Swedish women's self-esteem, body dissatisfaction and health

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Self-reported mental health problems have increased dramatically among young female high school (Swedish: gymnasium) and university students in Sweden since the 1990's. The reasons for this increase are mostly unknown but self-esteem and body image might be important factors behind this problem. The aim of this study was to test whether self-esteem and body dissatisfaction predict health. All correlation directions were in accordance with previous studies on the subject. There was no age group difference in levels of self-esteem, body dissatisfaction or health among the women. Multiple regression analysis revealed that global self-esteem was the strongest single predictor of health. These results give support for the importance of global self-esteem for subjective health. This should be considered in future studies and in the battle against the development of depression, anxiety and eating disorders among women.

Self-reported mental health problems have increased dramatically among young Swedish women in recent years where reports of anxiety and worrying have tripled since the 1990's (Lager, Berlin, Danielsson, & Heimerson, 2009). The problems are more common among young, female high school (Swedish: gymnasium) or university students who live in the city. In fact female university students aged 20-24 who are single and have extra jobs, report more health problems and physical complaints such as shoulder and neck pain than other women. Anxiety and worrying can be related to health problems such as sleep disturbances and pain in the shoulders and neck area. More and more women in Sweden seek help for anxiety and depression which are now the most common reasons for hospitalisation. They are also much more common among women than men (Lager et al., 2009). The reasons for this increase are mostly unknown, but there is a possibility that self-esteem and body image are connected to this new problem. Negative body image is correlated with low self-esteem, depression and anxiety and this correlation is significantly higher for females than males. Self-esteem is relatively stable throughout the life span but women begin to build body image in their teenage years, the same time as self-reported health problems increase (Lager et al., 2009). Lager et al. (2009) suggest that one of the factors behind this rise in anxiety and depression is increased individualism and larger focus on appearance where young women think more about diet, weight and looks than men. According to a socio-cultural study by Lindberg and Hjern (2003), women from wealthy, Swedish families (Swedish ethnicity) are at the greatest risk of developing anorexia nervosa compared to other socioeconomical and ethnical groups in Sweden. It is therefore important to look at the reasons behind the decrease in psychological well-being and health among Swedish women.

The aim of this study is to compare the present results to the results of the Swedish public health report concerning age difference in self-esteem, body dissatisfaction and

health (Lager et al., 2009) and to test whether and how well self-esteem and body dissatisfaction predict psychological well-being among female university students in Sweden. This study also looks at the relationship between weight perception, weight satisfaction and health and tests if these factors predict psychological well-being among women because weight perceptions and weight satisfaction are a part of the body image and represent one form of body dissatisfaction among women (Tiggemann, 2005). In the present study weight perceptions and weight satisfaction were used as predictors for psychological well-being instead of actual weight in the form of BMI (Body mass index) as it was not possible to measure.

Self-esteem

Self-esteem and body image have both separately and together been related to reports of poorer health, both mental and physical, among teenagers and adults (Aalto-Setälä, Poikolainen, Tuulio-Henriksson, Marttunen & Lönnqvist, 2002; Baker & Gringart, 2009; Meland, Haugland, & Breidablik, 2007; Mellor, Fuller-Tyszkiewicz, McCabe, & Ricciardelli, 2010; Paxton & Phythian, 1999; Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006; Tiggemann, 2005).

Self-esteem reflects how we feel about ourselves; how well we think we can control our circumstances and our social situations. In short it is "an individual's positive or negative evaluation of himself or herself" (Smith & Mackie, 2008). Self-esteem is an important part of us because it tells us how well we are doing in constructing a positive self, a self which makes us feel good and helps us function well (Smith & Mackie, 2008). By having self-serving judgments we build a strong self-esteem and produce a positive affect (Roese & Olson, 2007). For those who have low self-esteem, self-esteem has extensive negative consequences because of its destructive nature. It has been found to be a risk factor for mental disorders such as depression (Roese & Olson, 2007).

Self-esteem develops from infancy; it is part of the secure attachment pattern and is relatively stable throughout the lifespan (Blom, 2011; Cassidy & Shaver, 2008). This type of self-esteem is sometimes called basic self-esteem or non-contingent self-esteem as it has been found to lay certain grounds for other types of self-esteem such as global self-esteem and contingent self-esteem (Blom, 2011). Self-esteem is most often measured as one factor (global self-esteem) with the Rosenberg's scale from 1965 even though it has been criticised for being insensitive and biased (Campell, Eisner & Riggs, 2010). To clarify the behavioural and health relevance of having high self-esteem, other measurements have been developed such as the contingencies of self-worth scale. The contingencies of self-worth (CSW) theory and the contingencies of self-worth scale were developed by Crocker and colleagues (2003) and are based on William James' theory about self-esteem which states that "dissatisfaction in a particular domain will have an impact on overall global self-esteem to the extent that the domain is central to the individual's self-definition" (James, 1890). Crocker's theory suggests that all individuals practise contingent self-esteem and people's contingencies of self-worth are based on seven different sources: academics, appearance, approval from others, competition, family support, God's love, and virtue. One of these sources, physical appearance, has greater socio-cultural importance for women than men. Considering this fact in relation to Crocker's theory, appearance concerns and body dissatisfaction

should have more impact on women's global self-esteem than men's as they base their self-esteem on other sources (Rodin, Silberstein, & Striegel-Moore, 1985). It differs between individuals on which of these seven sources they base their self-esteem, some weigh more on appearance while others base their self-esteem on academic performance etc. When a woman defines herself by her appearance, she will base her global self-esteem more on appearance than the other sources. How she thinks others see her and appraisal from others considering her looks will be most important for how she feels about herself. She will therefore be more vulnerable to having her self-esteem threatened when something negative happens within the domain of appearance such as receiving a negative comment about weight gain or a bad haircut.

