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Explaining Long Term Exercise Adherence in Women Who Complete a Structured Exercise Program

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The purpose of this study was to qualitatively examine factors related to physical activity adherence to understand why women continue to participate in long-term exercise after completing a structured exercise program. Data were collected from focus groups, interviews, and e-mails, and analysis used grounded theory. The central category related to physical activity adherence was self-worth. Motivation, activity enjoyment, priorities, body image, ability to access support, and self-regulation skills had an impact on the self-worth of nonadherers and adherers. Women must value themselves enough to continue to participate in physical activity once they start. Exercise and fitness professionals are encouraged to use strategies to increase self-worth and long-term adherence to physical activity. Some recommended strategies include (a) increasing motivation and enjoyment relative to activity, (b) making activity a high priority in a woman's life, (c) improving or deemphasizing body image, (d) increasing a woman's ability to access support, and (e) facilitating the use of self-regulation strategies. This study is the first to examine qualitative perspectives of exercise adherence among women who completed a structured exercise program. Several concepts related to adherence presented in the quantitative literature are confirmed and enhanced in this study.

Key words: physical activity, qualitative, self-worth

Physical activity (PA) participation has well known health benefits, such as reducing disease risk and enhancing well being (Blair, Cheng, & Holder, 2001; Eyler et al., 1997); however, many Americans fail to participate in the recommended levels (Ainsworth, 2000; Annesi, 2000; Burnham & Wilcox, 2002; Marcus & Forsyth, 2000). Thus, researchers have tried to determine why people who know the benefits of PA do not make it a regular part of their daily routine. Although individuals may start a PA program, only one of every two will continue (Jones et al., 1998; Marcus, & Forsyth, 2000; Morgan, 2001; Wen et al., 2002). Unfortunately, this high attrition rate typically occurs within the first 6 months of a program, often before any health benefits are realized (Ainsworth, 2000; Annesi, 2000).

Because so many people drop out of PA before attaining its benefits, there is a need to better define *adherence* to exercise and/or PA. Most health promotion professionals suggest the definition should be consistent with the maintenance stage of the transtheoretical model (e.g., 6 months of sustained behavior change; Bock, Marcus, & Pinto, 2001; Dishman, 1994; Dunn et al., 1999). In spite of this, suggestions for a time frame for adherence have been inconsistent. Some studies define it as 8 weeks, whereas others define it as 24 months. Given the need to clarify the length of time constituting adher-

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ence, the authors of this study operationally defined it as at least 6 months of regular PA participation. Long-term adherence is defined as at least 1 year of regular participation, although additional years of participation may also constitute long-term adherence.

There is also a need to examine adherence in women who have participated in structured exercise programs and continued to exercise after completing a program. Many studies have included only men or men and women combined (White, Ransdell, Vener, & Flohr, 2005), making it difficult to discern specific adherence factors unique to women. There is evidence, however, that women have a more difficult time participating in and adhering to PA then men, making them an important population to investigate. In 2002, only 30% of women ages of 25–64 years participated in regular leisure-time PA compared to 36% of men (U.S. Department of Health and Human Services (USDHHS) 2004). Additionally, women tend to be an underserved population (USDHHS, 2004). These factors contribute to the need to focus on women.

To learn more about PA adherence in women, it is imperative to consider qualitative and quantitative findings (Eyler, 2002). Not only can researchers use statistical results to design, implement, and evaluate programs, but they can also use thoughts, feelings, and other verbal communication. The nation continues to struggle with an obesity epidemic, and low PA levels are a major contributing factor. Additionally, most studies have been quantitative and have not provided answers needed to increase long-term PA adherence in women. Adding a qualitative component is beneficial to learn more about why women do or do not adhere to exercise. Such inquiry will facilitate a better understanding of participants' experiences, opinions, feelings, and knowledge related to the research question (Eyler, 2002; Patton, 2002) and may uncover new findings related to adherence that have not been previously discovered.

Previous quantitative researchers have had some success in identifying barriers associated with low PA levels in women, yet there are many unanswered questions and only minor improvements in long-term adherence. Factors such as a lack of time or motivation, fear of injury, cost, and boredom (Salmon, Owen, Crawford, Bauman, & Sallis, 2003; White et al., 2005) may be barriers to adopting a regular PA program. Unfortunately, few studies have examined facilitators of long-term adherence. Most studies are limited to 6 months or less (White et al., 2005), adding little to the knowledge about adherence beyond 6 months. More evidence is needed to delineate facilitators related to long-term PA adherence.

