Original Research

EXPOSURE OF THE FEMALE BODY IMAGE IN THE MEDIA AND THE EFFECT ON ATHLETE AND NON-ATHLETE FEMALES' BODY IMAGE DISSATISFACTION

Nicole Irvine, Gary Barclay and Richard Humphrey

School of Sport, Exercise & Health, Otago Polytechnic, Dunedin, New Zealand.

INTRODUCTION

In Western society, body dissatisfaction (an individual's negative evaluation of the appearance of their body; Joseph & Shiffrar, 2011) has become a cultural norm (National Eating Disorders Collaboration, 2015). It has been found that viewing images of thin, idealised models is associated with body dissatisfaction and low body esteem (Halliwell, Easun, & Harcourt, 2011), as well as giving the perception that being thin is most attractive. The media is filled with images of unrealistic and unattainable thin-ideal bodies. This phenomenon is evident in magazines, TV shows, commercials and, more recently, social media.

Body image is the perception a person has of their physical self and the thoughts and feelings that result from that perception (National Eating Disorders Collaboration, 2015). These thoughts and feelings can be negative and lead to an individual developing body dissatisfaction. Negative body image gives a person a distorted and ashamed feeling about their body, which is sometimes seen as personal failure (National Eating Disorders, 2012). Dissatisfaction with one's body is an internal process influenced by external stimuli such as environmental factors including family, friends, dating partners and the media (Stice & Whitenton, 2002).

Modern ideals of female attractiveness are beginning to change – from extreme thinness to a more toned and fit appearance (Homan, McHugh, Wells, Watson, & King, 2012). Several studies have found that the thin female body images idealised by the media may lead to body dissatisfaction, especially in female athletes (Tok, Gúnes, Koyuncu, Dogan, & Canpolat, 2011), and even more in athletes who participate in leanness-promoting sports (Homan, 2010).

Research according to Swami, Steadman, and Tovée, (2009) and Tok, Gunes, Koyuncu, Dogan, and Canpolat, (2011) has revealed a set of relationships between 'athletes' (those who participate in sport at either recreational or elite level), 'non-athletes' and the ideal-internalisation variable that they are likely linked to. Athletes who participate in performance-promoted sports were shown to have stronger athletic-ideal internalisation, whereas athletes who participate in leanness-promoted sports were reported to have a higher thin-ideal internalisation (Swami et al., 2009; Tok et al., 2011). This is likely due to athletes in performance-based sports, such as rugby or powerlifting, being more reliant on physical strength to succeed in their chosen sport. In comparison, athletes participating in leanness-promoted sports, like track and gymnastics, prefer a relatively small body-frame and are more thin-internalised than athletic-internalised (Kong & Harris, 2015). Presumably, this is because the 'ideal' body image portrayed across the media is predominantly thin.

As noted above, the ideal body image is changing to a more 'toned' physique, although it has been found that those non-athletes who perceive the athletic ideal as most attractive would not make the behavioural changes needed

to achieve such a body shape (Mulgrew & Hennes, 2015). Thin-ideal and athletic-ideal internalisation both have a significant correlation with body dissatisfaction. Many studies (Blum, Johnson, & Rodgers, 2010; Halliwell et al., 2011; Homan, 2010; Tok et al., 2011) have found body dissatisfaction among athletic-internalised participants to be less significant than among thin-internalised participants, although Mulgrew and Hennes (2015), found the opposite result. Multiple studies (Homan, McHugh, Wells, Watson, & King, 2012; Miller & Halberstadt, 2005) agree that some level of body dissatisfaction is evident among most females, regardless of the idealisation they display.

Body dissatisfaction is likely to evolve from an individual having a negative perception of their body, and/or vice versa (Eating Disorder Hope, 2016). Body perception is determined by anthropometric and psychological factors (Fortes, Almeida, & Ferreira, 2014). A significant correlation has been found between females' body image perception and body dissatisfaction, with those who perceive themselves to be larger than they actually measure showing the strongest signs of body dissatisfaction (Blum et al., 2010; Zaccagni, Masotti, Donati, Mazzoni, & Gualdi-Russo, 2014). For female athletes vs non-athletes, Blum et al. (2010) found that body image perception among athletes was on average 20 percent higher than for non-athletes.

When investigating the relationship between Body Mass Index (BMI) and body image perception, Blum et al. (2010) found that athletes with a low-risk BMI (18.5 to 24.9) had a 10 percent more positive body image perception, resulting in less body dissatisfaction, when compared to non-athletes. Overweight participants (BMI of 25-29.9) displayed a 20 percent more positive body image perception compared with non-athletes (Blum et al., 2010).

