The effect of history of teasing on body dissatisfaction and intention to eat healthy in overweight and obese subjects

Thomas Heijens, Wim Janssens, Sandra Streukens

Department of Marketing and Strategy, Hasselt University, Diepenbeek, Belgium

Correspondence: Thomas Heijens, Faculty of Business Economics, Hasselt University, Diepenbeek, Belgium, tel: +32 (0) 11 26 86 11, fax: +32 (0) 11 26 87 00, e-mail: thomas.heijens@uhasselt.be

Background: Obesity has become a health problem in western Europe and Belgium. In Belgium, 54% of the males and 40% of the females are overweight. A high percentage of overweight kids endure teasing because of their weight. The effect of history of teasing on body dissatisfaction and intention to eat healthy is studied. Methods: In a sample of 239 overweight and obese participants with a history of teasing about their weight, factors contributing to weight-controlling behaviour were studied to gain more insight into the understanding of the lack of such behaviour. By means of a path model, the intention to eat healthy was estimated by body mass index (BMI), social norm, internalization, history of teasing, body dissatisfaction and self-efficacy. Results: History of teasing and social norm had a direct effect on body dissatisfaction as well as an indirect effect through internalization. BMI appeared to have no effects. Both body dissatisfaction and self-efficacy had effects on the intention to eat healthy. Conclusion: Self-efficacy has a large effect on intention to eat healthy and should be heightened. The environmental factors contribute to high body dissatisfaction. This high body dissatisfaction, however, does not have a large effect on the intention to eat healthy.

Introduction

As obesity has increased to epidemic rates in the USA, Europe is now facing the same problem with percentages of overweight and obesity in the EU–27 having risen to 59% for males and 47.5% for females.1 In Belgium, where this study was conducted, 54% of males and 40% of females were overweight or obese in 2008.2 Obesity is a cause of heart disease, hypoxia, sleep apnoea and Type II diabetes.3 Besides these health problems, there is also a high monetary cost: in 2002, the total direct and indirect costs of obesity in the 15 Member States of the European Union have been estimated to be 32.8 billion euro per year.4 When facing these facts, it is very understandable that governments and health organizations are trying to turn the tide. However, this requires a thorough understanding of the reasons people have to start eating healthy. Existing research shows that history of teasing is a key variable to take into account when trying to understand the propensity to engage in healthy eating behaviour. In particular, it is evidenced that history of teasing, the perceived amount of teasing (negative remarks and jokes) about their weight in their childhood, ignites a chain of effects that via three factors eventually influence eating behaviour. First, via internalization, defined by Thompson and Stice5 as the extent to which an individual cognitively ‘buys into’ socially defined ideals of attractiveness and engages in behaviours designed to produce an approximation of these ideals. Second, via social norm, the perceived social pressure to perform a behaviour.6 And third, via body dissatisfaction, defined by Grogan7 as a person’s negative thoughts and feelings about his or her body, history of teasing influences eating behaviour. So far, these relationships have been empirically tested only for normal weight subjects.8

At least two reasons underscore the importance of assessing the nomological web connecting history of teasing to behavioural intentions regarding healthy eating in the context of overweight and obese people. First of all, these people can have the greatest benefit in knowing which factors contribute to body dissatisfaction and healthy eating. Second, teasing is a substantial problem among overweight and obese adolescents...
as 25.5% of all girls and 22.2% of all boys have been subjects of teasing with regard to weight. Additionally, among the very overweight people, these numbers are up to 45.3 and 50.2%, respectively.

Consequently, the aim of this study is to develop and test a comprehensive model to understand the role of history of teasing on body dissatisfaction and intention to eat healthy among overweight and obese people.

