

Body Image in Older People as It Relates to Exercise and Dieting

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Abstract

Older people have increased interest and involvement in controlling their aging body through physical exercise and dieting. This study examined the relationship between body image and the participation of older people in exercise and dieting. Two measures of body image (appearance attitude and appearance orientation) were used to study their relationships to participation in exercise and dieting among older people. Data were collected via a mail survey of older married couples residing in three U.S. metropolitan areas of Florida. A total of 94 couples who were 60 years older participated in this study. Multiple regression was run separately for men and women. The results indicated that for both men and women, appearance attitude was inversely related to dieting and positively related with exercise (even though the relationship with exercise was weak for men). Appearance orientation was not significantly related to exercise or dieting for both men and women. A new scale development on body image for an aging population was suggested. Various activities performed by aging people to manage their aging body and appearance need to be studied as related to physical and psychological well-being that includes body image.

Key words: Body image, Aging, Exercise, Dieting

I. Introduction

As older people experience aging-related changes of the body and appearance, their feelings or attitudes toward the body and appearance may undergo changes as well. The way older people feel about their aging bodies or appearance may influence their behavior to manage their aging bodies and appearance. Older people's sense of body image may be related to their engagement in exercise and dieting to manage their aging appearance and chronic health concerns. Unlike the ever growing investment in developing exercise and dieting programs for older people (Wellman et al., 2007), little effort has been made to examine empirically how older people's sense of body image influences their decisions to engage in exercise or dieting in order to control their aging bodies and appearance.

The term *body image* as used in the present study will reflect evaluative and attitudinal components and,

more specifically, refer to feelings about and satisfaction with the body and physical appearance, the degree of cognitive importance placed on physical appearance, and the degree of orientation to appearance-related activities (Brown et al., 1990).

In the dualistic perspective prevailing in Western culture in which the body is seen as a material object distinct from one's essential self, one's desire to control the body as an object is embedded in significant personal meanings, anxieties, and motivations to choose certain products, to buy specific styles of clothes, and to engage in body-focused consumer practices, such as extensive dietary and exercise regimens (Thompson & Hirschman, 1995). Aging deviates the body from socially accepted standards of beauty in U.S. culture and eventually deteriorates the body from youthful condition, making older people's desire to resist the aging process seem self-evident (Thompson & Hirschman, 1995). Older people's activities to manage their aging bodies and to reconstruct a youthful appearance may be the expression of efforts to reduce the gap between

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youthful inner self and the aging signs of the body.

Although body changes associated with aging happen to everyone, the ways older individuals perceive these changes of their bodies may vary depending on subjectively construed experiences of aging. Appearance management practices such as exercise and dieting to cope with the aging process may be motivated and influenced by older persons' subjective experiences of aging, mostly perception of bodily changes rather than by the actual changes of the body. However, previous studies that looked at the relation between body image and appearance management practices among older people are rare. Little attention has been paid to the relation between body image of older people and their involvement in various exercise programs and dieting regime. In this study, older people's sense of body image was examined in relation to engagement in exercise and dieting.

II. Review of Literature

1. Body Image in Aging Process

Aging-related physical changes may lead older people to feel growing discrepancy between how old they look and how old they actually feel. Older people may be particularly susceptible to developing problems in body image because physical changes associated with the aging process generally are perceived as socially undesirable and unattractive. According to Ferraro et al. (2008), the conflict older people may experience during the aging process between the aging body and their desire for thinner and smaller body shape could lead to a reshaping of body image and be translated into greater concerns for weight, body size, and body image. Baker and Gringart (2009) reported that there were significant differences between aging men and women on satisfaction with physical appearance, evaluation of physical fitness, and investment in activities their fitness level. However, this aging population has been understudied in the field of body image. Especially, little is empirically known about how diversely older people perceive or feel about their aging bodies and appearance and how this is related to their efforts to control, maintain, or improve their aging bodies or appearance.

In this study, among various appearance management practices, engagement in exercise and dieting was studied as related to older people's perception of the body.

