

Go Figure? Body-Shape Motives are Associated with Decreased Physical Activity Participation Among Midlife Women

Michelle Segar,^{1,3} Donna Spruijt-Metz,² and Susan Nolen-Hoeksema¹

This study was designed to investigate the relationship between midlife women's physical activity motives and their participation in physical activity. Cross-sectional qualitative and quantitative data were collected from 59 midlife women, most of whom were well-educated European-Americans (mean age = 45.6 years). Body-shape physical activity motives (i.e., motives related to toning, shaping, and weight loss) were compared with all other types of physical activity motives combined. Participants with body-shape motives were significantly less physically active than those with non-body-shape motives ($p < .01$). Negative affect toward physical activity was negatively associated with participation, but did not mediate the effect of physical activity motives on participation. Body Mass Index (BMI) was not related to physical activity motives or participation. Results suggest that body-shape motives might be associated with less physical activity participation than non-body-shape motives among midlife women.

KEY WORDS: women; physical activity; exercise; goals; motives; reasons for exercising.

Despite the significant benefits of regular physical activity (U.S. Department of Health and Human Services, 1996), 75% of all Americans do not meet public health recommendations for exercise (Centers for Disease Control and Prevention, 2001). Women are less likely than men to meet physical activity recommendations (Centers for Disease Control and Prevention, 2004; Macera & Pratt, 2000; Pate et al., 1995; U.S. Department of Health and Human Services, 1996). Participation in physical activity decreases as women age (Centers for Disease Control and Prevention, 1993; Pate et al., 1995), and women over 50 are at substantial risk of being sedentary (U.S. Department of Health and Human Services,

1996). To understand midlife women's decreased level of physical activity it is important to investigate sociocultural influences on women's motives for exercise.

There is strong evidence that women are more likely than men to exercise in order to lose weight, tone up, and improve their appearance (Frederick & Ryan, 1993; McDonald & Thompson, 1992; Silberstein, Striegel-Moore, Timko, & Rodin, 1988; Tiggemann & Williamson, 2000). This may be because women experience greater pressure than men do to meet cultural beauty and thinness norms (Fredrickson & Roberts, 1997; Rodin, Striegel-Moore, & Silberstein, 1984).

Attitudes, motives, and choices are closely connected to cultural expectations (Coole, 1995; Eccles, 1994; Markus & Kitayama, 1991). Therefore, it is important to contextualize women's approaches to physical activity within sociocultural meanings and norms (Henderson & Ainsworth, 2000). The mass media play a significant role in shaping how women view their bodies, as well as how women think

¹Department of Psychology, The University of Michigan, Ann Arbor, Michigan.

²Institute of Health Promotion and Disease Prevention, University of Southern California, Los Angeles, California.

³To whom correspondence should be addressed at Department of Psychology, The University of Michigan, 530 Church St., Ann Arbor, Michigan, 48109-1043; e-mail: fitness@umich.edu.

about physical activity (Blaine & McElroy, 2002; Nilges, 1997). The media, particularly the market-oriented media, often focus on physical attractiveness and body shape when promoting exercise and fitness (Blaine & McElroy, 2002; Theberge, 1997). How body-shape exercise motives influence midlife women's participation is not known.

One study of college-age women showed that exercising for body-shape or appearance reasons was associated with negative outcomes, such as decreased body satisfaction, lower body esteem, and lower self-esteem (Strelan, Mehaffey, & Tiggemann, 2003). Given that body dissatisfaction remains stable throughout women's lives (Tiggemann, 2004), and that many women may have internalized the prevailing cultural body-shape and appearance meanings for exercise (Nilges, 1997), midlife women might associate exercise with changes in body shape and initiate physical activity with body-shape motives. Because the vast majority of the research on exercise motives has been conducted with university age women it is unclear how body-shape concerns for physical activity affect midlife women's participation.

Midlife and university-age women generally have different sets of responsibilities and demands on their time. Midlife women commonly report that, due to work demands and family obligations, they lack time for leisure activity. They are often "sandwiched" between two generations that both need their attention (Harrington & Dawson, 1995; Verhoef, Love, & Rose, 1992). Research on decision-making and choice suggests that individuals choose a particular behavioral option if it is more valuable than others that are available (Eccles, in press). For example, if the purpose of physical activity is tied to improving one's body or appearance, then that activity might be considered less valuable than other behavioral alternatives related to work or family. Thus, midlife women might forgo exercise when it is in competition with more pressing or more highly valued daily responsibilities. Given midlife women's constraints on participating in leisure time activities, trying to make time for appearance-driven exercise might cause stress and result in negative affect toward physical activity. Available research on body-shape and appearance motives for exercise is inconclusive. Some research shows that body-related motives for physical activity are positively associated with participation (Cash, Novy, & Grant, 1994; Finkenbergh, DiNucci, McCune, & McCune, 1994), whereas other studies suggest that such motives are negatively related to participation (Jacobs Institute

of Women's Health, 1998; Ryan, Frederick, Lepes, Rubio, & Sheldon, 1997). The purpose of the present study is to add to our knowledge about the relationship between body-shape and weight motives for physical activity and midlife women's physical activity participation.

