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THE PROTECTIVE STRENGTHS OF POSITIVE BODY IMAGE FOR SOMATIC SYMPTOMS, ANXIETY, SOCIAL DYSFUNCTION AND DEPRESSION

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Abstract. This study examined the protective strengths of positive body image for various dimensions of general health in a non-clinical setting. Two hundred and seventy-six university students (139 males; \( M = 21.09 \); 137 females; \( M = 21.51 \)) with a normal Body Mass Index (BMI) took part in the study. The positive body image and general health of the participants were measured using the Body Image Scale and the General Health Questionnaire, respectively. The findings revealed higher mean scores on body appreciation (BA) and body effectiveness (BE) (components of positive body image) and overall positive body image scale of the female participants compared to the males. Body appreciation, body effectiveness and overall positive body image showed significant negative correlations with social dysfunction, depression, and overall general health. The implications of the findings are discussed.

Keywords: Body appreciation, Body effectiveness, Body image, Depression, General health, Social dysfunction

INTRODUCTION

The study of body image constitutes an interdisciplinary area of inquiry that has theoretical and practical significance to the understanding of a variety of life outcomes (He et al., 2020; Tylka & Wood-Barcalow, 2015). Body image refers to a set of attitudes, beliefs, perceptions and emotions about one’s own body (Alexias & Togas, 2021; Tylka, 2012). In essence, body image is a multidimensional, subjective, and dynamic concept that encompasses a person’s perceptions, thoughts, and feelings about their body (Alexias & Togas, 2021). It is formed by a complex interplay between biological, socio-cultural and psychological factors, which, in turn, shape the nature and extent of various life outcomes (Tylka, 2012; Webb et al., 2014). Positive and negative body images are two components of body image. The core features of
positive body image include body appreciation, body acceptance and love, a broad conceptualization of beauty, inner positivity, and filtering of information in a body-protective manner (e.g., Tylka, 2012). Research suggests that people with high positive body image exhibit confidence, pro-social behaviour, self-care, and friendliness towards others (e.g., Tylka, 2012) as well as high self-esteem, optimism, and proactive coping (e.g., Avalos et al., 2005).

The negative body image, on the other hand, has been well-documented in the literature on the psychology of body image (Tylka & Wood-Barcalow, 2015). Negative body image is closely linked to low self-esteem, depression, and a sense of insecurity for both genders with females demonstrating higher levels of ill-consequences than males (Quittkat et al., 2019; Sujoldžić & De Lucia, 2007). It is also associated with social phobia, the internalization of a thin-body image and social comparisons (e.g., Cafri et al., 2006). Socio-cultural factors play an important role in the development of a particular type of body image (Cafri et al., 2006). Recent studies have shown that negative body image has a close link to socioeconomic status and body image dissatisfaction is more prevalent in individuals who have a higher socioeconomic status (Ganesan et al., 2018; Hosseini & Padhy, 2021; O’Dea & Caputi, 2001; Qi & Cui, 2018).

Similar to the findings for American and Western societies (Cafri et al., 2006; Taylor et al., 2013) that reported negative body image to essentially comprise awareness of a thin ideal, internalization of this ideal, and perceived pressures to achieve thinness which, in turn, lowers positive life outcomes, unhealthy consequences of negative body image for Indian people have also been reported. For example, body image dissatisfaction and a higher Body Mass Index (BMI) has been shown to have ill-consequences for Indian women, such as eating disturbances (Chandra et al., 2012) and poor well-being (Goswami et al., 2012), which is thought to be due to the internalization of the thin body image portrayed by the mass media. Similar findings have been reported in non-Western countries such as Fiji (Becker et al., 2002), Croatia (Rukavina & Pokrajac-Bulian, 2006), United Arab Emirates (Eapen et al., 2006) and Korea (Jung, 2006). Thus, a variety of ill-consequences of negative body image have been reported for people of both Eastern and Western societies.

**Gender differences**

Research suggests that males and females differ in their body image ideals and the way they evaluate and talk about their bodies (e.g., Halliwell & Dittmar, 2003). There are significant cultural differences in the ways men and women are socialised to be attractive and evaluate their body attributes (e.g., Xanthopoulous et al., 2011). For example, males take their bodies as a whole and functional entity, whereas women tend to evaluate and talk about their bodies as a collection of different and distinct parts (Halliwell & Dittmar, 2003). These gender differences in the conceptualizations of body image underlie the dissimilarities in body awareness and body focus between males and females (Alexias & Togas, 2021; Fredrickson & Roberts, 1997). Moreover, males and females differ in the cultural expectations which impact their body image and body image ideals. Female body ideals are strongly associated with thinness, signifiers of sexual attraction, overestimation of the actual body attributes (e.g., fatness) and desire to lose weight, more so than male body ideals (Kagawa et al., 2007). Indian
females have also been reported to be more satisfied with body parts than males. Males were found to strive for masculinity whereas females aspired for a thin body (Shahi & Kohli, 2019). The ideal body image of men and women is portrayed in the media through the advertisement of beauty products and entertainment materials which promote self-altering activities, as well as over-attention and excessive acts (e.g., exercise) on the body to achieve the ideal body image. These cumulatively determine levels of body image satisfaction for both genders. Thus, there are significant gender differences in the nature, associated psychological processes, and consequences of body image, which are mediated by cultural factors (e.g., Xanthopoulos et al., 2011).

