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# The Role of Body Image in Sexual Satisfaction Among Partnered Older Adults

## A Population-Based Study in Four European Countries

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### Abstract

Body image issues can affect all domains of sexual functioning. The aim of this study was to examine how, in a sociocultural context where physical and sexual attractiveness is equated with young and slim body ideals, appearance dissatisfaction and importance are related to sexual satisfaction in older adults in four European countries. A cross-sectional survey with probability samples of the population aged 60-75 years was used. Only respondents with a partner were included in this paper, and the countries included Norway ( $n = 957$ ), Denmark ( $n = 846$ ), Belgium ( $n = 612$ ), and Portugal ( $n = 367$ ). Sexual satisfaction, appearance dissatisfaction and importance were assessed, and frequency of intercourse/kissing and cuddling, relationship satisfaction, age, and body mass index (BMI) were all used as control variables. Belgian men scored significantly lower on sexual satisfaction, while there was no difference in sexual satisfaction in women. Appearance dissatisfaction was lower in Scandinavian women and men, and in Belgian men, and appearance salience was lower in Norwegian men and women, and in Portuguese women. Linear regression analysis revealed that, adjusting for confounders, appearance dissatisfaction was significantly related to sexual satisfaction in Scandinavian women and men, as well as in Belgian men. Compared to research on younger adults, appearance evaluation appeared to play an equally important role in sexual satisfaction in older adults in our study. The variation in appearance dissatisfaction in older adults across European countries is a novel finding that needs to be examined further.

Sexuality remains important in late adulthood for many people, even if older adults are often stereotyped as being both asexual and unattractive (Wada et al., 2015). Interpersonal and individual psychological factors can play an important part in sexual satisfaction in addition to the health problems and physiological changes associated with increasing age, (e.g., Byers and Rehman, 2014). A positive relationship between body image and sexual satisfaction has been well-documented in both young and middle aged adults, mostly in women (Byers and Rehman, 2014; Milhausen et al., 2015; Woertman and van den Brink, 2012). However, little is known about whether body image is also related to sexual satisfaction in older adults. The current study examined the relationship between body image and sexual satisfaction in older partnered adults from four different European countries.

### **Sexual Satisfaction in Older Adults**

Sexual satisfaction which can be defined as “the subjective evaluation of the positive and negative dimensions associated with one’s sexual relationships” (Lawrance and Byers 1995, p. 514) has been found to be closely related to physical and mental health throughout life. Several studies show a decrease in sexual satisfaction with age, and of aging men reporting higher sexual satisfaction than women (Træen et al., 2017).

Important interpersonal factors associated with sexual satisfaction, which may vary with aging, are satisfaction with frequency of sexual activity (Schmiedeberg et al., 2017) and general satisfaction with the couple relationship (Fallis et al., 2016). Research has documented a robust association between frequency of sexual activity and sexual satisfaction in both women and men (e.g., Costa and Brody, 2012; McNulty et al., 2016; Træen et al., 2017). Intercourse frequency, which is the most studied type of sexual activity, is largely determined among older adults by having a regular partner (Schwartz et al., 2014). Despite a generally reduced frequency of sexual activity with increasing age, a corresponding reduction in sexual satisfaction is not always found (Byers and Rehman, 2014; Forbes et al., 2017). Older individuals tend to put less emphasis on intercourse/penetrative sex (Forbes et al., 2017), while the quality and type of sexual activity (e.g., kissing, cuddling, touching) is often reported as increasingly important for sexual satisfaction (Galinsky et al., 2014; Gillespie, 2017). Satisfaction with the partner relationship is vital to sexual satisfaction in middle and older adulthood (Byers, 2005; Heiman et al., 2011; Impett et al., 2014), and

relationship indicators have in some studies even been found to be more strongly associated with sexual satisfaction than sexual function (Dundon and Rellini, 2010).

The subjective evaluations of both one's own and one's partner's bodies are aspects that may predict sexual satisfaction (Byers and Rehman, 2014). At present, it remains unclear to what degree body image plays a role in sexual satisfaction in older age.

### **Body Ideals, Body Satisfaction, and the Aging Body**

The Western cultural body ideal generally emphasizes a youthful, slim, fit (or muscular for men) appearance, with a special focus on physical attractiveness and sexual desirability (Hurd Clarke & Korotchenko, 2011). Women across cultures are generally socialized to place greater value on their appearance than men (McConatha et al. 2003; Tiggemann 2011), and anxiety about the physical changes associated with aging has been found to be most salient for women (Sargent-Cox et al. 2014). Aging is accompanied by visible changes in appearance that are stereotypical indicators of 'being old' and generally viewed negatively, such as grey hair, wrinkles, changes in fat distribution and body shape, (Lipowska et al. 2016).

Body image is a construct that may be captured along multiple (including perceptual, cognitive, and behavioral) dimensions (Cash 2011). Body (or appearance) satisfaction pertains mainly to the evaluation of the observable appearance, while another aspect of body image is appearance importance (salience), which indicates how important and accessible appearance-relevant information is to the self and how it is processed and organized (Moss and Rosser, 2012). Cash (2011) also distinguished historical from concurrent factors that shape body image. Historical factors refer to cultural socialization, interpersonal experiences, physical characteristics, and personality attributes, which instil fundamental body image schemas and attitudes that guide the interpretation of sociocultural influences. Furthermore, a person's body image may fluctuate and be affected throughout life by changes in actual appearance, feedback from others, and social comparison processes (Roy and Payette, 2012). The research literature has mainly focused on the evaluative aspect of body image in older populations, while research on appearance salience is sparse.

Within the Western culture women tend to be consistently more dissatisfied with their body and appearance than men, regardless of age (Hurd Clarke and Korotchenko, 2011; Roy and Payette, 2012).

Levels of body satisfaction seem to remain relatively stable through mid- and later life (Tiggemann and Sleviec, 2012), although some studies have shown a slight decrease in body satisfaction with increasing age (Schwartz et al., 2014). The observed relative stability in body satisfaction may be somewhat surprising, considering the changes in appearance in older age. The main explanation that has been put forward is that, with age, both men and women seem to place less importance on appearance and more on body functioning and health (Lipowska et al., 2016; Roy and Payette, 2012). At the same time, however, qualitative findings suggest that older people find it difficult to view their aging body as sexually attractive (Montemurro and Gillen, 2012; Thorpe et al., 2015).

### **Body Image and Sexual Satisfaction**

Different causal pathways and mechanisms may explain the association between body image and sexual satisfaction. Longitudinal research suggests that core aspects of body schema may play a role in sexual satisfaction over time (Kvalem et al., 2019; Woertman and van den Brink, 2012). However, sexual encounters involving rejection or positive feedback about sexual attractiveness from a partner may also shape and change body image throughout life (Wiederman 2012).

Besides possible historical explanations for the associations between body image and sexual satisfaction, Cash et al. (2004) emphasized proximal or state factors such as schematic activation during sexual encounters. Body shame and self-consciousness may distract from being able to focus on sexual pleasure and thus ultimately have an impact on sexual satisfaction (Carvalheira et al. 2017; Faith and Schare 1993).