The CSW theory has gained more and more support in recent studies (see Blom, 2011, for review) and it seems that the seven different sources suggested by Crocker and colleagues (2003) are the most important aspect of our global self-esteem. These sources represent which dimensions of self-esteem are threatened by set-backs and failures and represent different qualities a person believes she must have to be of worth and value. The categories are a source of motivation and people use them to prove their qualities to themselves and others. When contingencies of self-worth are external in nature such as appearance and academic success, they can promote depression and eating disorders and are negatively correlated with well-being (Jambekar, Quinn, & Crocker, 2001).

Other studies suggest that it is not just the source on which self-esteem is based which determines the impact on well-being, but also how stable the self-esteem is over time. Stability is a very good predictor of psychological well-being and might weigh stronger than the actual source on which a woman's self-esteem is based. It is suggested that the stability of self-esteem must be taken into consideration to understand well-being and that instability in itself is a better predictor of health than the actual level of self-esteem. Contingent self-esteem is an example of a very unstable type of self-esteem since it relies on perceived successes and failures. Those who have low basic self-esteem are especially vulnerable to fluctuations in contingencies because they constantly have to strive for self-esteem to compensate for the lack of basic self-esteem (see Blom, 2011 for review).

Girls' self-esteem has been found to be more global in nature than boys' self-esteem and therefore global self-esteem has more influence on the level of depressive mood in girls than in boys (Bolognini, Plancherel, Bettschart, & Halfon, 1996). Also, there is a notable dip in self-esteem when girls enter puberty and this dip is deeper for girls than boys. However, it seems to be a temporal relationship where self-esteem decreases the most in early adolescence among girls and then remains stable (Tiggemann, 2005). This dip in self-esteem among teenage girls can have several causes. At that point girls move further and further away from a thin ideal embraced by women and at the same time they become more preoccupied with how they appear in the eyes of others, making appearance an important focus point in the teenage girls' lives (Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002) putting them at increased risk for body dissatisfaction.

The importance of appearance among women

In the year 2009, women in the United States of America underwent over nine million surgical and nonsurgical cosmetic procedures according to the American Society for Aesthetic Plastic Surgery (ASAPS). This was accounted to 91% of the total cosmetic procedures performed that year in the United States (The American Society for Aesthetic Plastic Surgery, 2011). Millions of women and girls diet and/or exercise excessively in order to alter their body shape and size, by losing weight (Grogan, 2006). These numbers underline the large role appearance plays in women's lives, especially in the Western World. The overemphasis on appearance among women is in part caused by the media (Clay, Vignoles & Dittmar, 2005; Durkin & Paxton, 2002; Grabe, Ward & Hyde, 2008; Rodgers, Salés & Chabrol, 2010) but other factors such as social cues from friends and family are also involved (Grogan, 2008). The general idea among women is that "What is beautiful is good" (Grogan, 2008).

The ideal female body has not always been thin. In the Middle Ages a round belly symbolized fertility and it was considered erotic and fashionable to have a plump body (Grogan, 2008). But since the 1960's the female ideal has become constantly thinner with the media exposing increasingly thinner models and more full body images of female models affecting the female body size ideal. In the 1980's and 1990's, fashion models' body size decreased significantly. This type of thinness is unnatural for most women and in most cases unrealistic to achieve. Still more and more women strive to diet, exercise and alter their body to try to achieve this ideal, which often ends in serious psychological problems (Sypeck, Gray & Ahrens, 2003). Women relate the super thin ideal to being successful in life and being thin is in general related to positive qualities among women (Evans, 2003), whereas words describing heavier weight are associated with negative qualities such as being lazy, gross and disgusting (Grogan, 2008). Furthermore, being thin is considered being healthy while being overweight equals being unhealthy (Grogan, 2008). The socio-cultural pressure on women to continue to look good and young far into their 60's or even 70's makes them take desperate measures such as plastic surgery, and for some creates a vicious cycle to do anything to look good. With the media constructing unreal female role-models, with Photoshop and other technical measures, and digitally modifying all fashion pictures, it makes it unreasonable and impossible for normal women to compete with the unrealistically flawless looks these role-models present (Grogan, 2008; Rodgers et al., 2010; Sypeck et al., 2003).

Body dissatisfaction

Body (dis)satisfaction is linked to body image, how people perceive their body and how they think and feel about it. Body image is defined as "a person's perceptions, thoughts, and feelings about his or her body" (Grogan, 2008). Body image can therefore include perceptions about weight, shape and size of the body as well as other factors. When a woman has a positive body image she has a real perception of her size and shape and is comfortable with her body but when a woman has a negative body image she has a distorted perception of her shape and size and is not comfortable with her body (The federal government source for women's health information, 2011).