**Cultural effects on body image**

Body image differences in males and females have been reported across cultural groups. For instance, White and Asian populations have shown lower body satisfaction than Black-African populations. These groups also differed in their conceptualizations of the ideal body image (e.g., Holmqvist et al., 2007). Such differences generally indicate that White (e.g., van den Berg et al., 2010) or Asian (e.g., Xanthopoulos et al., 2011) people are less satisfied with their bodies than Hispanic. Likewise, parental and familial factors such as peers, parental values and quality of parent-child relationship contribute significantly to the nature and level of body image satisfaction (e.g., Holsen et al., 2012). Research suggests that there are cultural differences in the mechanisms behind having a particular body image. For example, participants from Canada and India did not differ in their drive for thinness and body dissatisfaction but their concerns of body parts were different. Their body dissatisfaction construct included concerns about the weight of the abdomen, hips, thighs, and legs (Gupta et al., 2001). Socio-cultural factors made a portion of obese women to perceive their body weight as normal. The rest of them expressed their willingness to reduce their weight (Agrawal et al., 2014).

Similarly, there is no consensus regarding gender differences in body appreciation (a component of positive body image) of men and women (e.g., He et al., 2020). One line of research suggests that men show higher body appreciation than women. For example, a study with German samples suggested women to score lower on body appreciation measure as compared to men (e.g., Swami et al., 2008). The other line of research posits women to show higher body appreciation than men (Quittkat et al., 2019). A recent study also came to the same conclusion that women of all age groups show higher body appreciation than men (Weinberger & Luck-Sikorski, 2020). The third stream claims that both men and women possess similar levels of body appreciation (Meneses et al., 2019).

It is noticeable that body image plays an important role in shaping positive and negative life outcomes. It is also evident that most of the studies, whether from American/European or Indian cultures, have confined themselves to understand the nature, correlates and consequences of a negative body image only (He et al., 2020; Tylka, 2012). However, studying the effects of a positive body image has proven to be promising in contributing to the understanding of a different set of life outcomes (e.g., Tylka & Wood-Barcalow, 2015). Research suggests that positive body image is equally associated with positive and negative
life outcomes including the development of obesity, depression and psychological disturbances, self-esteem, social relationships, life success, happiness and well-being (e.g., Tylka & Wood-Barcalow, 2015). Moreover, there are cultural differences in the impact of the mass media and the different mechanisms which may underlie its influence (Ganesan et al., 2018). Research suggests that positive and negative body image is regulated by dissimilar mechanisms (e.g., Webb et al., 2015).

**The present study**

A close perusal of the above discussion shows that the body image constitutes a significant phenomenon to understand the dynamics of a plethora of human behaviour and life outcomes. Although negative body image is a well-studied phenomenon, little is known about the nature and dynamics of positive body image despite the evidence suggesting it to regulate a variety of significant life outcomes with enhancing and promotive values. Most of research on positive body image is based on samples drawn from American and Western societies characterized by individualistic values. Previous research also suggests that although gender is an important source to shape the nature and dynamics of body image of individuals, there is little consensus about its role in shaping a particular body image. Also, there is limited research on the relationship between positive body image and general health.

Thus, although the negative body image has been studied extensively, little attention has been paid to the study of the positive body image despite the fact that the study of positive body image may have significant implications for theory, practice and policy (He et al., 2020). Although women have been reported to have higher negative body image than men, research suggests that body appreciation or positive body image is not just the absence of body image dissatisfaction (Tiggemann, 2015). Similarly, gender differences in body appreciation may be due to multiple factors. For example, appearance ideals for men and women are a culturally determined phenomenon (Grogan, 2016). The similarity in educational and other prospects for men and women may provide them with equal opportunities for upward social comparison that can affect their positive body image and body appreciation (Watson et al., 2019). Thus, there are multiple and diverse factors underlying the inconsistencies concerning gender differences in positive body image (He et al., 2020). Specifically, gender differences in positive body image may be significantly moderated by a host of cultural factors (e.g., individualistic and collectivist values) (White & Lehman, 2005), socio-economic status and ethnicity (Holmqvist et al., 2007), social identity (Tiggemann, 2015), age (Quittkat et al., 2019), and type of sample (Tylka & Wood-Barcalow, 2015).