Research on the specific relationship between body satisfaction and sexual satisfaction among older adults is sparse, especially with respect to men, and the few studies undertaken show inconsistent results. Davison and McCabe (2005) found no relationship between body image and sexual satisfaction in a group of 50-86 year-old women and men. In an Israeli study of women and men over 60 living with a spouse or a partner, an association between body satisfaction and sexual satisfaction was reported; however, when control variables were included (e.g. age, gender, education, sexual activity), body image no longer predicted sexual satisfaction (Shkolnik and Iecovich 2013). Penhollow et al. (2009) reported a similar finding in a study of partnered women and men over the age of 55. No correlation was found between body

and sexual satisfaction among women, and the significant association observed among men became non-significant when controlling for other factors, such as frequency of orgasms, sexual self-confidence, and relationship satisfaction. Finally, Robbins and Reissing (2018) examined 215 women aged 18–88, all in a steady relationship. Women in older adulthood who experience low body appreciation reported lower levels of sexual satisfaction than women with average body appreciation, while high body appreciation was not related to sexual satisfaction. The main impression from these cross-sectional studies is that body image has a weak association to sexual satisfaction in older adults. However, the studies differ in sample characteristics (for example age groups and cultural background), body image measures, and use of control variables.

Qualitative studies that focused on how older women experience their aging bodies in a sexual context have revealed complex associations. For example, on the basis of interviews with 60 women and 20 couples aged 50-79 years, Fooker (1994) concluded that women who accepted age-related bodily changes were more likely to experience sexual enjoyment, while a study of 95 women aged 18-69 years by Montemurro and Gillen (2012) found that although looking attractive remained a concern in older women, looking sexually appealing became less important in relation to their sexuality with age.

### **Factors that may Influence an Association Between Body Image and Sexual Satisfaction**

In order to avoid the possibility of a spurious observed association between body image and sexual satisfaction, factors such as sexual activity, relationship satisfaction, and body weight, must be considered as potential confounders.

While sexual activity is associated with sexual satisfaction in both young and older adults (McNulty et al. 2016; Træen et al. 2017), there is little research on body image and sexual activity in older adults. However, in younger adults, body dissatisfaction has been found to predict lower intercourse frequency (Trapnell et al. 1997). In an interview study (Thorpe et al., 2015), older women reported that touching within a sexual context negated their concerns about appearance.

Relationship satisfaction is associated with sexual satisfaction in older adults (Træen et al., 2019). Relationship satisfaction has also been directly and indirectly associated with body satisfaction in young adults (Milhausen et al. 2014; Træen et al. 2016). In an interview study of 20 Australian women aged 50–79,

participants stated that feeling loved and accepted by their long-term partners regardless of their appearance was important for positive sexual experiences (Thorpe et al. 2015).

Finally, being overweight is associated with body dissatisfaction in older adults, mostly in women (Hurd Clarke and Korotchenko, 2011). However, in older men, a decrease in Body Mass Index (BMI) may influence body evaluation negatively as it can be a consequence of loss of muscle mass (Hurd Clarke and Korotchenko, 2011). The association between BMI and sexual satisfaction is less clear. In a US American sample, Addis et al. (2006) found that increased BMI was correlated with less sexual satisfaction in older women, while no association was found either in women or men in a French study by Bajos et al. (2010).

Frequency of sexual activity, relationship satisfaction, and BMI should thus be controlled for in analyses on the association between body image and sexual satisfaction.

### **Cross-Cultural Aspects**

Very few studies have examined the sociocultural differences in body satisfaction, and sexual satisfaction in older populations. Nordic countries traditionally tend to have what is considered a more 'liberal' perspective on sexuality, characterized by a tendency towards gender and age-related equality (Træen et al., 2019). The cultural context in Southern European countries is to a larger degree influenced by patriarchal traditions where sexual gender roles tend to position masculinity in opposition to femininity (Træen et al., 2019). Træen and colleagues (2019) found indications for a North-South European difference in sexual satisfaction in older adults, possibly related to differences in gender role equality and restrictions on sexuality.

The Western media is an important source for shaping cultural body ideals in many countries, and there is thus no reason to expect any large differences regarding body ideals across European countries (Schaefer et al., 2019; Swami, 2015). Most cross-cultural research on body dissatisfaction within the Western culture has compared young adult samples in the United States with European countries, and found that US Americans generally appear to be more dissatisfied (Holmqvist and Frisen, 2010; Schaefer et al., 2019). Whether cultural differences play a role in older age groups is unclear.

The slim and sexualized female body ideal is associated with a conservative, feminine gender role, while masculinity is represented by the muscular and agentic male body ideal (Murnen and Don, 2012).



Strength in ideological preferences may also be related to body image. In an online survey of women and men (aged 18-67) from the United States, positive body image was associated with more sexual liberal attitudes and behavior, irrespective of age, relationship status, BMI, and sexual orientation (Swami et al., 2017).

### **The Current Study**

Research on the association between body image and sexual satisfaction in older and in male populations is still lacking. The first aim of this study was to examine possible differences in sexual satisfaction and body image in older adults across four European countries. The second aim was to investigate the relationship between body image and sexual satisfaction within the four countries separately. In addition, we aimed to examine whether the relationships between body image and sexual satisfaction remain when accounting for relevant covariates, such as relationship satisfaction, frequency of sexual activity, BMI, and age.

## **Method**

### **Participants**

The Department of Psychology at the University of Oslo, in cooperation with the poll organization IPSOS, conducted the multinational survey in nationally representative samples of the population aged 60–75 years in Norway, Denmark, Belgium, and Portugal. The sample size in Norway was  $N = 1,270$ , in Denmark  $N = 1,045$ , in Belgium  $N = 990$ , and in Portugal  $N = 509$ .

Respondents who stated they had never been sexually active during their lifetime were excluded ( $n = 139$ ) from the study sample. *Partner status* was based on the question: “Do you currently have a steady/committed relationship with anybody? A steady/committed relationship also includes married/cohabiting persons,” with response options *Yes*, *No*, and *Unsure*. The 21 participants who were unsure about their relationship status were excluded. There was a significant difference in the proportion of respondents currently in a partner relationship between the four countries (Table 1). A majority of men had a partner (ranging from 80.5% in Belgium to 93.0% in Portugal;  $\chi^2 = 18.0$ ,  $p < .001$ ), while the proportion varied from less than half (46.1%) among Belgian women to 84.5% of women from Denmark ( $\chi^2 = 148.7$ ,  $p < .001$ ). The current study included *only respondents in a partner relationship*, and the resultant sample

size in Norway was  $n = 957$  (518 men/439 women), Denmark  $n = 846$  (424 men/402 women), Belgium  $n = 612$  (381 men/231 women), and Portugal  $n = 367$  (199 men/168 women).

There were significant differences between the countries for both women and men in the distribution of age and weight groups (see Table 1). Both the Danish female and male sample had the highest proportion of respondents over 70 years of age (38.3% and 40.4%). For women the obesity rate was highest in the Belgian sample (22.5%), and the Portuguese sample had the highest obesity rate among men (20.5%).

### **Recruitment and Procedure**

Initially, IPSOS conducted a randomized telephone recruitment of participants using national phone registries was conducted to ensure that the sampling procedure would produce representative samples similar to the target population. The exception was Portugal, where a complete and updated telephone register does not exist, where IPSOS used an alternative recruiting procedure (described in detail in Træen et al., 2019). For all countries recruitment was carried out from October to December 2016. Those who agreed to participate received an anonymous, self-administered questionnaire followed by two reminders (see Træen et al., 2019).