It is worthwhile to examine facilitators of short-term PA adherence (e.g., 6 months or less) with the belief that some factors may also be related to long-term adherence (e.g., 1 year or more). Facilitators related to short-term PA adherence include social support, education, enjoyment, and self-efficacy (White et al., 2005). Of the short-term facilitators, self-efficacy is arguably one of the most robust. An abundance of research supports self-efficacy as a major determinant of PA participation and adherence in women (McAuley & Blissmer, 2000; McAuley, Jerome, Marquez, Elavsky, & Blissmer, 2003; McAuley, Mihalko, & Bane, 1997). If women have high self-efficacy about PA, they are more likely to participate in it.

In addition to data supporting the impact of self-efficacy, or situation-specific self-confidence (Bandura, 1977; McAuley & Blissmer, 2000; McAuley, et al., 2003) on PA adherence, evidence suggests that self-worth may play a role in maintaining exercise behavior (McAuley et al., 1997). Self-worth is the evaluation of self, the sum of how well an individual does in specific areas based on personal values and standards (Fox & Corbin, 1989; Shavelson, Hubner, & Stanton, 1976). McAuley and colleagues (1997) reported small but significant changes in self-worth as a result of PA participation; however, this was related to the physical dimensions only. Research has predominantly focused on the physical self to enhance exercise behavior; it is possible other dimensions (emotional, social, and academic self) play an important role as well. For example, the social dimension of self-worth may be enhanced through interpersonal relationships that provide social and emotional support, thus enhancing self-worth and exercise adherence (Annesi, 2000; Peterson, Yates, Atwood & Hertzog, 2005; Wills & Shinar; 2000). Futhermore, improving the academic and emotional dimensions of self-worth (i.e., knowledge about PA and feelings about oneself) through education and behavior change strategies may help a woman adhere to PA long term. Self-worth may increase with exercise, but little research has focused on improving psychological factors *before* exercise participation. A woman may need to have a strong sense of self-worth *before* beginning exercise to increase the likelihood of exercise adherence.

Although various themes have emerged, the literature remains inconclusive about why some women adhere to PA over the long term and others do not (Dishman, 2001). Therefore, the present study sought to address the gaps in the literature by qualitatively examining factors related to women's adherence to exercise or PA after completing a structured exercise program.

Method

Participants

Eligible participants were those who completed UTAHFIT (U Try Active Habits and Fitness), a 12-week PA behavior change program, within the previous 3 years. UTAHFIT was a pilot, single group, PA program

for sedentary faculty and staff at The University of Utah. All participants were classified as "sedentary" (< 500 kcal/week in leisure-time PA) prior to starting the program. The UTAHFIT program included group-based cognitive strategy sessions that emphasized goal setting, self-monitoring, and positive self-talk once a week and participation in physical activities two to three times a week (supervised and at home) to increase PA and improve various psychological variables. Details of this program are summarized in White and Ransdell (2003).

Women were asked to participate if they had finished the UTAHFIT PA intervention. Those who agreed to participate in the study completed an informed consent form according to the standards established by the Institutional Review Board at The University of Utah. Of the 75 UTAHFIT participants, 41 met the inclusion criteria and were invited to participate. Twenty-four agreed to participate in the study. However, 1 had a family emergency, 3 had time constraints, and 1 did not attend the last focus group, resulting in a total of 19 participants attending all of the focus groups. All were Caucasian, between 26 and 66 years of age (M = 46 years, SD = 12.7) and were residents of Salt Lake City, UT. Most women were married (74%), college graduates (84%), and had an income between $35,000 and $74,999 (64%). Thirty-one percent were practicing Mormons.

Questionnaires

Participants completed a demographic and health history questionnaire and were interviewed using the Modifiable Activity Questionnaire (MAQ) to determine their adherence classification. The MAQ assesses historical, past year, and past week activity and is reliable and valid for adults (Kriska et al., 1990). For this study, long-term PA adherence was defined as continued regular participation in moderate to vigorous leisure-time PA 150 min/week or more for at least 1 year prior to participating in this study. Participants with MAQ scores lower than 150 min/week were classified as nonadherers. These criteria were used because: (a) according to the transtheoretical model, those who participate in exercise longer than 6 months are considered to be in the maintenance stage; (b) the current public health recommendation is for individuals to participate in at least 30 min of moderate to vigorous intensity PA on most, if not all, days of the week (i.e., 150 min/week or more; Buckworth & Wallace, 2002; Pate et al, 1995; Blair, LaMonte, & Nichaman, 2004); and (c) more research is needed to assess long-term adherence.

