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14

SOCIOCULTURAL CONTEXT OF BODY DISSATISFACTION AND POSSIBILITIES OF VIBROACOUSTIC THERAPY IN DIMINISHING BODY DISSATISFACTION

Abstract

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CONTENTS

LIST OF ORIGINAL PUBLICATIONS

The dissertation is based on the following original publications, which will be referred to in the text by their respective Roman numerals.

I. Tiggemann, M., Rüütel, E. (2001). Cross-cultural comparison of body dissatisfaction in Estonian and Australian young adults and its relationship with media exposure. *Journal of Cross-Cultural Psychology, 32*(6), 756–762.

II. Tiggemann, M., Rüütel, E. (2004). Gender role concerns in Estonian and Australian young adults. *The Journal of Social Psychology, 144* (1), 93-95.

III. Rüütel, E. (2002). The psychophysiological effects of music and vibroacoustic stimulation. *Nordic Journal of Music Therapy, 11*(1), 16-26.

IV. Rüütel, E., Ratnik, M., Tamm, E, & Zilensk, H. (2004). The experience of Vibroacoustic Therapy in the self-development of adolescent girls. *Nordic Journal of Music Therapy, 13*(1), 33-46.

INTRODUCTION

The field of body image has experienced tremendous growth in the last fifty years and the end of the twentieth century is clearly a time of enhanced concern with body image (Grogan, 1999, p. 2; Thompson, 2004, p. 7). Body image is the term that has come to be widely accepted as the internal representation of one's outer appearance. However, there are different terms used to define the different components of body image (Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999, p. 10) and there are over fifty measures for the scientific investigation or clinical assessment of body image (Thompson, 2004). In the current dissertation body image is defined by Cash (2004, pp. 1-2) referring to the multifaceted psychological experience of embodiment, especially but not exclusively one's physical appearance, which encompasses one's body-related self-perceptions and self-attitudes, including thoughts, beliefs, feelings, and behaviours. Assessment of body image is mainly focussed on trait-like characteristics measuring how people usually think, feel, or act. Cash (2002a) also points to the importance of considering body image fluidity in everyday life.

Body image disturbance has been described through a continuum model, with levels of disturbance ranging from none to extreme and most people falling near the middle of the range, experiencing mild-moderate concern, distress or dissatisfaction (Thompson, et al., 1999, pp. 7-8). Body dissatisfaction is considered the most important component of disturbance since it refers to negative subjective evaluations of one's physical body (the majority of people reporting dissatisfaction with weight or body shape). Although body dissatisfaction is one of the prominent risk and maintenance factors of eating pathology (anorexia nervosa, bulimia nervosa), certain disturbance may also have beneficial aspects as it can serve as a motive for health related behaviours and lead to healthy exercise and eating behaviours. Heinberg, Thompson, & Matzon (2001, p. 216) assert that the relationship between body image dissatisfaction and healthy dieting and exercise behaviours can be illustrated by an inverted U-shaped curve. When body image distress is very low, individuals may not engage in healthy dieting and exercise – even if necessary to improve health outcomes. When body image distress is very high, individuals may engage in unhealthy or even dangerous dieting behaviours (e.g. fasting or purging) or may fail to engage in any diet or exercise behaviours because of their perceived inability to overcome their body image deficits (or, possibly, excessive weight). Schwartz and Brownell (2004) are questioning the usefulness of the body image distress suggested by Heinberg et al. (2001) because it may lead to motivation through societal pressure to change, causing discrimination and stigmatisation.

Although there may be some positive aspects in body dissatisfaction, it has been found to be the central factor in development and maintenance of eating pathology. Sociocultural processes may foster body dissatisfaction. On the basis of prospective and experimental studies, Stice and Shaw (2002) suggest that perceived pressure to be thin, thin-ideal internalisation and elevated body mass increase the risk for subsequent body dissatisfaction, which in turn increases the risk of eating pathology and that this relation is mediated by increases in dieting and negative affect. Thus, according to their findings, Stice and Shaw suggest giving greater attention to body dissatisfaction in prevention and treatment interventions.

Very little research has been dedicated to the body image concerns among Estonians. Considering that for a long period of time Estonia was relatively separated from the western world, it can be assumed that certain differences in people's attitudes towards their bodies may have existed. However, the rapid socio-economic development in the 1990s has increased (critical) attention to the body ideals depicted by the western media. Body image concerns are

related more to adolescents and young adults. Thus a comparison of Estonian and South-Australian young people provides a fertile ground for the testing of theoretical hypotheses about the influence of sociocultural factors on body image. The media and sex roles may be the prime determinants of aspirations connected with appearance, which in turn, may impact on the global self-esteem especially in women.

The present dissertation is based on two research topics. Studies **I** and **II** compare body image related issues among Estonian and Australian young adults. These studies were carried out in cooperation with Prof. M. Tiggemann (The Flinders University of South-Australia) in 1999-2000. Studies **III** and **IV** concentrate on the influence of vibroacoustic stimulation and applying vibroacustic therapy (VAT) in a non-clinical population, bringing up the possibility to use VAT for diminishing body dissatisfaction. Study **III** is based on the experimental data collected in 1995-1997. Study **IV** is a part of a broader research project "The possibilities of applying music therapy and vibroacoustic therapy for diminishing heightened anxiety in adolescents" carried out in 2002-2003.

In the present dissertation the additional data collected within the two projects of the Laboratory of Health Studies of TPU in 2000-2001 are presented to give a broader perspective to the research topic. The data of Estonian adolescents from the survey carried out within the health promotion project "Body-friendly lifestyle" has been given in two age groups: students of the seventh and eight grade as the group **of** younger adolescents and students of the tenth and eleventh grade as the group of older adolescents. Data of adult women collected within the research project "Body dissatisfaction in relation to self-esteem and psychological well-being" are presented in two groups: normal population (norm-group, women in the age 30-65) and women participating in weight loss and maintenance groups (weight-controls, age 30-73). A group of young adults in the age under 30 from the Estonian sample of Study **I** and **II** are also included into cross-sectional analyses given in the present dissertation. The cross-sectional data are given in the Appendix.

More specifically the dissertation concentrates on the following issues:

- Dissatisfaction with body shape and weight and its background factors among Estonian men and women;
- The role of sociocultural factors in body dissatisfaction (Study **I**);
- Sex role concern and its relation with body image (Study **II**);
- Age differences in body image;

Possibilities of vibroacoustic treatment in diminishing body dissatisfaction (Studies **III** and **IV**).

1. ASSESSMENT OF BODY DISSATISFACTION

The present dissertation is focussed on the body dissatisfaction related to body weight. Measuring instruments used in Study **I** were chosen by the first author of the article Prof. M. Tiggemann and translated into Estonian by the author of the present dissertation. To validate the translation, all items were independently back-translated into English by a professional translator. The same measures were also used for collecting the Estonian data presented in the present dissertation (Appendix).

The silhouette technique is a quantitative measure of degree and direction of body dissatisfaction (Grogan, 1999, p. 26; Thompson, Heinberg, & Altabe Tantleff-Dunn, 1999, pp. 52-57). This approach involves using the scales with schematic figures or silhouettes of varying sizes, from thin (underweight) to heavy (overweight). The 9 female and 9 male silhouette drawings used in Study **I** were developed by Stunkard, Sorenson and Schulsinger (1983) to determine the weight status of adoptees, and then subsequently used by Fallon and Rozin (1985) to consider body perception. The subjects are asked to choose from the figure rating scale the figure which approximates their current figure (Current), the one, they would like to look like (Ideal), the one they consider to be the most attractive to the opposite sex (Attractive), and the most attractive figure from the opposite sex scale (Opposite). The body dissatisfaction is calculated from the figure ratings as the discrepancy between Current and Ideal figures. This measure has been shown to have reasonable psychometric properties, with test-retest reliabilities ranging from .71 to .92 (Thompson & Altabe, 1991). Although Gardner, Friedman, and Jackson (1998) criticized the figural scales because of the lack of consistent size gradations between adjacent figures, the scales are widely used for measuring body dissatisfaction (Rozin & Fallon, 1988; Altabe & Thompson, 1993; Demarest & Allen, 2000; Lamb, Jackson, Cassidy, & Priest, 1993; Raudenbush & Zellner, 1997; Rozin, Trachtenberg, & Cohen, 2001; Stevans & Tiggemann, 1998; Tiggemann, 1992; Tiggemann & Pennington, 1990; Wardle, Bindra, Fairclough, & Westcombe, 1993).

