-exposure body dissatisfaction and the amount of upward appearance comparisons made on Facebook. For the European Australians, as expected, the amount of body dissatisfaction pre-exposure predicted the amount of appearance comparisons made on Facebook, indicating that higher pre-existing body dissatisfaction encouraged appearance comparison behavior on Facebook. In contrast, the level of body dissatisfaction pre-exposure was not predictive of the amount of appearance comparisons made on Facebook for the Asian Australians.

To date, very few studies have been conducted on social media and disordered eating across cultures, and diverse populations. It is possible that the Asian Australians used the ten-minute Facebook exposure differently than the European Australians, resulting in the different psychological consequences from their exposure. As appearance-based activities on Facebook and other social media platforms has been shown to contribute to body image concerns (Meier & Gray, 2014), this study asked participants what they did during the Facebook exposure. Only three items were particularly appearance-based, and the amount of reported photo-based activity between groups was similar. However, only three individuals reported 1) tagging or 2) untagging themselves in photos, so the majority of analyses were based on those who responded that they looked at friends' photos. It may be that the ten-minute exposure was not long enough for an individual to begin actively curating their profile, and thus, less focus was

paid to the individual's appearance and more to others' appearances, which may have different consequences for body image concerns. Alternatively, it may be that the three items used did not capture all activities on Facebook that are appearance-based, or possibly social grooming, behaviors. It is possible that any sort of active interaction with the site (posting publicly, commenting/liking public posts, etc.) may induce appearance-based stressors, as previous studies have shown that social grooming on social media is related to drive for thinness (Kim & Chock, 2015).

The Effect of Pre-Exposure Appearance Comparisons on Post-Exposure Body Image Concerns

Consistent with literature that has demonstrated the impact of upward appearance comparisons on mood states, body image, and thoughts of exercising and dieting (Fitzsimmons-Craft et al., 2015; Leahey & Crowther, 2008; Leahey et al., 2011; Leahey et al., 2007; Myers et al., 2012; Ridolfi et al., 2011), present findings indicated that the level of pre-exposure upward appearance comparisons was predictive of post-exposure body image concerns. Ethnicity was a significant moderator of the relationship between pre-exposure appearance comparisons and post-exposure body image concerns. Analyses indicated that the relationship between pre-exposure upward appearance comparisons and post-exposure body dissatisfaction was significantly positive for European Australians, but this relationship was not significant for the Asian Australians. Thus, results again suggest that the ten-minute Facebook exposure increased body image concerns for the European Australians, but the Asian Australian's body image remained seemingly unaffected.

Previous research on social media found that upward appearance comparisons

with close peers on Facebook especially predicted the relationship between time spent on Facebook and body image disturbance (Fardouly & Vartanian, 2014). Results from the current study indicated that the Asian Australians and European Australians reported similar amounts of appearance comparisons on Facebook with their close friends. However, the European Australians reported significantly more comparisons on Facebook to their Facebook friends, friends of friends, and celebrities. In other words, the Asian Australians reported significantly less overall appearance comparisons on Facebook, except for to their 'close friends'. When rating their level of attractiveness in comparison to these groups, the Asian Australians rated themselves as significantly more attractive (at around the same level of attractiveness to their close friends) than the European Australians did (slightly lower in attractiveness compared to their close friends).

Thus, extending to social comparison theories discussed earlier (Festinger, 1954; Miller et al., 1988), it is possible that the Asian Australians may experience less comparisons with celebrities if the assumption is made that Western media is mostly comprised of women of European descent. This is supported by recent research. As mentioned prior, from a study conducted in China, Chinese women ($N=456$) reported feeling more perceived pressure from, comparisons with, and preferences for physical appearance depictions in Chinese Asian media than Western media (Jackson, Jiang, & Chen, 2016). This finding underscores the possibility that body image concerns elicited from media may be culturally bound. However, in reference to the current research project, this is speculative. Further research is necessary to uncover trends of women who experience double consciousness, or a 'culture clash' of cultural setting and cultural

heritage. Research in this direction will help determine why women who experience double consciousness may experience social media and appearance comparison behavior differently than women who do not experience double consciousness. Regardless, these findings highlight that social media and appearance comparisons may be experienced differently in diverse samples of women.

The Effect of Trait Disordered Eating on Post-Exposure Body Image Concerns

Ethnicity was found to moderate the influence of trait disordered eating on both post-exposure body dissatisfaction and appearance comparisons made on Facebook. The EAT-26 was the most robust measure used in this project, with 26 items evaluating the extent of trait disordered eating behaviors and attitudes for each individual. The groups were extremely similar in the amounts of disordered eating: with 16 participants demonstrating elevated trait disordered eating in each group respectively. However, when results were limited to only those with elevated trait disordered eating (scoring 20 or higher on EAT-26), ethnicity became a non-significant moderator to post-exposure body dissatisfaction and the amount of appearance comparisons made on Facebook. This suggests that across individuals presenting with elevated trait disordered eating, the Facebook exposure was experienced similarly regardless of ethnicity.