Negative body image and weight stigma increase unhealthy eating behaviours, with body dissatisfaction the biggest known contributor to the development of eating disorders among females (National Eating Disorders, 2012). Body image and eating disorders correlate closely (Benowitz-Fredericks, Garcia, Massey, Vasagar, & Borzekowski, 2012). It is often dissatisfaction with one's body or appearance that leads women to believe that losing weight would improve their appearance and enhance their feelings about themselves (Eating Disorder Hope, 2016). Because of this link, a change in eating patterns and behaviours is commonly reported (Kong & Harris, 2015) and can develop into food obsession, resulting in detrimental outcomes such as anorexia nervosa, bulimia nervosa and body dysmorphic disorder (BDD) (Eating Disorder Hope, 2016). It has been found that 13.5 percent of athletes have subclinical eating disorders (Sundgot-Burgen & Torstveit, 2004).

Social media is intruding on our lives more than other media, with 2.34 billion users reported in 2016, a figure which is expected to reach 2.95 billion by 2020 (Statista, 2016). This means that exposure to thin and athletic-idealised bodies is becoming unavoidable, and related risks such as disturbed eating behaviours and eating disorders are increasing, in both younger and older age groups (National Eating Disorders Collaboration, 2012).

This is what the media wants. Profits are made by exploiting our insecurities and promoting unattainable ideals of 'beauty' (Eating Disorder Hope, 2016). There are athletic- and thin-idealised models on social media, such as Instagram or Facebook, who are paid to advertise particular products. Consumers are drawn into thinking that they will look like these models if they buy the product being promoted, or that looking like this is the only way to be happy and successful – forgetting that these are paid models who most likely do not even use the product themselves.

Based on the literature reviewed, the purpose of the study was to examine the influence of social media on female body image dissatisfaction.

METHOD

Participants

The participants were 102 volunteer females aged 18 years and over. They included those who participated in sport or regular exercise, and those who were non-active. Participants were excluded if they were not female, or were not 18 or over. The mean age was 28.09 years (SD = 9.93). BMI was calculated from self-reported height and weight, ranging from underweight to obese, with an average of 25.32 (SD = 4.86), a figure which falls within the 'overweight' range.

Design

The study was designed as a multiple-component questionnaire. The main variable was sport and exercise behaviour, with further variables being body dissatisfaction, thin-internalisation and athletic-internalisation, and BMI. An initial pilot study was conducted involving eight volunteer females to obtain opinions on whether images displayed in the questionnaire would give an accurate interpretation of the factors that the researcher was wanting to distinguish. The questionnaire was adapted following the results of this pilot study, although the study design remained the same.

Measures

A survey consisting of 36 questions was used, made up of three parts: demographics; the Sociocultural Attitudes Towards Appearance Questionnaire – 4 (Schaefer et al., 2015); and a Figure Evaluation Scale.

Demographic Information. Participants indicated their age, height and weight, along with measurements of their bust, waist and hips. These measurements were self-reported, and BMI was then calculated by the researcher. Participants (N=102) had a mean age of 28.09 (SD=9.93) and a mean BMI of 25.32 (SD=4.86). Participants were separated into two groups (active and non-active; see Table 1). Active (N=77) participants had a mean age of 27.99 (SD=8.61) and a mean BMI of 25.10 (SD=4.65). Non-active participants had a mean age of 29.04 (SD=11.53) and a mean BMI of 25.93 (SD=5.53). Exercise behaviour within the active participants showed a mean of 8.06 (SD=1.641).

	Active (N=77)	Non-Active (N=24)	Sig (2-tailed)
Age	27.99 (8.612)	29.04 (11.532)	.631
BMI	25.104 (4.651)	25.925 (5.531)	.472
Exercise Behaviour	8.06 (1.641)	a	a
Body Dissatisfaction	1.43 (.677)	1.58 (.584)	.316
Media Pressure	15.3 (5.040)	16.21 (4.890)	.359
Athletic Internalisation	15.45 (5.012)	10.17 (4.239)	.000*
Thin Internalisation	15.25 (5.17)	14.21 (5.308)	.392

Table 1: Mean (SD) scores and significance for age, BMI, exercise behaviour, body dissatisfaction, media pressure, athletic internalisation, and thin internalisation; Scale end points: exercise behaviour, 4-11; body dissatisfaction, 0-2; media pressure, 4-20; athletic internalisation, 5-25; thin internalisation, 5-25; a cannot be computed because variable group does not exist
*correlation is significant at the 0.01 level (2-tailed).

Exercise behaviour. To determine physical activity levels, participants specified whether or not they exercised. If they responded yes, they were then prompted to detail the frequency, intensity, time (length of period at one time) and type.

Sport behaviour. To determine sport participation, survey respondents were asked if they played sport. If they answered yes, they were then asked to determine the type of sport played, as well as the length of time and frequency involved.

Social media use. Participants were questioned whether they used social media on a regular basis, and which sites they used.