In Portugal, it was decided to send the reminders by phone. Unfortunately, 502 potential Portuguese participants could not be reached. Of the 1,498 Portuguese individuals contacted by phone, 561 declined participation after having seen the questionnaire. Total response rates were 68% in Norway, 52% in Denmark, 57% in Belgium, and 26% in Portugal. As part of the study, a couples sub-sample was recruited in each country if both parties in a relationship were in the age range of 60–75 years ( $n = 218$  couples).

### **Measures**

*Sexual satisfaction* was measured with a single question, also used in The National Survey of Sexual Attitudes and Lifestyles (NATSAL-3; Mitchell et al. 2013), “Thinking about your sex life in the last year: All things considered, how satisfied are you with your sexual life?” The response options ranged from 1 = Completely dissatisfied to 5 = Completely satisfied.

Two aspects of *Body image* was assessed, *appearance dissatisfaction* (valence) and *appearance salience*, by two separate scales developed at The Centre of Appearance Research (CAR) by Moss and Rosser (2012). “The CAR Valence scale” (CARVAL) consists of six items on which respondents evaluate

the visible appearance of their body in a positive or negative way (e.g., “I am satisfied with my physical appearance,” “The way I look makes me unattractive”). The response categories ranged from 1 = Strongly Disagree to 6 = Strongly Agree. A mean score was calculated such that a high score indicated dissatisfaction with appearance. Cronbach’s alpha for men in Norway, Denmark, Belgium, and Portugal was .95, .94, .88, and .86, respectively, and .94, .92, .88, and .81 for women.

“The CAR Salience scale” (CARSAL) consists of five items measuring “the extent to which appearance and physical self is brought into conscious awareness” (e.g., “I am often aware of the way that I look to other people,” “For me my appearance is an important part of who I am”), with response options from 1 = Strongly Disagree to 6 = Strongly Agree (Moss and Rosser 2012, p. 3). A high mean score indicated a higher cognitive *importance of appearance*, and Cronbach’s alpha for Norway, Denmark, Belgium, and Portugal was .96, .94, .95, and .88 for men, and .96, .92, .91, and .85 for women.

*Relationship satisfaction* was measured by the question “On a scale of 1 to 7, where 1 means ‘very happy’ and 7 means ‘very unhappy’: How happy or unhappy are you with your relationship with your partner, all things considered?” The reversed high mean scores indicate higher satisfaction.

*Sexual activity* was assessed by a question about *Intercourse frequency*: “How many times have you had or attempted sexual intercourse (vaginal, anal, or oral sex) during the past month?”, with the response options: 1 = None, 2 = Once in the past month, 3 = 2 or 3 times in the past month, 4 = Once a week, 5 = 2 or 3 times a week, 6 = Once a day, and 7 = More than once a day. A second question assessed *Kissing and cuddling*: “My partner and I kiss and cuddle each other,” with two response categories, 0 = Seldom/Very Seldom and 1 = Often/Very Often.

*Body Mass Index* (BMI) was based on self-reported weight (kg) and height (h), and was calculated with the formula  $BMI = kg/h^2$ .

## Statistical Analysis

All analyses were carried out on sample weighted data (DuMouchel and Duncan 1983), and were conducted separately for men and women to avoid interdependency in the couples subsample that might bias our estimates. Descriptive statistics and correlations (Pearson’s  $r$ ) between study variables were obtained.

Effect size criteria used for correlations were: between .10 and .30, small; .30-.50 medium; and >.50, large (Cohen, 1988).

A series of two-way between-groups analyses of covariance (ANCOVA with age and BMI as covariates for body image, and age as covariate for sexual satisfaction) was carried out to examine the difference between countries. Hierarchical multiple linear regression analyses, split by gender and country, explored the association between body image and sexual satisfaction, controlling for the influence of relationship satisfaction, sexual activity (intercourse frequency; kissing and cuddling), BMI, and age.

### Results

The correlations in the total sample between all the study variables split on gender are presented in Table 2. Sexual satisfaction had a small negative correlation with appearance dissatisfaction for both women ( $r = -.23, p < .001$ ) and men ( $r = -.25, p < .001$ ), a weak negative correlation with appearance salience (Women [W]:  $r = -.07, p < .05$ ; Men [M]:  $r = -.09, p < .01$ ), a strong positive association with intercourse frequency (W:  $r = .52, p < .001$ ; M:  $r = .52, p < .001$ ), and medium sized correlations with kissing and cuddling (W:  $r = .36, p < .001$ ; M:  $r = .36, p < .001$ ), and with relationship satisfaction (W:  $r = .45, p < .001$ ; M:  $r = .39, p < .001$ ). There was a weak negative association between BMI and sexual satisfaction in men ( $r = -.09, p < .01$ ), but not for women ( $r = -.05$ ). There was a weak correlation of  $r = -.09 (p < .01)$  between appearance dissatisfaction and salience for both women and men.

A one-way ANCOVA revealed a statistically significant difference in sexual satisfaction between countries in men ( $F(3, 1492) = 2.88, p = .035$ ) but not in women ( $F(3, 1234) = 1.49, p = .216$ ). Bonferroni-corrected post-hoc tests showed that Scandinavian men scored significantly higher on sexual satisfaction than men from Belgium (Table 3).

A main effect of country was also found for appearance dissatisfaction in both genders (Women:  $F(3, 1274) = 12.30, p < .001$ ; Men:  $F(3, 1505) = 7.40, p < .001$ ). Post hoc tests showed that Belgian and Portuguese women were more dissatisfied with their appearance than women from Norway and Denmark, while Portuguese men scored higher on appearance dissatisfaction than men from the other countries. There was a main effect of country for appearance salience among both women ( $F(3, 1271) = 10.08, p < .001$ ) and men ( $F(3, 1501) = 22.61, p < .001$ ). Appearance salience was significantly higher for men from Denmark,

Belgium, and Portugal than it was for Norwegian men. Women from Denmark and Belgium deemed appearance more important than Norwegian and Portuguese women did. Overall, the effect sizes of all cross-country group differences were small.

### **Predicting Sexual Satisfaction by Country**

The results of the hierarchical linear regression models for women and men are presented in Tables 4 and 5, respectively. The regression models show that, when controlling for relationship satisfaction, sexual activity (intercourse frequency, kissing and cuddling), BMI, and age, appearance dissatisfaction was associated with lower sexual satisfaction in women and men from both Scandinavian countries, as well as in Belgian men. For Portuguese and Belgian women and for Portuguese men, appearance dissatisfaction became non-significant as a predictor of sexual satisfaction after the control variables were added in the final model. In the final models, sexual satisfaction was predicted by higher appearance salience in Belgian men and by lower appearance salience in Danish women.

### **Discussion**

Using data from a population-based study involving four European countries, this study aimed to address the gaps in extant literature on the relationship between body image and sexual satisfaction in partnered older adults and to explore cross-cultural differences in sexual satisfaction and body image. The analyses comprising the total sample revealed that being dissatisfied with one's visible appearance was associated with lower sexual satisfaction in both women and men.

There were no significant cross-cultural differences in mean sexual satisfaction in partnered older women, and slightly higher sexual satisfaction in Scandinavian than Belgian men. This finding is contrary to Træen et al. (2019) who found that Scandinavian men scored lower than the Portuguese when non-partnered men were included. The difference may thus reflect the impact of partner status on sexual satisfaction between the countries.