Quetlet's BMI (Body Mass Index, the weight in kilograms divided by squared height in meters) is used for determining body size and body image. The self-reported weight is highly correlated with the actual weight although heavier individuals have a tendency to underreport their weight (Beebe, Holmbeck, & Grzeskiewicz, 1999). One of the simplest measures of overall weight satisfaction is to compare a persons' current BMI with their ideal BMI (calculated from the height and ideal weight). Following Heinberg and Thompson (1992), weight satisfaction can be found with single global item by asking participants to rate their body weight satisfaction on a 7-point Likert scale from 1 (extremely dissatisfied) to 7 (extremely satisfied).

Eating Disorder Inventories – EDI (Garner, Olmstead, & Polivy, 1983) and EDI-2 (Garner, 1991) are widely used questionnaires to measure dysfunctional behaviour related to body dissatisfaction. Three behavioural subscales of EDI – Body dissatisfaction, Drive for thinness and Bulimia – were used in Study **I** with untransformed scores as it was recommended by Schoemaker, van Strien, and van der Staak (1994) in the case of nonclinical population. Cronbach's alphas of the subscales were for men (n = 527) respectively .87; .75; .66, and for women (n = 1143) .90; .85; .78 in the Estonian sample presented in the current dissertation.

The measure of global self-esteem can be used to find out the wider influence of body dissatisfaction on the persons' psychological well-being. The 10-item scale used here was adapted by Bachman and O'Malley (1977) from Rosenberg's (1965) Self-Esteem Scale. Respondents rate a number of statements about themselves (e.g., "I feel like I have a number of good qualities") from "almost always true" to "never true". Scores range from 10 to 50, with high

scores indicating high self-esteem. Cronbach's alpha of the scale was .83 for men (n = 527), and .85 for women (n = 1143) in the Estonian sample.

2. CULTURAL AND GENDER ASPECTS OF BODY DISSATISFACTION

2.1. CROSS-CULTURAL SIMILARITIES IN BODY DISSATISFACTION

Body size perception has been shown to be highly influenced by cultural factors (Altabe, 1998). In Study **I** we compared young adults in Australia with a similar sample in Estonia. As a country from the former Soviet bloc, Estonia has not had a long history of exposure to commercialised western largely American-based media depicting thin idealised bodies, as is the case in Australia, although exposure to such material was also rapidly increasing in Estonia. However, the consequent prediction that the Estonian women would suffer less body dissatisfaction and disordered eating than their Australian counterparts was largely unsupported. They, like Australian women, choose an Ideal figure significantly smaller than their Current figure and on most other measures they score similarly. Where there were differences in satisfaction, these were largely accountable for the lower BMI of Estonian women.

One reason for the lack of differences between Estonian and Australian young adults in body satisfaction measures can be the homogeneity of college students independent of country and culture. Other studies have also shown similar results. Sociocultural shift toward smaller female body size has been observed in the African American community – female university students report desire for smaller body size and no difference was found in desired female body size indicated by African American and White males (DiGioacchino, Sargent, & Topping, 2001). Stephens, Schumaker and Sibiuya (1999) have shown no difference in eating disorder symptoms between Australian and Swazi university students. However, the cultural factors in eating disorders may have a different nature of the underlying body image disturbance as was found in comparative study of young women in Canada and India where dissatisfaction was related to different body parts (Gupta, Chaturvedi, Chandarana, & Johnson, 2001).

Being on average somewhat taller than Australian women (Study **I**), the Estonian women are in fact considerably closer to the current thin idealised images of beauty. In this light their dieting behaviour is somewhat surprising. Most surprising is the greater frequency with which Estonians (men and women) weigh themselves, suggesting the cultural trend. There are no significant age differences in weighing frequency (Appendix, Table 1). The difference is only between genders – as expected, women weigh themselves more frequently than men (for women $M = 3.02$, $SD = 1.02$; for men $M = 2.63$, $SD = .91$; $t(1449) = -7.23$, $p < .001$).

The relations between weighing frequency and dissatisfaction with body shape and weight (Appendix, Table 4) show that the background factor for men seems to be sports related weight monitoring, whereas for women it is the drive for thinness. Among Estonians the weight fluctuation is higher than among Australians (Study **I**). It may be connected to weight monitoring – frequent weighing gives more possibilities to notice changes. Correlation between weighing and weight fluctuation was $r = .38$ for men and $r = .33$ for women in the sample of Estonian young adults.

2.2. GENDER DIFFERENCES IN BODY DISSATISFACTION

Similarly to many studies (Rodin, 1993; Grogan, 1999 for a review) which have shown consistent gender differences in body concern, Study **I** demonstrates significant and substantial gender differences: women perceive themselves to be heavier (higher subjective overweight), are less satisfied with their body and body weight, and wish themselves to weigh less and to be thinner (discrepancy between Current and Ideal figure ratings and actual and ideal BMI) more than men do.

Contemporary Western cultures idealize thinness for females and an average body shape for males (Jackson, 2002, p. 18). Clear-cut gender differences in physical attractiveness were also found in Study **II** (Appendix, Table 6) – in the case of women the physical attractiveness was related to slimness, in the case of men to muscularity. The most important indicator related to popularity is slimness for women and professional success for men (Appendix, Table 7), supporting findings from previous studies (Feingold, 1990) about social conditioning emphasizing the greater importance of appearance for women.

Studies have pointed out that objectification (Fredrickson, Roberts, 1997), the form of self-consciousness that is characterised by habitual and constant self-monitoring of one's outward appearance, encourages body dissatisfaction, eating problems, and other mental health concerns among girls and women. Self-objectification was not studied in Study **I**; however, the weighing may be viewed as a certain way of self-objectification and body weight as an object for social comparison. Research findings show that self-objectification and its consequences are already pertinent to girls from the age of 12 or 13 (Slater & Tiggemann, 2002). Although the objectification of women is more common, the emphasis on the objectification of men is increasing across time. However, there is limited information about how strongly it may be linked to body problems in boys (Murnen, Smolak, Mills, Good, 2003).

3. RELATIONS BETWEEN BODY DISSATISFACTION, BODY WEIGHT, AND WEIGHT LOSS BEHAVIOUR

According to the World Health Organization report (2000), prevalence of overweight and obesity is increasing worldwide and women generally have higher rates of obesity than men. Terms "overweight" and "obesity" describing the condition of excess weight are often used interchangeably. The WHO has separated them in the context of health and defines overweight as a BMI between 25 and 29.9 and obesity as BMI above 30. Treating obesity through dieting has historically been the most common approach and most weight loss programs begin with dietary treatment (Brownell, 1982). However, weight losses produced through dietary methods can be small and hard to maintain (Agras, et al., 1996; Lohman & Wright, 2004). Chronic dieting may lead to feelings of being out of control in relation to food, and sometimes to a cycle of bingeing and starving that leaves the dieter feeling dissatisfied, guilty and low in self-esteem (Grogan, 1999, p. 175).

Obese groups tend to have higher body dissatisfaction than non-obese comparison groups, which is also found in Estonian sample while comparing the female group of weight-controls with the norm-group (Appendix, Table 1). However, there is heterogeneity of body image and variety of

psychological well-being among obese population (Friedman & Brownell, 1995) and several studies have found no evidence for greater body dissatisfaction among those who are more obese (Schwartz & Brownell, 2004). Overweight men are less likely to be dissatisfied with their bodies than women (Wardle & Johnson, 2002). The severity of body dissatisfaction among obese women is likely to be affected more by the perception of overweight than by objective BMI (Foster, Wadden, & Vogt, 1997; Sarwer, Wadden, & Foster, 1998). Thus poor body image and low self-esteem are not the inevitable consequences of having a high BMI (Wardle, Waller, & Fox, 2002). This is also supported by the Estonian data (Appendix, Tables 3 and 5). Body dissatisfaction can be the potential stimulus for seeking obesity treatment and elevated scores of body dissatisfaction can be improved by weight loss (Packianathan, Sheikh, Feben, & Finer, 2002). Body image can also be successfully treated in a number of different populations with cognitive-behavioural therapy (Cash, 2002b). This means that body image may prove independent of weight loss (Schwartz & Brownell, 2004).

Several studies have pointed out that many of the individuals who diet are of normal weight for their height, many of the dieters use unhealthy weight-control behaviours, and dietary restraint can be etiologically significant for the development of eating disorders (Ackard, Croll, & Kearney-Cooke, 2002). There is only modest support for the assertion that body mass is a risk factor for eating pathology (Stice, 2001).

The share of dieting girls is growing significantly in the older adolescent group parallel with an increase in body weight and body dissatisfaction (Appendix, Table 1). The comparison of Estonian and Australian young adults (Study **I**) shows that there are no differences in current dieting. As expected, significantly fewer men are currently dieting than women. Similar proportions of men had ever dieted (approximately four times less than women). However, one third more Australian women had ever dieted than Estonian women.