Sociocultural attitudes towards appearance questionnaire – 4. The SATAQ-4 (Schaefer et al., 2015) is a 22-item scale with five factors, measuring body image, eating disturbance and self-esteem. The five factors include thin internalisation, athletic internalisation, and family, peer and media pressure. Items are measured on a 5-point scale (1 = definitely disagree, 5 = definitely agree). Developed from the original Sociocultural Attitudes Towards Appearance Questionnaire-3 (Thompson et al., 2004), SATAQ-4 provides a more targeted assessment of internalisation of appearance ideals, and expands the assessment of appearance-related pressures from sources such as media (Schaefer et al., 2015).

Figure evaluation scale. The Figure Evaluation Scale was produced specifically for this study to measure participants' body perception. As the participants were all female, only female figures were used. Participants viewed a selection of six front-view and six rear-view images in random assembly, which varied in range from thin, thin-athletic (defined muscularity), average, average-athletic, overweight and overweight-athletic. Each image variable fit within standard BMI ranges (thin and thin-athletic = underweight; average and average-athletic = normal; overweight and overweight-athletic = overweight). The software used to create the images was MakeHuman 1.1.1. Images were generated to include different body shapes, including defined muscularity and varied shoulder, hip and waist ratios. This was to show the diversity of the female body in relatable terms for the participant. Sizing guides from the Ministry of Health (2017) and clothing retailer Glassons (2017) were used to ensure that measurements of specific areas stayed within average range for each variable. Participants then indicated which figure, for each body area (bust; waist; hips; thighs; buttocks; shoulders; arms), they believed was (i) most closely reflective of themselves (FRS-current) and (ii) which was their ideal (FRS-ideal). Although this scale was designed specifically for this project (to include athletic-idealised body image), it retained properties similar to those found in Stunkard, Sorensen and Schulsinger's (1983) Figure Rating Scale.

PROCEDURE

Maori consultation was undertaken with the Kaitohutohu as part of the ethics application, which was approved by the Otago Polytechnic Ethics Committee.

Participants were recruited via a sponsored public Facebook post including a survey which enrolled females to take part in the study. The online survey was conducted on Qualtrics Survey Software and accessed by following a link from the Facebook page. Participants were then given a brief summary of the study and information about it, and consented by accepting to proceed. The survey, which took no longer than 10 minutes on average, required participants to give demographic details and complete SATAQ-4 and the Figure Evaluation Scale. No incentives were provided. Due to the nature of the study, no personal data or IP address was solicited from participants. This was to protect data and eliminate the possibility of false information being given due to privacy concerns. A professional protocol for data management was in place, with data being kept securely for five years from the date of survey closure before being disposed of.

Risk management. To minimise the risk of negative thoughts or feelings arising after participants had completed the

survey, the survey contained links to relevant health professionals and programmes. It was also recommended that concerned participants see their doctor.

RESULTS

The initial aim of the study was to examine whether exposure to thin-ideal and athletic-ideal female body images in the media affects body image dissatisfaction among athlete and non-athlete females. It was intended to include a varied range of athletic criteria, including leanness-promoted (e.g., track running and gymnastics) and muscular-promoted (e.g., rugby and powerlifting) sports, as well as variations of exercise and frequency. However, because sufficient respondents for each of these variables were lacking, it was decided that athletes would be combined with those who exercised and be described as 'active.' Respondents who stated they did not exercise became 'non-active.' Of the 148 initial respondents, 46 were excluded due to significant amounts of missing data. The remaining 102 participants displayed minimal missing data points (<10). In these cases, an average score was calculated for each relevant section.

Body dissatisfaction in active vs non-active participants

An independent samples t-test was conducted to compare body dissatisfaction (FRS; score range 0-2) in active and non-active participants. There was no significant difference between the scores for active (M=1.43, SD=0.677) and non-active (M=1.58, SD=.584) participants; t(99)= -1.008, p= 0.316. These results suggest that body dissatisfaction is evident in both groups, with active participants showing a slightly lower (better) score, although there was not a significant difference with the non-active group.

Effect of media pressure on active and non-active participants

An examination of the effect of media pressure (SATAQ-4; score range 5-20) on active and non-active groups was done by an independent samples t-test. Active participants had a mean score of 15.3 (SD=5.040) and non-active had a mean score of 16.21 (SD=4.890). The results showed no significant difference between the two groups; t(99)= -0.922, p=0.359. This suggests that pressure from the media was not received differently by the two groups.

Athletic internalisation

An independent samples t-test was undertaken to measure athletic internalisation (SATAQ-4; score range 5-25) against active (M=15.45, SD=5.012) and non-active (M=10.17, SD=4.239) groups. A significant difference was observed; t(99)=4.670, p=0.000. This showed the likelihood of a relationship between athletic internalisation and active and non-active participants. A Pearson correlation was then conducted (see Table 2) to examine this relationship further. There was a positive correlation between athletic internalisation (N=102, M=14.23, SD=5.304) and exercise behaviour (N=77, M=8.06, SD=1.641), r=0.331, p=0.003. This correlation is significant at the 0.01 level (2-tailed). These results suggest that as exercise behaviour increases (in terms of frequency, intensity and time), so does the level of athletic internalisation.