Given the significant links of positive body image to a variety of life outcomes and its relative under-exploration, the present study aimed to investigate the possible protective strengths of positive body image for somatic symptoms, anxiety, social dysfunction (poor interpersonal and social relationship outcomes), and depression (the major components of general health). The positive body image measure used in this study has two aspects: body appreciation and body effectiveness. Body appreciation reflects an understanding of the promotive role of body image for self-confidence, adaptive perception, respect, attractiveness, good feeling, satisfaction, acceptance, happiness, healthy body practices, non-comparison
between body attributes, and perception of the body as a gift of God (Jain & Tiwari, 2020). On the other hand, *body effectiveness* denotes a source of success in life, beauty, adjustment, social relationships, a source of social status and regard in interpersonal situations, positive social response, regularity in efforts, positive health habits, and interpersonal effectiveness (Jain & Tiwari, 2020). The study also aimed to identify gender differences as well as the nature and extent of the association between positive body image and general health measures and their components. This may eventually help to testify a model of positive body image derived from a collectivistic society (India) (Koydemir et al., 2013) to understand general health. Based on the understanding of the review of the relevant literature on positive body image, the following hypotheses were formed:

**H1:** Female participants will show higher mean scores on positive body image (body appreciation and body effectiveness) and general health (somatic symptoms, anxiety, social dysfunction, and depression) measures as compared to their male counterparts.

**H2:** The positive body image (body appreciation and body effectiveness) will show significant correlations with general health indices and will negatively predict their manifestations such as somatic symptoms, anxiety, social dysfunction, and depression.

**METHOD**

**Sample**

Initially, 700 male and female university students with their age ranging from 20 to 30 years ($M = 21.30, SD = 1.64$) were personally contacted. After seeking permission from the heads of the academic departments, potential participants were approached through face-to-face interactions and briefed about the study objectives. Those who volunteered to participate were asked to report their height and weight for determining their BMI. The participants were screened in two stages. In the first stage, three hundred participants were selected out of 700 on the basis that their BMIs falling in the normal range of 18.50 to 22.90, as suggested for Asian people (Anuurad et al., 2003). This screening criterion (BMI) was chosen since normal BMI has been reported to be associated with body appreciation (a significant component of positive body image) (Weinberger & Luck-Sikorski, 2020). After screening outliers (Donald, 2016) from these 300 participants who responded to the body image and the general health measures, 139 males aged 20-26 years ($M = 21.09, SD = 1.18$) and 137 females aged 20-30 years ($M = 21.51, SD = 1.98$) were finally chosen for this study. These participants were again contacted at their respective academic departments during intervals and requested participation which would last about 20 min. No monetary or other compensation was given for their participation. The participants were Hindi speaking and regular students at the University. Most of them belonged to Hindu families with dissimilar socioeconomic backgrounds predominantly lower middle class.
Measures

The following psychometric tools were used:

Body Image Scale

The Body Image Scale (Jain & Tiwari, 2020) was used to measure positive body image which contains 24 items with a seven-point response scale (1-Very Strongly Disagree, 2-Strongly Disagree, 3-Somewhat Disagree, 4-Neutral, 5-Somewhat Agree, 6-Strongly Agree, 7-Very Strongly Agree). This scale was previously standardised and available in the Hindi language (Jain, 2018). The scale measures two components of positive body image: Body appreciation (e.g., Item 1: I respect my body and its parts; Item 5: I am satisfied with my body) and body effectiveness (e.g., Item 13: Positive body image is helpful in the adjustment; Item 20: People respond positively to my body). Cronbach’s alpha of Body Appreciation, Body Effectiveness, and overall Body Image scale were .88, .84, and .90, respectively. The concurrent validity of the scale has been established (Jain & Tiwari, 2020) with the Quality of Life scale (World Health Organization, 1996). Cronbach’s alpha coefficients of the Body Appreciation, Body Effectiveness and the whole Positive Body Image scale for this sample were .87, .82, and .84, respectively.

General Health Questionnaire (GHQ-28)

General health was measured with the help of General Health Questionnaire (GHQ) (Goldberg & Hillier, 1979) that comprises 28 items with four response alternatives (1 = not at all, 2 = no more than usual, 3 = rather more than usual, 4 = much more than usual). It has four components: Somatic symptoms (e.g., Item 7: Have you recently been having hot or cold spells?); Anxiety/insomnia (e.g., Item 10: Have you recently felt constantly under strain?); Social dysfunction (e.g., Item 20: Have you recently felt capable of making decisions about things?), and severe Depression (e.g., Item 23: Have you recently felt that life is entirely hopeless?). As the participants were Hindi speaking, the scale was first translated in Hindi with a back-translation in English by three senior faculty members of psychology who were aware with the construct inherent in GHQ and were well-versed in both the languages and had long teaching and research experiences in the subject. It is a popular measure reported to be equally useful for psychiatric and non-psychiatric populations (e.g., Sakakibara et al., 2009). Cronbach’s alpha coefficients of GHQ-28 have been reported to range between .82 and .86, and it has also shown a negative correlation with the quality of life measure (e.g., Griffiths et al., 1993). GHQ has evinced an excellent concurrent validity of .83 when compared with the clinical interview schedule (e.g., Sakakibara et al., 2009). Cronbach’s alpha coefficients of the Somatic symptoms, Anxiety/insomnia, Social Dysfunction, severe Depression, and the overall GHQ for this cultural group were .72, .67, .69, .84, and .84, respectively.