It is difficult to draw any general conclusions from the differences in appearance dissatisfaction and salience between countries we found in both women and men. There are no previous cross-cultural research on body image difference in older adults within a European context. The finding that body image differed between countries even when the observed difference in obesity prevalence was accounted for, points to

sociocultural explanations beyond a possible varying impact from the Western slim body ideal in older adults (Hurd Clarke & Korotchenko, 2011).

Within countries, appearance dissatisfaction predicted sexual satisfaction in Scandinavian women and men, and in Belgian men, even when controlling for a number of relevant cofounders. The study is thus one of the first to provide evidence for an association between appearance evaluation and sexual satisfaction in older men. Appearance dissatisfaction and salience (how important and easily accessible appearance is to one's sense of self) were relatively unrelated, which is in accordance with previous research (Moss and Rosser 2012). Our finding that mainly appearance dissatisfaction was related to variations in sexual satisfaction was thus not surprising, as appearance dissatisfaction represents the emotional evaluation of appearance and is associated with distress (Moss and Rosser 2012; Moss et al., 2014).

Our findings indicate that appearance satisfaction seems to be a unique source of variation in sexual satisfaction in late adulthood, as has previously been documented in young adulthood (Kvalem et al., 2019; Woertman and van den Brink 2012). Although the particular body image measure used in this study has not previously been used in older age groups, our findings among Scandinavian women resemble the findings by Robbins and Reissing (2018), where body appreciation was associated with sexual satisfaction in women across all age groups (age 18–88), controlling for BMI. That appearance dissatisfaction also predicted sexual satisfaction in men is not in accordance with two previous studies including older men, where no association between body image and sexual satisfaction was found controlling for relevant factors (Penhollow et al. 2009; Shkolnik and Iecovich 2013).

There are several possible explanations for our findings. Body dissatisfaction can be evident from childhood and seems to remain relatively stable throughout life (Grogan 2017; Wertheim and Paxton 2011). For example, Kvalem et al. (2019) found that baseline adolescent body satisfaction (controlling for change in body satisfaction) predicted adult sexual satisfaction 13 years later. This stability might reflect an early-established body image schema, representing core affect-laden assumptions about one's appearance in life that may influence how appearance-related information and experiences and changes in appearance will be processed throughout the life course (Cash 2011). Appearance evaluation seems to play a small but independent role in sexual satisfaction that does not include sexual activity level or satisfaction with the

partner relationship (Anthony et al. 2007). Having the *belief* that one is attractive may foster sexual confidence in sexual activities with one's partner (Cash 1990), and partners may mutually reinforce the level of body satisfaction by expressing sexual attraction for each other (Nezlek 1999). However, it is important to emphasize that this study does not say whether aging per se make this association stronger.

In addition to sexual satisfaction, body satisfaction has been related to other constructs where positive or negative affect is a central aspect, such as life satisfaction, subjective well-being, and self-esteem (Donaghue 2009; von Soest et al. 2016). It is thus possible that the association found between body and sexual satisfaction may reflect a core affect (Russell 2003) or aspect of personality (Swami et al. 2008), resulting in a tendency to evaluate different domains in life in positive or negative terms.

An interesting finding was that appearance satisfaction in older men was equally associated with sexual satisfaction as in women, which is similar with findings reported in recent cross-sectional and longitudinal studies of young adults (Holt and Lyness 2007; Kvaalem et al. 2019; Milhausen et al. 2015; Træen et al. 2016). It is, however, possible that the social meaning of body satisfaction within a sexual context differs for older men and women and that the age-related visual body changes are perceived as more closely related to sexual function and behavior in men than in women. Masculinity and the drive for muscularity are intertwined with body evaluation in men (Parent et al. 2016). For example, physical strength and independence are generally seen as masculine qualities (Lipowska et al. 2016), and body satisfaction has been linked to sexual agency and assertiveness in men (Swami et al. 2014). Reduced sexual satisfaction could thus be associated with and attributed to age-related body changes to a larger degree in men than in women.

When adjusting for other relevant variables, appearance dissatisfaction remained a unique negative predictor of sexual satisfaction in the Scandinavian samples as well as in Belgian men. Although the differences were small, the results point to a possible North-South difference in the role of body image in sexual satisfaction. One interpretation of this difference may be that within Nordic culture, with a more egalitarian and permissive view of female sexuality (Lewin 2006), body satisfaction is more connected to sexual agency than among women from the middle and south of Europe. The competing body ideals of looking young and sexually attractive versus an age-appropriate appearance (Jankowski et al. 2016) may be

more difficult for older women in the Nordic countries to negotiate than in Belgium and Portugal. For men, the results may reflect a more traditional and masculine gender role in the Portuguese sample, where sexual activity and relationship satisfaction were more influential factors in relation to sexual satisfaction than the evaluation of their appearance. Why sexual satisfaction was associated with higher appearance salience in Belgian men and lower appearance salience in Danish women, is difficult to explain. The associations were small and could thus be a result of differences in statistical power or selection bias, or be a result of cultural differences in how appearance related information is activated and processed in relation to sexuality. Future research needs to explore possible sociocultural sources for the observed variations, such as how cohort-specific body ideals and sexual norms are related.

### **Study Strengths and Limitations**

The strengths of this study are its large-scale probability-based community samples of older women and men, both sexually active and inactive, and its cross-cultural component. Despite these strengths, several limitations should also be considered when interpreting the results of this study. First, the response rates varied between the countries, with a potentially larger self-selection bias in Portugal and among Belgian men, which may influence the generalizability of the observed cross-cultural differences. Second, only one-item indicators of sexual and relationship satisfaction were used. Third, the appearance evaluation measure did not include satisfaction with specific age-related changes, such as wrinkles and less muscle tone. This may have decreased the validity of the measure for older respondents, particularly for men. Finally, questions about sexuality are often considered a sensitive topic and might be embarrassing to some participants in older age groups. Social desirability is another important issue in sexuality research, and may lead to exaggerated or censored responses on questions about sexual experiences.

### **Conclusion**

This study shows a negative association between body dissatisfaction and sexual satisfaction in late adulthood. As has been found in younger samples, appearance evaluation appears to play an important role in sexual satisfaction in older adults. This association was evident in Nordic women and men, and in Belgian men. The results may reflect a relatively similar role of body image in sexual satisfaction in older populations within the Western culture, but more research is needed to further examine the cross-cultural



variations found in appearance dissatisfaction and salience in this study. The study findings underscore the importance of including normative changes in body image as a topic in the prevention and treatment of sexual health problems in both older women and men.