Eating behaviour has been put forward as an important factor in obesity and losing weight by past literature. For example, Westenhoefer et al.\textsuperscript{10} state that subjects who change eating behaviour, like choosing low-fat food, and maintain these changes for one year, will have a greater opportunity of successful weight reduction after three years. Healthy eating behaviour constitutes a wide range of behaviours, like eating low-fat foods and low-calorie drinks,\textsuperscript{10} which concerns exactly what is eaten. But besides that, ways of eating, such as eating breakfast and lunch have been associated with a lower risk of obesity.\textsuperscript{11,12} Likewise, meal sizes are a significant factor in obesity.\textsuperscript{11} When being obese, an intention to eat healthy often results from a drive for thinness and/or a drive to lose weight. In line with this literature, we opted for the intention to eat healthy as the goal behaviour. In the literature, the following factors influencing drive for thinness are discussed.

One of the key determinants of drive for thinness is body dissatisfaction.\textsuperscript{6} In a study about eating disturbances that was based on an Australian and a Swedish sample of teenage girls, Lunner et al.\textsuperscript{13} found that body dissatisfaction primarily contributed to the drive for thinness. Shroff and Thompson\textsuperscript{14} replicated these findings with Indian subjects. As a consequence, heightened body dissatisfaction should also result in healthy eating intentions.

Besides body dissatisfaction, self-efficacy, described by Bandura\textsuperscript{15} as ‘people’s beliefs about their capabilities to exercise control over their own level of functioning’, is likely to have an influence on weight-controlling behaviour too. The direct relationship between self-efficacy and behavioural intentions stems from the theory of planned behaviour.\textsuperscript{16} Thunfors et al.\textsuperscript{17} acknowledged the influence self-efficacy has on the intention to eat healthy; thus, when one believes one can eat healthy one will more easily have the intention to exhibit the subsequent behaviour.

Friedman and Brownell\textsuperscript{18} have showed that an individual’s body mass index (BMI, kg/m\textsuperscript{2}) and body dissatisfaction are positively related. The notion that obese people tend to be less satisfied with their bodies has been evidenced for both genders and across ages.\textsuperscript{9,20} Likewise, studies by Chen et al.,\textsuperscript{8} Shroff and Thompson\textsuperscript{14} and Lunner et al.\textsuperscript{13} also reported a positive influence of BMI and of pressure and social norm on body dissatisfaction.

Thompson and Psaltis\textsuperscript{21} have found already a positive effect of history of teasing on body dissatisfaction in college females, especially the effect of history of teasing, rather than the frequency thereof. History of teasing covers the occurrence of people ridiculing and making fun of the obese status of the subjects in their childhood and adolescence, for example, being called a ‘fatso’, being pointed at or being laughed at while doing sports. History of teasing is expected to also have an influence on body dissatisfaction.

In the models by Shroff and Thompson\textsuperscript{14} and Chen et al.,\textsuperscript{8} there were also positive effects of internalization and of social norm on body dissatisfaction.

Shroff and Thompson\textsuperscript{14} have found that history of teasing also has a positive influence on internalization. People who were teased when they were young will believe more in the ideals of attractiveness and compare themselves more with people in magazines and on television. Another model, the tripartite model, has been proposed by Thompson et al.,\textsuperscript{22} which suggests that peers, parents and media are important in the development of body image and eating dysfunctions and these effects are mediated by social comparison and internalization.\textsuperscript{22,23} In the model by Chen et al.,\textsuperscript{8} history of teasing has a positive influence on the pressure people perceive to lose weight and, therefore, on the social norm. They state that a direct message can be one form of the pressures overweight people have to deal with; these direct messages can also include weight-related teasing.

This brings us to the following hypotheses:

H1: Body dissatisfaction has a positive influence on intention to eat healthy.
H2: Self-efficacy has a positive influence on intention to eat healthy.
H3: High BMI has a positive influence on body dissatisfaction.
H4a: History of teasing has a positive influence on body dissatisfaction.
H4b: Internalization has a positive influence on body dissatisfaction.
H4c: Social norm has a positive influence on body dissatisfaction.
H5a: History of teasing has a positive influence on internalization.
H5b: Social norm has a positive influence on internalization.
H6: History of teasing has a positive effect on social norm.