2. Exercise among Older People

Chodzko-Zajko et al. (2009) found that older people's involvement in exercise was associated with improvement in physiological health. Older people often times engage in exercise to prevent or slow deterioration of the body's physiological capacities due to aging (Fontane, 1996). Positive health outcomes of exercise may motivate older people to continue or to maintain their exercise regimens. Positive psychological outcomes of exercise such as increased self-confidence (McAuley, 1993), lower psychological distress and greater self-efficacy (McAuley et al., 1995), heightened self-esteem (Reitzes et al., 1995), and perceived internal locus of control (Hill et al., 1993) have been also found with older people. However, Williams and Lord (1995) found no relationship between psychological variables (locus of control, depression, anxiety, stress, and cognitive functioning) and older women's participation in a formal exercise program.

Vocks et al. (2009) found that that young people who were concerned with weight and shape, had more stronger desire to be slim, and were more dissatisfied with their bodies reported their 'felt' body dimension to be thinner and improved mood after participating in physical exercise sessions. Hallinan and Schuler (1993) reported that older women who exercised regularly showed greater differences in their perception of current and ideal body shape than those who did not exercise at all. Even though the researchers did not measure older women's satisfaction with their bodies, the results implied that older women who exercise may be less satisfied with their current bodies. A major motive for these women to engage in exercise might be to achieve a certain ideal body shape such as thin body shape. Similarly, Abadie et al. (1996) found that older men, especially Black men who were highly involved in physical activities showed significantly greater differences in their perception of current and ideal body shape than did those who were lower in physical activity. A greater discrepancy between

current body shape and an ideal body shape may result in dissatisfaction with their current bodies.

Although it is generally believed that exercise strengthens the physical body and brings psychological well-being including body image, thereby improving the quality of life of aging people (Chodzko-Zajko et al., 2009), the relation between psychological factors including body image and older people's involvement in exercise deserves further investigation due to inconsistent or insufficient results from the previous studies. Little research has been done to investigate the relationship between body image and engagement in exercise among older people. To examine the relationship between body image and engagement in exercise among older people, the following hypothesis was developed.

H₁: Older people's body image dimensions - appearance attitude and appearance orientation are positively related to their participation in exercise.

3. Dieting among Older People

While a sizable number of studies of dieting and eating disorders with regard to body dissatisfaction or body perception have been conducted with young people in adolescence and young adulthood (e.g., Kichler & Crowther, 2009; Shroff & Thompson, 2006; Thompson et al., 1995), Mangweth-Matzek et al. (2006) reported that eating disorders were also associated with body dissatisfaction among elderly women.

Dieting has been found to be one of the easiest ways to control body weight in aging process among women (Johnston et al., 2004). In a study examining attitudes toward eating behaviors and body size among older Black and White women, Stevens et al. (1994) found that both Black and White older women who were overweight were more likely than those who were not overweight to report eating restraint such as eating less than they wanted to keep weight down, feeling guilty about overeating, and dieting to lose weight. Dissatisfaction with current body weight among older women appears to motivate them to engage in dieting.

Hetherington and Burnett (1994) found that older women did not differ from young women in dietary restraint and eating attitudes and that women in both ages reported a desired body weight lower than their

current body weight, expressing some dissatisfaction with their weight. In the study, over 50 percent of the older subjects reported that they were or had been actively engaged in dieting to lose weight. Women may be concerned about weight gain usually accompanied with aging in middle age; their dissatisfaction with weight gain or overall body shape may lead to restricted eating patterns such as dieting. In a similar study, Hetherington (1994) confirmed that dieting, the desire to lose weight, and dissatisfaction with the body were prevalent for women of all ages despite normal weight status.

Gupta and Schork (1993) found a positive relationship between aging-related concerns about physical appearance and excessive preoccupation with thinness and body weight among older men and women from a nonclinical sample of mall shoppers. Findings indicated that both older men and women who were more worried about the effect of aging upon their appearance showed greater concerns about dieting, greater desire to lose weight, and greater fear of weight gain than did those who were less worried. Overall, older women, more than older men, were found to be concerned about aging-related changes. The influences of aging-related concerns on body dissatisfaction and dieting were much stronger for older women than for older men. Gupta (1995) also found significant influences of concerns about aging on excessive concerns about dieting, preoccupation with weight, and an extreme pursuit of thinness among randomly selected older subjects. These two similar studies with different older samples suggest that older people's concerns about aging may lead to dissatisfaction with their bodies and to behaviors to lose weight such as dieting.

However, previous studies have measured one dimension of body image-satisfaction/dissatisfaction with body; body image as a multifaceted concept, however, has been rarely studied among older people with regard to their engagement in dieting. The lack of previous research on the relationship between body image and dieting among older people generated the following hypothesis.