## References

- Addis IB, Van Den Eeden SK, Wassel-Fyr CL, et al. (2006) Sexual activity and function in middle-aged and older women. *Obstet Gynecol*, 107:755–764. doi:10.1097/01.AOG.0000202398.27428.e2
- Anthony DB, Holmes JG, Wood JV (2007) Social acceptance and self-esteem: tuning the sociometer to interpersonal value *J Pers Soc Psychol* 92:1024-1039 doi:10.1037/0022-3514.92.6.1024
- Bajos N, Wellings K, Laborde C, Moreau C (2010) Sexuality and obesity, a gender perspective: results from French national random probability survey of sexual behaviours *BMJ* 15:340 doi:10.1136/bmj.c2573
- Byers ES (2005) Relationship satisfaction and sexual satisfaction: a longitudinal study of individuals in long-term relationships *J Sex Res* 42:113-118 doi:10.1080/00224490509552264
- Byers ES, Rehman US (2014) Sexual well-being. In: Tolman DL, Diamond LM, Bauermeister JA, George WH, Pfaus JG, Ward LM (eds) *APA handbook of sexuality and psychology, Vol. 1: Person-based approaches*. American Psychological Association, Washington, DC, US, pp 317-337.
- Carvalho A, Godinho L, Costa P (2017) The impact of body dissatisfaction on distressing sexual difficulties among men and women: the mediator role of cognitive distraction *J Sex Res* 54:331-340 doi:10.1080/00224499.2016.1168771
- Cash TF (1990) The psychology of physical appearance: Aesthetics, attributes, and images. In: Cash TF, Pruzinsky T (eds) *Body images: Development, deviance, and change*. Guilford Press, New York, pp 51-79
- Cash TF (2011) Cognitive-behavioral perspectives on body image. In: Cash TF, Smolak L (eds) *Body image: A handbook of science, practice, and prevention*. 2 edn. Guilford Press, New York, pp 39-47
- Cash TF, Maikkula CL, Yamamiya Y (2004) "Baring the body in the bedroom": Body image, sexual self-schemas, and sexual functioning among college women and men. *Electronic J Hum Sex* 7 <http://www.ejhs.org/volume7/bodyimage.html>
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum

- Costa RM, Brody S (2012) Sexual satisfaction, relationship satisfaction, and health are associated with greater frequency of penile-vaginal intercourse Arch Sex Behav 41:9-10 doi:10.1007/s10508-011-9847-9
- Davison T, McCabe M (2005) Relationships between men's and women's body image and their psychological, social, and sexual functioning Sex Roles 52:463-475 doi:10.1007/s11199-005-3712-z
- Donaghue N (2009) Body satisfaction, sexual self-schemas and subjective well-being in women Body Image 6:37-42 doi:10.1016/j.bodyim.2008.08.002
- DuMouchel WH, Duncan GJ (1983) Using sample survey weights in multiple regression analyses of stratified samples J Am Stat Assoc 78:535-543 doi:10.2307/2288115
- Dundon CM, Rellini AH (2010) More than sexual function: predictors of sexual satisfaction in a sample of women age 40-70 J Sex Med 7:896-904 doi: 10.1111/j.1743-6109.2009.01557.x.
- Faith MS, Schare ML (1993) The role of body image in sexually avoidant behavior Arch Sex Behav 22:345-356 doi:[10.1007/bf01542123](https://doi.org/10.1007/bf01542123)
- Fallis EE, Rehman US, Woody EZ, Purdon C (2016) The longitudinal association of relationship satisfaction and sexual satisfaction in long-term relationships J Fam Psychol 30:822-831 doi:10.1037/fam0000205
- Fookien I (1994) Sexuality in the later years--the impact of health and body-image in a sample of older women Patient Educ Couns 23:227-233 doi: [10.1016/0738-3991\(94\)90038-8](https://doi.org/10.1016/0738-3991(94)90038-8)
- Forbes MK, Eaton NR, Krueger RF (2017) Sexual quality of life and aging: A prospective study of a nationally representative sample J Sex Res 54:137-148 doi:10.1080/00224499.2016.1233315
- Galinsky AM, McClintock MK, Waite LJ (2014) Sexuality and physical contact in National Social Life, Health, and Aging Project Wave 2 J Gerontol B Psychol Sci Soc Sci 69 Suppl 2:S83-98 doi:10.1093/geronb/gbu072
- Gillespie BJ (2017) Correlates of sex frequency and sexual satisfaction among partnered older adults J Sex Marital Ther 43:403-423 doi:10.1080/0092623X.2016.1176608
- Grogan S (2017) Body image: Understanding body dissatisfaction in men, women, and children. 3 edn. Routledge, London

- Heiman JR, Long JS, Smith SN, Fisher WA, Sand MS, Rosen RC (2011) Sexual Satisfaction and Relationship Happiness in Midlife and Older Couples in Five Countries *Arch Sex Behav* 40:741-753 doi:10.1007/s10508-010-9703-3
- Holmqvist K, Frisén A (2010), Body dissatisfaction across cultures: Findings and research problems *Eur Eat Disorders Rev* 18:133-146. doi:10.1002/erv.965
- Holt A, Lyness KP (2007) Body image and sexual satisfaction *J Couple Relatsh Ther* 6:45-68 doi:10.1300/J398v06n03\_03
- Hurd Clarke L, Korotchenko A (2011) Aging and the body: A review *Can J Aging* 30:495-510 doi:10.1353/cja.2011.0035
- Impett EA, Muise A, Peragine D (2014) Sexuality in the context of relationships. In: Diamond L, Tolman D (eds) *APA handbook of sexuality and psychology*, vol 1. American Psychological Association, Washington, DC, pp 269–316
- Jankowski GS, Diedrichs PC, Williamson H, Christopher G, Harcourt D (2016) Looking age-appropriate while growing old gracefully: A qualitative study of ageing and body image among older adults *J Health Psychol* 21:550-561 doi:10.1177/1359105314531468
- Kvalem IL, Træen B, Markovic A, von Soest T (2019) Body image development and sexual satisfaction: A prospective study from adolescence to young adulthood *J Sex Res* 56:791-801. doi:10.1080/00224499.2018.1518400
- Lawrance K-A, Byers ES (1995) Sexual satisfaction in long-term heterosexual relationships: The interpersonal exchange model of sexual satisfaction *Pers Relatsh* 2:267-285 doi:10.1111/j.1475-6811.1995.tb00092.x
- Lewin B (2006) Sexuality in the Nordic context. In: Træen B, Lewin B (eds) *Sexology in context*. Universitetsforlaget, Oslo, pp 125-132
- Lipowska M, Lipowski M, Olszewski H, Dykalska-Bieck D (2016) Gender differences in body-esteem among seniors: Beauty and health considerations *Arch Gerontol Geriatr* 67:160-170 doi:10.1016/j.archger.2016.08.006

- McConatha JT, Schnell F, Volkwein K, Riley L, Leach E (2003) Attitudes toward aging: a comparative analysis of young adults from the United States and Germany *Int J Aging Hum Dev* 57:203-215 doi:10.2190/k8q8-5549-0y4k-ugg0
- McNulty JK, Wenner CA, Fisher TD (2016) Longitudinal associations among relationship satisfaction, sexual satisfaction, and frequency of sex in early marriage *Arch Sex Behav* 45:85-97 doi:10.1007/s10508-014-0444-6
- Milhausen RR, Buchholz AC, Opperman EA, Benson LE (2015) Relationships between body image, body composition, sexual functioning, and sexual satisfaction among heterosexual young adults *Arch Sex Behav* 44:1621-1633 doi:10.1007/s10508-014-0328-9
- Mitchell KR et al. (2013) Sexual function in Britain: findings from the third National Survey of Sexual Attitudes and Lifestyles (Natsal-3) *Lancet* 382:1817-1829 doi:10.1016/s0140-6736(13)62366-1
- Montemurro B, Gillen MM (2012) Wrinkles and sagging flesh: Exploring transformations in women's sexual body image *J Women Aging* 25:3-23 doi:10.1080/08952841.2012.720179
- Moss T, Rosser B (2012) The moderated relationship of appearance valence on appearance self consciousness: Development and testing of new measures of appearance schema components *PLoS ONE* 7 doi:10.1371/journal.pone.0050605
- Moss TP, Lawson V, White P (2014) Saliency and valence of appearance in a population with a visible difference of appearance: direct and moderated relationships with self-consciousness, anxiety and depression *PLoS One* 9:e88435 doi:10.1371/journal.pone.0088435
- Murnen SK, Don BP (2012) Body image and gender roles. In: Cash TF (ed) *Encyclopedia of body image and human appearance*. Elsevier Academic Press, San Diego, CA, pp 128-134. doi: <http://dx.doi.org/10.1016/B978-0-12-384925-0.00019-5>
- Nezlek JB (1999) Body image and day-to-day social interaction *J Pers* 67:793-817 doi: [10.1111/1467-6494.00073](https://doi.org/10.1111/1467-6494.00073)
- Parent MC, Schwartz EN, Bradstreet TC (2016) Men's body image. In: Wester YJWSR (ed) *APA handbook of men and masculinities*. APA handbooks in psychology series. American Psychological Association, Washington, DC, US, pp 591-614. doi:10.1037/14594-027