The significant effect of trait disordered eating on post-exposure body image concerns is consistent with prior evidence that pre-existing vulnerability can interact with objectifying or thin-idealising experiences to result in greater negative consequences for already at-risk women (Fitzsimmons-Craft et al., 2016; Leahey et al., 2011; Stice & Shaw, 2002; Tiggemann & Boundy, 2008). Hence, those with higher disordered eating behaviors and attitudes experienced the effect of Facebook on body dissatisfaction and

the amount of appearance comparisons to a worsened degree than those with less trait disordered eating. The significant ethnicity moderator demonstrated that the European Australians experienced this relationship: the amount of trait disordered eating was positively predictive of the amount of body dissatisfaction post-exposure and the amount of appearance comparisons made on Facebook. However, this relationship was non-significant for the Asian Australians.

This suggests that something may be missing from analyses that would explain why the Asian Australians, regardless of the level of trait disordered eating, did not experience the expected increase in body image concerns elicited from the Facebook exposure. Because those with pathological disordered eating symptoms experienced the Facebook exposure and subsequent body image issues similarly, it is unlikely that there is some unknown protective factor of ethnicity keeping the Asian Australians from experiencing the exposure similarly to the European Australians. It is more likely that those with disordered eating use their Facebook accounts similarly across ethnicity; but across the whole sample, the Asian Australians used the exposure differently than the European Australians. This is consistent with hypotheses that the groups would experience the Facebook exposure differently. In this sample, ethnicity moderated the impact of the individual's level of disordered eating on post-exposure body image concerns. While not necessarily pathological (necessitating a diagnosis), disordered eating symptoms including body dissatisfaction and upward appearance comparisons are of clinical concern as they are identified as pre-cursors to eating illnesses. Hence, these findings suggest that pre-cursors to disordered eating may be elicited from social media differently in diverse cultural contexts.

Limitations and Future Directions

This research is one of the first to question if women from diverse backgrounds experience social media and subsequent body image concerns differently; however, there were many limitations that this study could not address. First, this sample was comprised of university students and participants were recruited from specifically just the University of Melbourne, potentially limiting the sample to Western, educated, industrialized, rich, and democratic (WEIRD) young women, and undermining the generalizability of results. Additionally, while the sample was extremely convenient for the ethnicity moderator, it was randomly obtained and was not representative of the University of Melbourne's demographics, or the city of Melbourne's demographics (as the percentage of Asian Australians in these communities is below the ~50% obtained for this study). This may limit generalizability of the findings to Western student populations with a high amount of international students, as international students comprise 37% of all students at the University of Melbourne (UniMelb Annual Reports 2016).

Moreover, as this project only looked at self-reported ethnicity and cultural background, and thus, the participants' citizenship status is unknown. As mentioned prior, the groups actually consisted of Europeans, European Australians, Asians, and Asian Australians. In other words, the two groups may have included a wide range of nationalities. Likewise, in accordance with a study conducted in Hawaii, combining various ethnic groups under a single "Asian" category may obscure important group differences (Yates, Edman, & Aruguete, 2004). This research was limited in this regard as the four Asian subgroups were extremely unequally distributed (i.e. there were only

three individuals in the Western Asian Australian subgroup). Thus, future research should investigate differences within ethnic subgroups.

Because Facebook is an international platform with the most predominant users in Western settings (Constine, 2017), these results may extend to university women who experience double consciousness of Asian cultural heritage living in a Western cultural setting. However, as modes of media delivery and content continue to evolve, current findings may not apply to Western-located university women of the near future. Furthermore, there was no baseline data for reference on the extent to which individuals use social media across ethnicities. It may be that as more exposure to social media is associated with greater sensitivity to body image concerns (de Vries et al., 2016; Fardouly & Vartanian, 2014; Tiggemann & Slater, 2013), findings may be due to the European Australians merely using social media more than the Asian Australians. However, under these circumstances, this interpretation of the findings remains entirely speculative.

In regards to this possibility, one main limitation of this study was that it did not include a control group. Thus, the correlational design of the study prevented establishment of whether Facebook actually caused or heightened body image concerns. Because the study was designed prior to establishing the research questions for the current project, participants were not randomly selected to the Facebook exposure as there was no control group. Future studies should utilize a control group and randomization (i.e. control group: have participants go on a non-social, neutral website for ten minutes) to allow for causal interpretations of the findings.

Additionally, demand characteristics were possible as individuals self-selected

into a study on “social media and body dissatisfaction”. For example, it is possible that individuals desired to participate in the study in order to educate themselves on the amount of disordered eating behaviors they may exhibit. Also, the ten-minute exposure to Facebook limited findings. While this brief exposure still yielded significant results for the effects on body image concerns, a longer or repeated exposure would potentially provide a more detailed account of how individuals use social media in real world contexts. The use of social media was not ecologically assessed in this study, and the laboratory setting and design (pre-exposure body image concern measures and trait disordered eating measure) may have impacted body image and mood even before the exposure to Facebook. Thus, ecological momentary assessment data that tracks daily real-world usage of social media, may provide a more naturalistic picture of body image concerns and Facebook usage.

Insofar as the duration and setting of the Facebook exposure is crucial, observing only the number of appearance comparisons made during a set exposure may be a poor proxy for understanding appearance comparison behavior on Facebook. It is possible that two individuals could report the same number of comparisons but experience these comparisons for different durations, potentially leading to exacerbated or attenuated effects depending on the duration of the appearance comparison. Further testing should include questions on the durations of appearance comparisons to establish whether this factor impacts results. Additionally, research investigating appearance comparisons may potentially benefit from replicating the current findings in a clinical eating disorder population to see if effects generalize, and in males given that body image concerns have been found to be prevalent (but to a lesser degree) in males (Mitchison & Mond, 2015).