To study midlife women's motives for exercise, participants were recruited from a university-based health registry. Most of the respondents were European-American, well-educated, midlife women. The central hypothesis is that midlife participants who are physically active because of body-shape and/or weight-related motives will report less physical activity than those who have non-body-shape motives for physical activity. Given previous research that suggests that body-shape and appearance motives are negatively related to physical activity levels, body-shape-related motives for physical activity were compared with other types of motives as they relate to participation. We hypothesized that midlife women who exercise with body-shape motives would have greater negative affect toward physical activity than women who exercise with non-body-shape motives, and, as a result, body-shape motives would be associated with less physical activity participation. In addition, we explored whether participants with body-shape motives would report different types of physical activities than those with non-body-shape motives.

METHOD

Participants and Procedure

We recruited participants from the University of Michigan Women's Health RegistryTM (WHR). The WHR is a volunteer registry developed and sponsored by the University of Michigan Women's Health Program and the Center for Clinical Investigation and Therapeutics. The purpose of the WHR is to increase the participation of women in clinical research. All women attending clinics in the University of Michigan Hospital System are invited to join the registry. The University of Michigan Institutional Review Board and the WHR approved this study.

Although some consider 40–60 years of age to constitute the "core" of midlife (Brim, Ryff, & Kessler, 2004), other researchers argue that midlife begins at age 35 (Moen & Wethington, 1999). Thus, the inclusion criteria for the participants in this study included women of ages 35–60 years. Any physical or

mental illness or other condition with the potential to limit or inhibit a woman's ability to be physically active was an exclusion criterion. Examples of these exclusion criteria included chronic back or neck pain, HIV/AIDS, polio, lupus, chronic fatigue syndrome, fibromyalgia, tuberculosis, cancer, emphysema, lung diseases, and depression. Ninety-two women in the database met the study criteria.

An introductory letter and a copy of the survey were mailed to all participants who matched the study criteria. WHR participants were reminded that their participation was completely voluntary, and they were informed that, if they chose to participate, they could mail back the survey in the enclosed, stamped envelope. One week after the surveys were mailed, the study coordinator followed up with the WHR participants who had not yet returned their surveys. A second and final reminder to return the survey was made 3 weeks following the first reminder.

Sixty-four women returned the surveys (70% response rate). Of the 28 women who did not return their surveys, 7 explicitly communicated their desire not to participate, and the rest simply did not return their surveys despite repeated reminders. Five participants were removed from the database because they had incomplete data. The analyses were conducted on the data from 59 study participants.

The mean age of study participants was 45.6 ($SD = 6.8$) years. The majority of this study population were European Americans (86%), 2% Latinas, 10% African Americans, and 2% did not answer this question. Sixty-four percent of the study participants were married, 20% were divorced, 4% were separated, and 12% were never married. The majority of the study participants were well educated (71% with a college or advanced degree) and employed for wages (81%). Participants' average Body Mass Index (BMI) was 26.3 kg/m², which is considered overweight (BMI greater than or equal to 25 kg/m²; Lean, Han, & Seidell, 1999). There were no statistically significant differences in ethnicity and education between members of the registry who returned their surveys and those who did not.

Measurement of Study Variables

Physical Activity Motives

Rather than having participants endorse predetermined categories, we used inductive, qualita-

tive methods to determine participants' motives for physical activity in order to avoid priming specific motives. Participants were asked to write a narrative about being physically active. An inductive imagination exercise that had been previously used to elicit specific thoughts, feelings, associations, and meanings in people living with chronic illness was adapted for this study (Scioli, McClelland, Weaver, & Madden, 2000). The specific instructions were as follows: "Imagine that you are being physically active right now. Take a minute or two and go over the experience in your mind." Participants were then asked to "describe what you are feeling and thinking in 3–4 sentences." Research on mental imagery shows that imagining an object or event can be equivalent to the information processes and emotional responses of actually experiencing it (Schwartz, Weinberger, & Singer, 1981; Shin et al., 1997).