- Penhollow TM, Young M, Denny G (2009) Predictors of quality of life, sexual intercourse, and sexual satisfaction among active older adults *Am J Health Educ* 40:14-22  
doi:10.1080/19325037.2009.10599074
- Robbins A-R, Reissing ED (2018) Appearance dissatisfaction, body appreciation, and sexual health in women across adulthood *Arch Sex Behav* 47:703-714 doi:10.1007/s10508-017-0982-9
- Roy M, Payette H (2012) The body image construct among Western seniors: A systematic review of the literature *Arch Gerontol Geriatr* 55:505-521 <http://dx.doi.org/10.1016/j.archger.2012.04.007>
- Russell JA (2003) Core affect and the psychological construction of emotion *Psychol Rev* 110:145-172  
doi:10.1037/0033-295X.110.1.145
- Sargent-Cox KA, Rippon M, Burns RA (2014) Measuring anxiety about aging across the adult lifespan *Int Psychogeriatr* 26:135-145 doi:10.1017/S1041610213001798
- Schaefer LM, Burke NL, Anderson LM et al. (2019) Comparing internalization of appearance ideals and appearance-related pressures among women from the United States, Italy, England, and Australia *Eat Weight Disord* 24:947-951 doi: 10.1007/s40519-018-0544-8
- Schmiedeberg C, Huyer-May B, Castiglioni L, Johnson MD (2017) The more or the better? How sex contributes to life satisfaction *Arch Sex Behav* 46:465-473 doi:10.1007/s10508-016-0843-y
- Schwartz P, Diefendorf S, McGlynn-Wright A (2014) Sexuality in aging. In: *APA handbook of sexuality and psychology, Vol. 1: Person-based approaches*. American Psychological Association, Washington, DC, US, pp 523-551. doi:10.1037/14193-017
- Shkolnik D, Iecovich E (2013) Health, body image, gender, and migration status: their relationship to sexuality in old age *Int Psychogeriatr* 25:1717-1727 doi:10.1017/s1041610213000604
- Swami V (2015) Cultural influences on body size ideals *Euro Psychol* 20:44-51 doi:10.1027/1016-9040/a000150
- Swami V, Diwell R, McCreary DR (2014) Sexuality and the drive for muscularity: Evidence of associations among British men *Body Image* 11:543-546 <https://doi.org/10.1016/j.bodyim.2014.08.008>
- Swami V, Hadji-Michael M, Furnham A (2008) Personality and individual difference correlates of positive body image *Body Image* 5:322-325 <https://doi.org/10.1016/j.bodyim.2008.03.007>

- Swami, V., Weis, L., Barron, D. Furnham A (2017) Associations between positive body image, sexual liberalism, and unconventional sexual practices in U.S. adults *Arch Sex Behav* 46: 2485-2494. doi: 10.1007/s10508-016-0924-y
- Thorpe R, Fileborn B, Hawkes G, Pitts M, Minichiello V (2015) Old and desirable: older women's accounts of ageing bodies in intimate relationships *Sex Relation Ther* 30:156-166  
doi:10.1080/14681994.2014.959307
- Tiggemann M (2011) Sociocultural perspectives on human appearance and body image. In: Cash TF, Smolak L (eds) *Body image. A handbook of science, practice, and prevention*. 2 edn. The Guilford Press, New York, pp 12-19
- Tiggemann M, Slevac J (2012) Appearance in adulthood. In: Rumsey N, Harcourt D (eds) *The Oxford handbook of the psychology of appearance*. Oxford University Press, Oxford, pp 142-159
- Trapnell PD, Meston CM, Gorzalka BB (1997) Spectatoring and the relationship between body image and sexual experience: Self-focus or self-valence? *J Sex Res* 34:267-278  
<http://www.jstor.org/stable/3813386>
- Træen B, Carvalheira AA, Kvalem IL, Stulhofer A, Janssen E, Graham C, Hald GM, Enzlin, P (2017) Sexuality in older adults (65+)—An overview of the recent literature, Part 2: Body image and sexual satisfaction *International J Sex Health* 29:11-21 doi:10.1080/19317611.2016.1227012
- Træen B, Markovic A, Kvalem IL (2016) Sexual satisfaction and body image: a cross-sectional study among Norwegian young adults *Sex Relation Ther*:1-15 doi:10.1080/14681994.2015.1131815
- Træen B, Stulhofer A, Janssen E, Carvalheira AA, Hald GM, Lange T, Graham C (2019) Sexual activity and sexual satisfaction among older adults in four European countries *Arch Sex Behav* 48:815-829 doi: 10.1007/s10508-018-1256-x.
- von Soest T, Wichstrom L, Kvalem IL (2016) The development of global and domain-specific self-esteem from age 13 to 31 *J Pers Soc Psychol* 110:592-608 doi:10.1037/pspp0000060
- Wada M, Hurd Clarke L, Rozanova J (2015) Constructions of sexuality in later life: analyses of Canadian magazine and newspaper portrayals of online dating *J Aging Stud* 32:40-49  
doi:10.1016/j.jaging.2014.12.002

- Wertheim EH, Paxton SJ (2011) Body image development in adolescent girls. In: Cash TF, Smolak L (eds) *Body image: A handbook of science, practice, and prevention*. 2 edn. Guilford Press, New York, pp 76-84
- Wiederman MW (2012) *Body image and sexual functioning*. Academic Press, London
- Woertman L, van den Brink F (2012) Body image and female sexual functioning and behavior: a review *J Sex Res* 49:184-211 doi:10.1080/00224499.2012.658586