Body dissatisfaction is more specifically defined as "a person's negative thoughts and feelings about his or her body" (Grogan, 2008). Body image is determined by a person's social experiences and it is dynamic in nature. It is suggested that teenagers are especially vulnerable to change in body image (Grogan, 2008; Lager et al., 2009). When girls become teenagers, they move further and further away from the stick thin ideal, they grow hips and breasts and most of them gain weight. This is all a part of a normal developmental process. The fact that teenage girls' self-esteem decreases more than for teenage boys might be a direct function of the girls appearance concerns related to their bodily changes. Teenagers are very preoccupied by how they appear in the eyes of others and therefore appearance including body image is an important factor of teenagers' self-image and self-esteem (Robins et al., 2002). Both body dissatisfaction and appearance concerns have been associated with low self-esteem among young teenage girls (Meland et al., 2007).

Women are more dissatisfied with their bodies than men, they are likely to perceive themselves as overweight regardless of their actual weight and most of them want to lose weight. Being dissatisfied with one's body is related to lower levels of self-esteem and greater proneness to depression (Mintz & Betz, 1986). Increased body dissatisfaction has been found to predict poorer psychological well-being among college women (Ganem, de Heer & Morera, 2009). Negative body image affects health-related behaviours such as eating and exercising. Feeling fat can sometimes get women to exercise which is good for mental and physical health but it can also keep women from exercising because they think that they need to be a certain type or have a certain type of body to join the gym (Grogan, 2008). Women prefer to be thin to a greater extent than men and there is a greater importance of weight and appearance among women than men, which results in body dissatisfaction having much more impact on global self-esteem for women than men (Rodin et al., 1985). These differences have been supported in studies on young adults (Tiggemann, 2005).

Women who are psychologically vulnerable appear to be more affected by media pressure on self-esteem and body satisfaction in a negative way. Increased body dissatisfaction is also related to greater proneness to depression (Mintz & Betz, 1986). Teenage girls who are overweight and perceive themselves as overweight are more vulnerable to developing low self-esteem than other girls (Tiggemann, 2005). Hence, weight perception can be an important factor for self-esteem development among teenage girls. Lower self-esteem has been related to heavier weight and effect sizes are significantly larger for self-perceived overweight, women and high school or college students than actual weight, men and children (Miller & Downey, 1999). According to the World health organisation's (WHO) studies on health behaviour in school aged children (HBSC), being underweight or overweight is associated with perceptions of negative health among teenagers and young adults in the Nordic countries (Meland et al., 2007).

There are several background factors which can have an impact on the level of self-esteem and body dissatisfaction and affect the relationship between these two variables. Age is a factor because there is a dip in self-esteem in adolescence and increased worrying about body shape and size (Tiggemann, 2005). Mellor et al. (2010) did not find a consistent relationship between body dissatisfaction and self-esteem across time for age. With increased age, self-esteem relies on other factors than appearance and

remains relatively stable. In old age there seems to be a shift from the importance of appearance for body dissatisfaction and self-esteem to the importance of the bodily functioning and health even though appearance continues to be an important factor (Baker, & Gringart, 2009; Paxton, & Phythian, 1999). Being a woman is a factor because women are more focused on appearance and report more body dissatisfaction than men. Also, girls' self-esteem is more global in nature than boys' (Bolognini et al., 1996) suggesting a different nature of self-esteem between males and females. Low socio-economic status is related to increased body dissatisfaction and lower self-esteem among teenagers (van den Berg, Mond, Eisenberg, Ackard, & Neumark-Sztainer, 2010). Ethnicity is also a factor because body dissatisfaction and low self-esteem seem to be a "white" woman problem, caused by the focus on extreme thinness among white women, as other ethnic groups prefer curvier bodies. However some studies have not confirmed this (Grabe, & Hyde, 2006). According to the study by Lindberg and Hjern (2003), having Swedish ethnicity is a risk factor for developing anorexia nervosa compared to other ethnic groups in Sweden. Weight is a factor in many ways and both concerns perceived and actual weight. Being overweight or perceptions of overweight lead to more vulnerability to developing low self-esteem among teenage girls. Also, weight is an important focus point in women's perceptions of attractiveness and body dissatisfaction, where being very thin is highly valued among women of all ages and being overweight or fat is considered disgusting and undesirable (Baker, & Gringart, 2009; Evans, 2003; Paxton, & Phythian, 1999; Tiggemann, 2005).

It should be noted that studies on women's body dissatisfaction have their roots in clinical psychology with focus on eating disorders. Also, the concept of body image including body dissatisfaction is very wide and can therefore not be easily captured in one simple measurement tool (Grogan, 2006). Previous studies have revealed that self-esteem and body image (body dissatisfaction) seem to be interlinked, that is, if you get a low score on self-esteem scales, you will also score low on body esteem scales. It is not known in which direction the relationship between these variables is as the relationship seems to be temporal and is not constant between individuals. It also seems to be spiral in nature (Paxton et al., 2006; Tiggemann, 2005). The most important aspect for the present study is that body dissatisfaction has been found to be related to poorer mental health among women (Ganem et al., 2009).