The following two questions were also coded to determine participants' physical activity motives: (1) "What would your most important goal be for doing your imagined physical activity?" and (2) "What would your reason(s) be for choosing to participate in your imagined physical activity?" Narratives were used in addition to these questions because they might offer more meaningful data than explicit self-reporting (McAdams, 1995; Westen, 1999). The narratives provided additional information regarding the content of participants' thoughts and feelings when they imagined being physically active.

Participants were coded as having body-shape motives (e.g., related to weight loss or body shape) if they indicated that they wanted to lose or maintain their weight, or if they wrote any of the following words in their open-ended responses: "shape," "calories," or "toning." Participants received a code of body-shape motive regardless of whether or not other motives were mentioned. Participants who did not use any of the above words were coded as having non-body-shape motives. The first author and a psychology doctoral student trained in coding analyzed the physical activity motives. There was very close agreement between the coders, $\kappa = 0.93$, $p < .01$. The two discrepancies were discussed until an agreement was reached.

Physical Activities Reported

Participants were asked what specific physical activity came to mind during the imagination

exercise. Different types of physical activities were coded and compared across groups. Two main categories were evident from the physical activity categories reported: (1) walking and (2) equipment/classes. A physical activity was coded as “walking” if participants wrote about walking, regardless of whether it was done on a treadmill or outdoors. A physical activity was coded as “equipment/classes” if what participants wrote suggested any type of class (video or live), membership (e.g., aerobics, TAE BO[®], Curves[®]), or equipment (e.g., weights, elliptical trainer). These categories were not mutually exclusive. If participants wrote down an activity that fit into both categories, it was coded as both (e.g., treadmill walking).

Affect Toward Physical Activity

The PANAS-X Inventory (Watson & Clark, 1992) was adapted to measure participants’ affect toward physical activity. The PANAS-X is a frequently used measure that has adequate reliability and validity for assessing emotional states (Watson & Clark, 1994). Participants were instructed to “write the number that best describes the extent to which you feel that way when you think about the physical activity that you just imagined doing (tired, disgusted, etc.)” Ratings were made on a continuum from 1 (*Slightly or Not at all*) to 5 (*Extremely*). To create the Negative Affect toward Physical Activity Scale, items from the PANAS-X were summed together (e.g., irritable, guilty, scornful). Inter-item reliability for this scale was 0.89. Higher scores represented higher negative affect toward physical activity. The mean was 18.7 ($SD = 6.2$) and the scores ranged from 0 to 37.

Physical Activity Participation

Physical activity participation was assessed using a modified version of the Godin Leisure-Time Exercise Questionnaire (GLTQ; Godin & Shephard, 1985). The GLTQ has been used successfully across diverse populations and has a reported test-retest reliability in adults of 0.74 (Pereira et al., 1997). The GLTQ is a 1-week recall instrument that assesses light, moderate, and vigorous physical activity levels separately; a summary score is created by combining all three levels. As recommended (Masse et al., 1998), in order to collect more complete physical ac-

tivity data on women, some physical activity behaviors that are more commonly performed by women were integrated into the list of GLTQ items. (i.e., light housework, playing with children, light gardening, running after children, care of an older or disabled person, heavy house work, heavy gardening). To assess light, moderate, and vigorous physical activity levels, individuals were asked to estimate how many times during the past week they had participated in each activity listed under each level for more than 15 min. The total physical activity summary score was obtained by multiplying each level by the METs⁴ that reflected its intensity (mild/light = 3; moderate = 5; strenuous/vigorous = 9), after which all three levels were summed. Higher scores indicated higher levels of physical activity. The mean of the GLTQ in this study was 119.0 ($SD = 74.3$), and scores ranged from 0 to 424.

Body Mass Index

To explore the possible influence of BMI on the relationship between women’s physical activity motives and their participation, BMI was calculated as the ratio of participants’ self-reported weight (kg) to height squared (m^2) (Lean et al., 1999).

RESULTS

Physical Activity Motives and Participation

Twenty-six participants (44%) were categorized as having motives related to weight loss and/or body shape (body-shape); 33 participants (56%) reported motives that were not related to body shape (non-body-shape). There were no significant differences between participants who had body-shape and non-body-shape motives in BMI or demographic variables, including age, ethnicity, education level, employment status, marital status, and whether they had children at home. See Table I for examples of the reported non-body-shape and body-shape motives. It was interesting to note a general difference in valence when the narratives from the two different motive groups were examined. Compare the positive tone in a non-body-shape participant’s narrative (“Feels good to be moving; feels good to be

⁴A way of measuring physical intensity is by the metabolic equivalent, or MET (Katch & McArdle, 1993).