A confirmatory factor analysis was carried out to cross-validate the four-factor structure of the Hindi version of the General Health Questionnaire. IBM SPSS Amos v26 (Statistical Package for the Social Sciences) was used. The criteria suggested by Hu and Bentler (1999) was used to determine the fit indices of the model tested through the confirmatory factor analysis on the present data (CFI/TLI ≥ .95, RMSEA ≤ .06, SRMR ≤ .08). The results
confirmed a good fit to the four-factor structure of the general health measure (Somatic symptoms, Anxiety/insomnia, Social dysfunction, and Severe Depression), $\chi^2$/df = 1.76, GFI = .88, AGFI = .86, TLI = .89, NFI = .81, CFI = .91, RMSEA = .05 (see Figure 1).

**Figure 1. Confirmatory factor analysis of the four-factor structure of the Hindi version of the General Health Questionnaire (Goldberg & Hillier, 1979)**

**Body Mass Index**

The BMI for each participant was derived by dividing the mass (weight) by the square of the body height that is expressed in units of kg/m$^2$. The new BMI criteria for identifying individuals with normal weight suggested for Asians range from 18.50 kg/m$^2$ to 22.90 kg/m$^2$ (Anuurad et al., 2003).

**Ethics**

The research proposal was approved by the Ethics Committee of Doctor Harisingh Gour University, Sagar, Madhya Pradesh, India. The researchers established rapport with the participants, briefed them about the basic goals of the study and those who satisfied the inclusion criteria submitted their written consent to take part in the study. They were given oral instructions to facilitate the answering of the items of the scales. The participants read the instructions and answered the items of the scales.
RESULTS

Descriptive statistics of all measures are presented in Table 1.

<table>
<thead>
<tr>
<th>Measure</th>
<th>Range</th>
<th>Min.</th>
<th>Max.</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Body Appreciation</td>
<td>45</td>
<td>32</td>
<td>77</td>
<td>65.18</td>
<td>9.63</td>
</tr>
<tr>
<td>2. Body Effectiveness</td>
<td>40</td>
<td>41</td>
<td>81</td>
<td>62.67</td>
<td>8.28</td>
</tr>
<tr>
<td>3. Overall Positive Body Image</td>
<td>125</td>
<td>106</td>
<td>231</td>
<td>193.02</td>
<td>24.47</td>
</tr>
<tr>
<td>4. Somatic Symptoms</td>
<td>18</td>
<td>7</td>
<td>25</td>
<td>15.07</td>
<td>4.13</td>
</tr>
<tr>
<td>5. Anxiety/Insomnia</td>
<td>20</td>
<td>7</td>
<td>27</td>
<td>16.04</td>
<td>4.32</td>
</tr>
<tr>
<td>6. Social Dysfunction</td>
<td>16</td>
<td>7</td>
<td>23</td>
<td>14.46</td>
<td>3.40</td>
</tr>
<tr>
<td>7. Severe Depression</td>
<td>19</td>
<td>7</td>
<td>26</td>
<td>11.58</td>
<td>4.92</td>
</tr>
<tr>
<td>8. Overall General Health</td>
<td>101</td>
<td>57</td>
<td>158</td>
<td>102.73</td>
<td>20.27</td>
</tr>
</tbody>
</table>

Note: \(N = 276\)

To test H1 that predicted gender differences in positive body image (body appreciation and body effectiveness) and general health (somatic symptoms, anxiety, social dysfunction, and depression) of the participants, one-way multivariate analysis of variance (MANOVA) was employed. The MANOVA showed a significant main effect of gender for the positive body image measures, Wilk’s \(\Lambda = 0.907, \eta_p^2 = .09, F(2, 273) = 13.94, p < .001\). The results showed that female participants, compared to males, had significantly higher mean scores on body appreciation, \(F(1, 274) = 27.38, p < .001, \eta_p^2 = .09\), body effectiveness, \(F(1, 274) = 9.96, p = .002, \eta_p^2 = .04\), and overall positive body image, \(F(1, 274) = 27.21, p < .001, \eta_p^2 = .09\). According to the recommendations of Cohen (1992), these differences are low in effect size. Specifically, there were differences in the mean scores of the male and female participants on the body appreciation, \(M(SD)_{male} = 62.30 (11.64)\), \(M(SD)_{female} = 68.10 (5.74)\), body effectiveness, \(M(SD)_{male} = 61.13 (9.00)\), \(M(SD)_{female} = 64.23 (7.18)\), and positive body image measures, \(M(SD)_{male} = 185.73 (29.09)\), \(M(SD)_{female} = 200.42 (15.57)\).