H₂: Older people's body image dimensions - appearance attitude and appearance orientation are negatively related to their engagement in dieting.

III. Methods

1. Questionnaire Development

The Multidimensional Body-Self Relations Questionnaire developed by Cash (1994) was used to measure body image. The MBSQ consisted of Appearance Evaluation, Appearance Orientation, and Body Area Satisfaction scales. The Appearance Evaluation scale included six items assessing feelings of physical attractiveness and satisfaction with one's overall physical appearance. The Appearance Orientation scale was made up of 12 items measuring the extent to which people place importance on how they look and are oriented to extensive appearance-related activities. The Body-Areas Satisfaction scale consisted of seven items tapping satisfaction with specific aspects or parts of one's body (face, hair, lower torso, upper torso, muscle tone, weight, and height). Participants responded to the items on a five-point Likert scale. Maximin (1989) reported that the Appearance Evaluation scale and the Appearance Orientation scale had satisfactory internal consistencies with Cronbach's alpha of .80 and .82, respectively. The Body-Areas Satisfaction scale was also found to be a reliable and valid measure for body image (Cronbach's alpha = .74 for females; .77 for males; Cash, 1994).

To measure participants' involvement in exercise, 12 different types of exercise items were asked including brisk walking, jogging, aerobics, and golf. These items were adopted from the Yale Physical Activity Survey for Older Adults developed by Dipietro et al. (1993). For each exercise type, participants responded to two questions: (1) "How often do you exercise a week?" and (2) "How long do you exercise each time?" For each exercise type, scores on a frequency question and a duration question were multiplied. Multiplied scores on the 12 exercise items were summed and used to construct a score for exercise.

The Cognitive Behavioral Dieting Scale developed by Martz et al. (1996) was used to measure current dieting behavior and related thoughts within the past two weeks. Among 14 original items, two items asking the level of and the motif for exercise were omitted because of overlap with the exercise measure. The Cronbach's alpha of the scale was .95 (Martz et al., 1996).

2. Sample

After contacting 600 randomly selected married couples from the list purchased from a mailing company via telephone, the questionnaires were sent to the 194 married couples who agreed to participate in this study. A follow-up postcard reminder was sent to each household one week after the first mailing was sent. Finally, the third mailing that included a letter, a set of questionnaires, and a self-addressed stamped envelope was sent to those who had not responded by the third week from the first mailing. The data collection was done in the spring of 1999. A total of 129 married couples, aged 60 and older, residing in an independent dwelling, and living in three metropolitan areas in Florida, returned the questionnaires after three mailing attempts. Return rates of both usable and unusable questionnaires were 66.5%, with a usable rate of 48.4% ($N=94$ couples). Husbands ranged in age from 60 to 95, with an average age of 74.6 years; wives ranged in age from 60 to 90, with an average age of 72.1 years.

3. Data Analysis

Principal components factor analysis with Varimax rotation was used to find separate dimensions within measures of body image and dieting. A two-factor solution was most satisfactory for incorporating both men's and women's responses on the measures of body image. For both men and women, Appearance Attitude and Appearance Orientation were generated. Items highly loaded on these two factors were similar in the men and women sample. The factor analyses indicated that satisfaction with some body parts contributed to participants' overall evaluation of their bodies and appearance (Appearance Attitude). One factor labeled Dieting was extracted from the 12 Cognitive Behavioral Dieting Scale items. The items included assessed participants' cognitive intention to diet and engagement in dieting behavior to control weight. Items commonly included for both men and women were summed and averaged to construct a score for Dieting. Inter-item correlations (Cronbach's alpha) among items in Appearance Attitude, Appearance Orientation, and Dieting were .90, .86, and .91 for men and .91, .80, and .89 for

women respectively.

Multiple regression was used to examine how measures of body image - Appearance Attitude and Appearance Orientation - could explain older men's and women's engagement in exercising and dieting. All multiple regression analyses conducted to test the hypotheses were subject to regression diagnostics. Plots of residuals and the independent variables were examined. There was no indication of outliers or influential data points. The plots also supported that the error variances were constant. The results of correlation tests for normality showed that residuals from each multiple regression analysis were normally distributed. Finally, variance-inflation factor (VIF), tolerance, eigenvalue, and condition index were calculated for all independent variables for each regression analysis. The largest VIF value among all independent variables was used as an indicator of the severity of multicollinearity. When a maximum VIF value exceeds 10, it is usually an indication that multicollinearity may be influencing the least squares estimates (Neter et al., 1996). No multicollinearity problems among independent variables were detected for any multiple regression analyses.