	Exercise Behaviour	
	Sig (2-tailed)	*Pearson's Correlation*
Athletic Internalisation	.003	.331**

Table 2: Correlation between exercise behaviour and athletic internalisation
** Correlation is significant at the 0.01 level (2-tailed)

Thin internalisation. Thin internalisation (SATAQ-4; score range 5-25) was compared between active (M=15.25 SD=5.117) and non-active (14.21, SD=5.308) participants using an independent samples t-test. No significant difference was found between these variables; t(99)=0.860, p=0.392. These results show that there is no dissimilarity between active and non-active groups in relation to thin internalisation – both groups showed similar scores, and neither was prone to higher or lower scores.

Body Dissatisfaction

Multiple Pearson correlations were completed (see Table 3) to analyse body dissatisfaction against several variables including media pressure, BMI and exercise behaviour and internalisation (combined score). Body dissatisfaction (M=1.47, SD= 0.656) and media pressure (M=15.43, SD= 4.998) showed a positive correlation, although with no great significance; r= 0.185, p=0.062, with a R^2= 0.034. This would suggest that media pressure has a relatively small (3.4%) effect on body dissatisfaction. BMI (M=25.304, SD= 4.834) had a significant positive correlation at the 0.01 level (2-tailed); r= 0.294, p= 0.003, with a R^2= 0.086.

	Body Dissatisfaction	
	Sig (2-tailed)	*Pearson's Correlation*
Media Pressure	.62	.185
BMI	.003	.294**
Active	.316	-.101
-Exercise Behaviour	.016	.274*
Non-Active	.316	.101
Internalisation (total)	.031	.213*
Age	.814	-.024

Table 3: Correlation between body dissatisfaction and media pressure, BMI, exercise behaviour, and internalisation (total).
Notes: *Correlation is significant at the 0.05 level (2-tailed)
** Correlation is significant at the 0.01 level (2-tailed)

Exercise behaviour (M=8.06, SD= 1.641) showed a positive significance at the 0.05 level (2-tailed); r= 0.274, p= 0.016, with a R^2= 0.074. Thin and athletic internalisation were combined for an average total score (M=14.89, SD= 4.403). A significant correlation was found at the 0.05 level (2-tailed); r=0.213, p= 0.031, R^2=0.045. Age (M=28.14, SD= 9.345), resulted in a negative correlation; r=-0.024, p=0.814, R^2= 0.0005. The variables that showed positive correlations (media pressure, BMI, exercise behaviour, non-active and internalisation) demonstrate that as each variable increases, so does body dissatisfaction. The variables that showed negative correlations (active participants and age) indicate that as body dissatisfaction increases, these variables decrease, and vice versa.

DISCUSSION

The aim of this study was to determine how body dissatisfaction in active and non-active females was affected by exercise behaviour, BMI, internalisation (thin and athletic) and pressure from the media. This study, although limited in its original scope, has some relevant findings to add to current research. Previous research has also found body dissatisfaction to be evident among most females, regardless of an individual's behaviours such as exercise patterns and media consumption (McDonald & Thompson, 1992; Cardosi, 2006; Derenne & Beresin, 2006; Hausenblas & Fallon, 2006; LePage, Price, O'Neil, & Crowther, 2012; Cohen & Blaszczynski, 2015), as well as their age and BMI (Knauss, Paxton, & Alsaker, 2007; Quick, Eisenberg, Bucchianeri, & Neumark-Sztainer, 2013).

No differences were found in our study between active and non-active groups in relation to body dissatisfaction, further suggesting that females have low body satisfaction for many reasons apart from exercise alone. Societal pressures, such as media and peer appearance conversations, are having an increasing impact on body dissatisfaction levels (Lawler & Nixon, 2011; Cohen & Blaszczynski, 2015).

Consistent with the study hypothesis and previous research (Furnham, Badmin, & Sneade, 2002; Homan, 2010; Koyuncu et al., 2010; Kong & Harris, 2015; Mulgrew & Hennes, 2015), the body dissatisfaction of those who exercise increases as exercise behaviours are stepped up (in terms of frequency, intensity and time). This result could be explained by the 'athletic' idealised image becoming more desirable and publicised by the media on an accelerating scale (Lunde & Gattario, 2017). It could also be due to people having greater body awareness and unrealistic goals to strive for (Furnham et al., 2002). It is important to note that most people over-report their exercise behaviour (Yuen, Wang, Holthaus, Vogtle, Sword, Breland, & Kamen, 2013), either from the honest perception that they are achieving more than they actually are, or they provide misleading information in the belief that this is the level they should be achieving. Most studies of this type include self-reported responses which could misinform results.

Contradicting the consensus, Hausenblas and Fallon (2006) found that exercise *decreased* body dissatisfaction, both in long-term exercisers and those who were usually sedentary but who participated in an exercise intervention. This was thought to be the case because 'active' participants more closely resembled the athletic-idealised ideal, or because exercise increases one's psychological well-being, leading to enhanced self-awareness and body image (Hausenblas & Fallon, 2006; LePage et al., 2012).