Table 1. *Partner Status, Age, and BMI by Country (Weighted Data) and Gender*

|                          | Women    |          |          |          |          |          |          |          | X <sup>2</sup> | Men      |          |          |          |          |          |          |          |                |
|--------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------------|----------|----------|----------|----------|----------|----------|----------|----------|----------------|
|                          | Norway   |          | Denmark  |          | Belgium  |          | Portugal |          |                | Norway   |          | Denmark  |          | Belgium  |          | Portugal |          |                |
| <i>Total</i>             | <i>n</i> | <i>%</i> | <i>n</i> | <i>%</i> | <i>n</i> | <i>%</i> | <i>n</i> | <i>%</i> |                | <i>n</i> | <i>%</i> | <i>n</i> | <i>%</i> | <i>n</i> | <i>%</i> | <i>n</i> | <i>%</i> | X <sup>2</sup> |
| <b><u>Partner</u></b>    |          |          |          |          |          |          |          |          |                |          |          |          |          |          |          |          |          |                |
| No                       | 19       | 30.5     | 75       | 15.5     | 249      | 51.9     | 63       | 26.7     |                | 111      | 17.6     | 78       | 15.5     | 92       | 19.5     | 15       | 7.0      |                |
| Yes                      | 43       | 69.5     | 402      | 84.5     | 231      | 46.1     | 168      | 73.3     | 148.7***       | 518      | 82.4     | 424      | 84.5     | 381      | 80.5     | 199      | 93.0     | 18.0***        |
| <i>With partner</i>      |          |          |          |          |          |          |          |          |                |          |          |          |          |          |          |          |          |                |
| <b><u>Age groups</u></b> |          |          |          |          |          |          |          |          |                |          |          |          |          |          |          |          |          |                |
| 60-64                    | 17       | 39.0     | 119      | 29.6     | 110      | 47.6     | 65       | 38.4     |                | 188      | 36.3     | 112      | 26.4     | 106      | 27.9     | 67       | 33.7     |                |
| 65-69                    | 15       | 35.3     | 130      | 32.3     | 66       | 28.6     | 63       | 37.3     | 36.6***        | 177      | 34.2     | 134      | 31.6     | 138      | 36.3     | 75       | 37.7     | 23.9***        |
| 70-76                    | 11       | 25.7     | 153      | 38.1     | 55       | 23.8     | 41       | 24.3     |                | 153      | 29.5     | 178      | 42.0     | 178      | 35.8     | 57       | 28.6     |                |
| <b><u>BMI</u></b>        |          |          |          |          |          |          |          |          |                |          |          |          |          |          |          |          |          |                |
| Normal weight            | 21       | 52.1     | 191      | 50.9     | 95       | 43.0     | 59       | 36.4     |                | 182      | 37.8     | 137      | 34.1     | 129      | 36.1     | 58       | 30.5     |                |
| Over-weight              | 14       | 35.7     | 118      | 31.5     | 77       | 34.8     | 77       | 47.5     | 25.2***        | 248      | 51.6     | 206      | 51.2     | 165      | 46.2     | 94       | 49.5     | 14.9*          |
| Obese                    | 50       | 12.2     | 66       | 17.6     | 49       | 22.2     | 26       | 16.0     |                | 51       | 10.6     | 59       | 14.7     | 63       | 17.6     | 38       | 20.0     |                |

Chi-square test of differences among countries; \* =  $p < .05$ , \*\*\* =  $p < .001$

Table 2:

*Correlations, Means, Standard Deviations, and Range of Study Variables in Women (lower left diagonal) and Men (upper right diagonal).*

| Total                      | Women    |           |                |         |         |        |         |         |         |            |            | Men      |           |                |
|----------------------------|----------|-----------|----------------|---------|---------|--------|---------|---------|---------|------------|------------|----------|-----------|----------------|
|                            | <i>M</i> | <i>SD</i> | <i>Min-Max</i> | SS      | AD      | AS     | IF      | KC      | RS      | <i>BMI</i> | <i>Age</i> | <i>M</i> | <i>SD</i> | <i>Min-Max</i> |
| Sexual satisfaction        | 3.50     | 0.99      | 1-5            | -       | -.25*** | .05    | .52***  | .36***  | .39***  | -.09**     | -.05       | 3.41     | 1.02      | 1-5            |
| Appearance dissatisfaction | 2.52     | 0.94      | 1-6            | -.23*** | -       | -.09** | -.11*** | -.18*** | -.18*** | -.19***    | -.08**     | 2.29     | 0.84      | 1-6            |
| Appearance salience        | 4.04     | 1.06      | 1-6            | -.07*   | -.09**  | -      | .03     | .05     | -.01    | -.01       | .06*       | 3.70     | 1.08      | 1-6            |
| Intercourse freq.          | 2.58     | 1.38      | 1-6            | .52***  | -.16*** | -.02   | -       | .33***  | .20***  | -.08**     | -.11***    | 2.75     | 1.38      | 1-6            |
| Kissing & cuddling         | 0.68     | 0.47      | 0-1            | .36***  | -.18*** | .01    | .37***  | -       | .39***  | -.07**     | .01        | 0.67     | 0.47      | 0-1            |
| Relationship satisfaction  | 5.91     | 1.22      | 1-7            | .45***  | -.23*** | -.03   | .33***  | .42***  | -       | -.03       | .01        | 5.89     | 1.29      | 1-7            |
| BMI                        | 25.84    | 4.56      | 16-54          | -.05    | .38***  | -.10   | -.10*** | -.02    | -.08**  | -          | -.03       | 26.5     | 3.81      | 17-60          |
| Age                        | 66.60    | 4.25      | 60-75          | .00     | .05     | .05    | -.07*   | .01     | .02     | .00        | -          | 67.2     | 4.30      | 60-76          |
| <i>N</i>                   | 1201     |           |                |         |         |        |         |         |         |            |            | 1492     |           |                |

Note. SS = Sexual Satisfaction; AD = Appearance Dissatisfaction, AS = Appearance Salience; IF = Intercourse Frequency;

KC = Kissing and Cuddling; RS = Relationship Satisfaction; BMI = Body Mass Index; \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 3:  
*Differences in Sexual Satisfaction and Body Image between Countries by Gender, controlled for BMI and Age.*

|                            | <b>Norway</b> |               | <b>Denmark</b> |               | <b>Belgium</b> |               | <b>Portugal</b> |               | <i>F(adj)</i><br><i>BMI/Age</i> | $\eta^2$ |
|----------------------------|---------------|---------------|----------------|---------------|----------------|---------------|-----------------|---------------|---------------------------------|----------|
|                            | <i>n</i>      | <i>M (SD)</i> | <i>n</i>       | <i>M (SD)</i> | <i>n</i>       | <i>M (SD)</i> | <i>n</i>        | <i>M (SD)</i> |                                 |          |
| <u>Women</u>               |               |               |                |               |                |               |                 |               |                                 |          |
| Sexual satisfaction        | 404           | 3.52 (0.98)   | 374            | 3.56 (0.98)   | 292            | 3.39 (1.04)   | 164             | 3.50 (0.92)   | 1.49                            | -        |
| Appearance dissatisfaction | 412           | 2.45 (0.92)   | 380            | 2.35 (0.90)   | 306            | 2.64 (1.04)   | 176             | 2.88 (0.84)   | 12.30***                        | .03      |
| Appearance salience        | 411           | 3.92 (1.07)   | 382            | 4.29 (1.11)   | 305            | 4.16 (0.97)   | 173             | 3.82 (0.87)   | 10.08***                        | .02      |
| <u>Men</u>                 |               |               |                |               |                |               |                 |               |                                 |          |
| Sexual satisfaction        | 516           | 3.43 (1.05)   | 407            | 3.47 (0.99)   | 342            | 3.27 (0.98)   | 227             | 3.45 (1.05)   | 2.88*                           | .01      |
| Appearance dissatisfaction | 520           | 2.26 (0.78)   | 414            | 2.20 (0.82)   | 346            | 2.25 (0.90)   | 225             | 2.55 (0.89)   | 7.40***                         | .015     |
| Appearance salience        | 520           | 3.38 (1.07)   | 413            | 3.81 (1.08)   | 346            | 3.87 (1.05)   | 222             | 3.88 (0.93)   | 22.6***                         | .04      |