IV. Results and Discussion

Of two measures of body image, appearance attitude measures feelings of and satisfaction with one's body and appearance while appearance orientation reflects the degree to which people are oriented to appearance-related behavior (Brown, et al., 1990). The correlation between these two body image variables was .40 ($p=.001$) for men and .35 ($p=.001$) for women. Older men and women who felt more positive about and more satisfied with their bodies and appearance

tended to be more concerned about how they looked and were more oriented to appearance-related activities. These two body image variables (appearance attitude and appearance orientation) served as the independent variables in multiple regression analyses estimating older men's and women's engagement in appearance management practices.

The overall model estimating men's engagement in exercise was not significant (Table 1). Neither t values associated with appearance attitude nor appearance orientation was a significant predictor of older men's engagement in exercise. However, appearance attitude was weakly, but not significantly related to exercise. Older men who had more positive attitudes about and higher satisfaction with their bodies and appearance were slightly likely to engage more in exercise. The test hypothesis (H1) was not supported for older men.

Likewise, the overall model for older women's engagement in exercising was not significant and the hypothesis (H1) was not supported (Table 2). However, the result of the F test indicated that there was a non-significant trend in this model. Since the overall fit was not significant, but close to the level of significance, the estimates for independent variables needed to be examined further. Appearance attitude had a significantly positive relationship to older women's engagement in exercise, while appearance orientation was not significantly related to exercise. A significant relationship between appearance attitude and exercise for older women may have contributed to the non-significant trend of the overall fit estimation. Older women who felt more positive about their bodies and appearance and were more satisfied with their body parts tended to exercise more than did those who felt less positive and were less satisfied.

Table 1. Multiple regression analysis estimating exercise for men

Source	DF	SS	MS	F	R^2
Regression	2	309.81	154.90	1.57 ($p=.213$)	.03
Error	91	9273.59	101.91		
Total	93	9583.40			
Variables		b	t value (p value)	β	
Appearance attitude		3.50	1.771 (0.079)	.20	
Appearance orientation		-1.53	-0.762 (0.448)	-.09	

$N=93$

Table 2. Multiple regression analysis estimating exercise for women

Source	DF	SS	MS	F	R ²
Regression	2	891.35	445.68	1.68 (<i>p</i> =.074)	.06
Error	91	15136.61	166.34		
Total	93	16027.97			
Variables		b	<i>t</i> value (<i>p</i> value)	β	
Appearance attitude		4.59	2.307 (0.023)	.25	
Appearance orientation		-2.41	-0.979 (0.330)	-.11	

N=93

Although the relationships between body attitude and exercise were non-significant trends for both men and women, these slightly positive relationships were consistent with Sydney and Shephard's study (1976) in which older men and women reported improved body image after participating in physical training programs. The results of national survey by 『Psychology Today』 in 1997 also showed that people who regularly exercised felt better about their bodies ("1997 Body Image", 1997).

The lack of relationship between appearance orientation and engagement in exercise for both men and women suggests that older people may exercise to improve or to maintain their health or fitness rather than to improve their appearance. In a global definition of body image by Cash (1994), body image is conceived as one's attitudinal dispositions toward the physical self which encompasses not only the aesthetics of one's appearance or size but also fitness and health/illness. In a study by Dishman et al. (1985), people who were well-educated, self-motivated, knowledgeable about health benefits of exercise, able to plan a personal exercise program, or had a history of involvement in sports in young adulthood were found to engage regularly in spontaneous exercise. Further research is

needed to explore various factors motivating older people to participate in regular exercise.

The overall model for men's involvement in dieting was significant ($F(2, 96)=6.20, p=.003$), accounting for 13% of the variance of dieting (Table 3). Appearance attitude had a significantly negative relationship to men's involvement in dieting especially to control their weight. This negative relationship supports the test hypothesis (H2). Older men who were less satisfied with their body parts and had less positive feelings about their bodies and appearance engaged in more dieting than did those who were more satisfied with their body parts and had more positive feelings about their bodies and appearance.