The share of dieters seems to be constant for Estonian women and for men as well (Appendix, Table 1), although only some men reported current dieting. Thus, every fourth adult women has ever dieted and one out of ten is currently dieting. This is significantly less than in other western countries. For example Allaz, Bernstein, Rouget, Archinard, and Morabia (1998) found that 42% of women in the age of 30-70 had dieted in the last 5 years, which is a similar proportion to the Australian young women (Study **I**) but considerably more than that of Estonian women.

The main predictor of dieting among currently dieting Estonian women is the internalised ideal of thinness. Another important background factor is previous dieting (Appendix, Table 5). It is not the current body weight that predicts dieting but the discrepancy between current and ideal weight.

Nowak and Büttner (2003) found strong association between attempting weight loss and weight related beliefs among high school students. The methods of weight loss employed were also related to beliefs – those who believed that exercise was important were more likely to use this method, those who believed that skipping meals was a good way to lose weight were more likely to skip meals for weight loss. Research has shown that higher dieting frequency among college females is associated with emotional distress and eating disorder behaviours (Ackard et al., 2002), whereas body change strategies to increase muscle tone have been found to predict positive affect for both genders (McCabe, Ricciardelly, & Banfield, 2001). However, Strelan, Mehaffey and Tiggemann (2003) found that reasons for exercise were significantly related to young women's levels of body satisfaction and self-esteem. Women who exercised for appearance-related reasons reported lower levels of body satisfaction and self-esteem than women who exercised for functional reasons – health, fitness, mood, and enjoyment.

The share of physically active Estonian men and women is not statistically different and sporting and exercising diminishes with age (Appendix, Tables 1, 2, 5). Although the scores of body dissatisfaction do not differ significantly between physically active and not active men and women, the data of older female adults indicate that there are possibilities to motivate more women to be physically active and to feel good through sports and exercising. In her correlational study of men and women aged 20-80, Wilcox (1997) found that among women who did not exercise, age was associated with greater body dissatisfaction, whereas for those who exercised, increasing age was associated with greater body satisfaction.

4. THE SOCIOCULTURAL BACKGROUND OF BODY IDEALS

4.1. THE ROLE OF MEDIA IN BODY DISSATISFACTION

Body dissatisfaction is linked to objectification of women in the media (Murnen, Smolak, Mills, & Good, 2003). Current western societal standards of beauty, reflecting unrealistically thin models, inordinately emphasise the desirability of thinness (Cusumano & Thompson, 1997; Spitzer, Henderson, & Zivian, 1999). According to the cultivation theory (Gerbner, Gross, Morgan, & Signorielly, 1994), the real world perceptions of heavier media users should correspond more closely to the media-depicted world than the perceptions of lighter media users. It is supported by the findings from a large population study by Utter, Neumark-Sztainer, Wall, & Story (2003) which suggest that reading dieting-related magazines is a separate and independent correlate of weight-control behaviours for high school girls and boys.

According to Study **I**, Estonians reported spending more hours watching television and more often reading fashion magazines than Australian young adults, and not surprisingly, women read fashion magazines more often than men. Correlation analyses conducted between dietary restraint and disordered eating symptomatology, and the two measures of exposure to the media (hours spent watching TV, and frequency of fashion magazine reading) showed that the reading of fashion magazines correlated with dietary restraint and all the subscales of disordered eating symptomatology for both Estonian and Australian women, but not for men.

It is considered that the relationship between mass media and body image is complex, multiply determined, and bi-directional (Thompson et al., 1999, p. 94). Studies have shown that a number of additional individual differences, e.g. social comparison tendency, internalisation of thin-ideal, identification with models, appearance information, and critical body image processing (Botta, 2003; Durkin & Paxton, 2002; Hargreaves & Tiggemann, 2003; Wilcox & Laird, 2000), may moderate mass media exposure. The experimental study by Hargreaves and Tiggemann (2003) has pointed out that the media may have an indirect impact on women's and girls' body image through influence on men's and boy's appearance expectations that may, in turn, feed back into women's body image concern. Kenrick and Gutierres (1980) found that exposure to attractive actresses (relative to controls) led men to rate an average-looking woman as less attractive, which points to the possibility that exposure to highly idealized images produces a contrast effect that works against the average woman. According to Harrison (2003), for both women and men exposure to ideal-body images on television predicted approval of women's use of surgical body-alteration methods such as liposuction and breast augmentation. "Exposure to ideal-body media

images may thus contribute to women's tendency to do "double damage" to their bodies through both extreme dieting and surgery" (Harrison, 2003, p. 264).

4.2. APPEARANCE IN THE CONTEXT OF SEX ROLE CONCERNS

In Study **II** we predicted that in sex role concerns (Silverstein & Perdue, 1988) less emphasis is placed on slimness and more emphasis on traditional home values among Estonian women than among Australian women. The prediction that Estonians would more value traditional sex roles was strongly supported. The biggest national difference was found for the item "being a good homemaker". This was ranked as third most important by Estonian young women (after intelligence and physical attractiveness), but as second-to-last (eighth) by Australian women. All traditional sex-role concerns (being a mother, being a good homemaker, and the ability to tend to the needs of others) were rated considerably higher by Estonians. Estonian women also rated higher physical appearance (slimness and physical attractiveness), popularity and, from attributes of achievement – intelligence (but not professional success).

Study **II** showed that there were conflicting expectations for Estonian women for both traditional (home/family) and non-traditional (appearance, achievement) values, which may prove hard to fulfil. Comparing Estonian young women to middle aged women, the situation seems to be more complicated for older women (Figure 1).

Traditional sex roles are valued even more in the case of older women, whereas the non-traditional aspirations as professional success and intelligence are valued as high as by their younger counterparts. Although the appearance is less valued, it is at the same level with Australian young women (Study **I**). Thus the aspirations of Estonian middle-aged women are even higher than those of young women. There is a clear-cut difference between age groups, which can point to changing sex roles of Estonian women or it may indicate the differences between the generations, as the data are cross-sectional.

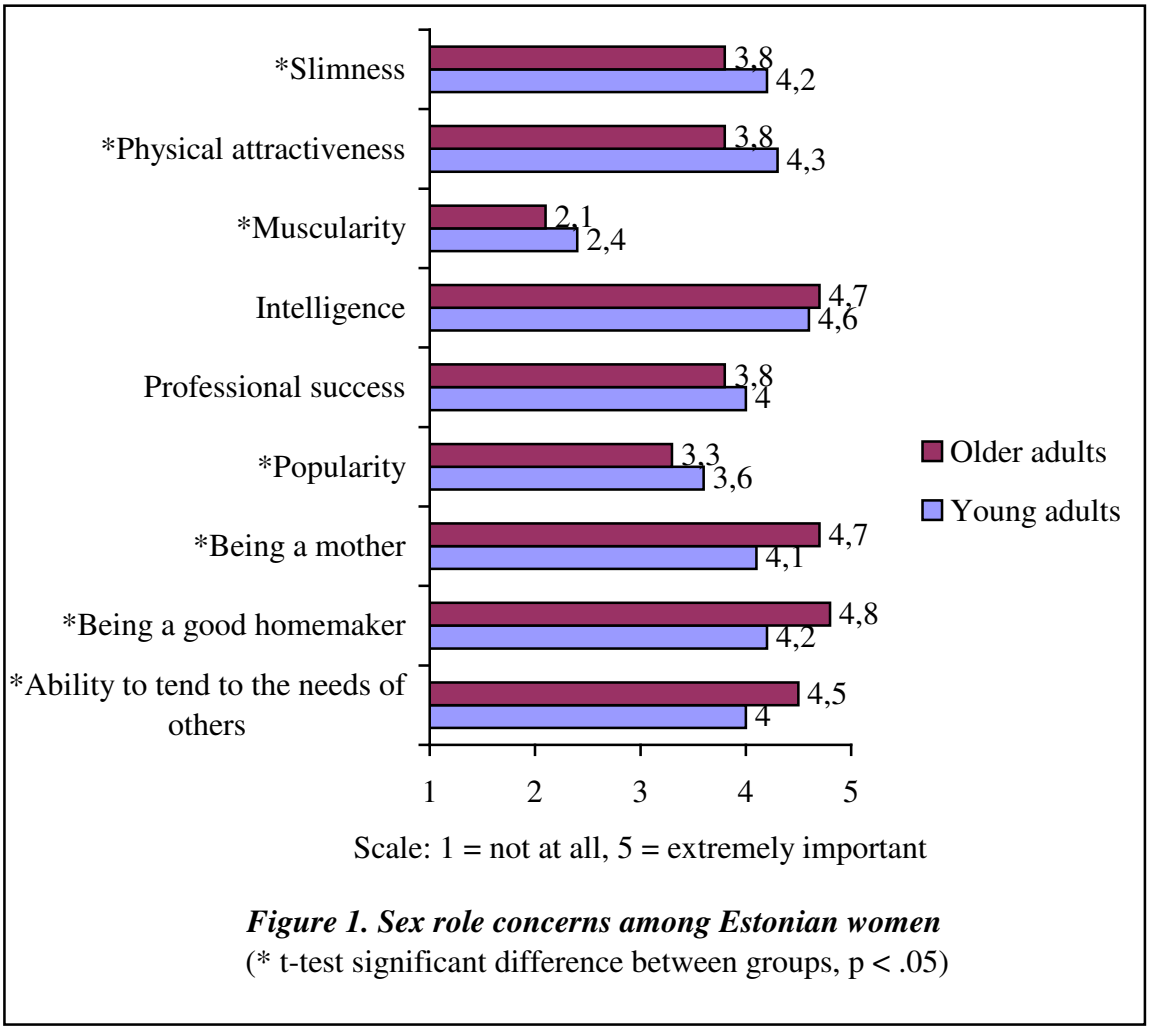

Figure 1. Sex role concerns among Estonian women
(* t-test significant difference between groups, $p < .05$)