Design

Participants were divided into the following focus groups to obtain different perspectives based on their level of PA adherence (e.g., groups consisting of only adherers or nonadherers) and mixed perspectives (e.g., combination group): (a) adherers (one group), (b) nonadherers (two groups), and (c) a combination of adherers and nonadherers (one group). The researchers felt it was important to have one group that included both adherers and nonadherers to provide the opportunity for dialogue between the two groups, where participants could consider their views in the context of opposing views. Each group consisted of 4 to 6 participants, with a total of 7 classified as adherers and 12 as nonadherers.

Focus groups were the primary source of data collection, because they allowed participants to hear each other's responses and comment beyond their original responses. Interaction among participants can enhance data quality (Patton, 2002). Guidelines suggested by Krueger (1998) were used to collect focus group data. Questions were developed using the adherence literature, and the same semistructured format was used for all four groups (White et al., 2005). As recommended by Krueger (1998), the groups started with questions to help participants get acquainted and feel comfortable, then, introductory questions were used to begin the discussion (e.g., when you hear the term physical activity, what comes to mind?), key questions were aimed at gaining insight on adherence (e.g., what are some things that have contributed to your lack of physical activity?), and ending questions ensured all points had been discussed and reached closure (e.g., if you could tell health professionals the one thing that you need to be regularly physically active, what would it be?). These questions were the same for each focus group. The first author served as a moderator for all discussions, and a transcriber took notes all focus groups. The transcriber tape recorded the sessions, with permission from all participants.

Two triangulation sources were used to cross-check the consistency of information and ensure data quality. Following the sessions, one adherer and one nonadherer were randomly selected to participate in an individual interview. Participants were asked the same questions as in the focus groups, and the same format was used for individual interviews. Information from the individual interviews was compared to confirm information gained in the focus groups. Other studies have used this method as well (Collins et al., 2006; Vu, Murrie, Gonzalez, & Jobe, 2006). Four participants in the focus groups made ambiguous statements, so their statements were clarified via e-mail, which included the same questions asked in the focus group (Patton, 2002).

Data Analysis

The first author used grounded theory guidelines (open, axial, selective coding) to analyze all data (Strauss

& Corbin, 1998). During open coding, line-by-line, sentence, and paragraph analyses were used. This was continued until all data were saturated (Creswell, 1998). All codes were reviewed and compared with those of a coinvestigator. The investigators agreed on most codes; however, discrepancies were addressed by using the code closest to the actual text in the data. During axial coding, smaller categories (subcategories or themes) emerged. Relationships were also generated between the categories and subcategories. In selective coding, data were integrated and refined into one central category. A coinvestigator and the primary investigator reached consensus on data analyses to ensure correct coding of themes, data saturation, and relationships of categories as recommended by Strauss and Corbin (1998).

Results

The purpose of this study was to qualitatively examine factors related to long-term PA adherence among women. The researchers found that adherence or nonadherence to PA was related to the women's self-worth. Major categories contributing to self-worth (the central category) are listed in order, based on how frequently they appeared. The number of quotes for each major category is listed in parentheses. The major categories for adherers were: motivation (35), need for support (23), body image (21), enjoyment (17), prioritizing (13), and goal setting (6). The major categories contributing to self-worth in nonadherers were: need to feel supported (69), responsibilities (49), lack of time/prioritizing (46), poor body image (36), guilt (22), desire for a better quality of life (16), lack of motivation (14), and lack of PA enjoyment (11).

Several major categories were present for both adherers and nonadherers and included motivation (or lack thereof), enjoyment of activity, prioritization of activity, body image, accessing support, and self-regulation. Following are highlights of the major categories and how they were operationalized. Then, unique major categories for each group were summarized.

Nonadherers' and Adherers' Self-Worth

Nonadherers' comments indicated they tended to have low self-worth, which was a major contributor to their physical inactivity and prevented them from participating in PA. Nonadherers were more likely to be filled with self-doubt, insecurities, negative self-talk, and fear of failure. Many women worried about how others perceived them, including family members (e.g., "It's hard not to compare yourself to everyone else. You are thinking, am I doing this right? You are thinking about what other people perceive of you;" and "I never got committed to a fitness center, because I perceive those people beyond my level. I expect to be babied because I am overweight").