Table I. Examples of Non-Body-Shape and Body-Shape Motives

Motive type	Narrative	Motives	
		Activity goal	Reasons for goal
Non-body-shape	I am happy because I am moving. I feel great and awake. My body feels wonderful because it is moving. I am relaxed.	Feeling good physically and mentally.	Feeling good and strong.
	Feels good to be moving; feels good to be outside.	Walk regularly so my legs feel better, I feel stronger, I sleep better.	Waking is easy, I just have to go out the door.
	I am relaxed. I am free. This is great.	Enjoy it	Enjoy it.
	Enjoying the air view, scenery. Feeling at peace. Feeling invigorated	Pleasure of outdoors	Enjoyment; view of flora and fauna.
	I'm doing something good for my body and mind. I like the rhythm.	Aerobic exercise.	Easy convenient enjoyable.
	I feel like I'm enriching the quality of my life. If I'm out in the air I feel grateful to be in touch with other forms of nature.	Relaxing and feeling good about myself.	Exercising my feet, legs, and arms.
	It's good for me. The kids are with me.	To have fun	I'm with my family outside.
	Body-shape.	How out of shape I am. My legs hurt. Why did my friend talk me into this? When I'm done that wasn't that bad and I feel OK.	To bike without getting winded.
Hot, trying to remember to breathe evenly, breathlessness.		Weight loss.	Weight loss.
I'm feeling winded, and uncomfortable. I do feel better for making an effort to get into shape hoping that I can keep it up.		To get into better shape	Alone.
I need to be walking. Having sex all day. I would like to start running.		To loose this weight I'm tired of carrying around.	Losing weight. Toning muscle.
I'm staying fit. I'm strong. I'll be glad when it's over.		Weight loss.	Motivation.
This is really good for me. I wish I could do this more often. Proud of myself.		To do it regularly.	Lose weight, get fit.
Feels good, I'm glad I'm jogging and if I can go 50+ minutes. I need to do this more often.		To feel mentally well.	Increase feeling of well-being. Decrease weight, improve endurance.

outside.”) with a body-shape participant’s (“I’m feeling winded and uncomfortable. I do feel better for making an effort to get into shape hoping that I can keep it up!”) The use of “I should,” which was seen more frequently in the body-shape motive group’s narratives, is indicative of a more introjected, or controlled, motivation. In contrast, the non-body-shape participants’ narratives exhibit a more intrinsic motivation (Deci & Ryan, 1985) because they more commonly refer to feeling good and enjoying being

physically active by using expressions such as “I feel great and awake.” and “Feels good to be outside.”

As predicted, independent *t*-tests showed a significant relationship between participants’ motives for physical activity and their participation, $t(57) = -2.87, p = .006$. Figure 1 shows the mean differences in physical activity participation between the two groups defined by physical activity motives: non-body-shape = 142.1 ($SD = 75.8$); body-shape = 89.6 ($SD = 61.7$). Multiple regression results showed that

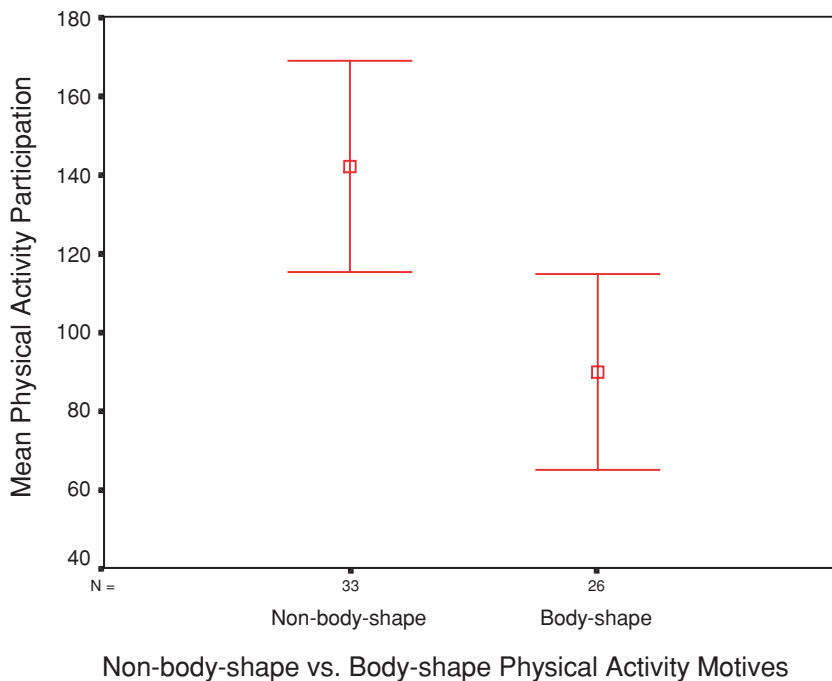


Fig. 1. Mean physical activity participation by physical activity motives.

even when BMI was controlled, $\beta = -.15$, $p = .26$, body-shape motives were significantly and negatively related to physical activity participation, $\beta = -.35$, $p = .007$, $R^2 = .14$.