Health and psychological well-being

Health is defined by the World health organization (WHO) as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity" (WHO, 1946). Perceived health is a good predictor of actual health and health is important for our mental and physical well-being. As discussed above, self-esteem and body dissatisfaction have both separately and together been found to predict psychological well-being among women. But others suggest that self-esteem is predicted by feelings about health, not vice versa (Wade & Cooper, 1999).

As mentioned above, self-reported mental health problems have increased dramatically among women in Sweden since the 1990's and the most common reason for young women's hospitalisations are depression and anxiety. Also many women suffer from eating disorders (Lager et al., 2009). Mental health problems such as depression,

anxiety and eating disorders are very expensive for the society as they involve increased costs for hospitalisations and treatment such as psychotherapy and medicine. It is difficult for those who suffer from clinical depression to live a normal life and participate in the labour market which leads to loss of healthy and able workers. More women than men suffer from clinical depression and eating disorders, and many of those who once suffer from depression have more episodes of depression later in life (see Grabe & Hyde, 2006, for review). According to the World Health Organization (WHO) depression is among the leading causes of disability worldwide and in the year 2020, depression will be the second most global burden of disease in the world (WHO). Therefore it is very important to seek all possible means to decrease and hopefully stop this development.

Summary and purpose of the study

The purpose of this study is to test whether different aspects of self-esteem predict women's subjective health (perceptions of psychological well-being) within a group of university students. Most previous studies on the different variables are done on teenagers, developed around clinical populations such as women with eating disorders or focus on American subjects and therefore do not represent the normal population of Swedish women. Here we also want to compare the results to the results of the Swedish Public health report (Lager et al., 2009). In the following study the direction of the relationship between self-esteem and body dissatisfaction is not the main focus but rather how, and if, these variables predict self-reported health, whether one or the other is a better predictor of health, or if they together are the best predictor for women from a normal population. Also, the relationship between weight perception, weight satisfaction and psychological well-being is interesting to look at, as perceptions of weight have been found to be an important effect factor in body dissatisfaction and self-esteem development. Whatever directionality the relationship between self-esteem and body image has, it is clear that when it is negative in nature it impacts women's health in a negative way. It is therefore important to study this relationship and the nature of it. In this study the following hypotheses will be tested:

H1: Global self-esteem, appearance based self-esteem and body dissatisfaction predict women's psychological well-being (health).

H1a: Low self-esteem predicts poorer health.

H1b: Appearance based self-esteem predicts poorer health.

H1c: Body dissatisfaction predicts poorer health.

H1d: Weight dissatisfaction predicts poorer health

H1e: Perceptions of overweight predict poorer health.

H2: There is an age group difference in global self-esteem, appearance based self-esteem, body (dis)satisfaction and psychological well-being (health).

H2a: The younger women (18-24) have lower self-esteem than the older group of women (25-45).

H2b: The younger women's self-esteem is more based on appearance than in the older group of women (25-45).

H2c: The younger women are more dissatisfied with their bodies than the older group of women (25-45).

H2d: The younger women report poorer health than the older group of women (25-45).

Method

Participants

The sample consisted of 134 female students at Stockholm University in the spring semester 2011. The women were aged between 18 and 45. Most of the participants (124) came from five different classes at the Department of Psychology and School of Business but ten participants came from other departments at the University. All of the participants were volunteers. Out of the sample, 81.3% were born in Sweden, 3% in one of the other Nordic countries, 4.5% within Europe but not the Nordic countries, and 11.2% outside of Europe. Most of the participants were single or 50%, 39.1% were in a relationship and living together (Swedish: sambo), and 10.9% were married. Most of the women had no children, or 90.3%, 9% had one or two children and 0.7% had three or more children. Considering household economy, 40% of the participants said that they had good or very good household economy (HE), 32.8% had neither good nor bad HE, and 17.1% had strained or very strained HE.

Design and materials

The study variables were measured on different Likert scales and presented in the following order: Background questions, General health questionnaire (GHQ-12), Rosenberg self-esteem scale, Contingencies of self-worth (CSW); appearance scale, Body shape questionnaire (BSQ-16A) and two questions about weight. The questionnaires were presented in this order because of increased sensitivity of the questions, where GHQ-12 is the least sensitive questionnaire and BSQ-16A is the most sensitive one followed by the weight questions. This way of arranging questions by sensitivity is recommended by Wärneryd (1993).

The GHQ-12 is originally on a 4 point scale but the Swedish version that this study presented has 5 points where 1 denotes "never", 2 denotes "quite seldom", 3 denotes "sometimes", 4 denotes "quite often" and 5 denotes "always". The version tested in the

present study had 5 response alternatives instead of 4 because the author felt that there were more positive response alternatives than negative in the standardized Swedish version. It is possible that this difference had an effect on the women's scores on the GHQ-12 but it is unlikely since most of them scored very high on this scale but internal consistency in the current study was slightly lower than presented in previous studies.