Figure 1 displays all hypotheses in a model.

**Methods**

**Participants and procedure**

The sample of the study comprised 239 Flemish (Belgian) subjects (M\textsubscript{age} = 34.49 years, SD = 10.88), of which 80 were male and 159 were female. The sample used a convenience sample which was a subset of a larger study on obesity and only those people who reported they had experienced teasing in the past were included in this study. All participants were overweight, with a BMI ranging from 25.15 up to 46.49 and a mean BMI of 33.38. Participants completed an online survey. The participants were gathered by spreading the link to the survey through message boards about health or obesity, the Website of a major national newspaper and through the waiting rooms in general practitioners’ offices. People willing to participate could just visit the website and fill in the questionnaire. The data were collected in the first half of 2009.

**Model variables**

We measured several constructs. BMI (kg/m\textsuperscript{2}) was calculated by self-reported height (in centimetres) and weight (in kilograms). This is a reliable way of determining participants’ BMI. Self-efficacy was measured by a scale based on the nutrition self-efficacy scale designed by Schwarzer and Renner\textsuperscript{24} and consisted of 4 items. History of teasing was measured by a scale based on the perception of teasing,\textsuperscript{26} consisting of 4 items. Social norm was measured by a scale based on the perceived sociocultural pressure scale designed by Stice et al.,\textsuperscript{27} and consisted of 3 items. Internalization was measured by a scale based on the Sociocultural...
Attitudes towards Appearance Questionnaire-3 (SATAQ-3), which is a revision of the first two scales, our scale consisted of 4 items. Body dissatisfaction was measured by a scale based on the body shape questionnaire designed by Cooper et al. and consisted of 5 items. Intention to eat healthy was measured by a scale ranging from ‘never’ to ‘always’, consisting of 3 items that asked subjects about their intentions, plans and probability to eat healthy. All measures used in this study, except the respondent’s height and weight, were assessed using seven-point Likert scales. All items of the measures are presented in the appendix (available as online supplementary data).

The SPSS-PASW18 module AMOS18 was used to perform a structural equation modelling (SEM) analysis with a maximum likelihood estimation. SEM is a statistical technique that allows research to incorporate latent constructs and to estimate multiple dependent relationships simultaneously.

For the remainder of the article, we will use the term ‘effect’. However, it should be kept in mind that in a cross-sectional study, causality is theoretical. Empirically, the causality cannot be determined with certainty, rather associations are determined.

Results

We first assess the scales’ unidimensionality, reliability, convergent validity and discriminant validity following Steenkamp and van Trijp. Unidimensionality was evidenced by the different model fit indices (Tucker Lewis Index = 0.95, Comparative Fit Index = 0.96, Root Mean Square Error of Approximation = 0.049 and Standardized Root Mean Residual = 0.0847), which indeed suggest a good model fit.

For each of the constructs (except BMI), the reliability was checked by calculating Cronbach’s Alpha. The lowest Cronbach’s Alpha was 0.80, indicating a good reliability (shown in Table 1).

Inspection of the magnitude and significance of the loadings provides information on the scales’ convergent validity. All items loaded significantly on their respective constructs [minimum t-value 7.182 (results not shown)]. Furthermore, all items, except one item for social norm, had loadings of at least 0.50 on their underlying latent construct.

Discriminant validity was evidenced as the inspection of the implied correlation matrix of the latent variables in the model indicated that none of the confidence intervals of the latent variables included 1 or -1.

As stated in Hypothesis 1, body dissatisfaction had a significant positive effect on intention to eat healthy (β = 0.148, P = 0.030), and a significant positive effect of self-efficacy with intention to eat healthy was also found (β = 0.440, P < 0.001), supporting Hypothesis 2.

In line with Hypotheses 4a, 4b and 4c, history of teasing had a significant positive effect on body dissatisfaction (β = 0.198, P = 0.003), internalization had a significant positive effect on body dissatisfaction (β = 0.587, P < 0.001), and social norm had a significant positive effect on body dissatisfaction (β = 0.158, P = 0.011).