Leading on from this point, it is important that we understand the ideal internalisation of individuals, and the body changes they aspire to. Up until recent years, thin internalisation has been most prominent, with the athletic ideal now becoming equally desirable. Crucial to this shift, in this study thin internalisation showed similar results between the active and non-active participants. This shows that the thin ideal is still highly sought after, and that exercise may be undertaken more for body-image reasons, as opposed to health and well-being (Robinson, Prichard, Nikolaidis, Drummond, Drummond, & Tiggemann, 2017).

On the subject of athletic internalisation, our results agree with the hypothesis, and current research, that athletic internalisation occurs more in those who exercise than those who do not (Kong & Harris, 2015; Mulgrew & Hennes, 2015). Again, this is likely to be because sedentary individuals aspire less to conform to images representing a fit and athletic appearance (Peterson, 2003). Although it might be presumed that athletic-idealised images are inspirational for females, promoting a healthier lifestyle, they may be understood differently and lead to higher body dissatisfaction and alter women's reasons for exercising (Robinson et al., 2017). The exercise behaviour of active participants increased with their athletic internalisation, implying that exercise levels may actually increase in an unhealthy manner, rather than for the reasons originally assumed (Robinson et al., 2017).

We found that internalisation was substantially higher when linked with body dissatisfaction. With the combined factors already discussed for thin and athletic internalisation respectively, we anticipated that internalisation levels in general would be high. According to Lawler and Nixon (2011), internalisation may be a psychological process that

leads to body dissatisfaction, along with a focus on body mass for females.

In our study, media pressure was found to make no major difference between active and non-active participants, and there was only a slight suggestion that media pressure had an effect on body dissatisfaction. So it would seem that perceived pressure from the media to look a certain way is responded to no differently by those who are active and those who are not. This supports earlier research that those who exercise and those who do not aspire towards different ideals (Mulgrew & Hennes, 2015).

There is a strong indication in the current study, as well as previous research (van den Berg, Paxton, Keery, Wall, Guo, & Neumark-Sztainer, 2007; Swami et al., 2009) that BMI is correlated with body dissatisfaction, in that body dissatisfaction worsens as BMI increases. Yates, Edman and Aruguete (2004) also found this link to be valid, extending it to a variety of ethnicities and exercise variances. It is important to note here, when comparing exercisers or sport participants, that BMI may show inaccuracies as a result of its failure to consider muscle mass and the weight difference between fat and muscle tissue. Thus people with greater muscle mass can sometimes be considered overweight or obese when the BMI is applied (Rush, Goedecke, Jennings, Micklesfield, Lambert, & Plank, 2007; Garrido-Chamorro, Sirvent-Belando, Gonzalez-Lorenzo, Martin-Carratala, & Roche, 2009).

The limitations of the current study should also be considered when assessing its findings. Firstly, the initial aim of research was to study a variety of participants involved in leanness and performance-based sports. However, because the presence of these variables was insufficient to provide a substantial basis to examine these sports comprehensively, in the study sports players were merged with exercisers. This could imply that the active variable in the study is comprised of a variety of 'athletic' backgrounds, perhaps failing to give an accurate view of what readers assume to be 'exercisers.' The addition of males in the study may have resulted in a higher response rate for sports variables, and this should be considered in further research.

Secondly, media pressure was interpreted only by the SATAQ-4 questionnaire. As all participants agreed that they used social media, it would have been useful to ascertain the time spent in this activity in terms of hours per day or week, in order to refine their media pressure score.

Thirdly, the images used in the Figure Rating Scale may not have portrayed real-life body images for the female respondents, or what they perceived themselves to be. Although images were created to fit within each BMI category (underweight, normal, overweight, obese), and standardised measurements for bust, waist and hips (Glassons, 2017; Ministry of Health. (2017) were given for each variable ('normal' and 'athletic'), the BMI results came back with an average of 25.104 (overweight). This result suggests that despite these images fitting standardised criteria, they may not have depicted the participants' body-image for 'current' and 'ideal.' Also, due to the complexity of the FRS, and the presumed inaccurate results, images were only used to ascertain body dissatisfaction scores. For future studies, a wider range of body-image sizes is recommended, as well as creating a simple, more accurate scoring system for the images chosen.

Fourthly, all data was self-reported by participants, including measurements. This could have resulted in inaccuracies, particularly for body measurements and weight, either by mistake or because participants wished to portray a size other than their actual one. It is presumed that because of respondents' anonymity, this would have been true in only a few cases, but it is nevertheless important to note. Finally, to increase the validity of the study results, it would have been beneficial to ask participants about their ethnicity, race and socioeconomic status. This would provide a deeper understanding and a broader spectrum for comparisons with other research studies.