When the scores on GHQ-12 were calculated, the scale was reversed to be in the same direction as the Rosenberg self-esteem scale, so that high scores would represent good health respective high global self-esteem. This was done to simplify interpretation of the results. The following questions were reversed on the GHQ-12 so that a high total score would represent good health (psychological well-being) instead of poor health: number 2, 5, 8, 9, 10 and 11.

Independent variables

Self-esteem. Global self-esteem was measured with a ten item self-esteem scale developed by Rosenberg (1965). The scale is built on ten statements and measures an individual's sense of self. The scale was presented on Likert scale from 1 to 4, where 1 denotes "strongly agree" and 4 "strongly disagree". A sample statement is "I feel I am a person of worth, at least on an equal place with others". In the present study the ten items yielded an alpha of 0.9.

Appearance based self-esteem. To measure this variable a subscale from the Contingencies of self-worth scale developed by Crocker et al. (2003) was presented. The subscale measures appearance based self-esteem and has five items on a Likert scale from 1 to 7, where 1 denotes "strongly disagree" and 7 "strongly agree". A sample statement is: "My self-esteem is unrelated to how I feel about the way my body looks". Two questions were reversed before calculating the score as is stated in the instructions on the scale. This scale was not available standardised in Swedish so it was cross translated by a native speaking Swede and a bilingual British-Swede. The translations were very accurate and the wording was the same. In the present study the five items yielded an alpha of 0.67.

Body dissatisfaction. Women's body image or body dissatisfaction has been found to be related to their self-esteem and health perceptions. To measure how satisfied the women were with their bodies the Body shape questionnaire version 16A was presented on a Likert scale from 1 to 6, where 1 denotes "never" and 6 "always". A sample statement is: "Over the past four weeks: Has eating even a small amount of food made you feel fat?" The BSQ 16A is one of the shorter versions of the original BSQ and was developed and presented by Evans and Dolan (1993). The shorter versions have been found to be more reliable than the full version when the purpose of a study is not solely to measure negative perceptions of one's body (Ghaderi & Scott, 2004; Dowson & Henderson, 2001). In the present study the 16 items yielded an alpha of 0.93.

Body dissatisfaction was also measured with two weight questions presented by Tiggemann (2005). They represent two simple forms of measuring body dissatisfaction. The questions were presented on a 5 point Likert scale: How satisfied are you with your weight? Where 1 denotes very dissatisfied, 2 denotes dissatisfied, 3 denotes neither

dissatisfied nor satisfied, 4 denotes satisfied, 5 denotes very satisfied. The second question was: I feel that I am... where 1 denotes very underweight, 2 denotes underweight, 3 denotes normal weight, 4 denotes overweight and 5 denotes very overweight. Weight perceptions and weight satisfaction are important factors in the level of body dissatisfaction among women but the BSQ-16A does not ask about weight per se so these questions were added to the model. The questions were both on five point scales.

Dependent variable

Health. Health was measured with the 12 item General health questionnaire (GHQ-12) developed by Goldberg (1979). It was presented on a Likert scale from 1 to 5, where 1 denotes "never" and 5 "always". A sample statement is: "In the past few weeks have you been able to concentrate on what you are doing?" (Swedish: Har Du de senaste veckorna kunnat koncentrera dig på vad du gör?). It measures psychological well-being. Self-report questionnaires measuring perceptions of health give good prediction of actual health. Health will be termed psychological well-being in this report. In the present study the 12 items yielded an alpha of 0.68.

Statistical analysis

The SPSS package was used for all statistical procedures and calculations. First relevant questions were reversed so that interpretations of the data would be simpler. Then a total score on each scale was calculated for each participant. Age groups were calculated for the whole sample where 24 and younger represented age group number one and 25 and older represented age group number two. This division of groups was decided considering the results of the Swedish public health report (Lager et al., 2009). A Spearman's rho correlation was calculated instead of simple Pearson's correlations to test the associations between the independent variables and the dependent variable because two of the independent variables had skewed distributions. From previous studies it is suggested that the relationship is linear. Skewness and Kurtosis tests were run on all variables to explore whether all of them fitted the criteria for multiple regression analysis. When testing the hypothesis and the predictors a multiple regression analysis was performed using the enter method. It is the most stable and safe method in multiple regression analysis. Collinearity diagnostics was performed to control for multicollinearity and a Durbin Watson test was run to test whether the residuals were unrelated, which is one of the criteria of multiple regression analysis. When testing for age group differences an independent samples t-test was run through SPSS (Brace, Kemp, & Snelgar, 2009; Guðmundsson & Kristjánsson, 2005).

Procedure

The author searched for different classes and their teachers/lecturers within the Department of Psychology and School of Business on the web. The teachers/lecturers were contacted via email and asked whether the author could come to their classes and

hand out questionnaires. The subject was presented to them in the email so they were aware of the material of the study, five teachers answered and gave permission, three from Department of Psychology and two from School of Business. The presentation and hand-out was done at the end of the classes, either right before lunch break or late in the afternoon, so that the students would be tested at a similar point in time of the day. The questionnaires were handed out after a brief presentation in English which stated the purpose of the study, that participation was voluntary and confidential. They were also invited to send the author an email at the end of the semester if they were interested in the results.