The data also supported Hypotheses 5a and 5b; there was a significant positive effect of history of teasing on internalization (β = 0.208, P = 0.003) as well as a significant positive effect of social norm on internalization (β = 0.240, P < 0.001).

However, the results did not support Hypotheses 3 and 6. High BMI was not found to have a positive effect on body dissatisfaction (β = 0.038, P = 0.528) and history of teasing had no significant effect on social norm (β = 0.101, P = 0.157). All values are shown in Table 2.

To gather further insight into the effects, we also evaluated the total effects (i.e. by also taking into account the indirect effects and adding them up with the direct effects) of history of teasing and social norm on body dissatisfaction. The total effects of history of teasing and social norm were significant, with effect sizes of 0.350 and 0.298, respectively, on body dissatisfaction.

Intention to eat healthy seemed to be influenced most by self-efficacy, with an effect size of 0.440. Body dissatisfaction also influenced the intention to eat healthy (effect size = 0.148). History of teasing, internalization, and social norm also had significant indirect effects on intention to eat healthy; effect sizes were, respectively, 0.052, 0.087 and 0.044 (results not shown). In figure 2, the model is presented with the estimated standardized loadings for each path.

Discussion

Our results indicate that body dissatisfaction and self-efficacy are important factors influencing the intention to eat healthy. Body dissatisfaction, in turn, appears to be affected by internalization, social norm and history of teasing.

The influence of body dissatisfaction on intention to eat healthy is in line with research by Lee et al., who concluded that participants who

Table 1 Constructs and dimensions with means, standard deviations, Cronbach’s alpha (IC), explained variance of the concepts (EV) and correlations between the constructs

<table>
<thead>
<tr>
<th>Construct</th>
<th>Mean</th>
<th>SD</th>
<th>IC</th>
<th>EV</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 BMI</td>
<td>33.38</td>
<td>5.04</td>
<td>NR</td>
<td>NR</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Body dissatisfaction</td>
<td>4.68</td>
<td>1.02</td>
<td>0.80</td>
<td>50.1</td>
<td>-0.034</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 History of teasing</td>
<td>4.34</td>
<td>1.11</td>
<td>0.86</td>
<td>72.7</td>
<td>0.129</td>
<td>0.275</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Internalization</td>
<td>3.73</td>
<td>1.55</td>
<td>0.88</td>
<td>74</td>
<td>-0.243</td>
<td>0.529</td>
<td>0.194</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 Self-efficacy</td>
<td>4.17</td>
<td>1.42</td>
<td>0.92</td>
<td>81.4</td>
<td>-0.054</td>
<td>-0.191</td>
<td>0.026</td>
<td>-0.206</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Social norm</td>
<td>3.43</td>
<td>1.42</td>
<td>0.80</td>
<td>72.6</td>
<td>0.035</td>
<td>0.352</td>
<td>0.148</td>
<td>0.292</td>
<td>-0.176</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>7 Intention to eat healthy</td>
<td>5.54</td>
<td>1.20</td>
<td>0.91</td>
<td>84.8</td>
<td>-0.010</td>
<td>0.023</td>
<td>-0.065</td>
<td>0.058</td>
<td>0.409</td>
<td>0.064</td>
<td>1</td>
</tr>
</tbody>
</table>

NR: not relevant.