CONCLUSION

Overall, this study has deepened our understanding that body dissatisfaction, media pressure and exercise behaviour all have correlating relationships among females. It shows the level of pressure from the media, and the effect of this

on females, regardless of exercise behaviour. We conclude that body dissatisfaction is evident among the majority of females, regardless of exercise behaviour and media pressure. The thin-ideal image portrayed in the media is equally desired by females who exercise and those who do not; but it is only those who exercise who tend to desire the increasingly popular athletic ideal. It is important to point out that the exercise variable in this study included females who participated in various types and levels of sports, which may have a bearing on the desire for an athletic-idealised body and higher levels of BMI. These findings are similar to those of Derenne and Beresin (2006), Knauss et al. (2007) and Quick et al. (2013).

Given the results of our study, women need to be aware of the often unrealistic and unobtainable body images portrayed in media. They are not always ideals to aspire to, given that the majority of female models and social influencers are paid or reimbursed to look a particular way. It is unlikely that they achieve their 'image' naturally or in a healthy manner (Gamson, Croteau, Hoynes, & Sasson, 1992). It is especially important for females to understand and pursue the health and well-being benefits of exercise, as opposed to exercising to look a particular way. Body dissatisfaction can be a predictor of health problems such as eating disorders and depression (Stice & Whitenton, 2002). Hausenblas and Fallon (2006) found that exercise can actually decrease symptoms or minimise the risk of these health conditions.

Further research is needed to determine the influence that thin- and athletic-ideal images in the media have on body dissatisfaction among sports players, exercisers and sedentary females. Robinson et al. (2017) found that idealising an athletic image may not actually motivate exercise behaviour. It would be useful to test body dissatisfaction and exercise behaviour both before and after viewing appropriate media images. This would establish the extent to which body dissatisfaction is influenced by the mass media, using a more specific and controlled method. This approach would then supply the evidence needed to establish an exercise intervention for those experiencing an increase in body dissatisfaction, to assess whether exercise can generate a positive influence on an individual's body image.

CORRESPONDING AUTHOR

Richard Humprey: Otago Polytechnic; Email: Richard.humprey@op.ac.nz; Tel: 0800762786

REFERENCES

Benowitz-Fredericks, C. A., Garcia, K., Massey, M., Vasagar, B., & Borzekowski, D. L. (2012). Body image, eating disorders, and the relationship to adolescent media use. *Pediatric Clinics of North America, 59*(3), 693–704.

Berscheid, E., Walster, E., & Bohrnstedt, G. (1973). The happy American body: A survey report. *Psychology Today, 7*(6), 119–131.

Blum, M., Johnson, B., & Rodgers, E. (2010, May 7). *Body image perception in athletes versus non-athletes* [Unpublished paper]. PED 461–Health and Human Performance: Senior Seminar.

Brumfitt, T. [BodyImageMovement]. (2016, July 20). *What's one word to describe your body?* [Video file]. Retrieved from https://www.youtube.com/watch?v=LdEHQHFriKE

Bulik, C. M. (1996). The prevalence of disordered eating behaviours and attitudes in adolescent girls. *New Zealand Journal of Psychology, 25*(1), 7.

Cardosi, C. (2006). *Effect of media on female adolescents' satisfaction with their body image* [Unpublished PhD thesis]. Retrieved from University of Virginia Library.

Cash, T. F., Fleming, E. C., Alindogan, J., Steadman, L., & Whitehead, A. (2002). Beyond body image as a trait: The development and validation of the Body Image States Scale. *Eating Disorders, 10*(2), 103–113.

Cash, T. F., (2000). *Multidimensional body-self relations questionnaire users' manual.* Available from the author at www.body-images.com.

Cohen, R., & Blaszczynski, A. (2015). Comparative effects of Facebook and conventional media on body image dissatisfaction. *Journal of Eating Disorders*, *3*(1), 23.

Derenne, J. L., & Beresin, E.V. (2006). Body image, media, and eating disorders. *Academic Psychiatry*, *30*(3), 257–261.

Eating Disorder Hope. (2016) *Weight & body image disorders: Causes, symptoms & signs*

Retrieved from http://www.eatingdisorderhope.com/information/body-image

Farquhar, J. C., & Wasylkiw, L. (2007). Media images of men: Trends and consequences of body conceptualization. *Psychology of Men and Masculinity*, *8*, 145–160. doi:10.1037/ 1524-9220.8.3.145.

Fortes, L. D. S., Almeida, S. D. S., & Ferreira, M. E. C. (2014). Influence of psychological, anthropometric and sociodemographic factors on the symptoms of eating disorders in young athletes. *Paidéia (Ribeirão Preto)*, *24*(57), 21–27.

Franzoi, S. L. (1995). The body-as-object versus the body-as-process: Gender differences and gender consideration. *Sex Roles*, *33*, 417– 437. doi:10.1007/BF01954577.