The multivariate main effect of gender for general health measures was found to be significant, Wilk’s \(\Lambda = 0.951, F(4, 271) = 3.49, p < .009, \eta_p^2 = .05\). Contrarily, no gender differences were observed in the mean scores of somatic symptoms, \(F(1, 274) = 3.58, p = .059, \eta_p^2 = .01\); \(M(SD)_{male} = 14.60 (4.44)\), \(M(SD)_{female} = 15.54 (3.74)\); anxiety, \(F(1, 274) = 3.06, p = .081, \eta_p^2 = .01\), \(M(SD)_{male} = 15.59 (4.36)\), \(M(SD)_{female} = 16.50 (4.24)\); social dysfunction, \(F(1, 274) = 0.43, p = .512, \eta_p^2 = .002\), \(M(SD)_{male} = 14.60 (3.53)\), \(M(SD)_{female} = 14.33 (3.26)\); depression, \(F(1, 274) = 1.62, p = .204, \eta_p^2 = .01\), \(M(SD)_{male} = 11.96 (5.18)\), \(M(SD)_{female} = 11.20 (4.63)\); and overall general health measure, \(F(1, 274) = 0.96, p = .327, \eta_p^2 = .004\), \(M(SD)_{male} = 101.54 (20.94)\), \(M(SD)_{female} = 103.93 (19.56)\).

To further test Hypothesis 1, Pearson correlation analyses were performed between the subscale scores of PBI and GHQ for each gender separately. Body appreciation of male participants showed significant negative correlations with social dysfunction, \(r(137) = -.24, p = .004\), depression, \(r(137) = -.23, p = .007\), and overall general health, \(r(137) = -.24, p = .004\). Similarly, the overall positive body image of the male participants showed significant negative
correlations with social dysfunction, \( r(137) = -0.18, p = 0.038 \), depression, \( r(137) = -0.20, p = 0.021 \), and the overall general health score, \( r(137) = -0.17, p = 0.049 \) (see Table 2).

The body appreciation of the female participants showed a significant negative correlation with social dysfunction, \( r(135) = -0.35, p < 0.001 \), while body effectiveness had significant negative correlations with somatic symptoms, \( r(135) = -0.24, p = 0.006 \), social dysfunction, \( r(135) = -0.24, p = 0.004 \), and depression, \( r(135) = -0.20, p = 0.023 \). Similarly, the overall positive body image of the female participants showed a significant negative correlation only with social dysfunction, \( r(135) = -0.35, p < 0.001 \) (see Table 2).

**Table 2. Pearson r correlations and respective effect sizes \( (r^2) \) between study variables**

<table>
<thead>
<tr>
<th></th>
<th>SS</th>
<th>AN</th>
<th>SD</th>
<th>D</th>
<th>OGH</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( r )</td>
<td>( r^2 )</td>
<td>( r )</td>
<td>( r^2 )</td>
<td>( r )</td>
</tr>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body Appreciation</td>
<td>-.15</td>
<td>.01</td>
<td>-.10</td>
<td>.01</td>
<td>-.24**</td>
</tr>
<tr>
<td>Body Effectiveness</td>
<td>.04</td>
<td>.01</td>
<td>-.01</td>
<td>.01</td>
<td>-.04</td>
</tr>
<tr>
<td>Overall Positive Body Image</td>
<td>-.07</td>
<td>.01</td>
<td>-.07</td>
<td>.01</td>
<td>-.18*</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body Appreciation</td>
<td>.10</td>
<td>.01</td>
<td>.07</td>
<td>.01</td>
<td>-.35**</td>
</tr>
<tr>
<td>Body Effectiveness</td>
<td>.24**</td>
<td>.06</td>
<td>.04</td>
<td>.01</td>
<td>-.24**</td>
</tr>
<tr>
<td>Overall Positive Body Image</td>
<td>.21</td>
<td>.04</td>
<td>.06</td>
<td>.01</td>
<td>-.35**</td>
</tr>
<tr>
<td>Overall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Body Appreciation</td>
<td>-.04</td>
<td>.01</td>
<td>-.01</td>
<td>.01</td>
<td>-.27**</td>
</tr>
<tr>
<td>Body Effectiveness</td>
<td>.14*</td>
<td>.02</td>
<td>.03</td>
<td>.01</td>
<td>-.13*</td>
</tr>
<tr>
<td>Overall Positive Body Image</td>
<td>.05</td>
<td>.01</td>
<td>.01</td>
<td>.01</td>
<td>-.23**</td>
</tr>
</tbody>
</table>