Table 2 Estimated standardized loadings, standard errors and significance of all hypothesized paths

<table>
<thead>
<tr>
<th>Effects on</th>
<th>Effect by</th>
<th>Estimate</th>
<th>SE</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social norm</td>
<td>History of teasing</td>
<td>0.101</td>
<td>0.105</td>
<td>0.157</td>
</tr>
<tr>
<td>Internalization</td>
<td>History of teasing</td>
<td>0.208</td>
<td>0.105</td>
<td>0.003</td>
</tr>
<tr>
<td>Body dissatisfaction</td>
<td>Social norm</td>
<td>0.240</td>
<td>0.069</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>BMI</td>
<td>0.038</td>
<td>0.012</td>
<td>0.528</td>
</tr>
<tr>
<td></td>
<td>History of teasing</td>
<td>0.198 (0.350)</td>
<td>0.060</td>
<td>0.003 (0.002)</td>
</tr>
<tr>
<td></td>
<td>Social norm</td>
<td>0.158 (0.298)</td>
<td>0.038</td>
<td>0.011 (0.003)</td>
</tr>
<tr>
<td></td>
<td>Internalization</td>
<td>0.587</td>
<td>0.050</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Intention to eat healthy</td>
<td>Self-efficacy</td>
<td>0.440</td>
<td>0.067</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>Body dissatisfaction</td>
<td>0.148</td>
<td>0.073</td>
<td>0.030</td>
</tr>
</tbody>
</table>

The total effects and significance are between parentheses.
experience low body dissatisfaction are less inclined to lose weight. Furthermore, they found that participants who believe others think they should lose weight and who are inclined to comply are also more willing to change their appearance; for example, by losing weight. What we find in our study supports the positive effects of social norm on body dissatisfaction.

As expected, these results also indicate that self-efficacy is an important factor in the intention for a certain behaviour, as proposed in the literature and the theory of planned behaviour. The current findings reinforce the view that the feeling that one can cope with the problems that come with the intention to eat healthy is of great importance when deciding to eat healthier.

Body dissatisfaction seems to be often a result of the environment. Three factors especially influence body dissatisfaction. First, overweight and obese people are often confronted with teasing. Teasing might result in a vicious cycle in which being overweight results in being teased by others. As described by Haines and Neumark-Sztainer, the teasing in a vicious cycle in which being overweight results in being teased by others. As described by Haines and Neumark-Sztainer, the teasing might result in negative emotions, body dissatisfaction and dieting; all these can then result in binge eating. Consequently, the binge eating can lead to weight gain, which will, in its turn, lead to more teasing by others. Likewise, Lunner et al. pointed out that, although BMI cannot be ruled out as a cause of elevated body dissatisfaction, there also is an influential role played by negative feedback, regardless of body mass. They also stressed the possibility of high body dissatisfaction resulting in eating disorders. Thus, although body dissatisfaction might cause greater intention to eat healthy, often this does not result in healthy dieting but rather in a very strict diet with bingeing episodes. Because of these binging episodes, they often fail to lose weight.

The second factor influencing body dissatisfaction is social norm, or the pressure of one’s surroundings to lose weight, direct and indirect through comparison. This is in line with the research that supports the tripartite model.

The third factor is internalization; the importance of the images in the media has already been described by Wiseman et al. They state that it is very likely that media images play a role in body dissatisfaction of adolescents. While their article concentrated on adolescents and suggested that the effects would be less pronounced in adults, our results show that in adults the comparisons with media figures are also apparent. In the meta-analytical review by Myers and Crowther, concerning body dissatisfaction, it was found that there was a small inverse relationship between social comparison and body dissatisfaction. This also supports the notion that comparison with others, as in internalization, heightens body satisfaction. Yet, this study shows that the comparison with others often results from social norm and a history of teasing.

When looking at the direct effects only the effect of internalization clearly is the most important factor with an estimated standardized loading that is more than double that of history of teasing and triple that of social norm. However, when we take the indirect effects into account and look at the total effects, internalization still has the largest effect on body dissatisfaction but the difference in effect with social norm and history of teasing on body dissatisfaction is much smaller, indicating that besides the important effect of internalization the effects of social norm and history of teasing are also important and deserve attention.