The same regression analysis was repeated with older women's dieting as the dependent variable to examine if appearance attitude and appearance orientation would contribute to explain engagement in dieting. The overall model was significant ($F(2, 90)=10.47, p=.0001$), accounting for 19% of the variance of women's dieting (Table 4). Of two predictors, appearance attitude had an inverse relationship with dieting. Similar to men, women who were less satisfied with their body parts and felt less positive about their bodies and appearance were more involved in dieting

Table 3. Multiple regression analysis estimating dieting for men

Source	DF	SS	MS	F	R ²
Regression	2	7.30	3.65	6.20 (<i>p</i> =.003)	.13
Error	86	50.59	0.59		
Total	88	57.88			
Variables		b	<i>t</i> value (<i>p</i> value)	β	
Appearance attitude		-.57	-3.521 (0.001)	-.39	
Appearance orientation		.25	1.505 (0.136)	.17	

N=88

Table 4. Multiple regression analysis estimating dieting for women

Source	DF	SS	MS	F	R ²
Regression	2	13.13	6.68	10.47 (<i>p</i> =.000)	.19
Error	90	56.54	0.63		
Total	92	69.70			
Variables		b	<i>t</i> value (<i>p</i> value)	β	
Appearance attitude		-.54	-4.413 (0.000)	-.45	
Appearance orientation		.06	0.391 (0.697)	.04	

N=92

than were those who were more satisfied with their body parts and felt more positive about their bodies and appearance. The hypothesis (H2) was also supported among older women.

A positive relationship between dissatisfaction with body weight and engagement in dieting among older women has been consistently found (Gupta, 1995; Hetherington, 1994; Stevens et al., 1994). Interestingly, older men also engaged in dieting to resolve their dissatisfaction with their body parts including body weight or to improve their negative feelings about their bodies and appearance. The majority of the men and women in this present study reported that they had experienced weight gain in the aging process.

V. Conclusions

This study was designed to explore the relation between body image and engagement in appearance management practices employed by older people. For both men and women, appearance attitude was inversely related to dieting and positively related with exercise (even though the relationship with exercise was weak for men). Regardless of age and gender, people tried to avoid unnecessary increases in weight. This trend may have influenced older people's daily eating behaviors as they experienced weight gain. Similarly, Mangweth-Matzek et al. (2006) reported that the close association between body dissatisfaction and eating disorders among elderly women.

Proper dieting to reduce a little extra fat or to maintain a current body weight may not be dangerous; however, excessive dieting can lead to eating disorders which have significant physical and psychological consequences for older people's health. During

the late 1990s, dieting or eating disorders among older people had not received much attention by researchers, even though the process of aging brings many changes that can influence the development of restrained eating or eating disorders (Larocca & Goodner, 1988). Older people experience increases in the percentage of body fat and decreases in lean body mass (Krause & Mahan, 1984). Older people's dissatisfaction and negative attitudes about their bodies and appearance may have led them to change eating patterns, to skip meals, or to avoid consuming certain foods. Unbalanced nutrition or restrained eating may have had severe consequences for older peoples' physical health as well as psychological health. Even though the body image among older people as related to exercise and dieting has still been understudied, positive body image has been found to be a motivating factor to participate in more physically active leisure activities (Liechty & Yarnal, 2010).

The application of this study has some limitations. First, since this study used the data collected from the aging population in the late 1990s, the interpretation of the results should be cautiously done given the timeframe. Second, the measures of body image have been criticized as focusing on certain aspects of body image and may not represent one's feelings about the body as a whole. Third, the survey was limited to older people living in Florida, married, and generally healthy both physically and mentally. Thus, findings may not be generalizable to older people in other regional areas, to older people who are never married, divorced, or widowed, or to those who are frail. The older people who participated in this study may have held fairly positive attitudes toward themselves including their physical bodies and appearance; therefore, they may

have felt more comfortable to express their feelings about their bodies and appearance.

This research has provided a significant, but still only a small amount of information, about older person's body image and appearance management practices, especially with exercise and dieting. Older men and women may experience aging differently and define physical attractiveness differently. The way older individuals define physical attractiveness may have implications for their behaviors to manage their appearance. Also, most previous studies involving the older population have used the body image measures developed from studies involving the young population. As people age, they often change their definitions of attractiveness, fitness, and beauty. Also the meaning of the physical body to the self may be altered as they move into different stages of life. Further research is suggested to define the meanings of attractiveness or beauty among the older population and new instruments measuring the concepts of body image appropriate for these older people are called for.

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