**Note 1:** Male \( (n = 139) \), Female \( (n = 137) \)

**Note 2:** *\( p < .05 \), **\( p < .01 \)

**Note 3:** SS = Somatic Symptoms, AN = Anxiety, SD = Social Dysfunction, D = Depression, OGH = Overall General Health

Irrespective of gender, body appreciation showed significant negative correlations with social dysfunction, \( r(274) = -0.27, p < 0.001 \), depression, \( r(274) = -0.17, p = 0.006 \), and the overall general health score, \( r(274) = -0.15, p = 0.014 \). Body effectiveness showed a significant negative correlation with somatic symptoms, \( r(274) = -0.14, p = 0.021 \), and social dysfunction, \( r(274) = -0.13, p = 0.023 \). Similarly, the overall positive body image showed a significant negative correlation only with social dysfunction, \( r(274) = -0.23, p < 0.001 \). It should be noted, however, that following Cohen (1992), most of the effect sizes \( (r^2) \) of the above correlations (see Table 2) were moderate to low. According to Cohen (1992), \( r^2 \) values .01, .03 and .50 represent low, medium, and high effect size of a correlation, respectively.

**Hierarchical regression analysis**

To test Hypothesis 2, namely that positive body image components will negatively predict the GHQ measures, a series of hierarchical regression analyses was carried out, each regarding a
different factor of GHQ. In the first model (Model 1), regarding somatic symptoms, gender was introduced as predictor. This effect was nonsignificant, $R^2 = .01$, $F(1, 274) = 3.58$, $p = .059$. In Model 2, body appreciation was also entered. This effect was also nonsignificant, $R^2_{change} = .02$, $F(1, 273) = 1.52$, $p = .218$. Then, in Model 3, body effectiveness was added as predictor. The three predictors accounted for 4.90% of the variance in the somatic symptoms, $R^2 = .05$, $F(1, 272) = 8.20$, $p = .007$. The β values showed that body effectiveness emerged as the most significant predictor for somatic symptoms followed by body appreciation and gender (see Table 3).

Table 3. Hierarchical regression analysis with gender and positive body image components as predictors and general health components as outcome variables

<table>
<thead>
<tr>
<th>Predictors</th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$B$</td>
<td>$SE$</td>
<td>$\beta$</td>
</tr>
<tr>
<td>Somatic Symptoms</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>.94</td>
<td>.49</td>
<td>.11</td>
</tr>
<tr>
<td>Body Appreciation</td>
<td>-.03</td>
<td>.03</td>
<td>-.08</td>
</tr>
<tr>
<td>Body Effectiveness</td>
<td>.10</td>
<td>.03</td>
<td>.20</td>
</tr>
<tr>
<td>$R^2$</td>
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<td>.02</td>
<td>.05</td>
</tr>
<tr>
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<td>3.58</td>
<td>1.52</td>
<td>8.80**</td>
</tr>
<tr>
<td>Anxiety</td>
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<tr>
<td>Gender</td>
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<td>.52</td>
<td>.11</td>
</tr>
<tr>
<td>Body Appreciation</td>
<td>-.02</td>
<td>.03</td>
<td>-.05</td>
</tr>
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<td>.02</td>
<td>.04</td>
<td>.04</td>
</tr>
<tr>
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<td>.01</td>
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<tr>
<td>$F$ for change in $R^2$</td>
<td>3.06</td>
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<td>.38</td>
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<tr>
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<td>.41</td>
<td>-.04</td>
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<tr>
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<td>.02</td>
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</tr>
<tr>
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<td>.00</td>
</tr>
<tr>
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<td>.07</td>
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<tr>
<td>$F$ for change in $R^2$</td>
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<td>20.81**</td>
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<td>1.62</td>
<td>6.20**</td>
<td>3.02</td>
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<tr>
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<td>2.44</td>
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<td>.03</td>
<td>.05</td>
</tr>
<tr>
<td>$F$ for change in $R^2$</td>
<td>0.96</td>
<td>8.54**</td>
<td>3.60</td>
</tr>
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</table>

Note: $N = 276$

*p < .05. **p < .01.

In the hierarchical analysis regarding anxiety, neither gender, $R^2 = .01$, $F(1, 274) = 3.06$, $p = .081$, nor body appreciation, $R^2_{change} = .01$, $F(1, 273) = 0.53$, $p = .467$, nor body effectiveness, $R^2_{change} = .01$, $F(1, 272) = 0.38$, $p = .54$, significantly predicted anxiety scores.
In the hierarchical analysis regarding social dysfunction, gender, $R^2 = .00$, $F(1, 274) = 0.43$, $p = .512$, did not predict social dysfunction. In Model 2, the predicted value of social dysfunction decreased by 0.098 units for each unit of body appreciation, and gender and body appreciation jointly accounted for 7.20% of the variance, $R^2_{\text{change}} = .07$, $F(1, 273) = 20.81$, $p < .001$ (see Table 3). Entering body effectiveness, $R^2_{\text{change}} = .07$, $F(1, 272) = 0.00$, $p = .994$, did not have any added effect as regards social dysfunction.