Most of the participants were handed out a questionnaire at the end of their class or lecture at the University. Ten participants received the questionnaires at the University gym and filled them out there or answered them at home and returned them later at the gym. It is not known at which departments these participants were studying at the time of measurement.

The questionnaires were presented in the following order: Background questions, GHQ-12, Rosenberg's SES, CSW appearance, BSQ-16A, and finally the two weight questions. The questionnaires were presented in this row because of their sensitivity, the BSQ has the most sensitive questions/subject and the GHQ the least. This way of presenting questions by sensitivity where at the beginning non-threatening neutral questions are presented and then the level is gradually increased to the most sensitive at the end of the questionnaire is recommended by Wärneryd (1993). The questionnaires were presented in the order because different levels of sensitivity of the questions might have an impact on the results by stirring up the participants feelings. It is best to open up a questionnaire with a non-threatening question and then gradually increase the sensitivity of the questions asked. It is not possible or reasonable to present the questions per se in a randomized order because they are interrelated within each questionnaire and do not have similar Likert scales.

The title page included background questions about age, family situation, children, household economy and ethnicity (Where are you born? In: Sweden, Scandinavia, outside of Scandinavia but in Europe, or outside of Europe). These questions were included to describe the sample in the present study. These background factors have been found to have an impact on self-esteem, body dissatisfaction and health one way or the other in several studies (Grabe & Hyde, 2006; Lager et al., 2009; Lindberg & Hjern, 2003; van den Berg et al., 2010).

In the present study they were not used as control variables but to describe the sample in a more detailed way for future studies to concern. No further personal information was required for this study as that would raise ethical questions and needs a special permission.

Results

Minimum and maximum scores, means, standard deviations, reliability calculated with Chronbach´s alpha and number of scale items are presented in Table 1.

Table 1. Minimum and maximum scores, means, standard deviations, Chronbach´s alpha and number of scale items for variables.

Variable	Min	Max	μ	SD	α	Items
Self-esteem	19	40	30.60	5.50	0.90	10
Appearance based self-esteem	2	7	4.90	1.02	0.67	5
Body dissatisfaction	16	88	41	14.80	0.93	16
Weight satisfaction	1	5	3.25	1.12	--	1
Weight perception	2	5	3.19	0.58	--	1
Health	23	54	42.30	5.20	0.68	12

Correlations between all the variables are presented in Table 2. The correlations were calculated with Spearman's rho because two of the variables had a skewed distribution. There were weak correlations between weigh perception and self-esteem, appearance based self-esteem and health, respectively. None of the correlations were over 0.8 which is one of the criteria for multiple regression analysis. The strongest correlation was between weight satisfaction and body dissatisfaction.

Table 2. Correlations among all variables as calculated by Spearman's rho.

Variable	1	2	3	4	5	6
Self-esteem	1					
Appearance based self-esteem	-.34**	1				
Body dissatisfaction	-.47**	.52**	1			
Weight satisfaction	.46**	-.37**	-.71**	1		
Weight perception	-.16	.20*	.40**	-.54**	1	
Health	.66**	-.35**	-.44**	.28**	-.12	1

*Note. 1= Self-esteem, 2= Appearance based self-esteem, 3= Body dissatisfaction, 4= Weight satisfaction, 5= Weight perception, 6= Health. ** p<0,01. * p<0,05.*

There was a problem with the weight questions, according to the Kurtosis test and the Skewness test both questions were much skewed. After viewing normal quantile plots of the residuals of both it was clear that the distributions of the questions were in separate directions, where perceptions of weight were positively skewed and weight satisfaction was negatively skewed, but still closer to normal than weight perceptions. Appropriate transformations were calculated but they did not improve the distribution. Possible explanations will be discussed later. Since the data did not fit the criteria for multiple regression analysis the weight questions were not included in the multiple regression analysis. Also since the correlations between weight satisfaction and health and weight perception and health respectively, were lower than 0.3 they were too low to be included in the hypothesis testing (Brace et al., 2009; Guðmundsson & Kristjánsson, 2005). The frequency distribution on the weight questions were the following: 46.6% were happy or very happy with their weight, 26.7% were neither nor happy with their weight, 26.7% were unhappy or very unhappy with their weight, 19.1% reported being

overweight or very overweight, 76.3% reported being of normal weight and only 4.6% reported being underweight.

Hypothesis 1, H1a, H1b and H1c were tested by the use of multiple regression analysis. The scores predictor estimates were calculated by using the enter method also termed the simultaneous or standard method (see results in Table 3).

Table 3. The unstandardised and standardised regression coefficients for the variables entered into the model.

Variable	B	SE B	β
Self-esteem	0.54	0.07	0.57**
Appearance based self-esteem	-0.13	0.41	-0.03
Body dissatisfaction	-0.06	0.03	-0.17*

*p<0,05. **p<0,0005

A collinearity diagnostics was requested to control for multicollinearity. This diagnostics showed high tolerance under 0.8 for all variables suggesting weak relationship between the predictive variables. The whole model was significant F (3.12) =34.87, p<0.0005. The model explains 44.6% of the variance (Adjusted R^2=0.446). Table 3 gives information for the predictor variables entered into the model. Self-esteem and body dissatisfaction were significant predictors but appearance based self-esteem was not a significant predictor of psychological well-being. The model was good, as the Durbin Watson test was close to 2 (=1.905), and viewing normality plot and scatter plot for the residuals, the data fitted the criteria of normal distribution for multiple regression analysis (Brace et al., 2009; Guðmundsson & Kristjánsson, 2005).