Also, it may be important to examine other potential moderators that could lessen or heighten the effect of appearance comparisons. Research suggests that the effects of appearance comparisons likely depend on a multitude of factors. For example, studies have found that the impact of appearance comparisons is moderated by contextual cues, such as the perceived attainability of the comparison target's appearance (Leahey & Crowther, 2008), and trait variables such as social physique anxiety (Fitzsimmons-Craft, Harney, Brownstone, Higgins, & Bardone-Cone, 2012), and negative affect and body shame (Colautti et al., 2011). Thus, future research should consider potential moderating factors of appearance comparisons and ways to mediate factors that may exacerbate effects of appearance comparisons.

Implications

This study's results hold theoretical, methodological, and clinical implications. Current findings reinforce and extend central tenets of the Tripartite Influence Model. Extending beyond media in general, this research confirms that social media may provide a basis for the development of body image concerns and disordered eating. Additionally, those with elevated levels of body dissatisfaction, appearance comparison behaviors, disordered eating symptoms, and internalization of the thin-ideal were especially vulnerable to the effect of Facebook on body image concerns, as has been shown in previous research (Slater & Tiggemann, 2015; Cooper & Fairburn, 2011; Thompson & Stice, 2001). This suggests that preventative interventions may be directed towards individuals who may be especially at-risk for body image concerns from social media usage. Interventions could attempt to educate women on the detrimental consequences that the act of appearance comparison may have on their eating behaviors and body

image, as well as encourage women to consciously decrease appearance comparison behaviors.

The possibility that appearance comparisons made on Facebook activate negative body image concerns may help with development of preventative strategies aimed to equip women to be more satisfied with their bodies (e.g. concentrate on how the body feels, not looks). These preventative strategies should help reduce the frequency of appearance comparisons and attenuate their impact for women. Furthermore, attempting to reduce appearance-comparison behaviors could be integrated into treatment for eating disorder sufferers (Tiggemann & Slater, 2015). Research has suggested that appearance comparisons made on social media, in contrast to in-person comparisons, may be especially detrimental for body image concerns (Fardouly, Pinkus, & Vartanian, 2017). Thus, findings should extend to, and influence, public health psycho-education concerning the potential negative impact of appearance comparison behaviors on social media.

Conclusion

As predicted, the Asian Australians experienced the ten-minute Facebook exposure differently than the European Australians. This prediction was supported by previous research, which suggested that the presentations of disordered eating differ within cultural contexts (Becker, 2004; Gordon, 2004; Pike et al., 2014). As there have only been two cross-cultural studies on social media and body image concerns, and very limited findings on this relationship in diverse populations, this project helps fill a substantial research gap in regards to how ethnically/culturally diverse women experience social media. The present findings specifically highlighted the concern of pre-cursors to

disordered eating as experienced differently across ethnicities. In comparison to the European Australians, for some unknown reason, the Asian Australians did not experience the expected increase in body image concerns elicited from the exposure, regardless of their level of pre-existing body image concerns. Further research should investigate when and where this difference emerges between groups, and what might trigger body image concerns across ethnicities. Additionally, as the two groups reported comparing themselves to celebrities and other groups on Facebook to differing degrees with differing psychological impacts, understanding why individuals compare their appearance to only certain groups may help explain why the experience of social media may differ across ethnicities.

The present findings highlight that aspects of social media elicit different psychological consequences for women of diverse backgrounds. Social media, as supported by this research and previous work (Tiggemann & Slater, 2013; Meier & Gray, 2014), has a considerable influence on symptoms of disordered eating and appearance comparison behaviors. Further research should attempt to elucidate social media's level of impact in regards to the other factors described in the Tripartite Influence Model. This project highlights the significance of ethnicity, or culturally diverse backgrounds, that plays a role in the relationship between social media and body image concerns in women. Thus, future research must consider ethnicity as a possible factor influencing body image concerns. As social media is on the rise globally, it is imperative to consider the factors of social media that might trigger body image concerns. In order to implement preventative strategies, and to refine psychiatric nosology to generalize to all populations, research must attempt to understand emerging global trends of disordered eating by considering

the varied presentations of these disorders across cultures and individuals of diverse backgrounds.

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Appendices

Appendix A. Defining self-reported “Other” ethnicity

For those who selected “Other” and offered a specification for self-reported ethnicity, individuals were placed into one of the following categories: Caucasian or European, African Australian (Aus.) or Black, Eastern Asian Aus., Southern Asian Aus., Western Asia Aus., Indigenous Australian, Southeast Asian Aus. Southern Asian Aus. included the countries: India, Pakistan, Bangladesh, Afghanistan, Nepal, Sri Lanka, Bhutan, and Maldives. Eastern Asian Aus. included the countries: China, Japan, South Korea, North Korea, Taiwan, Hong Kong, Mongolia, and Macao. Southeast Asian Aus. included the countries: Indonesia, Philippines, Vietnam, Thailand, Myanmar, Malaysia, Cambodia, Laos, Singapore, Timor-Leste, and Brunei Darussalam. Western Asian Aus. included the countries: Armenia, Bahrain, Iran, Iraq, Israel, Jordan, Kuwait, Lebanon, Oman, Qatar, Palestinian territories, Turkey, UAE, West Bank and Yemen (Maddison, 2003).