Nonadherers were less likely to make themselves a priority and less likely to make their PA participation a priority based on how they felt about themselves. To the contrary, adherers felt good about themselves, put their need for a high quality of life first, and were more likely to be committed to PA. Adherers believed they deserved to spend their time and energy being active (e.g., "I'm gonna go to the aerobics class because I want to. I'm worth the time. I haven't given myself that time for a lot of years of my life").

They were more inclined to be healthy so they could enjoy their lives with their loved ones. Adherers were more likely to make feeling good a priority, and to feel good, they had to remain active. Their commitment to PA occurred regardless of their expectations and responsibilities (e.g., nurturing or taking care of family-, job-, or church-related needs), occasional lack of enjoyment, and lack of time

Major Categories and Themes

Motivation. Motivation was a major category for adherers and nonadherers. Lack of motivation prevented nonadherers from participating in PA for two major reasons: (a) they believed their classes lacked momentum, and (b) they failed to lose weight in previous attempts. The theme of frequency was about getting into the habit of "something." The nonadherers tended to believe that more frequent activity would help them get used to doing something and, thus, make it a habit. Unfortunately, they were more inclined to believe that classes or programs in which they had participated in the past prevented the habit from forming. Examples of some activities that slowed the momentum included: (a) classes that ended after 12 weeks, (b) classes that stopped but started again after 2 weeks or longer, (c) classes canceled by instructors on any day for any reason, and (d) classes that did not meet more than twice a week.

The repeated failure to lose weight in previous PA programs seemed to make them believe there was no point in being active, especially if they were not going to lose weight. This may have also contributed to poor body image and low self-worth that contributed to a lack of PA.

The large number of responsibilities these women had and the associated guilt about wanting to participate in PA also influenced their lack of motivation. Nonadherers had responsibilities and expectations they believed kept them from being active (i.e., nurturing or taking care of their job, coworkers, partners, spouses, and families). These led to poor body image and feelings of

guilt for not pursuing a more active lifestyle. This process seemed to be a continuous downward spiral and left them with no perceived time to participate in PA.

Clearly, this desire for a better quality of life did not seem as much of a motivator for nonadherers as it was for adherers. Nonadherers seemed to have the desire to be in better shape and understand that activity would relieve stress, yet they still made excuses about why they could not be active (e.g. lack of time, motivation, lack of enjoyment). The nonadherers desired a better quality of life and wanted to be fit; however, they did take the steps to do it (e.g., "I know exercise will help me cope, but I just don't do it;" and "I want my body to keep up with my head. I want to be a more fit older person").

In adherers, a strong sense of self-worth, which facilitated continued participation in activity, seemed to influence motivation. Motivation in adherers was associated with two themes (a) enjoying how exercise enhanced their quality of life, and (b) fearing a bad quality of life without exercise. Adherers liked the way PA made them feel, how it enhanced their quality of life, and how it contributed to their enjoyment of life (e.g., "My motivation is wanting my grandkids to want their grandma to go with them;" "I want to be somebody who enjoys living a healthy life, to look forward to exercise and being fit;" or "I used to have vanity but not anymore. Now the most important thing is just being healthy").

Adherers were also motivated by the fear of not being able to perform activities that they enjoy. The adherers did not want to live their lives like they did before they were active. For example:

> Motivation is always a real problem for me. I am not motivated by having the best body in the world because it is too painful to get there and maintain it, but I am afraid of being incapable of doing what I like, so I accept that amount of pain every day.

Enjoyment. Nonadherers were less likely to enjoy PA than adherers. For example, nonadherers had a long list of physical activities they did not enjoy and several mentioned distaste, negative effect, and boredom with walking, running, and using stationary exercise equipment. This distaste was greater when doing PA alone (e.g., "Walking is a waste of time. My mind is going way too much to focus on walking;" and "Getting on a machine doing something for no reason other than just exercising leaves me cold."

At the opposite end of the spectrum, adherers seemed much more positive about exercise. They were more likely to enjoy PA than nonadherers, and when they did not enjoy it, they devised "strategies" to remain active. Their most important strategy was to overlook the lack of enjoyment, because they saw the value in PA (e.g., "I don't necessarily like activity, but I value it. It allows me to go after my granddaughter when she runs away from me"). Nonadherers never mentioned such strategies.