All three of these factors, internalization, social norm and history of teasing, are factors that play in the environment of the overweight person. These three external factors heighten body dissatisfaction in overweight and obese people. High BMI does not seem to contribute to body dissatisfaction, even though BMI is the factor that influences the shape of the body. This can be explained by a lack of variance because our sample consists solely of overweight and obese subjects. However, Canpolat et al. also found that factors like thinner body ideal, low self-worth and low physical self-concept have greater significant effects on body dissatisfaction than the effect of actual overweight. The study by Lee et al. showed that high body dissatisfaction could stimulate people to lose weight. However, in their data the effect of the resulting body dissatisfaction on intention to eat healthy is rather small compared to the effect of self-efficacy. This stresses the urge to stimulate the self-efficacy to lose weight and eat healthy in overweight people and refrain from arguments, which would just heighten their body dissatisfaction or might lead to stigmatizing obese persons. Body dissatisfaction has been named as an important factor leading to eating disorders. Haines and Neumark-Sztainer already stressed that it would be beneficial to enhance body satisfaction in obese persons. They claim that high body image dissatisfaction might rather be a potential risk factor and not just a consequence of obesity. We found confirmation of this potential risk of body dissatisfaction, which was a significant effect in our model even while controlling for other factors as self-efficacy. However, our results stress that in relative terms self-efficacy might be the most influential factor in the intention to eat healthy.

Some limitations in this study need to be considered. First, we did not ask whether they were dieting at the time of filling in the questionnaire or perhaps were being treated for their weight. This might influence their body satisfaction and intentions. Future research should take this into account. Future research should also try to get enough subjects to test whether the model might be different for different age groups, gender or socioeconomic status. Furthermore, the data were self-reported and part of a convenience sample and these data should always be handled with care.

Further research is also needed to see whether these conclusions can be generalized to differing cultures or societies where obesity is more or less accepted, where the stress a society puts on having an attractive body may be different or where role models and public figures are more or less overweight.

Also, because this was a cross-sectional study, causality could only be theoretically established and not empirically. Further research (e.g. by panel study) is needed to check empirically the causal links in our study. Besides advancing our theoretical understanding of stimulating dietary behaviour among overweight and obese people, our study also has practical implications. In particular, the findings of our study can be...
used in health counselling and communication, such as public health campaigns.

To change the behaviour of overweight people, negative remarks such as harsh criticism and remarks perceived as teasing should be avoided. These remarks may lead to more comparison with others and higher body dissatisfaction; there is the possibility of causing an eating disorder, which might result from high body dissatisfaction. When setting up campaigns or giving feedback to overweight or obese people, these disadvantageous results should be kept in mind to minimize the negative consequences of the campaigns. Cost-effective campaigns to decrease the percentage of overweight and obese people may benefit from focussing on elevating self-efficacy. In this way, people can be motivated to lose weight without becoming highly dissatisfied with their body. Luthans et al. argue that self-efficacy can be changed in three ways. The first way is mastery and successful experiences, the second way is vicarious learning or modelling and the third way is social persuasion and positive feedback. Although mastery and successful experiences are described to be the best way to develop self-efficacy, it seems to be least applicable in this case. People who have successfully lost weight in the past will either have a normal weight by now or have gained weight again, which might undermine their experience of success in the earlier attempt to lose weight. The second way to develop self-efficacy can be useful here, by showing or telling people how others, similar to them, have lost weight. By doing so, they might believe that they too can do it. They are able to learn from successes and mistakes from others in this way and they can also master the behaviour needed to lose weight. However, the models used in the campaigns should be very similar to the person and also be in a similar situation to work. The third way is social persuasion or positive feedback. When encouraged by others while doing well, thoughts and beliefs slowly change in the direction of the encouragements. In obesity, off course this means that family and friends should support the dieter and encourage them at difficult times.

**Supplementary data**

Supplementary data are available at EURPUB online.

**Acknowledgements**

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**Conflicts of interest:** None declared.

**Key points**

- Eating behaviour is an important cause of obesity. Factors contributing to intention to eat healthy need to be identified; history of teasing might be an important factor. Overweight kids get teased frequently.
- A path model analysis shows that internalization, social norm and history of teasing have an effect on body dissatisfaction. Body dissatisfaction and self-efficacy have an effect on the intention to eat healthy.
- Self-efficacy has a greater effect on intention to eat healthy than body dissatisfaction. Campaigns and help towards overweight people can benefit from focussing on self-efficacy.