In the case of depression, gender, $R^2 = .01$, $F(1, 274) = 1.62$, $p = .204$, was not significant predictor. In Model 2, body appreciation was added, and the predicted value of depression decreased by 0.08 units for each unit of body appreciation. Body appreciation contributed 2.80% of the variance in depression, $R^2_{\text{change}} = .03$, $F(1, 273) = 6.20$, $p = .013$, proved an important predictor, followed by gender. Body effectiveness was not significant predictor of depression beyond that of body appreciation and gender, $R^2_{\text{change}} = .04$, $F(1, 271) = 2.99$, $p = .085$.

Finally, gender, $R^2 = .00$, $F(1, 274) = 0.96$, $p = .327$, did not predict overall general health scores. The predicted value of overall general health in Model 2 decreases by 0.38 units for each unit of body appreciation and gender and body appreciation accounted for 3.40% of the variance in overall general health, $R^2 = .03$, $F(1, 273) = 8.54$, $p = .004$. Body effectiveness did not significantly predict overall general health, $R^2_{\text{change}} = .05$, $F(1, 272) = 3.60$, $p = .059$ (see Table 3).

**DISCUSSION**

The aim of this study was to investigate the role of positive body image components (body appreciation and body effectiveness) in general health symptoms (somatic symptoms, anxiety, social dysfunction, and depression. Gender effects on the components of positive body image and general health symptoms were also explored. The findings showed gender differences in body appreciation and body effectiveness while no gender differences were observed in the various components of general health. Both components of positive body image had significant negative correlations with the various components of general health in males and females. Irrespective of gender, there were significant negative correlations among body appreciation and social dysfunction, depression, and overall general health, and between body effectiveness and somatic symptoms, and overall positive body image and social dysfunction. Gender, body appreciation and body effectiveness accounted for significant variance in the somatic symptoms while body appreciation seems to have higher “protective” relevance for social dysfunction, depression, and overall general health as compared to body effectiveness. Notably, body image did not predict anxiety.

The findings provided partial support to Hypothesis 1 since there were gender differences in positive body image in favour of females, but there was no gender effect on general health symptoms (somatic symptoms, anxiety, social dysfunction, and depression). Although the findings regarding gender differences in positive body image are not in line with research in Western countries that report higher body appreciation in men than women (e.g., Swami et al., 2008), there is variation in the findings of previous studies on this issue. Our
findings are in line with recent studies that reported similar to the present study findings (Quittkat et al., 2019; Weinberger & Luck-Sikorski, 2020).

As our study took place in India, one might explain the gender differences in terms of cultural factors. Specifically, positive body image of men and women is moderated by cultural factors (e.g., religious beliefs, interdependence, the prevalence of collective norms, beauty ideals, etc.) (Grogan, 2016), dissimilar life opportunities, ethnicity (Holmqvist et al., 2007), and social identities (Tiggemann, 2015). With semi-urban and rural backgrounds, women participants of the present study may have had lower media exposure than men, and this, to some extent, may have protected them against upward comparisons, and unrealistic body ideals causing higher body appreciation. Gender differences in positive body image may also be due to differences in gender roles, cultural body image ideals, and culturally defined criteria of body image evaluation (e.g., Sujoldzić & De Lucia, 2007).

Yam (2013) has suggested that cultural identification is closely associated to culture-specific norms of body ideals. Specifically, identification with Asian culture has been found to be linked with a thinner body ideal in Asian American women, while a higher exposure to Asian cultural cues, as compared to American cultural cues, is associated with a thicker body ideal. Moreover, there are significant differences between South Asian and East and South-East Asian cultural values, appearance, and body ideals (e.g., Yam, 2013). Indians show a lower tendency for thinness than Japanese (Kayano et al., 2008), whereas Pakistani women express higher body satisfaction as compared to Australian women (Mahmud & Crittenden, 2007). This suggests that in the present sample, cultural values did not contradict the body image of women.

Despite the possible differences in body ideals and body satisfaction, the thin-body ideal and risk factors associated with body dissatisfaction seem to be similar in Indian and American/Western cultures (Gupta et al., 2001). Moreover, in Indian culture, there are regional variations in food habits and religious practices that might be closely linked with body image. Most Hindus prefer and promote vegetarianism. The role of body image in religious ceremonies has been reported to be significant (e.g., Raman, 2015). The incidence of obesity in India is very low as compared to American and Western societies since Indians’ socioeconomic status is comparatively lower than the American and Western societies (Raman, 2015). This suggests that although the Indian society does not promote thin-body ideals through the media, at least uniformly, Indians have a different conception of beauty for the two genders (e.g., Khandelwal et al., 1995). This may be a strong reason behind the higher positive body image of female participants as compared to their male counterparts. Moreover, these participants belong to suburban areas that are mostly a mix of traditionalism and modernism with the former being more prevalent.