An independent samples t-test was conducted to answer H2, a, b, c and d. Hypothesis H2 was 2-tailed and the 2-tailed test was not significant for all variables, p>0.05. Since hypothesis H2a, H2b, H2c and H2d were one tailed the p values were divided by 2 because the test results only view results for a 2 tailed t-test. There were no significant results for any of the variables; p>0.05. The younger women (18-24) did not have lower self-esteem, more appearance concerns, more body dissatisfaction or poorer health than the older group of women (25-45).

Discussion

To summarize the results, all correlations were in the expected directions but not all were significant. Global self-esteem and body dissatisfaction predict women's psychological well-being (health) where low self-esteem and body dissatisfaction predict poorer health but appearance based self-esteem, weight dissatisfaction and perceptions of overweight do not predict poorer health. There was also no age group difference in self-esteem, appearance based self-esteem, body dissatisfaction and health among the women which was not in accordance with the results of the Swedish public health report (Lager et al., 2009).

These results lay good grounds for future studies on the subject of self-esteem, body dissatisfaction and health among Swedish women. Even though the group of participants was not representable of all Swedish women the results give good and interesting clues about how important global self-esteem and body dissatisfaction are for women's psychological well-being. The main strengths of the study lie within the sample size and the reliability of the scales because all of the scales were very reliable which means that they appear to be measuring what they were supposed to measure and the sample size fitted the criteria for multiple regression analysis very well.

What was interesting about the results is that even though most of the women were very concerned about their appearance they also had high self-esteem and good health. These results suggest that perhaps appearance concerns do not affect women's sense of well-being, but this needs further studies. It should also be mentioned that since appearance based self-esteem was very weakly correlated with global self-esteem it is possible that even though clearly the women were very concerned with appearance, appearance was not the basis on which they base their global self-esteem. It would therefore have been interesting to see what they would have scored on the whole CSW scale instead of on just one subscale. It is likely that the women based their contingencies of self-esteem on some other factors (Crocker et al., 2003). According to James' theory (1890), on which the CSW is based on, if the women's appearance concerns were the main contingency of their self-esteem it should affect global self-esteem so that increased appearance concerns should decrease global self-esteem scores. It is possible that the reason behind the fact that appearance and body dissatisfaction were so weakly correlated with self-esteem and health respectively, is that female university students base their self-evaluations and well-being on other factors such as academic performance. It is likely that they have high global self-esteem because they base their self-esteem on other factors and are successful in those fields. For example if they base their contingencies of self-worth on academic performance it is likely that they are satisfied in that field because they have climbed the academic stair with success, as in order to be accepted into the University, you have to have good grades, etc. What might explain the scores in the present study is that the women were performing on the contingency which is most important to them and therefore had high self-esteem scores even though their appearance concerns were high (Crocker et al, 2003; see Blom for review, 2011). It is not possible to answer whether appearance was central to the women's self-esteem from the data in the present study. It is therefore necessary to repeat this study and include the whole CSW to declare if these suspicions are true. It is also possible that this group of women had high basic self-esteem (non-contingent self-esteem) which might work as a buffer for appearance concerns, body dissatisfaction and mental distress (see Blom for review, 2011). However, these are just suggestions drawn from the results from previous studies on the subject and no conclusions can be made on the basis of the data from the present study. This needs further studies. The fact that most of the women were so highly concerned with their appearance further supports the importance of appearance among women (Grogan, 2008).

Another interesting point to consider is that there was no age group difference in global self-esteem, appearance based self-esteem, body dissatisfaction and health among the women. This is not in accordance with the results presented in the Swedish public health report (Lager et al., 2009). The difference in group size might have been the problem because that lowers statistical power and increases the risk for type-2 error. But

another possible reason behind these results is that perhaps age is not a factor when it comes to self-esteem, body dissatisfaction and health among adults or university students. Women at all ages show body dissatisfaction and think about their appearance (Aalto-Setälä et al., 2002; Baker & Gringart, 2009; Meland et al., 2007; Mellor et al., 2010; Paxton & Phythian, 1999; Paxton et al., 2006; Tiggemann, 2005).

It should be mentioned that the BSQ has been found to give very good predictions for future eating disorders, in a way that those who report being dissatisfied with their bodies are more likely than the others to develop eating disorders or perform disturbed eating patterns. It should therefore be of considerable concern that half of the sample reported body dissatisfaction and had quite high scores. It would have been interesting to ask about eating behaviours in relation to the results on the BSQ.

The fact that the questionnaires were arranged in a specific order and not randomized between participants might have had an effect on the answers but because of the sensitivity of the subject and questions included in the study, it was concluded that it was better to arrange them by sensitivity as suggested by Wärneryd (1993) so that the participants' answers would be less affected by uncomfortable feelings.