Appendix B. University of Melbourne Human Research Ethics; Approval

**THE UNIVERSITY OF MELBOURNE
HUMAN RESEARCH ETHICS COMMITTEE**

**APPLICATION SUMMARY FOR
APPROVAL OF HUMAN RESEARCH**



1. ADMINISTRATION DETAILS

ETHICS ID:	1646320.3		
TITLE:	The effect of Facebook use on body satisfaction and eating behaviours		
APPLICATION TYPE:	Project Application	RESPONSIBLE RESEARCHER:	KRUG, DR ISABEL
RESPONSIBLE HEAG:	Psychological Sciences	HESC:	Behavioural and Social Sciences
ADMINISTERING DEPARTMENT:	5120 - Melbourne School Of Psychological Sciences	ADMINISTERING CENTRE: (if applicable)	

2. REQUEST FOR AMENDMENT DETAILS

DATE OF SUBMISSION: 09-Jan-2017

1.1 Nature of and Reason for Amendment

The current study includes two components: 1.) Baseline data collection and 2.) Ecological Momentary Assessment (EMA) for 7 days. We would like to drop the EMA component for the study and only collect baseline data. In addition we would like to add a new researcher to the study, Miss Haley Brown. Given that the study will require less time to complete without the EMA component we will also change the reimbursement from 3 hours REP credits to 1 hour REP credit. Only REP data (no community data) will be used for the current study.

1.2 Impact on Documentation

Given that we will drop the EMA component and a new researcher (Miss Haley Brown) will be added to the study, there will need to be a few minor amendments to the PLS, consent, debrief and advertisement forms.

1.3 Possible Inconvenience or Risks to Participants

N/A

1.4 Actions to be taken by Researchers to Reduce Risks

N/A - these have already been outlined in the original application

1.5 Expected Date of Implementation of Amendment to Research

16-Jan-2017

1.6 Possible Affect on Funding Arrangements

N/A

1.7 Possible Implications for Compliance with Legislative Requirements

N/A

3. PROJECT DETAILS

PROJECT TYPE:	Supervised Student Research Project - Honours Staff Research Project
RESEARCH INVOLVES:	Locations other than/in addition to Uni of Melbourne

PROPOSED DURATION OF WHOLE RESEARCH PROJECT:

From: FEB-2016

To: DEC-2016

PROPOSED DATE TO COMMENCE DATA COLLECTION: 21-Feb-2016

4. PERSON DETAILS

Responsible Researcher

Name	Krug, Dr Isabel	Department	5120 - Melbourne School Of Psychological Sciences
Person Type	Staff	Centre	
Phone Number	Work telephone number not found in HR System	Email Address	isabel.krug@unimelb.edu.au
Qualifications	PhD, University of Barcelona		
Experience & Skills Relevant to the Project	Dr. Krug has conducted research for over 10 years, so is well informed on ethical procedures, risks and unexpected outcomes that may arise. Dr. Krug is currently supervising Honours, Masters-level and PhD research projects.		
Additional Training Required	None		
Ethics Training Already Undertaken	Dr. Krug has 10 years experience and hence has conducted many ethics applications.		

Student Researcher

Name	Brown, Miss Haley	Department	University of Melbourne
Person Type	External	Centre	
Phone Number		Email Address	hb3480@gmail.com/Alt:isabel.krug@unimelb.edu.au
Qualifications	Haley is currently undertaking an exchange year at the University of Melbourne. She is doing her undergraduate degree at Bard College in the United States.		
Experience & Skills Relevant to the Project	Haley has taken a subject on the Causes and Consequences of Eating Disorders upper-level Psychology course at her home institution, Bard College. Furthermore, Haley has conducted research before, and presented data on her research at a recent cognitive psychological conference. Haley will be involved in the data collection for the current study.		
Additional Training Required	N/A		
Ethics Training Already Undertaken	Haley has undertaken ethics training as part of her undergraduate course. She also recently completed a first aid course		
Student Supervisor(if applicable)	Isabel Krug		

Student Researcher

Name	Hollis, Brianna	Department	
Person Type	Student	Centre	
Phone Number	03 9772 3864	Email Address	b.hollis@student.unimelb.edu.au
Qualifications	Brianna has completed the requirements of a BSc with a major in Psychology		
Experience & Skills Relevant to the Project	Brianna has received ethics training as part of her undergraduate degree at the University of Melbourne		
Additional Training Required	None		
Ethics Training Already Undertaken	Brianna has received ethics training as part of her undergraduate degree		
Student Supervisor(if applicable)	Isabel Krug		

Co researcher

Name	Kiropoulos, Dr Litza	Department	5120 - Melbourne School Of Psychological Sciences
Person Type	Staff	Centre	