5. THE STABILITY AND CHANGE OF BODY IMAGE

5.1. RELATIONS BETWEEN AGE AND BODY IDEALS

Stevens and Tiggemann (1998) found that women's body dissatisfaction (measured by the discrepancy between Current and Ideal body figure) was relatively constant across the sample of women from 18 to 59 years old, irresponsive to marital status, educational level or occupational status. In contrast to the earlier studies in all age groups the nominated ideal figure was significantly larger than the figure considered attractive to the opposite sex. Ratings of the Attractive figure did not increase with age. There were no significant differences in the ratings of married and single women. Women's body figure preferences did not vary as a function of education level or work status.

Figure preferences give interesting findings also in the Estonian sample (Appendix, Tables 1 and 2), which seem to have connection with sex role concerns and societal beauty standards. The

Current and Ideal figure ratings are increasing with age both for men and women, whereas the size of Attractive figure is increasing only in men's ratings and staying in the same size for all five groups of women. In the present study, similarly to other studies (Cohn & Adler, 1992; Fallon & Rozin, 1985; Rozin & Fallon, 1988), Attractive figure chosen by women was significantly smaller than attractive female figure chosen by men (for adolescents $t(833) = -9.18$, $p < .001$ and for young adults $t(398) = -7.80$, $p < .001$). The Estonian "standard" of the Attractive figure seems to be the same with western "standard". According to Study **I,** the cross-sectional data of Estonian women (Appendix, Tables 1 and 2) and the data given by Stevens and Tiggemann (1998), there are no differences in the Estonian and Australian women's ratings of Attractive figure. Thus the figure chosen by women as attractive to opposite sex seems to describe the cross-cultural "standard of female attractiveness" (exposed in the media). That does not necessarily describe either the men's real preferences or the women's personal desires of attractiveness. Women's personal aspirations for attractiveness are reflected by the Ideal figure. However, there is considerably high correlation between the ratings of Ideal and Attractive figure both for women ($r = .44$; $p < .001$) and for men ($r = .39$; $p < .001$).

The present data also confirm the findings by Stevens and Tiggemann (1998) that there is a shift in the placement of Ideal and Attractive figure, comparing younger and older women. Adolescents and young adults choose Ideal figure smaller or the same size as Attractive figure, whereas in the older women's mean ratings the Attractive figure is chosen smaller than the Current figure: the 2-way interaction between group and Ideal and Attractive figure is $F(3, 902) = 12.08$; $p < .001$. The explanation given by Tiggemann (2004; Stevens & Tiggemann, 1998) points to age differences.

There can be one more explanation according to the regression analyses of the Estonian sample (Appendix, Table 8). The location of the Attractive figure in relation to the Ideal figure is predicted by the body mass and the discrepancy between the actual and the ideal BMI. Thus, how far and in which direction the Attractive figure situates in relation to the Ideal figure does not depend on age, body (dis)satisfaction or self-esteem. In the case of women with higher BMI the "standard of attractiveness" inevitably situates further away from the figure representing the current body shape and being realistic about their body ideals the Attractive figure will be the slimmest of the three figures. In the case of slimmer women there are more possibilities of placement of the figures in relation to each other and the personal ambitions related to the body will determine where the other two figures will situate in relation to the "standard of attractivity".

5.2. AGE, BODY IMAGE AND SELF-ESTEEM

According to Feingold and Mazzella's (1998) meta-analysis, the gender differences in body image satisfaction increase from early to mid-adolescence and then diminish in adulthood. There was an increase with age in the share of women among individuals who were highly satisfied with their bodies; the share of women among those who were highly dissatisfied with their bodies remained constant across the life span.

Tiggemann (2004) points to three aspects of body image across the life span for women: aging moves women (and men) further from the youthful thin ideal; body dissatisfaction remains relatively stable; the importance of body appearance seems to decrease with increasing age. Thus, two processes (increasing deviation from the beauty ideal, and decreasing importance)

counterbalance one another to produce a stable level of body dissatisfaction. Thus, stable levels of dissatisfaction should not be taken as an indication that "body image" in all its facets remains stable across the life span.

Findings of the Estonian sample support this. Ratings of Current and Ideal body figure are increasing (Appendix, Tables 1 and 2), showing increasing deviation from the "standard of beauty" (Attractive figure). At the same time middle-aged women put significantly less importance on the physical appearance (slimness, physical attractiveness and muscularity) than young women do (Figure 1). Mean scores of the subscales of Eating Disorder Inventory increase in the age groups of older adolescents and young adults and decrease in the norm-group of older adults (Appendix, Table 1). This points to the diminishing dysfunctional behaviour related to body image in middle-aged women. Thereby a relatively stable level of drive for thinness points to clearly expressed attitude, which Rodin, Silberstein and Striegel-Moore (1985) characterised as "a normative discontent". The stability of the attitude towards their bodies among adult women is also seen in the Figure 2. The orientation towards thinness seems to be even more stable for men, at least in young age (Figure 3); however, it is three times lower than among women.

Halliwell and Dittmar (2003) in their qualitative investigation on women's and men's attitudes towards ageing found that women tended to focus on display (the appearance of the body) and men on functionality (physical capabilities of their bodies). Thus changes in the way their bodies look seemed for men less important and less threatening to their self-esteem. Women were concerned with maintaining a youthful appearance as an indicator of their value and attractiveness. This is also shown by the high percentage of Estonian adult women striving towards slimness (Figure 2), which, however, is converted into a behavioural dimension by significantly fewer women (share of dieters; Appendix, Table 1). Moving further from the youthful standard of attractiveness is generally not an obstacle for the rise of self-esteem, since self-esteem in women increases significantly with age (Appendix, Tables 1 and 2). This is in line with findings about global self-esteem showing gradual increases for both genders across the life span until about the age of 60 or 70 when it sharply declines (Robins, Trzesniewski, Tracy, Gosling, & Potter, 2002). In the current sample the increase in self-esteem is not determined by age (Appendix, Table 5).

The findings about relations between dissatisfaction with body weight and self-esteem are contradicting (Tiggemann, 2004). Among Estonian women the self-esteem is significantly lower in the group of weight-controls compared to the norm-group (Appendix, Table 1). When excluding weight-controls, a lower self-esteem is predicted by the dissatisfaction with body weight, symptomatology of bulimia, and lower BMI (Appendix, Table 5). Drive for thinness does not predict self-esteem, pointing again to the common attitude towards female body shape. Among men the drive for slimness and body dissatisfaction can be significant predictors for self-esteem. However, the regression models of self-esteem are predicting only 13-16% of the variance, indicating that there are other important factors beside body image. For example, according to Buss (1995), the global self-esteem is derived from six different sources – appearance, ability, power, social rewards, vicariousness, and morality – and individuals are expected to differ considerably in their ranking of these components.