**References**


Overweight, body image and bullying—an epidemiological study of 11- to 15-year olds

Carina S. Brixval, Signe L. B. Rayce, Mette Rasmussen, Bjørn E. Holstein, Pernille Due

National Institute of Public Health, University of Southern Denmark, Copenhagen, Denmark

Background: The purpose of this study was to examine the association between weight status and exposure to bullying among 11-, 13- and 15-year-old Danish school children. Furthermore, the purpose was to investigate the potentially mediating effect of body image. Methods: Data from the Danish contribution to the international cross-sectional research project Health Behaviour in School-aged Children (HBSC) 2002 was used. Data were assessed from questionnaires and 4781 students aged 11-, 13- and 15-year olds were included in the analyses. Logistic regression was used for the analyses. Results: The regression analyses showed that overweight and obese students were more exposed to bullying than their normal weight peers. Among boys, odds ratios (ORs) for exposure to bullying were 1.75 (1.18–2.61) in overweight and 1.98 (0.79–4.95) in obese boys compared with normal weight. Among girls, the corresponding ORs were 1.89 (1.25–2.85) in overweight and 2.74 (0.96–7.82) in obese girls. The mediation analyses showed that body image fully mediated the associations between weight status and exposure to bullying in both boys and girls. Conclusions: This study shows that overweight and obese boys and girls are of higher odds of being exposed to bullying than their normal weight peers. Moreover, this study finds that body image may statistically explain this association between overweight and exposure to bullying. However, the study is cross-sectional, and hypotheses of possibilities for opposite causality are possible.

Introduction

Overweight and obesity are increasing problems around the world and have several physical and psychological health consequences in children, adolescents and adults. Exposure to bullying has been linked to overweight in children. Children who are exposed to bullying have higher risks of health problems and poor well-being, e.g. head- and stomach ache, disturbed sleep, anxiety and depression. These health problems even tend to track into adulthood. Bullying is defined as a deliberate, repeated or long-term exposure to negative acts performed by a person or group of persons regarded as having a higher status than the victim. Bullying can be expressed both as physical, verbal and relational harassment.

Many adolescents are both burdened by overweight and exposure to bullying and are therefore in great risk of the mentioned health outcomes, but little is known about the mechanisms behind the association between overweight and exposure to bullying. Earlier studies of the association between overweight and a range of psychological outcomes, for instance depression, suicide attempts and low self-esteem, indicate that body image and weight dissatisfaction may be mediating factors. Body image is a person’s own impression of his or her body. Body image reflects actual body composition, body-related experiences, lifelong social response to body appearance and sociocultural body values and ideals. In the Western culture, the male body is ideally muscular and the female body is thin and young people who fail—or feel that they fail—to reach these ideals may suffer from lower self-esteem.

Six previous papers have examined the association between overweight and exposure to bullying in general among children and adolescents. Cross-sectional studies of children between the ages of 6–17 years from the US, Canada, Wales, Australia and England have all found an association between weight status and exposure to bullying. Griffiths et al. studied the association in a prospective design of 7.5- to 8.5-year-old English children, and found that weight status predicted exposure to bullying a year later. Only one of the six studies investigated possible explanatory factors for the association between overweight and exposure to bullying. The results of this study of 376 11- to 14-year old English school students indicated that both global self-worth, self-esteem for physical appearance and body dissatisfaction each fully mediated the relation between weight status and being exposed to bullying. Because of the few studies in this area, it is important to increase knowledge about these associations and mechanisms in other settings and other populations. Therefore, the purpose of the present study was to examine the association between overweight and exposure to bullying in a cross-sectional study of 11-, 13- and 15-year-old Danish students. Moreover, the purpose was to examine the potentially mediating effect of body image. We focus on adolescence as a period of changes and...