Furnham, A., Badmin, N., & Sneade, I. (2002). Body image dissatisfaction: Gender differences in eating attitudes, self-esteem, and reasons for exercise. *The Journal of Psychology*, *136*(6), 581–596.

Gamson, W. A., Croteau, D., Hoynes, W., & Sasson, T. (1992). Media images and the social construction of reality. *Annual Review of Sociology*, *18*(1), 373–393.

Garner, D. M., Olmsted, M. P., Bohr, Y., & Garfinkel, P. E. (1982). The eating attitudes test: Psychometric features and clinical correlates. *Psychological Medicine*, *12*(04), 871–878.

Garrido-Chamorro, R. P., Sirvent-Belando, J. E., Gonzalez-Lorenzo, M., Martin-Carratala, M. L., & Roche, E. (2009). Correlation between body mass index and body composition in elite athletes. *Journal of Sports Medicine and Physical Fitness*, *49*(3), 278.

Glassons. (2017). *Size chart.* Retrieved from https://www.glassons.com/size-guide

Grogan, S. (2008). *Body image: Understanding body dissatisfaction in men, women, and children* (2nd ed.). London and New York: Routledge.

Hart, A., & Rejeski, W. J. (1989). The measurement of SPA. *J Sport Exerc Psychol*, *11*(1), 94–104.

Hausenblas, H. A., & Fallon, E. A. (2006). Exercise and body image: A meta-analysis. *Psychology and Health*, *21*(1), 33–47.

Halliwell, E., Easun, A., & Harcourt, D. (2011). Body dissatisfaction: Can a short media literacy message reduce negative media exposure effects amongst adolescent girls? *British Journal of Health Psychology*, *16*(2), 396–403

Heinberg, L. J., & Thompson, J. K. (1995). Body image and televised images of thinness and attractiveness: A controlled laboratory investigation. *Journal of Social and Clinical Psychology*, *14*(4), 325–338.

Homan, K. (2010). Athletic-ideal and thin-ideal internalization as prospective predictors of body dissatisfaction, dieting, and compulsive exercise. *Body Image*, *7*(3), 240–245.

Homan, K., McHugh, E., Wells, D., Watson, C., & King, C. (2012). The effect of viewing ultra-fit images on college women's body dissatisfaction. *Body Image*, *9*(1), 50–56.

Joseph, C., & Shiffrar, M. (2011). Do observers' negative self-evaluations of their own bodies mediate their visual attention towards other bodies? *Journal of Vision*, *11*(11), 110–110.

Knauss, C., Paxton, S. J., & Alsaker, F. D. (2007). Relationships amongst bodydissatisfaction, internalisation of the media body ideal and perceived pressure from media in adolescent girls and boys. *Body Image*, *4*(4), 353–360.

Kong, P., & Harris, L. M. (2015). The sporting body: Body image and eating disorder symptomatology among female athletes from leanness focused and nonleanness focused sports. *The Journal of Psychology*, *149*(2), 141–160.

Koyuncu, M., Tok, S., Canpolat, A. M., & Catikkas, F. (2010). Body image satisfaction and dissatisfaction, social physique anxiety, self-esteem, and body fat ratio in female exercisers and nonexercisers. *Social Behavior and Personality: An International journal*, *38*(4), 561–570.

Lawler, M., & Nixon, E. (2011). Body dissatisfaction among adolescent boys and girls: The effects of body mass, peer appearance culture and internalization of appearance ideals. *Journal of Youth and Adolescence*, *40*(1), 59–71.

LePage, M. L., Price, M., O'Neil, P., & Crowther, J. H. (2012). The effect of exercise absence on affect and body dissatisfaction as moderated by obligatory exercise beliefs and eating disordered beliefs and behaviors. *Psychology of Sport and Exercise*, *13*(4), 500–508.

Lunde, C., & Gattario, K. H. (2017). Performance or appearance? Young female sport participants' body negotiations. *Body Image*, *21*, 81–89.

McDonald, K., & Thompson, J. K. (1992). Eating disturbance, body image dissatisfaction, and reasons for exercising: Gender differences and correlational findings. *International Journal of Eating Disorders*, *11*(3), 289–292.

Miller, E., & Halberstadt, J. (2005). Media consumption, body image and thin ideals in New Zealand men and women. *New Zealand Journal of Psychology*, *34*(3), 189–195.

Ministry of Health. (2017). *Body size*. Retrieved from http://www.health.govt.nz/our-work/populations/maori-health/tatau-kahukura-maori-health-statistics/nga-tauwehe-tupono-me-te-marumaru-risk-and-protective-factors/body-size

Mulgrew, K. E., & Hennes, S. M. (2015). The effect of functionality- and aesthetic-focused images on australian women's body satisfaction. *Sex Roles*, *72*(3–4), 127–139.