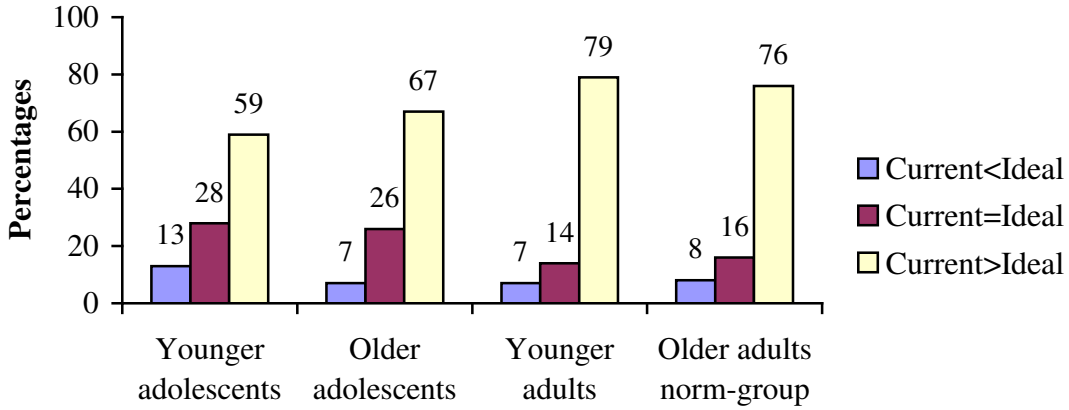

Figure 2. **Body (dis)satisfaction among Estonian women measured by discrepancy between Current and Ideal body figure.**

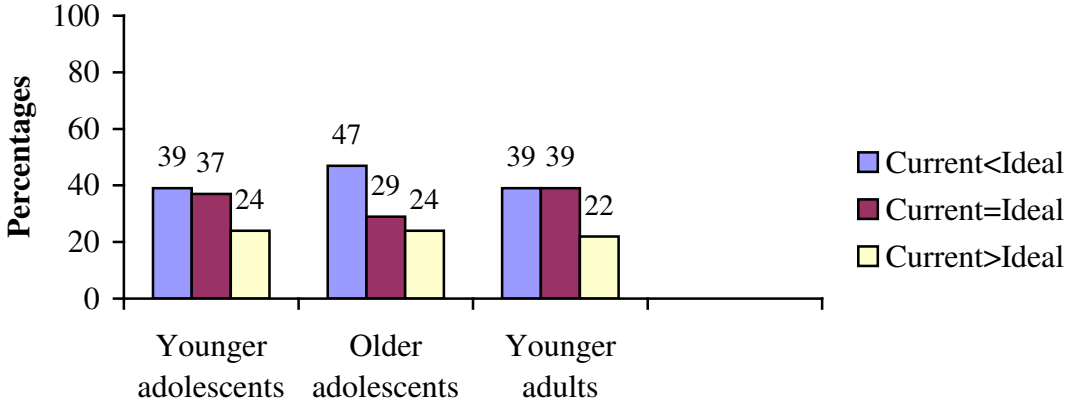

Figure 3. **Body (dis)satisfaction among Estonian men measured by discrepancy between Current and Ideal body figure.**

The data presented in the current dissertation confirm that the explanations of body dissatisfaction and the related behaviour can be found from sociocultural factors. Body dissatisfaction is discussed here more in the context of thinness as the females' hallmark of contemporary beauty. This is not to underestimate the importance of body image concerns among men, which are, however, based on the different "underlying design" and less expressed, and thus

presuppose a different focus and different approach. Nevertheless, the pressure to consumption expressed in the media is common for both genders. The extraordinary food availability combined with socially (and also medically) valued thinness simultaneously gives enticements and warnings focussing attention to the body and placing a person into "bulimic conflict". The body/health sabotaging choices can easily come into the situation, where social values and health aspects are interwoven, the border between healthy and unhealthy is unclear, and the quest for personal success makes the person susceptible to advantage-promising stimuli.

6. POSSIBILITIES OF VIBROACOUSTIC THERAPY IN DIMINISHING BODY DISSATISFACTION

Study **IV** describes the possibilities of vibroacoustic therapy (VAT) in reducing tensions and psychological discomfort in the context of a broader intervention programme. Since VAT is a method that directly **influences** the body, one purpose of the study was to find out about the possibilities of using it in diminishing body dissatisfaction.

Vibroacoustic method (Study **III**; Rüütel, 1998; Skille, 1989; 1997; Skille & Wigram, 1995; Skille, Wigram, & Weekes, 1989) presupposes using a bed or chair with built-in loudspeakers enabling **to** perceive sound vibrations by the body. Sound frequencies used in vibroacoustic therapy are usually between 30 and 80 Hz and may be combined with music, which is mainly gentle and unaccented in order to promote relaxation. In most cases a treatment session lasts for 20-30 minutes. The number of sessions is individually determinable.

The therapeutic results of VAT, however, often obtained as side products of practical work, have shown improvement of several somatic and functional disorders, including health complaints related to stress, decrease of muscle tension and spasms, and alleviation of pain (Raudsik, 1997; Rüütel, 1998; Skille, 1989, 1997; Skille & Wigram, 1995; Wigram, 1995, Wigram, 1997a, b). Beside clinical studies, some research with non-clinical subjects has also been carried out (Study **III**; **Wigram**, 1997c). According to Study **III** the effect of VAT can be characterised as a decrease in psychological and physical tension. Psychological influence becomes especially important in case of health complaints where physiological parameters are within the norm, but it is important to alleviate the psychosomatic discomfort. The study showed that one or a couple of sessions of vibroacoustic therapy could be applied in order to reduce fatigue or stress of everyday life. Stress management is an important aspect in diminishing body dissatisfaction and it is considered to be an important target for intervention in prevention and treatment of eating disorders (Fryer, Waller, & Kroese, 1997).

Study **III** confirms that women can perceive a wider spectrum of changes in vibroacoustic therapy than men, giving some support to the findings that women react to music more easily and evaluate the influence more positively than men (Standley, 1995). The results of Study **III** show changes in the state of mood and comfort in women that are important for bodily well-being. The changes after one VAT session measured by semantic differential scales were towards healthy, patient, comfortable, good, supple, and painless. After two sessions the overall change was wider – towards calm, patient, mild, protected, secure, fresh, supple, light, relaxed. This supports the findings from the previous trials (Skille & Wigram, 1995; Wigram, 1993a; Wigram, 1997a) that VAT may have a cumulative effect.

VAT and other vibrotactile methods have been successfully added to treatment programs. Finnish studies have shown that results were better in stress management when physioacoustic therapy (Finnish application resembling the vibroacoustic method) was used as a supplementary treatment for group trainings (Erkkilä, 2003; Lehikoinen, 1988). In Study **IV** VAT was the main component of the therapeutic intervention program. The methods used in intervention were directed to relaxation (VAT) and self-awareness (drawing self-portraits, self-assessment of mood) to restore psycho-physiological well-being and improve coping abilities of teenage girls. Relaxation is considered very important from the aspect of bodily well-being. It is noted that for the patients with eating disorders it is difficult to relax, they have lost sensitivity to their muscles and they typically fail to recognize varying degrees of tension in their bodies (Totenbier, 1995, p. 200). Thus massage can be a very suitable method for relaxing and encouraging body sensations. However, being touched by others can be frightening. Here VAT has a certain additional positive quality – the massage is produced by sound waves, not by touch.

The interviews held in Study **IV** allow bringing out versatile therapeutic potential of VAT. The changes noticed by the girls during the therapeutic intervention and the attention paid to VAT point to the importance of physical component. All girls emphasized the *positive bodily experience* that can be expressed through two categories:

- Physical self-awareness – discovering the significance of bodily needs (rest, relaxation, care);
- Physical comfort – fulfilling the bodily needs.

VAT can also be considered as a *medium for reflections* giving peaceful time to absorb the new information and continue the thoughts around unfinished or unclear topics raised in the conversations, thus enhancing the positive psychological state, which is important in meaning-based processes related to coping (Folkman, 1997).

Study **IV** refers to the positive effect of VAT in case of body image problems as five girls who had body weight dissatisfaction pointed out the importance of VAT in the therapy program. Three of them belonged to the group described as “tension release” where VAT was considered the most important component of the program. It can be supposed that positive bodily feeling (physical relaxation) from VAT can promote the acceptance of one’s body and through this enhance satisfaction with the body and oneself in general. According to the data of Estonian sample the role of body image in global self-esteem is more significant among adolescents than it is in the group of adults (the correlation between self-esteem and body dissatisfaction (EDI) was $r = .29$, $p < .001$; for older adults $r = .19$, $p < .01$). This supports the suggestion that self-esteem in female adolescents may be largely defined by how an individual feels about her body (Friedman & Brownell, 1995; Geller, Johnston, & Madsen, 1997). Thus, interventions aimed at reducing body dissatisfaction would improve self-esteem, but equally, fostering self-esteem might improve body image (Wardle, Waller, & Fox, 2002).