Phone Number	Work telephone number not found in HR System	Email Address	litzak@unimelb.edu.au
Qualifications	Bachelors Degree, University of Melbourne Bachelors Degree (Honours), Deakin University PhD, University of Melbourne Masters (Coursework & Research), Deakin University		
Experience & Skills Relevant to the Project	Dr. Kiropoulos has conducted research for over 10 years, so is well informed on ethical procedures, risks and unexpected outcomes that may arise. Dr. Kiropoulos is currently supervising Honours, Masters-level and PhD research projects.		
Additional Training Required	None		
Ethics Training Already Undertaken	Dr. Kiropoulos has more than 10 years experience and hence has conducted many ethics applications		

Co researcher

Name	Fuller-Tyszkiewicz, Dr Matthew	Department	Deakin University
Person Type	External	Centre	
Phone Number		Email Address	Matthew.fuller-tyszkiewicz@deakin.edu.au
Qualifications	A/Prof Fuller-Tyszkiewicz has a PhD from Deakin University. He currently supervises Honours, Master-level and Higher Degree by Research projects and working on other research collaborations with Deakin staff. A/Prof has conducted research for over 10 years, so is well informed on ethical procedures, risks and unexpected outcomes that may arise.		
Experience & Skills Relevant to the Project	A/Prof Fuller-Tyszkiewicz has completed his PhD and is currently supervising Honours, Master-level and Higher Degree by Research projects and working on other research collaborations with Deakin staff.		
Additional Training Required	NA		
Ethics Training Already Undertaken	A/Prof Fuller-Tyszkiewicz has more than 10 years experience and hence has conducted many ethics applications.		

5. ADDITIONAL QUESTIONS

5.1 Location of Research

Location Where Research Will Be Carried Out: University of Melbourne
 External sites within Australia
 Category of External Location: Public places

5.2 Other Approvals Required (other than ethics clearances)

Approvals Required: Not required

5.3 Other Ethic Clearances/Details of Multicentre Research

Other Clearances Required: Not required
 Responsible HREC:
 Comments:

6. ATTACHMENTS

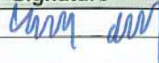
PLEASE ENSURE YOU ATTACH A PAPER COPY OF EACH OF THE FOLLOWING ATTACHMENTS:

Category	Description	Attached Via Themis	Hard Copy Only
Additional Module		Yes	No
Application		Yes	No

Category	Description	Attached Via Themis	Hard Copy Only
Miscellaneous	1646320.1_Approval.pdf	Yes	No
Miscellaneous	1646320.1_Response to HESC Review.pdf	Yes	No
Miscellaneous	1646320.2_Approval.pdf	Yes	No
Miscellaneous	The file contains a revised PLS, consent form, debrief and advertisement	Yes	No
Miscellaneous		Yes	No

7. SIGNATURE

RESPONSIBLE RESEARCHER

Name	Signature	Date
Dr Isabel Krug		09/01/2017

HEAG/DEPARTMENT USE ONLY

Please tick ONE of the following:

The HEAG/Head of Department recommends the amendment for approval by the HESC.	
The HEAG approves this amendment as the project was previously approved as a minimal risk project or as a project within a program and the amendment presents no additional risks.	

Comments / provisos:

HEAG CHAIR

Name of HEAG Chair	Signature	Date
Dr Simon Laham		

[Note: If the HEAG Chair is also a researcher involved in this project, the Request for Amendment should be signed by another authorised member of the HEAG. If the Department does not have access to a HEAG the Request for Amendment should be signed by the Head of Department]

Appendix C: Plain Language Statement

**Melbourne School of Psychological Sciences
Faculty of Medicine, Dentistry and Health Sciences
The University of Melbourne
PLAIN LANGUAGE STATEMENT**

Project title: The effect of Facebook use on body satisfaction and eating behaviours

Contact details of researchers:

**Dr. Isabel Krug (Senior Lecturer and Supervisor – The University of Melbourne)
(Principal Researcher)**

E-mail: isabel.krug@unimelb.edu.au

Ph: (03) 9035 8551

Dr. Litza Kiropoulos (Senior Lecturer and Co-Supervisor – The University of Melbourne)

E-mail: litzak@unimelb.edu.au

Dr Matthew Fuller-Tyszkiewicz (Associate Professor – Deakin University)

E-mail: Matthew.fuller-tyszkiewicz@deakin.edu.au

Brianna Hollis (Honours candidate – The University of Melbourne)

E-mail: bhollis@student.unimelb.edu.au

Haley Brown (Research assistant – The University of Melbourne/ Bard College)

E-mail: haleyb1@student.unimelb.edu.au

Please read this information carefully. At this time you may print a copy of this information sheet as a record.

What is the research about?

This study aims to investigate the relationship between Facebook use, appearance comparison, body satisfaction, mood, personality traits and eating behaviours. Specifically, the aim of the current study is to assess whether the frequency of Facebook use in daily life encourages appearance comparison and what impact it has on body satisfaction, eating behaviours and mood. Finally, we are also interested to find out whether certain personality traits might influence Facebook use, appearance comparisons and eating behaviours. This project has been approved by the University of Melbourne Human Research Ethics Committee.

What does my participation involve?

The research will be completed in a laboratory at the University of Melbourne. The initial phase will require you to fill in a 30-minute online baseline questionnaire. Then you will be asked to use your Facebook account as usual for a duration of 10-minutes. After the Facebook exposure, you will be asked to fill in another short, 5-minute post Facebook exposure form. Your total time commitment will be approximately 45- 60 minutes.