Relationship of Affect with Participation and Participants' Physical Activity Motives

Bivariate correlations showed that participation in physical activity was inversely associated with a negative affect toward physical activity, $r = -.28$, $p = .03$. There was a trend for higher negative affect toward physical activity in participants who cited body-shape motives for being physically active, $t(56) = -1.9$, $p < .07$.

Affect as a Mediator of the Relationship between Physical Activity Motives and Participation

For a variable to have a mediating effect (Baron & Kenny, 1986), the following conditions need to be met: (a) the predictor variable (physical activity motives) must be significantly related to the outcome (physical activity participation); (b) the predictor variable (physical activity motives) must be related to the mediator (negative affect toward physical

activity); and (c) the mediator (negative affect toward physical activity) must affect the outcome variable (physical activity participation) when the predictor variable (physical activity motives) and the mediator (negative affect toward physical activity) are entered into a regression simultaneously. We showed that the physical activity motives variable was marginally related to negative affect (precondition b). To test for preconditions a and c, we conducted a hierarchical regression to predict physical activity participation with physical activity motives as the first step; negative affect toward physical activity was added at the second step.

As can be seen from the results in Table II, the motives variable was significantly related to physical activity participation (precondition a). When negative affect was included in the analysis, the beta value for physically active motives decreased from

Table II. Hierarchical Multiple Regression Parameter Estimates (Beta Values) for Predicting Physical Activity

Step	Predictor variables	R^2	β
1	Physical activity motives	.13**	-.35**
2	Physical activity motives	.17	-.31*
	Negative affect		-.21

* $p < .05$. ** $p < .01$.

Table III. Physical Activities Reported by Non-Body-Shape and Body-Shape Participants

Activity	Participants	
	Body-shape	Non-body-shape
Swimming	1	2
Running/jogging	6	3
Biking	2	1
Hiking	0	3
Equipment/classes	12	4*
Walking (any type mentioned)	4	18*
No activity written down	1	1
Misc (water skiing, tennis, gardening, etc.)	1	3

* $p < .01$.

$\beta = -.36, p < .01$ to $\beta = -.31, p < .05$. However, the physical activity motives variable was still significantly associated with participation, and the relationship of negative affect with participation was no longer significant, which signifies no mediation. These results suggest that negative affect toward physical activity does not mediate the relationship between body-shape motives and decreased physical activity participation in this sample.

Physical Activities Reported

Table III shows the different physical activities reported by participants with body-shape and non-body-shape motives. Chi-square analyses showed a significant association between exercise motives and reported walking and between exercise motives and the use of classes/memberships. Sixteen percent of participants with body-shape motives and 55% of participants with non-body-shape motives reported walking, $\chi^2 = 9.0, df = 1, p < .01$. In addition, 52% of participants with body-shape motives and 12% of participants with non-body-shape motives reported using equipment or participating in classes/memberships, $\chi^2 = 9.2, df = 1, p < .01$. Although there were not sufficient numbers in other categories to conduct analyses, twice as many body-shape participants ($n = 6$) as non-body-shape participants ($n = 3$) wrote down “running/jogging.”

DISCUSSION

Women experience cultural pressure to be thin and attractive, and they report high body dissat-

isfaction throughout their lives (Tiggemann, 2004). Despite these seemingly influential motivators, our data showed that study participants who had body-shape motives for being physically active reported less physical activity participation than did those whose motives were related to things other than body shape, toning, or losing weight.

Because being active impacts many life areas, it is likely that women have many concurrent motives for being physically active. Many women have motives for exercising such as “stress reduction” and “enjoyment,” both of which are associated with physical activity participation among women (Eyler et al., 2002). It is logical to expect that participants who have *both* non-body-shape motives and body-shape motives would have multiple reasons for exercising, and thus be sufficiently motivated to be active. However, these data suggest that there are negative effects on midlife women’s participation from having body-shape motives even when they have other non-body reasons for being physically active. Because sociocultural norms influence attitudes and behaviors (Brownlee, Leventhal, & Leventhal, 2000; Winter, 1996), exercise motives that reflect sociocultural norms and gendered pressures might be especially influential. They may supercede the other types of non-body-shape motives that midlife women have, and they may exert a greater influence on women’s physical activity participation or lack thereof.