National Eating Disorders. (2012). *Negative body image*. Retrieved from https://www.nationaleatingdisorders.org/what-body-image

National Eating Disorders. (2012). *The war on women's bodies*. Retrieved from https://www.nationaleatingdisorders.org/war-womens-bodies

National Eating Disorders Collaboration. (2012). *An integrated response to complexity –National Eating Disorders framework 2012*. Retrieved from https://nedc.com.au/assets/NEDC-Publications/National-Framework-An-integrated-Response-to-Complexity-2012-Final.pdf

National Eating Disorders Collaboration. (2015). *What is body image?* Retrieved from http://www.nedc.com.au/body-image

Peterson, V. M. (2003). *Body image and dieting behaviours: A study of athletes and non-athletes* [Unpublished PhD thesis]. Australian Catholic University.

Quick, V., Eisenberg, M. E., Bucchianeri, M. M., & Neumark-Sztainer, D. (2013). Prospective predictors of body dissatisfaction in young adults: 10-year longitudinal findings. *Emerging Adulthood*, *1*(4), 271–282.

Robinson, L., Prichard, I., Nikolaidis, A., Drummond, C., Drummond, M., & Tiggemann, M.(2017). Idealised media images: The effect of fitspiration imagery on body satisfaction and exercise behaviour. *Body Image*, *22*, 65–71.

Rush, E. C., Goedecke, J. H., Jennings, C., Micklesfield, L., Dugas, L., Lambert, E.V., & Plank, L. D. (2007). BMI, fat and muscle differences in urban women of five ethnicities from two countries. *International Journal of Obesity*, *31*(8), 1232.

Schaefer, L. M., Burke, N. L., Thompson, J. K., Dedrick, R. F., Heinberg, L. J., Calogero, R. M., & Anderson, D. A. (2015). Development and validation of the sociocultural attitudes towards appearance questionnaire-4 (SATAQ-4). *Psychological Assessment*, *27*(1), 54.

Somer, O., Korkmaz, M., & Tatar, A. (2002). [Development of five factor personality inventory]. *Turkish Journal of Psychology*, *17*(50), 21–36.

Sparhawk, J. M. (2003). *Body image and the media: The media's influence on body image* [Unpublished PhD thesis]. University of Wisconsin-Stout.

Statista. (2016) *Number of social network users worldwide from 2010 to 2020 (in billions)*. Retrieved from http://www.statista.com/statistics/278414/number-of-worldwide-social-network-users/

Stice, E., & Whitenton, K. (2002). Risk factors for body dissatisfaction in adolescent girls: A longitudinal investigation. *Developmental Psychology*, *38*(5), 669.

Stunkard, A. J., Sørensen, T., & Schulsinger, F. (1983). Use of the Danish adoption register for the study of obesity and thinness. *Research Publications – Association for Research in Nervous and Mental Disease*, *60*, 115.

Sundgot-Borgen, J., & Torstveit, M. K. (2004). Prevalence of eating disorders in elite athletes is higher than in the general population. *Clin J Sport Med*, *14*(1), 25–32.

Swami, V., Salem, N., Furnham, A., & Tovée, M. J. (2008b). Initial examination of the validity and reliability of the female photographic figure rating scale for body image assessment. *Personality and Individual Differences*, *44*, 1752–1761.

Swami, V., Steadman, L., & Tovée, M. J. (2009). A comparison of body size ideals, body dissatisfaction, and media influence between female track athletes, martial artists, and non-athletes. *Psychology of Sport and Exercise*, *10*(6), 609–614.

Thompson, J. K., van den Berg, P., Roehrig, M., Guarda, A. S., & Heinberg, L. J. (2004). The sociocultural attitudes towards appearance scale-3 (SATAQ-3): Development and validation. *International Journal of Eating Disorders*, *35*(3), 293–304.

Thompson, J. K., Heinberg, L. J., Altabe, M., & Tantleff-Dunn, S. (1999). *Exacting beauty: Theory, assessment, and treatment of body image disturbance*. Washington, DC: American Psychological Association.

Tok, S., Güneş, İ., Koyuncu, M., Doğan, B., & Canpolat, A. M. (2011). The effect of female media body images on body image dissatisfaction in female athletes and non-athletes. *Turkiye Klinikleri J Med Sci*, *31*(5), 1049–56.

Van den Berg, P., Paxton, S. J., Keery, H., Wall, M., Guo, J., & Neumark-Sztainer, D. (2007). Body dissatisfaction and body comparison with media images in males and females. *Body Image*, *4*(3), 257–268.

Yates, A., Edman, J., & Aruguete, M. (2004). Ethnic differences in BMI and body/self-dissatisfaction among whites, Asian subgroups, Pacific islanders, and African-Americans. *Journal of Adolescent Health*, *34*(4), 300–307.

Zaccagni, L., Masotti, S., Donati, R., Mazzoni, G., & Gualdi-Russo, E. (2014). Body image and weight perceptions in relation to actual measurements by means of a new index and level of physical activity in Italian university students. *Journal of Translational Medicine*, *12*(1), 42.