What incentives does my participation entitle me to?

If you agree to participate in this study through the University of Melbourne's Research Experience Program (REP), you will receive 1 hours' worth of university credit. Miss Haley Brown will be in charge of the study and will provide you with the REP credits.

What are the risk of the study?

While we do not anticipate many risks of participation, the survey used in this study ask questions regarding personal topics that some participants may find sensitive or concerning, and as such your mood may be negatively affected. If at any stage you feel uncomfortable by any of the questions asked or topics covered, you are free to withdraw. If you feel any distress regarding any of the questions or the topics it covers, please do not hesitate to contact the principal researcher, or LifeLine, a 24-hour national counselling service (Ph: 13 11 14). You can also visit www.mycompass.org.au, a website which provides reputable psychoeducation, allows you to monitor your symptoms, and provides a range of techniques to alleviate depressed mood. Importantly, MyCompass is freely available and has been shown to improve symptoms.

How will my confidentiality be protected?

All information you provide will remain strictly confidential, subject to legal limitations and mandatory reporting requirements. All responses you provide will be stored in a password protected file on the University of Melbourne server, and will only be accessed by the researchers involved in this project. Any data published will be interpreted and reported at the group level, and, as such, individual responses will not be identifiable. All electronic files will be destroyed 5 years after completing the study.

What if I want to withdraw from the Research?

Participation in this research is completely voluntary. You are free to withdraw at any time and to withdraw any unprocessed data previously supplied. Withdrawing from the project will not affect your relationship with the Melbourne School of Psychological Sciences. Specifically, it will not affect any ongoing assessment/grades that you would otherwise be eligible for.

How will I receive feedback?

If you are part of Melbourne University's research experience program than the results of the experiment will be posted online (LMS). Additionally, if you score highly on any of the scales related to negative eating attitudes and/or behaviours, you will be provided through an automated message with information on a range of appropriate support services. Some people may experience discomfort while answering the questions in the survey. Those who experience distress are encouraged to contact Lifeline 24 hour service Ph: 13 11 14.

Where can I get further information?

If you would like any further information concerning this project, please do not hesitate to contact the researchers with the details given above. This research has been cleared by the Human Research Ethics Committee (HREC 1646320.3). A summary of the initial research findings will be available after October 2017 and you have the option in the consent form to tick off a box indicating that you would like those findings to be e-mailed to you once they are available. If you have concerns about the conduct of this research project, please contact the Executive Officer, Human Research Ethics, The University of Melbourne Ph: (03) 8344 2073 or Fax: (03) 9347 6739.

To be added as footer:

HREC Number: 1646320.3

Appendix D: Online consent form

**Melbourne School of Psychological Sciences
Faculty of Medicine, Dentistry and Health Sciences
The University of Melbourne**

ONLINE CONSENT FORM

Project title: The effect of Facebook use on eating behaviours and body satisfaction

Names of researchers:

**Dr. Isabel Krug (Senior Lecturer and Supervisor – The University of Melbourne)
(Principal Researcher)**

E-mail: isabel.krug@unimelb.edu.au

Ph: (03) 9035 8551

Dr. Litza Kiropoulos (Senior Lecturer and Co-Supervisor – The University of Melbourne)

E-mail: litzak@unimelb.edu.au

Dr Matthew Fuller-Tyszkiewicz (Associate Professor – Deakin University)

E-mail: Matthew.fuller-tyszkiewicz@deakin.edu.au

Brianna Hollis (Honours candidate – The University of Melbourne)

E-mail: bhollis@student.unimelb.edu.au

Haley Brown (Research assistant – The University of Melbourne/ Bard College)

E-mail: haleyb1@student.unimelb.edu.au

By clicking the “Accept” button below, you agree to the following:

1. I consent to participate in this project. The purpose of this research is to investigate the relationship between Facebook use, appearance comparison, body satisfaction, mood, personality traits and eating behaviours.
2. I understand that this project is for research purposes only and not for treatment.
3. There are two phases to this research, a baseline assessment (Phase 1) and a 10-minute Facebook exposure and post assessment (Phase 2). The details of this have been explained in the Plain Language Statement which I have been given a copy to keep.
4. I understand that there are risks involved in participating in this research project. Specifically, this survey asks questions regarding personal topics that some participants may find sensitive or concerning, and as such my mood may be negatively affected. These risks have been minimized by providing me with contact details of a range of support groups.
5. My participation is voluntary and that I am free to withdraw from the project at any time without explanation or prejudice and to withdraw any unprocessed data I have

provided. Withdrawing from the project will not affect my relationship with the Melbourne School of Psychological Sciences. Specifically, it will not affect any ongoing assessment/grades or treatment that I would otherwise be eligible for.

6. I have been informed that the data from this research will be stored at the University of Melbourne and will be destroyed after 5 years.
7. I have been informed that the confidentiality of the information I provide will be safeguarded subject to any legal requirements; my data will be password protected and accessible only by the named researchers.
8. At the completion of the project Miss Haley Brown will organise 1 hour' worth of university credit, through The University of Melbourne's Research Experience Program (REP).