Women place less importance on their bodies as they age (Tiggemann, 2004; Tiggemann & Lynch, 2001). Moreover, many midlife women have experienced years of failed attempts to achieve an idealized body shape and weight through exercising. Despite these seemingly powerful reasons for not having body-shape motives in midlife, almost one-half of our sample had body-shape motives for exercising. This supports our contention that body-shape and weight-loss motives for being physically active among midlife women may reflect the sociocultural pressure to achieve an ideal that women face throughout their lifetime (Chrisler & Lamont, 2002; Mutrie & Choi, 2000; Nilges, 1997; Theberge, 1997). In addition, midlife women may continue to have body-shape motives because they are influenced by images and messages prevalent in the marketing and commercialization of exercise and fitness (MacNeil, 1988; Theberge, 1997).

Externally motivated, body-focused motives that are prominent in the media, and reflect cultural ideals, may be associated with *initiating* exercise programs but may not related to long-term

maintenance of physical activity among some midlife women (Biddle & Mutrie, 1991; Ingledew, Markland, & Medley, 1998; Ryan et al., 1997). If exercise is inherently tied to achieving unrealistic weight-loss or body-shape motives, false hope and eventual feelings of defeat might cause midlife women to drop out (Polivy & Herman, 2000)—until the next surge of motivation to “try one more time” occurs.

According to Self-Determination Theory (Deci & Ryan, 1985), exercise motives related to achieving sociocultural norms would be internally conflicting, and might be associated with less intrinsic motivation and less optimal behavioral self-regulation (Ryan & Deci, 2000). This theory suggests that women who exercise in an attempt to meet cultural expectations would have an “introjected,” or controlled, form of self-regulation which derives from an avoidance of anxiety and guilt, and is based on external contingencies or intra-psychic forces (Biddle & Mutrie, 2001). This type of regulation is characterized by comments seen in the narratives of participants with body-shape motives, comments such as “I should exercise” (Ryan, Connell, & Grolnick, 1992). Given this, it is not surprising that the greatest motivator for exercising in one study among inactive women was “weight loss,” whereas it was “well-being” among active women (Jacobs Institute of Women’s Health, 1998).

Physical activity motives related to body shape and appearance reflect deeper sociocultural meanings that are portrayed in the media which encourage women to internalize a sexualized view of themselves and to self-objectify. Self-objectification theory suggests that women are socialized to view themselves from an observer’s perspective (Fredrickson & Roberts, 1997; McKinley, 1996). There is supporting data that body-shape motives reflect women’s self-objectification. In one study there was a high correlation ($r = .78, p < .01$) between self-objectification and exercising for appearance reasons among young, college-aged women (Strelan et al., 2003).

In contrast to our findings, Strelan et al. (2003) also reported that their participants were most likely to attend the fitness center *for* appearance-related reasons. The results of their study (of a sample recruited from a fitness facility) and others (Cash et al., 1994; Finkenbergh et al., 1994; Frederick & Ryan, 1993) suggest that appearance- and body-focused motives are a positive influence on exercise participation. However, most of the research that shows this positive association between exercise and body-focused motives has been conducted with

university-age women, and/or women who are physically active. Young and physically active women may feel optimistic about achieving their body goals because they more closely approach cultural appearance norms than women in midlife do (McKinley, 1999). Many studies also suggest that appearance-, weight-, and body-shape motives are positively associated with increased social physique anxiety, depression, and anxiety, in addition to reduced self-esteem and body satisfaction among young women (Frederick & Morrison, 1996; Frederick & Ryan, 1993; Strelan et al., 2003). However, there is little research about these questions among midlife women.

Physical activity is a behavior that continuously conflicts with competing needs and goals (Maes & Gebhardt, 2000). Therefore, midlife women whose purpose for being physically active is tied to improving their body shape in some way (e.g., weight loss, toning) may not prioritize and make regular time for physical activity on a daily basis even though they want to look better. It might be particularly difficult to make body-shape motives an ongoing high priority if past efforts resulted in perceived failure.