Applying VAT presupposes personal treatment, which is more time and labour consuming than a stress-management program based on group work, whereby the studies mentioned above (Erkkilä, 2003; Lehikoinen, 1988) as well as the present study demonstrate the efficient role of VAT in the formation of the positive effect of an intervention. Although the absence of a control group is the limitation of Study **IV,** it gives evidence relating to the possibilities of using VAT in diminishing body dissatisfaction. Interviews held in Study **IV** give an overview of the impact of different components of the therapeutic intervention programme, which, as a whole, can be used in prevention and treatment of body image disorders and for facilitating self-help through new knowledge and experience, as suggested by the following quotations of the thoughts of two girls

interviewed in Study **IV**: “I don’t think such things [therapy] can completely change a person. Some changes take place” (C9). … “You need to communicate with yourself all the time … in order to keep thoughts and deeds apart, you know … to keep things in order. … I think that now that I’m leaving … I’m going to try and solve all sorts of problems I have on my own. … The biggest part of the work I have to do myself, you see, like now and in the future” (C4).

CONCLUSIONS

Studies **I** and **II** demonstrate significant and substantial gender differences: women, more than men, perceive themselves to be heavier, are less satisfied with their bodies and body weight, wish to weigh less and to be thinner. In the case of women physical attractiveness is related to slimness, in the case of men to muscularity. For women slimness is the most important indicator related to popularity that may lead to disordered eating behaviour for those striving for popularity.

Independent of cultural differences and lower BMI, Estonian young women like their Australian counterparts, suffer from body dissatisfaction and disordered eating (Study **I**).

Estonian young women have high and contradicting aspirations, valuing highly appearance, achievement and home/family values. The situation is more complicated among older women (Study **II,** data of Estonian sample).

Indicators of disordered eating (Drive for thinness, Body dissatisfaction and Bulimia) are highest in the groups of older adolescents and young adults. Body dissatisfaction does not depend on the actual body weight, it is determined by subjective satisfaction with weight and is significantly related to self-esteem. Drive for thinness among Estonian women seems to describe more the internalised reflection of the general “female beauty trend” than dysfunctional eating behaviour (Data of Estonian sample).

Estonian women’s preferences for the figure chosen in the figure preference scale (Fallon & Rozin, 1985; Stunkard, Sorenson, & Schulsinger, 1983) as attractive to opposite sex reflects the cross-cultural “standard of female attractiveness” (exposed in the media), that does not describe either the men’s real preferences or the women’s personal desires of attractiveness. Women’s personal aspirations for attractiveness are reflected by the Ideal figure. The location of the personal body figure ideal in relation to the standard of attractiveness (the same, thinner or heavier) does not depend on age, body (dis)satisfaction or global self-esteem. It is predicted by the woman’s BMI and the ambitions for ideal body weight (Study **I**, data of Estonian sample).

Activities related to body image (Study **I**, data of Estonian sample):

- Frequent weighing related to sports and exercising among men and to drive for thinness among women seems to be a cultural trend among Estonians, which may reflect self-objectification.
- Dieting is rare among Estonian adolescent boys and young men. The share of dieting women remains the same in different age groups, being significantly lower than in Western countries. Women who have ever dieted tend to use dieting again to gain slimness.

- The share of physically active Estonian and Australian young adults is similar. The share of physically active Estonians diminishes with age. Sporting and exercising is not related to measures of body (dis)satisfaction.

Media consumption of Estonian young adults is higher than that of Australian young adults. It is related to dieting and disordered eating symptomatology in the case of women. The high media consumption of young people and the valuing of female slimness among both men and women create a fertile and sensitive ground for information related to slimness (Studies **I**, **II**).

In the present study vibroacoustic therapy was tried out in the case of body dissatisfaction. Vibroacoustic therapy promotes changes in the state of mood and comfort, which are important for bodily well-being. According to the interviews the changes noticed by the girls during the therapeutic intervention point to the importance of the physical component related to VAT, which can be described through the following categories: physical self-awareness; physical comfort; the medium for reflections (Studies **III, IV**).

Vibroacoustic therapy can be used for reducing stress in a non-clinical population and added to treatment programs, including interventions for diminishing body dissatisfaction (Studies **III**, **IV**).

The results of the present study clarify the role of sociocultural factors in body dissatisfaction in Estonia and demonstrate the possibility of changing this appraisal with psychotherapeutic means.

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KEHAGA RAHULOLEMATUSE SOTSIAALKULTUURILINE KONTEKST NING VIBROAKUSTILISE TERAAPIA VÕIMALUSED KEHAGA RAHULOLEMATUSE LEEVENDAMISEKS

Kokkuvõte

Väitekirjas käsitletakse kehaimidžit lähtuvalt Cash'i (2004, pp. 1-2) definitsioonist kui mitmetahulist kehalist kogemust eeskätt oma füüsilisest välimusest, mis määrab kehaga seotud enesetaju ja enesekohased hoiakud, hõlmates mõtteid, uskumusi, tundeid ja käitumist. Kehaga rahulolematust, mis sageli seostub kehakaalu ja kehakujuga, peetakse kõige olulisemaks kehaimidži häire komponendiks. Kehaga rahulolematus on naiste puhul niivõrd üldlevinud, et Rodin, Silberstein ja Striegel-Moore (1985) on seda nimetanud "normatiivseks rahulolematuseks". Kehaga rahulolematust võivad soodustada teatud sotsiaalkultuurilised tegurid, eeskätt meedias võimenduvad sõnumid (Murnen, Smolak, Mills, & Good, 2003; Utter, Neumark-Sztainer, Wall, & Story, 2003). Üldistades seniseid uuringuid, on Stice ja Shaw (2002, lk. 991) välja toonud, et tajutud surve olla kõhn, kõhnuse ideaali internaliseerimine ja suurenenud kehamass tõstavad kehaga rahulolematuse riski, mis omakorda on riskiteguriks söömishäiretele (anorexia nervosa ja bulimia nervosa). Seda protsessi vahendavad sagenenud dieedipidamine ja negatiivsed tundeseisundid. Sportimisel, mis on dieedipidamise kõrval teine oluline võimalus oma kehakuju korrigeerida, on täheldatud positiivset mõju kehaimidžile. Siinjuures muutub määravaks eesmärk, mille nimel treenitakse, kui esiplaanil on välimus, siis ei pruugi tulemus kehaga rahulolu suurenemises kajastuda (Strelan, Mehaffey, & Tiggemann, 2003).

Arvestades Eesti pikaajalist eraldatust läänelikust meediaruumist ning suhteliselt lühiajalist kokkupuudet meediadominandi – idealiseeritud ülisaleda kehaga –, siis võib Eestis eeldada taetud kehaimidžit puudutavaid erinevusi võrreldes läänemaadega. Kehaga rahulolematust käsitletakse väitekirjas peamiselt kehakaalu ja saleduse, kui olulise naiseliku ilu kriteeriumi kontekstis, pisendamata meeste kehaimidžiga seotud problemaatika olulisust, vaid eeldades, et see erineb oma "disainilt" ja on vähem väljendunud kui naistel, mistõttu vajab erinevat tähelepanukeset ning lähenemist. Sarnane on aga meedias mõlemale soole suunatud surve tarbimisele. Tohutu toiduvalik kõrvuti sotsiaalselt (ja ka meditsiiniliselt) väärtustatud saledusega edastab samaaegselt nii ahvatlusi kui hoiatusi, suunates tähelepanu kehale ning asetades inimese "buliimilisse konflikti". Keha ja tervist saboteerivad valikud on kerged tulema situatsioonis, kus sotsiaalsed väärtused ja terviseaspektid põimuvad, piir tervisliku ja ebatervisliku vahel on ähmane ning eneseotsing teeb inimese vastuvõtlikuks eduelamusi lubavatele stiimulitele.

Väitekiri on üles ehitatud kahe uurimisteema baasil, asetades tähelepanu keskmesse kehaga rahulolematuse problemaatika ning sidudes seda vibroakustilise meetodi võimalustega kehaga rahulolematuse leevendamisel. Uuringud **I** ja **II** on osad aastatel 1999-2000 koostöös prof. M. Tiggemanniga (Flinders University of South-Australia) läbi viidud uuringust. Uuringud **III** ja **IV** kajastavad vibroakustilise teraapia toimet ja rakendusvõimalusi mittekliinilisel kontingendil, tõstatades võimaluse vibroakustilise teraapia rakendamiseks kehaga (kehakaaluga) rahulolematuse puhul. Lähtudes Stice'i ja Shaw' (2002) uuringu tulemustest on kehaga rahulolematus just keskne tegur, millele nii preventiivses töös kui ravis tuleks suuremat tähelepanu pöörata. Uuring **III** toetub aastatel 1995-1997 kogutud vibroakustilise teraapia eksperimentaalsele andmestikule. Uuring **IV** on osa aastatel 2002-2003 läbi viidud laiemast uurimisprojektist "Muusikateraapia ja vibroakustilise teraapia rakendamisvõimalusi kõrgenenud

ärevuse alandamiseks teismeeas noortel" ning kirjeldab kvalitatiivse andmestiku baasil vibroakustilise teraapia võimalusi laiemas terapeutilise interventsiooni kontekstis.