It might be argued that the GHQ-12 and Rosenberg's scale are in part measuring the same thing as there are some questions included in the GHQ-12 which ask directly about sense of self-worth. However, the correlations between the two scales in the present study were not that strong, so that it is unlikely that GHQ-12 and the Rosenberg's scale were measuring the same thing. From the results it can be concluded that global self-esteem is very important for psychological well-being but future studies should include scales which test health in a more precise manner, such as physical complaints, eating behaviours and health destructive behaviours, such as smoking and drinking alcohol. It is possible that these measurements would give a more precise picture of the nature of the relationship between self-esteem and psychological well-being. Also, including all of the subscales of the CSW might shed a better light on the nature of women's self-esteem and which sources are important for health and health behaviours.

In the present study most of the women reported high self-esteem and good health and at the same time being of normal weight and being satisfied or neither nor satisfied with their weight. Considering the relationship between weight and self-esteem these numbers were in complete accordance with previous studies relating weight to body dissatisfaction and self-esteem (Tiggemann, 2005).

There are a few things which might be improved in future studies but in the present study this was not relevant. The sampling method was not very good and should be improved in future studies. There are also some facts about the background questions which should be considered for future studies that want to control for the effects of background variables. The ethnicity question was not very good. It is possible that some of those which marked the box for being born outside of Europe included Americans, and they are a part of the western culture where we have the lowest self-esteem and highest report of body dissatisfaction. However, it is not likely that there are many American women aged 18-45 studying at the Department of Psychology and School of business in Stockholm. But the ethnicity question should be clearer and possibly be divided into western culture and other cultures which are not as individualistic in nature,

as the problem with appearance and body dissatisfaction is likely to be different between cultures since these concepts are very social in nature.

Another thing to consider about the background questions was that there were quite many missing values on the question about living situation compared to the other questions. It is possible that the question is flawed. Some of the participants suggested that it needed a response alternative that represented being in a relationship and not living together but living on your own which seems to be a quite common living situation among young female students in Stockholm.

Limitations to the study

It should be mentioned that this study is only cross sectional and therefore no causal conclusions can be drawn. There were no serious limitations to the study but there are some which should be mentioned. Firstly, the results are not generalizable to other groups. The sample consisted of university students who volunteered to participate. Secondly, selecting only two departments to find participants possibly had an effect on the results as students from these departments are in no way representable for all students at Stockholm University. Also, there is a lack of information about the ten students which filled out the questionnaire at the gym or at home. Also they were filling out the questionnaire in a different setting and at a different time point than the other participants. It is likely that if a different group of women were tested there would be different results. The Swedish public health report (Lager et al.,2009) studied a sample drawn from the whole Swedish population. The author was aware of this problem from the beginning as the sample method was chosen to be able to get as many participants as possible, preferably close to 2-300, because it is good for the validity of a study. However, it should be noted that the results were mostly in accordance with previous studies on the subject and, therefore, perhaps the type of group does not matter for the results.

The reason for why there was no age group difference in self-esteem, body dissatisfaction and health among the women possibly lies in the group sizes. The younger age group was twice as big as the older age group and age distributions were not the same in both groups. This increases the risk for type-2 error and lowers statistical power. If the group sizes were more equal and the sample was a little larger, age group differences in self-esteem, body dissatisfaction and health might have been detected, since when looking at box plots of the distributions on the variables, the younger group of women seems to have more appearance concerns than the older group of women.

There was a problem with the weight questions suggesting that perhaps they were not a good enough measurement for weight perception and weight satisfaction. It was not possible to test weight satisfaction and weight perceptions as the data did not fit the criteria for multiple regression analysis and correlations between the variables and health were too weak to be included in the hypothesis testing. Appearance based self-esteem did not correlate that strongly with the other variables as was expected and was not a significant predictor of health. A possible explanation is that the appearance scale was just not good enough to measure in this context, the internal consistency was lower

than for the other scales which might be explained by the fact that this scale is only a single subscale and was only cross-translated, not standardized in Swedish. Also it is possible that the women base their self-esteem more highly on other factors as suggested by Crocker et al. (2003).

Conclusions

In the future it is important to perform longitudinal studies on the subject to declare the subject about directionality in the relationship between self-esteem, body dissatisfaction and health. It might be interesting to measure stability in self-esteem and contingencies of self-esteem over time among women at a certain age and see how that relates to women's body dissatisfaction and health both mental and physical. Also testing different ethnic groups might be interesting as well. In the future we need to find out how soon we need to work on children's global self-esteem in order to promote and maintain psychological well-being among people at all ages.

In the present study global self-esteem was the most important factor in predicting psychological well-being. It further supports the fact that global self-esteem is important for well-being. It might work as a protection or buffer for later mental health problems or promote stability in self-esteem, but this needs further studies. Women's self-esteem has been found to be more global in nature than men's and therefore the present results are in accordance with previous studies. Also, most of the women scored highly on appearance based self-esteem and half of them were dissatisfied with their bodies, further supporting the importance of appearance among women. These results give support for how important global self-esteem is for psychological well-being and that perhaps age is not that an important factor in the relationship between the variables among adults. This should be considered in future studies and in the battle against the development of depression, anxiety and eating disorders among women.

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