This idea is supported by the literature on behavioral self-regulation, which shows that the different purposes and goals for which people strive represent different aspects of their selves (Carver & Scheier, 1998). Thus, exercise motives related to body shape and appearance might not be as compelling for some women when they compete for limited time during the day with goals that represent other aspects of the self that are more important or pressing (e.g., goals related to family or work). Because the subjective value of people’s behavioral choices needs to be understood within the context of their other life goals and choices (Eccles, 1994), behavior needs to be understood as an expression of the self. According to this interpretation, the way that individuals define their roles and life responsibilities will determine their daily behavior (Allport, 1961; Little, 1999).

Ours is the first study to analyze body-shape physical activity motives compared to all other motives combined. This was an important analytic strategy. Rather than just investigating the relative effect on participation of having body-shape motives among other motives, as has been the predominant analytic approach (Cash et al., 1994; Ryan et al., 1997), our strategy permitted us to examine the specific effects of body-shape motives on physical activity participation compared to all the other types of motives participants mentioned. In addition, rather

than having participants endorse pre-determined categories, inductive, qualitative methods were used that did not prime participants to report specific reasons for being physically active. Because of this technique, our qualitative data facilitated the uncovering of participants' idiographic motives for being physically active.

As hypothesized, the data showed that negative affect toward physical activity was inversely associated with participation. This is not surprising given that emotion and motivation are thought to be two sides of the same coin, such that emotions are considered to be evidence of motivational potential (Allspach & Burgoon, 2000). Participants with body-shape motives tended to report greater negative affect toward physical activity than did those with non-body-shape motives, although the difference did not reach statistical significance ($p < .07$). This is in line with our hypothesis. It may be that the stress a woman experiences from trying to fit exercise into her tightly scheduled day causes negative affect toward being physically active.

Alternatively, women with body-shape motives may plan to exercise at high intensities in order to burn more calories and obtain the unrealistic body ideals promoted in our culture (Nilges, 1997; Theberge, 1997). Our data support this idea. Compared to the participants with non-body-shape motives, fewer participants with body-shape motives imagined walking, and more reported running. This is important to consider because high-intensity exercise is associated with worsening mood. One study showed that midlife women walking on a treadmill reported decreased positive mood when the intensity of their pace increased (Ekkekakis, 2004; Joens-Matre, Lind, & Ekkekakis, 2004). Other research also suggests that higher intensity exercise is associated with undesirable changes in mood (Berger & Motl, 2001; Berger, Motl, Martin, Wilkinson, & Owen, 1999; Berger & Owen, 1992).

Experiencing decreased positive valence or increased negative affect during physical activity could result in a woman developing negative affect toward being physically active, which she might experience when participating or even when just thinking about participating in physical activity (Shin et al., 1997). Because behavior (or deciding not to behave a certain way) is motivated by anticipating which emotions will occur (Frijda, 1986), women's affect toward physical activity could be highly influential in whether exercise is adopted, maintained, or discontinued (Marttila, Laitakari, Nupponen, Miilunpalo,

& Paronen, 1998). This idea is supported by a study that showed that sedentary adults who were prescribed high-intensity walking actually did significantly less physical activity than sedentary adults who were prescribed moderate-intensity walking (Perri et al., 2002).

Contrary to predictions, however, negative affect toward physical activity did not mediate the relationship between body-shape motives and decreased participation. Instead, body-shape motives continued to have significant effects on participation after we controlled for negative affect toward physical activity. This finding further supports the contention that the effects from body-shape physical activity motives may be powerful enough to override other related participation correlates among midlife women.

In line with previous studies (Cash et al., 1994), there was no significant relationship between BMI and body-shape motives for being physically active. This finding further supports the idea that normative sociocultural physical activity meanings are internalized by midlife women and translated into body-shape motives for being physically active, regardless of women's actual body size. These data also show no significant relationship between BMI and physical activity participation, and body-shape motives were associated with lower physical activity participation when the participants' BMI was controlled for in the regression. That BMI was not related to physical activity participation in this sample is not surprising because the inverse relationship between body weight and activity commonly reported in the literature is less consistent in women than in men (Fogelholm & Kukkonen-Harjula, 2000).

The cross-sectional study design limits the interpretability of the findings. One plausible alternate interpretation is that women who are less physically active have greater negative affect toward physical activity, as opposed the direction we hypothesized. In addition, it might be that women who participate less in physical activity are led to have body-shape motives rather than the reverse. However, this alternative explanation seems less plausible than the direction we hypothesized. Prospective research is needed to clarify this issue.