Väitekirjale laiema perspektiivi andmiseks on eelnimetatud uurimustele lisatud andmeid TPÜ Terviseuuringute laboris aastatel 2000-2001 läbi viidud kahest uurimisprojektist (tervisedenduslik projekt "Kehasõbralik elustiil" ja uurimisprojekt "Kehaga rahulolematuse seosed enesehinnangu ja psühholoogilise heaoluga"), kus on kasutatud samu mõõtmisvahendeid kui **I** ja **II** uurimuses. Täiendavad andmed on esitatud lisas.

Väitekiri keskendub järgmistele teemadele:

- Kehakuju ja kehakaaluga rahulolematus ning selle taustal olevad tegurid eesti meestel ja naistel;
- Sotsiaalkultuuriliste tegurite osa kehaga rahulolematuses (**I** uurimus);
- Soorollilised püüdlused ja nende seos kehaimidžiga (**II** uurimus);
- Vanusega seotud erinevused kehaimidžis;
- Vibroakustilise teraapia võimalused kehaga rahulolematuse vähendamiseks (**III** ja **IV** uurimus).

Esitatud uurimustest lähtudes võib välja tuua järgmised tulemused ja põhiseisukohad:

I ja **II** uurimus näitasid kehaimidžiga seotud olulisi soolisi erinevusi: rohkem kui mehed tajuvad naised end raskematena, on oma kehaga ja kehakaaluga rahulolematud, soovivad vähem kaaluda ja olla saledamad. Naiste puhul on füüsiline atraktiivsus seotud saledusega, meeste puhul muskulaarsusega. Naistel on saledus kõige olulisem populaarsusega seotud näitaja, mis viitab populaarsuse taotlemise potentsiaalsele seosele söömishäiretega.

Sõltumata kultuurilistest erinevustest ja väiksemast kehamassiindeksist esineb Eesti noortel naistel sarnaselt Austraalia eakaaslastega kehaga rahulolematust ja häirunud söömiskäitumist (**I** uurimus).

Eesti noortel naistel on kõrged ja vastuolulised püüdlused, mis väärtustavad kõrgelt nii välimust, saavutusi kui kodu ja perega seotud väärtusi. Olukord on veelgi komplitseeritum vanemate naiste puhul (**II** uurimus**,** Eesti andmed).

Söömishäiretele iseloomulikud näitajad (saledusetaotlus, kehaga rahulolematus ja buliimia) on kõrgeimad vanemate teismeliste ja noorte täiskasvanute grupis. Kehaga rahulolematus ei sõltu tegelikust kehakaalust, vaid subjektiivsest kaaluga rahulolust ning on seotud enesehinnanguga. Eesti naiste saledusepüüdlus viitab pigem internaliseeritud "naiseliku ilu trendi" peegeldusele kui düsfunktsionaalsele söömiskäitumisele (Eesti andmed).

Eesti naiste poolt figuuride skaalal (Fallon & Rozin, 1985; Stunkard, Sorenson, & Schulsinger, 1983) vastassoole atraktiivseks naisfiguuriks valitud figuur langeb kokku Austraalia naiste valikuga, kajastades seega kultuuridevahelist "naiseliku atraktiivsuse standardit" (meedia-kujutist), mis ei esinda ei naiste endi personaalseid atraktiivsuse püüdlusi ega meeste tegelikke eelistusi. Naiste isikliku atraktiivsuse püüdlused peegelduvad figuuris, mis on valitud oma ideaaliks. Ideaalse figuuri ja vastassoole atraktiivse figuuri (atraktiivsuse standardi) omavaheline paigutus skaalal (langevad kokku, Atraktiivne kõhnem või tüsedam kui Ideaal) ei sõltu vanusest, kehaga rahulolust (rahulolematusest) ega üldisest enesehinnangust. Personaalse kehakuju ideaali paiknemist atraktiivsuse standardi suhtes ennustavad naise kehamassiindeks ning kehakaalu ideaaliga seotud ambitsioonid (**I** uurimus, Eesti andmed).

Kehaimidžiga seotud tegevused (**I** uurimus, Eesti andmed):

- Sage kaalumine, mis meeste puhul on seotud sportimisega ja naiste puhul saledusepüüdlusega, näib olevat eestlaste kultuuriline trend, mis viitab enese-objektistamisele;
- Dieedipidamist esineb Eesti teismeeas poiste ja noorte meeste hulgas vähe. Dieeti pidavaid naisi on rohkem, nende osakaal erinevates vanusegruppides on sama, kuid oluliselt väiksem kui läänemaades. Kunagi dieedil olnud naised kalduvad saleduse saavutamiseks uuesti dieeti kasutama;
- Sportivate Eesti ja Austraalia noorte täiskasvanute osakaalud on sarnased. Sportijate osakaal eestlaste hulgas väheneb vanusega. Sportimine ei ole seotud kehaga rahulolu (rahulolematuse) näitajatega.

Meedia tarbimine Eesti noorte täiskasvanute hulgas on suurem kui Austraalia eakaaslastel. Naiste puhul on see seotud dieedipidamise ja söömishäiretele omaste näitajatega. Noorte intensiivne meedia tarbimine ning saleduse väärtustamine meeste ja naiste hulgas loob soodsa ja vastuvõtliku pinnase saledusega seotud informatsioonile (**I** ja **II** uurimus).

Käesolevas uurimuses katsetati vibroakustilise teraapia rakendamist kehaga rahulolematuse puhul. Vibroakustiline teraapia soodustab füüsilise heaolu aspektist olulisi muutusi enesetundes. Teraapilise interventsiooni programmis osalenud tüdrukute poolt nimetatud muutused enesetundes toovad esile vibroakustilise teraapia füüsilise mõju komponendid, mida võib kirjeldada kolme kategooriaga: keha-teadvus, füüsiline heaolu ja mõtlusmeedium (**III** ja **IV** uurimus).

Vibroakustiline teraapia on rakendatav stressi alandamiseks mittekliinilisel kontingendil ning kasutatav raviprogrammide komponendina, s.h. kehaga rahulolematuse vähendamiseks (**III** ja **IV** uurimus).

Käesoleva uurimuse tulemused selgitavad sotsiaalkultuuriliste tegurite osa kehaga rahulolematuses Eestis ning demonstreerivad võimalust seda hinnangut muuta psühhoteraapiliste vahenditega.

APPENDIX
DATA OF ESTONIAN SAMPLE

Table 1. Means/standard deviations and percentages/number of cases across gender and age.

	Adolescents 2001				Young adults 1999		Older female adults 2000	
	Younger		Older		Male	Female	Norm-group	Weight-controls
	Male	Female	Male	Female				
Sample size	217	247	153	231	156	252	197	215
Mean age	14.24/ .87	14.02/ .83	16.75/ .67	16.55/ .65	20.82/1.94	20.15/1.91	42.20/9.83	42.96/9.82
BMI	19.48/2.57	19.05/2.43	21.38/2.89	20.41/2.54	22.96/2.65	20.82/2.42	23.67/3.51	28.71/4.86***
BMI ideal	19.38/2.46	17.92/1.76	21.72/2.43	18.98/1.69	23.21/2.26	19.43/1.39	21.83/2.15	24.12/2.37***
BMI – ideal BMI	.10/2.80	1.17/1.77	-.32/2.72	1.49/1.68	-.09/2.56	1.44/1.63	1.88/2.02	4.56/3.79***
Subjective body weight	3.94/.79	4.17/.85	3.86/.91	4.28/.83	3.96/.78	4.38/.77	4.80/.91	5.81/.91***
Satisfaction with body weight	5.22/1.71	4.46/1.71	5.04/1.52	4.22/1.70	5.00/1.55	3.90/1.61	3.80/1.50	2.92/1.71***
Body figure ratings: Current	38.79/10.78	35.11/8.80	40.00/11.10	36.89/9.09	42.52/9.40	37.57/7.79	39.92/10.36	49.18/13.08***
Ideal	39.44/7.52	30.12/6.13	41.85/6.70	30.61/6.36	43.44/6.41	31.07/4.98	32.26/5.66	33.35/6.66
Attractive	38.21/7.603	31.41/6.02	40.62/7.24	30.61/6.34	43.50/9.36	31.31/6.01	30.21/6.60	28.91/6.74
Opposite sex	35.02/6.12	34.63/6.71	34.84/5.24	37.27/8.49	36.84/8.09	39.05/6.76	38.92/7.45	37.75/7.08
C-I discrepancy	-.73/10.03	5.01/7.46	-.68/9.67	6.27/7.38	-.91/8.70	6.55/6.29	7.69/7.98	15.99/10.03***
C-A discrepancy	.17/11.24	3.64/9.46	-.55/12.4	6.34/9.30	-.95/12.52	6.24/8.98	9.63/11.10	20.55/12.95***
Weighing frequency	2.60/ .88	3.09/1.02	2.58/ .91	3.04/1.05	2.72/.94	3.07/.95	2.86/1.07	–
Current dieting (%/n)	1.9/4	8.2/20	.7/1	13.9/32	1.9/3	12.4/31	12.2/24	–
Ever dieted (%/n)	2.3/5	10.3/25	.7/1	18.3/42	7.7/12	28.6/72	28.9/57	–
Sport and exercising (%/n)	91.3/199	95.6/227	92.8/142	86.6/200	79.5/124	72.0/180	46.7/92	40.0/86
EDI Drive for thinness	11.90/4.87	18.81/7.71	10.95/4.44	20.28/7.81	11.17/4.42	20.42/7.48	19.10/6.38	25.76/6.01***
Bulimia	12.02/3.92	11.88/3.95	13.00/5.10	14.05/5.30	11.98/3.91	15.55/5.15	13.65/4.39	16.22/4.85***
Body dissatisfaction	19.51/8.66	27.63/10.90	19.09/8.73	31.00/10.12	19.34/7.78	33.05/9.72	31.13/9.75	38.82/10.10***
Self-esteem	40.19/5.94	39.02/5.82	40.66/4.99	40.05/5.44	40.95/5.41	39.43/5.84	41.50/5.24	40.14/5.93*