(Please provide your email address below, so we can organise the REP credits at the conclusion of your participation)

9. I agree to have the findings of this study emailed to me.

☐

YES

☐

NO

If you would like to take part in the study, simply follow the weblink below, which will instruct you how to download the app.

Appendix E: Survey Measures**Demographics**

1. Your age
2. What is your e-mail address:
3. What is your current weight and height? If you do not have scales at home, please estimate to the best of your abilities.

Weight: kg

Weight: lb

Height:cm

Height:ft/in.

4. What is your ethnic/ cultural background?
 - Caucasian or European
 - African Australian (Aus.) or Black
 - Eastern Asian Aus.
 - Southern Asian Aus.
 - Western Asia Aus.
 - Indigenous Australian
 - Southeast Asian Aus.
 - Other (please specify)

.....

5. Main language spoken at home:

(1) English

(2) Other (please specify):

.....

6. Current marital status:
- | | |
|--------------|-------------------|
| (1) Married | (2) Divorced |
| (3) De Facto | (4) Separated |
| (5) Widowed | (6) Never Married |
| (7) Single | |

7. Please indicate the highest level of education you have completed.

- (1) Still at secondary school
- (2) Did not finish secondary school
- (3) Year 12 or equivalent
- (4) Certificate Level
- (5) Advanced Diploma/Diploma
- (6) Graduate Diploma/ Graduate Certificate
- (7) Bachelor Degree Certificate
- (8) Postgraduate Degree (e.g. Honours, Masters, Doctorate, PhD)

8. Are you currently in paid employment?

- (1) Yes (2) No

- a. If Yes, how many hours do you work per week?

.....



Do you think that compared to other individuals on Facebook you look:



- ☐ Much worse
- ☐ Worse
- ☐ Same
- ☐ Better
- ☐ Much better

Facebook Appearance Comparison Scale

☐ Info

The following questions refer to people of the same sex as you.

Page Break

☐

TypeAC

When looking at the Facebook photos of the following groups of people, how often do you compare your body to theirs?

	Never	Seldom	Sometimes	Often	Always
Close friends (Friends on Facebook and regularly hang out)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook friends (Friends on Facebook but don't regularly hang out)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friends of friends (People you know but aren't friends with on Facebook and don't regularly hang out)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Celebrities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

☐

TAC Rate



When comparing your body to each of the following on Facebook, how do you rate yourself

	Much worse	Worse	Same	Better	Much better
Close friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Facebook friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Friends of friends	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Celebrities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

Body Dissatisfaction measure

☐ BSat Please indicate how satisfied you are with your appearance right now, where 0= Not at all and 10= completely satisfied.






	0	1	2	3	4	5	6	7	8	9	10
How satisfied are you with your appearance right now?											

Page Break

Thin-Ideal Internalization Scale

☐ BI Intern Below is a list of statements dealing with your feelings about how you would like your body to look, please respond honestly:

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I wish my body was smaller in size	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I wish my body was larger in size	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would like my body to look more like other women's bodies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Women who are smaller are more attractive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Women who are larger are more attractive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A thin body is an ideal body shape	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is no ideal body shape, everyone is different	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
There is no ideal body size, everyone is different	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Page Break

▼ Post Facebook Exposure **Randomized** Block Options ▼

☐ What activities did you undertake on Facebook during the last 10 minutes?

POST FB
Jae



- ☐ Use Facebook chat
- ☐ Play games (FarmVille, etc.)
- ☐ Send/receive private messages
- ☐ Post a status update
- ☐ Post a new link to a story, video or website
- ☐ View friends' photos that they have added
- ☐ View friends' status updates
- ☐ Comment on a friends' status update
- ☐ Comment on a friends' link
- ☐ Tag myself in a friends' photo
- ☐ Untag myself in a friends' photo

Page Break

☐ If 0= no body comparisons and 10= constantly making body comparisons, please:

POST FB
AC

	No body comparisons					Constant body comparisons					
	0	10	20	30	40	50	60	70	80	90	100
Indicate the level of body comparison behaviour you engaged in while on Facebook											

Page Break

☐ If 0= completely dissatisfied and 10= completely satisfied, please indicate:

POST BD1

	Completely dissatisfied					Completely satisfied					
	0	1	2	3	4	5	6	7	8	9	10
How satisfied you are with your appearance right now?											

Page Break

Appendix F: EAT-26**Eating Attitudes and Behaviours**

Instructions: Please fill out the below form as accurately, honestly and completely as possible. There are no right or wrong answers. All of your responses are confidential.