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 4. Hierarchical Multiple Linear Regression Analysis Predicting Sexual Satisfaction in Women by Country

|   | Norway<br><i>n</i> = 382 |           |         |          | Denmark<br><i>n</i> = 352 |           |         |          | Belgium<br><i>n</i> = 201 |           |         |          | Portugal<br><i>n</i> = 133 |           |         |          |
|---|--------------------------|-----------|---------|----------|---------------------------|-----------|---------|----------|---------------------------|-----------|---------|----------|----------------------------|-----------|---------|----------|
|   | <i>B</i>                 | <i>SE</i> | $\beta$ | <i>p</i> | <i>B</i>                  | <i>SE</i> | $\beta$ | <i>p</i> | <i>B</i>                  | <i>SE</i> | $\beta$ | <i>p</i> | <i>B</i>                   | <i>SE</i> | $\beta$ | <i>p</i> |
| Appearance                                      |                          |           |         |          |                           |           |         |          |                           |           |         |          |                            |           |         |          |
| - dissatisfaction                               | -.24                     | .05       | -.22    | .000     | -.26                      | .06       | -.24    | .000     | -.17                      | .07       | -.18    | .012     | -.34                       | .10       | -.29    | .001     |
| - salience                                      | -.01                     | .05       | -.01    | .86      | -.14                      | .05       | -.16    | .003     | -.14                      | .07       | -.13    | .056     | -.03                       | .10       | -.03    | .74      |
| <b>Step 1 R<sup>2</sup></b>                     | <b>.05</b>               |           |         |          | <b>.06</b>                |           |         |          | <b>.05</b>                |           |         |          | <b>.08</b>                 |           |         |          |
| Appearance                                      |                          |           |         |          |                           |           |         |          |                           |           |         |          |                            |           |         |          |
| - dissatisfaction                               | -.12                     | .05       | -.12    | .009     | -.13                      | .05       | -.12    | .013     | -.04                      | .06       | -.04    | .53      | -.14                       | .09       | -.12    | .10      |
| - salience                                      | .01                      | .04       | .02     | .71      | -.08                      | .04       | -.09    | .047     | -.11                      | .06       | -.10    | .07      | -.07                       | .08       | -.06    | .39      |
| Sexual activity                                 |                          |           |         |          |                           |           |         |          |                           |           |         |          |                            |           |         |          |
| - Intercourse frequency                         | .32                      | .03       | .44     | .000     | .28                       | .03       | .41     | .000     | .30                       | .05       | .40     | .000     | .20                        | .05       | .27     | .000     |
| - Kissing & cuddling (1)                        | .16                      | .10       | .08     | .10      | .10                       | .10       | .04     | .36      | .18                       | .14       | .08     | .22      | .41                        | .19       | .21     | .036     |
| Relationship satisfaction                       | .26                      | .04       | .28     | .000     | .22                       | .04       | .27     | .000     | .16                       | .05       | .22     | .002     | .28                        | .07       | .33     | .000     |
| BMI   | .02                      | .01       | .09     | .02      | .01                       | .01       | .06     | .19      | .00                       | .01       | -.02    | .72      | .01                        | .01       | .03     | .68      |
| Age   | .02                      | .01       | .09     | .04      | .00                       | .01       | .002    | .97      | .02                       | .02       | .08     | .15      | -.02                       | .02       | -.08    | .22      |
| <b>Step 2 <math>\Delta</math> R<sup>2</sup></b> | <b>.37</b>               |           |         |          | <b>.30</b>                |           |         |          | <b>.32</b>                |           |         |          | <b>.39</b>                 |           |         |          |

Table 5.  
*Hierarchical Multiple Linear Regression Analysis Predicting Sexual Satisfaction in Men by Country*

|   | Norway<br><i>n</i> = 466 |           |         |          | Denmark<br><i>n</i> = 385 |           |         |          | Belgium<br><i>n</i> = 339 |           |         |          | Portugal<br><i>n</i> = 164 |           |         |          |
|---|--------------------------|-----------|---------|----------|---------------------------|-----------|---------|----------|---------------------------|-----------|---------|----------|----------------------------|-----------|---------|----------|
|   | <i>B</i>                 | <i>SE</i> | $\beta$ | <i>p</i> | <i>B</i>                  | <i>SE</i> | $\beta$ | <i>p</i> | <i>B</i>                  | <i>SE</i> | $\beta$ | <i>p</i> | <i>B</i>                   | <i>SE</i> | $\beta$ | <i>p</i> |
| Appearance                                      |                          |           |         |          |                           |           |         |          |                           |           |         |          |                            |           |         |          |
| - dissatisfaction                               | -.37                     | .06       | -.28    | .000     | -.29                      | .06       | -.24    | .000     | -.35                      | .06       | -.32    | .000     | -.17                       | .09       | -.15    | .06      |
| - salience                                      | .03                      | .04       | .04     | .44      | .04                       | .05       | .05     | .34      | .10                       | .05       | .10     | .043     | .02                        | .09       | .02     | .81      |
| <b>Step 1 R<sup>2</sup></b>                     | <b>.08</b>               |           |         |          | <b>.06</b>                |           |         |          | <b>.12</b>                |           |         |          | <b>.02</b>                 |           |         |          |
| Appearance                                      |                          |           |         |          |                           |           |         |          |                           |           |         |          |                            |           |         |          |
| - dissatisfaction                               | -.20                     | .05       | -.15    | .000     | -.14                      | .06       | -.11    | .014     | -.22                      | .05       | -.20    | .000     | -.10                       | .08       | -.09    | .22      |
| - salience                                      | .03                      | .03       | .03     | .35      | .02                       | .04       | .03     | .56      | .10                       | .04       | .10     | .01      | .00                        | .07       | .00     | .99      |
| Sexual activity                                 |                          |           |         |          |                           |           |         |          |                           |           |         |          |                            |           |         |          |
| - Intercourse frequency                         | .38                      | .03       | .53     | .000     | .24                       | .04       | .33     | .000     | .34                       | .03       | .43     | .000     | .26                        | .05       | .35     | .000     |
| - Kissing & cuddling (1)                        | .14                      | .08       | .07     | .09      | .20                       | .10       | .09     | .053     | .09                       | .09       | .04     | .36      | .42                        | .18       | .19     | .018     |
| Relationship satisfaction                       | .14                      | .03       | .16     | .000     | .15                       | .03       | .21     | .000     | .26                       | .03       | .35     | .000     | .17                        | .06       | .22     | .003     |
| BMI   | -.01                     | .01       | -.04    | .27      | -.01                      | .01       | -.04    | .39      | .00                       | .01       | .001    | .98      | .01                        | .02       | .02     | .74      |
| Age   | -.01                     | .01       | -.03    | .34      | .03                       | .01       | .14     | .001     | -.02                      | .01       | -.09    | .02      | -.01                       | .02       | -.06    | .36      |
| <b>Step 2 <math>\Delta</math> R<sup>2</sup></b> | <b>.39</b>               |           |         |          | <b>.24</b>                |           |         |          | <b>.37</b>                |           |         |          | <b>.31</b>                 |           |         |          |