* $p < .05$; ** $p < .01$; *** $p < .001$; t-test differences between norm-group and group of weight-controls of female older adults.

Table 2. The main effects of age group in the case of men and women (excluding weight-controls).

	Men F(2, 484…522)	Women F(3, 879…923)
BMI	77.19***	106.51***
BMI – ideal BMI	ns	5.80***
Subjective body weight	ns	23.02***
Satisfaction with body weight	ns	7.93***
Body figure ratings:		
Current	5.98**	10.61***
Ideal	15.08***	4.88**
Attractive	18.61***	ns
Opposite sex	4.55*	18.59***
C-I discrepancy	ns	5.27**
C-A discrepancy	ns	13.62***
Weighing frequency	ns	ns
EDI subscales:		
Drive for thinness	ns	2.92*
Bulimia	ns	24.21***
Body dissatisfaction	ns	11.88***
Self-esteem	ns	7.62***

* p < .05; ** p < .01; *** p < .001

Table 3. Variables predicting the scores of the subscales of EDI among Estonian women. Results of stepwise multiple regression analyses.

	Drive for thinness β/Step	Body dissatisfaction β/Step	Bulimia β/Step
BMI			
BMI – ideal BMI	-.12**/5		
Subjective body weight	.15***/4	.19***/4	.13**/3
Satisfaction with body weight	-.36***/1	-.42***/1	-.21***/1
C-I discrepancy	.27***/2	.16***/2	.11*/4
C-A discrepancy		.09*/6	
Self-esteem	-.09***/3	-.11***/3	-.17***/2
Age		-.07**//5	

Drive for thinness: R^2 = .38; F(5, 995) = 124.03***
Body dissatisfaction: R^2 = .57; F(6, 982) = 214.31***
Bulimia: R^2 = .21; F(4, 1005) = 66.727***

* p < .05; ** p < .01; *** p < .001

Table 4. Indicators related to weighing frequency of Estonian men and women (excluding weight-controls).

	Men				Women				
	Younger adolescents r	Older adolescents r	Young adults r	Stepwise regression β/step	Younger adolescents r	Older adolescents r	Young adults r	Older adults r	Stepwise regression β/step
BMI	-.10	.12	.34***	.19***/2	.06	-.00	.06	.12	-.18***/2
BMI–ideal BMI				-.17**/3					
Subjective body weight	-.06	.01	.01		.14*	.13	.13	.25**	.09*/4
Satisfaction with body weight	.03	-.09	-.09		-.07	-.18**	-.14*	-.28***	
Drive for thinness	-.14*	.19*	.01		.26***	.36***	.24***	.46***	.29***/1
Bulimia	.06	-.01	.09		.07	.13	.16*	.23**	
Body dissatisfaction	-.06	.08	.06		.16*	.23***	.13	.24**	
Current dieting					-.15*	-.27***	-.21***	-.17*	-.10**/3
Ever dieted									
Sport and exercising				-.14**/1					
Self-esteem	.02	-.15	.05		.01	-.06	.06	-.02	

For men: $R^2 = .05$; $F(3, 423) = 8.09$***
For women: $R^2 = .13$; $F(4, 783) = 28.24$***

* p < .05; ** p < .01; *** p < .001

Table 5. Variables predicting dieting, sport and exercising, and self-esteem (excluding weight-controls). Results of stepwise multiple regression analyses.

	Dieting	Sport and exercising		Self-esteem	
	Women R^2 = .21; F(3, 783) = = 53.57***	Men R^2 = .11; F(5, 421) = = 10.63***	Women R^2 = .14; F(2, 785) = = 64.24***	Men R^2 = .16; F(5, 421) = = 16.29***	Women R^2 = .13; F(4, 783) = = 30.05***
	β/step	β/step	β/step	β/step	β/step
Age		.29***/3	.29***/1	.09*/5	
BMI		-.28***/4	.13***/2		.23***/2
BMI – ideal BMI	-.09*/3			.15*/2	
Subjective body weight				.13*/4	
Satisfaction with body weight					.15**/4
Drive for thinness	-.20***/2			-.22***/3	
Bulimia					-.16***/3
Body dissatisfaction		.14**/5		-.27***/1	-.19***/1
Weighing frequency	-.08*/4	-.14**/1			
Current dieting					
Ever dieted	.26***/1				
Sport and exercising					
Self-esteem		-.10*/2			

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 6. Sex role aspirations among Estonian young adults (scale: 1 = not at all, 5 = extremely important).

	About men			About women			Men about men and women t	Women about men and women t
	Men	Women	t	Men	Women	t		
Slimness	3.1	2.9	2.9**	4.3	4.2	ns	11.0***	17.0***
Physical attractiveness	4.1	4.3	-2.1*	3.9	4.3	-4.9***	-2.3*	ns
Muscularity	4.1	4.4	-4.3***	2.3	2.4	ns	-18.3***	-29.7***
Intelligence	4.5	4.5	ns	4.2	4.6	-6.3***	-2.9**	ns
Professional success	4.4	4.7	-5.4***	3.6	4.0	-4.8***	-8.0***	-12.3***
Popularity	3.7	4.2	-4.9***	3.6	3.6	ns	ns	-7.2***
Being a mother/father	3.6	3.4	ns	3.8	4.1	-2.7**	2.2*	6.7***
Being a good homemaker	3.5	3.2	3.3***	4.0	4.2	-1.9*	4.3***	11.4***
Ability to tend to the needs of others	3.8	3.3	4.3***	3.9	4.0	ns	ns	7.6***

* $p < .05$; ** $p < .01$; *** $p < .001$

Table 7. Correlations between popularity and other sex role concerns among young adults.

	Males' popularity		Females' popularity	
	Men	Women	Men	Women
Slimness	.14	.02	.43***	.28***
Physical attractiveness	.30***	.18**	.15	.23***
Muscularity	.26***	.37***	-.15	.06
Intelligence	.25**	-.02	-.11	.18**
Professional success	.57***	.40***	.28***	.22***
Being a mother/father	.13	-.03	.08	.14*
Being a good homemaker	-.05	-.02	-.13	.20**
Ability to tend to the needs of others	-.12	-.19*	-.29***	.08

* p < .05; ** p < .01; *** p < .001

Table 8. Variables related to and predicting the discrepancy between Current and Ideal body figures (C-I) and discrepancy between Ideal and Attractive body figures (I-A) across five groups of women. Results of Pearson correlation analyses and stepwise multiple regression analyses.

	C-I		I-A	
	Correlations r	Regression summary R^2 = .67; F(7, 991) = = 290.06*** β/Step	Correlations r	Regression summary R^2 = .22; F(3, 981) = = 89.95*** β/Step
BMI	.71***	.46***/3	.43***	.58***/1
BMI – ideal BMI	.79***	×	.28***	-.29***/2
Subjective body weight	.74***	.30***/1	.36***	.12* /3
Satisfaction with body weight	-.59***	-.09** /6	-.21***	
Drive for thinness	.51***	.11***/5	.13***	
Bulimia	.33***		.23***	
Body dissatisfaction	.62***	.14***/2	.07*	
Self-esteem	-.09**		ns	
Group (5)	.38***	-.08* /7	.30***	
Age	.31***	-.14***/4	.32***	

* p < .05; ** p < .01; *** p < .001