Check a response for each of the following statements:	Always	Usually	Often	Sometimes	Rarely	Never
1. Am terrified about being overweight.						
2. Avoid eating when I am hungry						
3. Find myself preoccupied with food						
4. Gone on eating binges where I feel I may not be able to stop						
5. Cut my food into small pieces						
6. Aware of the calorie content of the food that I eat						
7. Particularly avoid foods with a high carbohydrate content (bread, rice, potatoes)						
8. Feel that others would prefer if I ate more						
9. Vomit after I have eaten						
10. Feel extremely guilty after eating						
11. Am preoccupied with a desire to be thinner						
12. Think about burning up calories when I exercise						
13. Other people think that I am too thin						
14. Am preoccupied with the thought of having fat on my body						
15. Take longer than others to eat my meals						
16. Avoid foods with sugar in them						
17. Eat diet foods						
18. Feel that food controls my life						
19. Display self-control around food						
20. Feel that others pressure me to eat						
21. Give too much time and thought to food						
22. Feel uncomfortable after eating sweets						
23. Engage in dieting behavior						
24. Like my stomach to be empty						
25. Have the impulse to vomit after meals						
26. Enjoy trying rich new foods						
In the <u>past six months</u>, have you						
(Answer yes even if it was only one time in the past six months)					Yes	No
Gone on eating binges where you feel that you may not be able to stop?						
Ever made yourself sick (vomited) to control your weight or shape						
Ever used laxatives, diet pills, or diuretics (water pills) to control your weight or shape						
Exercised more than 60 minutes a day to lose or control your weight						
Lost 20 pounds or more in the past six months						

Appendix G: Debrief form

THE UNIVERSITY OF
MELBOURNE

**Melbourne School of Psychological Sciences
Faculty of Medicine, Dentistry and Health Sciences
The University of Melbourne**

DEBRIEF FORM

Project title: The effect of Facebook use on eating behaviours and body satisfaction

Contact details of researchers:

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Thank you for your participation!

This study aimed to investigate the relationship between Facebook use, appearance comparison, body satisfaction, personality traits, mood and eating behaviours. The negative effects of Social Networking Sites (SNS), such as Facebook on body dissatisfaction and disordered eating behaviours are becoming a popular issue and can encourage unhealthy obsessions. However, the nature of this relationship is anecdotal and with this research we are trying to identify the specific ways in which Facebook use encourages these problems.

To our knowledge, this is the first study that has assessed whether using Facebook and engaging in upward appearance comparison on Facebook and in real life has a consistent effect on body dissatisfaction and eating pathology. Finally, we were also interested to assess whether specific personality traits, such as neuroticism and extraversion, moderated the relationship between daily Facebook use, body dissatisfaction and disordered eating behaviours. It is anticipated that the findings of the current study will improve our understanding on the effect of Facebook use has on the development and

maintenance of body dissatisfaction and eating pathology, informing interventions to educate individuals about healthy social media use.

If you would like to know more about this study, you are welcome to contact us on the details given above. A summary of the research findings will also be available after October 2017 and participants are encouraged to contact the researchers if you would like a copy.

If you participated in this study through the University of Melbourne's Research Experience Program (REP) and want to receive 1 hour' worth of university credit, Miss Haley Brown will organise the credits for you.

If you have found answering the surveys distressing, please feel free to contact the principal researchers on the details given above. Additionally, if you scored highly on any of the scales related to negative eating attitudes and/or behaviours, you will be provided through an automated message with information on a range of appropriate support services. Alternatively, listed below are some of the support services operating within Australia that you may also find helpful.

Lifeline:

13 11 14

Eating Disorders Victoria:

<https://www.eatingdisorders.org.au/>

Ph: 1300 550 236

The Butterfly Foundation for Eating Disorders:

<http://thebutterflyfoundation.org.au/>

Ph: 1800 334 673

Beyondblue – National Information Line:

<http://www.beyondblue.org.au/>

Ph: 1300 224 636

The University of Melbourne Psychology Clinic:

<http://psych.unimelb.edu.au/about/psychology-clinic>

Ph: (03) 9035 5180

You can also visit www.mycompass.org.au, a website which provides reputable psychoeducation, allows you to monitor your symptoms, and provides a range of techniques to alleviate depressed mood. Importantly, MyCompass is freely available and has been shown to improve symptoms.

Appendix H: Email for individuals scoring highly on the EAT-26

Dear participant,

Thank you for taking part in our research “The effect of Facebook on Body satisfaction”. This is a message to let you know that you have scored highly on the negative eating attitudes and behaviours items that you were asked to complete as part of this research.

Some common symptoms of disordered eating are preoccupation with eating, food, body shape and weight and feeling anxious and/or irritable around meal times.

If you think you could be at risk for an eating disorder, please see your GP for a referral to a clinical psychologist in your local area. Your GP may be able to put you on a Better Access to Mental Health Care plan which entitles you to at least 10 low fee sessions with a Medicare listed psychologist.

Alternatively, you can find a psychologist from the Australian Psychological Society (APS) “Find a Psychologist” facility of the APS website which is available to the public:

<http://www.psychology.org.au/findapsychologist/>

You can also contact the following support services that are available to you:

The University of Melbourne Counselling and Psychological Services

Ph: (03) 8344 6927

<http://services.unimelb.edu.au/counsel>

The University of Melbourne Psychology Clinic

Ph: 03 9035 5180

Email: clinic@psych.unimelb.edu.au

<http://psych.unimelb.edu.au/about/psychology-clinic>

The Butterfly Foundation for Eating Disorders

Ph: 1800 334 673

<http://thebutterflyfoundation.org.au/>

Eating Disorders Victoria

Ph: 1300 550 236

<https://www.eatingdisorders.org.au/>

Beyondblue – National Information Line

Ph: 1300 224 636

<http://www.beyondblue.org.au/>

If you have any further questions about appropriate referrals please do not hesitate to contact me.

Thanking you again for participating in our research.

Best wishes,
Isabel

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