The impact of culture on body image has also been studied in relation to BMI. The internalization of cultural values has been suggested to significantly mediate the relationship between BMI and body dissatisfaction as well as willingness for thinness in a sample of Indian adult and adolescent girls (Shroff & Thompson, 2004). In the present study all participants had BMI within normal range. Therefore, it is not clear if BMI had any direct effect on the gender differences identified. Other research has shown that normal BMI in both genders shows positive correlations with positive body image (Shahi & Kohli, 2019). This does not explain
Protective strengths of positive body image

the gender differences in the present study. It might be the case that it is not BMI per se that makes the difference in positive body image but dissimilar concerns for body parts (Gupta et al., 2001). This needs to be further investigated.

Hypothesis 2 was also partially supported. It was found that the two components of positive body image (body appreciation and body effectiveness) differed in their relations to the various aspects of general health symptoms. Body appreciation and body effectiveness negatively predicted somatic symptoms, but body appreciation also was negatively related to social dysfunction, depression, and overall general health. Notably, the two components of positive body image did not predict anxiety. These findings are similar to those of earlier studies (e.g., Pellizzer et al., 2018). Moreover, the present findings are in line with research showing that positive body image is associated with acceptance and management of chronic pain (e.g., Markey et al., 2020) and positive healthy feelings (e.g., Linardon et al., 2021). Likewise, positive body image and associated activities are linked with interpersonal effectiveness, satisfaction, enjoyment and pleasure (e.g., Gilchrist et al., 2021), and lowered depression (e.g., Gillen, 2015).

Further, the associations of positive body image with positive health and psychological states need to be further investigated as to the mechanism(s) underlying them. For example, recent research suggests that body image flexibility is an integral component of positive body image. It refers to the adaptive way in which individuals respond to threats to their body image (e.g., Rogers et al., 2018). Body image flexibility has been reported to be linked with lower levels of psychological distress (Rogers et al., 2018). It might be the case that the present findings are explained by body image flexibility. This is an issue for further research.

Another issue that requires further research is the differentiation of the effects of body appreciation compared to body effectiveness on general health symptoms. This finding could be associated with cultural factors, specific to the Indian society. Body image has different meanings and perceptions for males and females in the Indian culture. For males, a masculine, mesomorphic and stout body with expanded shoulders and chest and a slender waist is cherished. Skin colour has little value for males, as both white and dark skins are equally acceptable. Apart from facial beauty, being humble, mick, tender, and sociable are values preferred for women as they need to attend household work along with work outside and be functional in social and familial environments. This is an implicit meaning of body appreciation. That is, women receive input for self-appreciation, irrespectively of actual body form, from familial and social contexts. From this point of view, zero body image (i.e., thin body image) is an ideal for the Indian culture but does not ensure effectiveness and therefore is not a sought-after quality. This assumption, however, should be tested in future research. Males, on the other hand, are expected to be strong, stout, and functional but they are not much concerned for their outer appearance. Body appreciation is, in fact, appreciation of the quality of social behaviour and reflects acceptance by one’s cultural environment context for both males and females. Again, this is an issue for further research.

In conclusion, our findings showed gender differences as well as negative associations of a positive body image with somatic symptoms, anxiety, social dysfunction, and depression. These findings could represent culture free mechanisms subserving positive body image such as body image flexibility or BMI, or interactions of body image with cultural factors. This
needs to be further researched, particularly because of the fast and unavoidable growing influence of social media that are coupled with individualistic values. This impacts countries that still have a collectivist culture and strong traditional ways of living.

**Limitations, Directions for Future Research, and Implications**

The present study has limitations that should be mentioned. Specifically, one of the limitations regards the constitution of the sample, because the participants belonged to semi-urban or rural areas in India. A more representative sample, including participants from major cities, would allow generalization of the findings for the whole country. Further, the sample comprised only university students, which is a population with good physical and psychological condition. The findings might differ in the case of middle-aged or older adults. Lastly, the present findings are based on a correlational study that does not allow any causal conclusions about the effects of body image and general health symptoms. Positive body image does not function in isolation. Future research may explore mediating or moderating roles of age and personality compositions. Understanding their impact on eating disorders, disorders of adolescence and adulthood, other health outcomes, and well-being for diverse cultural groups deserve future inquiry.

There are many theoretical and practical implications of the findings of the current study. Positive body image (body appreciation and body effectiveness) based intervention programmes may be developed for groups at risk for developing major concerns about their body image, such as adolescents or young adults. Such interventions would emphasize the differentiation between body appreciation and body effectiveness, and their association with social, emotional, and behavioural skills.

**Conclusions**

Despite limitations, the present study provided useful insights about gender differences in positive body image in favour of females. Also, it showed the importance of differentiating body appreciation from body effectiveness as regards their relationship with general health symptoms in young adults. We hope that the present research will stimulate further investigation of the relationship of these variables in combination with other relevant psychological constructs.

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