These results may not be generalizable to women different from this homogenous sample, most of whom were European American, educated, midlife women. It is important to investigate this question with other groups of women. Studying this question is especially important to do with ethnic minority women because research shows that they

are among the least physically active groups, and, moreover, they are at high risk for developing many chronic illnesses that physical activity helps to prevent (Centers for Disease Control and Prevention, 2004, #686; U.S. Department of Health and Human Services, 1996, #201). Because the majority of data on motives and physical activity participation has been collected on European Americans we can only speculate about how body-shape motives might impact physical activity among other groups of women.

One study showed that lesbians are less vulnerable to the culturally dominant body dissatisfaction and beauty and thinness pressures (Siever, 1994). However, other research suggests that lesbians also struggle with body image issues, even if lesbians are, in general, less accepting of dominant cultural norms (Cogan, 1999; Heffernan, 1999). The more lesbians internalize beauty norms, the more concern they have about their weight and appearance (Cogan, 1999). Regardless of whether lesbians are more or less dissatisfied with their bodies than heterosexual women are, research suggests that lesbians and bisexual women are less likely to exercise for weight loss and aesthetic reasons and are more likely to exercise for health, fitness, and functional reasons (Heffernan, 1996).

Among lower-income African American women, however, exercising to lose weight might be a compelling motive given the high prevalence of diabetes and cardiovascular disease risk in this group (Centers for Disease Control and Prevention, 1993). Despite this, the barriers to exercise that lower-income minority women face (e.g., fatigue, a perceived need for rest after working in hard physical jobs, and care-taking responsibilities) might be difficult for many to overcome (Eyler et al., 2002; King et al., 2000).

Data also show that African American women are generally more accepting of different body sizes, and report less social physique anxiety, than European American women do (Hall, 1998; Kumanyika, Wilson, & Guilford-Davenport, 1993; Russell & Cox, 2003). African American women may be less susceptible to the cultural pressures faced by European American women (Russell & Cox, 2003), and they may not find body shape as important as other exercise motives, such as health and well-being. However, there is also evidence that women of all ethnic groups are vulnerable to cultural thinness norms (Shaw, Ramirez, Trost, Randall, & Stice, 2004). One study reported that, among African American undergraduates, women

more greatly endorsed beliefs that exercise assists with weight reduction and appearance than did men (Blanchard et al., 2003).

Self-presentational concerns could have influenced the specific motives the women in our study reported. Participants might have written that they wanted to exercise to “feel good” or “to tone up” because they actually believed this or because of a social desirability bias. In addition, it should be noted that we do not know the reason participants had body-shape motives because we did not collect data on their higher order goal, or their *reason* for wanting to shape their bodies (e.g., for health or appearance). A given behavior has different psychological meanings, depending on what particular purpose it is intended to serve (Carver & Scheier, 2000). It might be that some participants who exercised to lose weight or to change their body shape did so with aims to improve their health rather than to meet cultural expectations and thinness norms. However, exercising for health reasons might also be associated with decreased participation among women because many have an ethic of care for others and experience a lack of entitlement to focus on themselves (Henderson, 1991). This may make it challenging for them to prioritize their own health and self-care needs, and, thus, they may not take the time to practice health behaviors such as exercise on a regular basis (Clark, Dodge, Janz, & Garrity, 1994; Harrington & Dawson, 1995).

The small sample size prevented us from investigating whether different types of body-shape motives have distinct relationships with physical activity participation. It might be that women who want to “lose weight” or “get into shape” do different amounts of physical activity than women who aim to “maintain” their current body shape or size. Larger sample sizes are needed to explore this question.

It is essential to understand how body-shape/body-weight exercise motives influence participation given the national priority to prevent more Americans from becoming obese (National Institutes of Health Obesity Research Task Force, 2004) and the increased focus on sustained physical activity as an important way to reduce and maintain weight (U.S. Department of Health and Human Services, 2004, #600). Although the promotion of physical activity as a method of weight loss is logical, data from the present study and others (Silberstein et al., 1988; Ryan et al., 1997) suggest that promotion efforts that target weight loss and/or body shape might be detrimental to exercise participation and

mental health among women. It may be that body-shape motives inherently reflect the culturally dominant appearance pressures women face (Chrisler & Lamont, 2002; Strelan et al., 2003; Theberge, 1997), and thus have a subsequent negative effect on women's motivation (Ryan & Deci, 2000; Ryan et al., 1997), exercise participation (Ryan et al., 1997), and well-being (Frederick & Morrison, 1996). Instead, increased participation, which results in improved wellness, health, and fitness might better result if midlife women can shift their focus to the intrinsic value of being physically active (Gaesser, 2004; Segar, Jayaratne, Hanlon, & Richardson, 2002) and learn to celebrate the capabilities of their bodies (Chrisler & Lamont, 2002).

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