A second strategy adherers used was to make PA convenient. Even if they did not like it, they could make participating in activity convenient so they would continue to exercise. Some adherers had all their clothes in a locker, whereas others used the gym for convenience instead of the outdoors (e.g., "I dislike some of it. I choose to do some things because I find it's easier to go to the gym;" or "I have a locker at work so I can ride it [bike] to work, shower, and change").

A third tactic was to increase enjoyment by trying a number of activities until they found some they enjoyed. The adherers claimed they would more consistently participate in an activity if they were "hooked." Being hooked on activity seemed to be related to the environment, how participants felt about themselves in that environment, and how much fun they had (e.g., "There is one thing I love doing, so I will get up early and go do it. I kept taking classes till I found the right match for me").

Priorities. PA was a lower priority for nonadherers than adherers. They did not want to make arrangements to get up early or get home later in order to participate in PA. Nonadherers were less likely to make time for activity as a result of their overwhelming responsibilities and their negative feelings about themselves.

> —I just don't see adding an extra activity to my schedule on a daily basis. I've got to prioritize my time to get out and exercise. Sometimes it just doesn't work that way.
> —I find I have to do it right after work before I get started on everything else.
> When nonadherers did take time to do things away from their families, time was spent participating in other, more sedentary activities that were not related to PA.
> —After working hard all day, I want a break of doing something fun afterwards, reading a book, reading a paper. My job is mentally exhausting, and I just want to go home and do nothing.
> —Exercise is just not the first thing I would have to do.

The most frequently mentioned reasons for nonadherence were responsibilities and expectations as a woman, which were not deterrents for adherers. Nonadherers tended to believe that most women wanted to nurture and take care of their job, coworkers, partners, spouses, and families. Taking care of themselves was not a high

priority—especially when they had to care for everything and everyone else. Treating oneself badly and putting off one's needs for others was part of being a woman. Being active was unrealistic. It seemed difficult for the nonadherers to feel good about themselves when they had no time to themselves and lived to help other people. The nonadherers seemed to have more traditional views of women's role in society, and this influenced their PA adherence. Overall, responsibilities and expectations as a woman most likely contributed to low self-worth, which was manifested as guilt, desire for a better quality of life, poor body image, and lack of time.

> —I go to work. I come home: work, work, work. I didn't go to yoga one night because my husband needed me. I wanted to go, but he needed my help. So, I gave it up.
> —We go and do for our husbands and children and friends and other people, and we are the last person we take care of. Then we run out of time.
> —It would be nice if someone was making us feel worth it, because I think a lot of us feel like we're there to serve everybody else. It just sucks the life out of ya.
> —If I walk, I feel better, but just being away from my husband and my baby is really hard. I find that after work or before work when my husband's at home watching him [the baby], I feel guilty.
> —There are some days when I walk out of work feeling so guilty because I didn't finish everything.

Adherers' priorities, and possibly life philosophies, were different from the nonadherers. The prioritization of PA into one's day seemed to occur because these women valued being physically active. Adherers seemed to have more contemporary and less "traditional" views of women that carried over extensively into their lives and activity choices. If time became an issue or adherers knew it would interfere with exercise participation, they tried to plan ahead to prevent that from happening. Adherers' strategies included getting up earlier, driving straight to aerobics class from work, or bringing their workout clothes with them. Adherers found time for PA by taking time away from other parts of their lives.

An interesting aspect of adherers' priorities was the need for "me time." If they had time to themselves, they used it to participate in PA, whereas the nonadherers would rather not participate in PA. Adherers used the time for themselves to recap and think, claiming that physical activity allowed them to do this.

Body Image. Body image was another major category evident in both adherers and nonadherers and seemed to play a large role in how the nonadherers felt about themselves. Nonadherers negatively compared their bodies to others and claimed that negative self-talk went on in their head. One woman said a societal expectation of being a woman is that one's appearance should be feminine—if she is overweight, that is not feminine, which leads to feelings of failure related to low self-worth. Some examples follow:

> —Looks make me wish I was more active. I'm not happy with the extra lumps and bumps.
> —When I am at the gym, I am comparing myself to everybody else there. If that day there are 15 people who are bigger than me, I feel okay. If it's skinny people. . . . I know I am not as large as some people by any means, but I'm huge compared to what I used to be and it's depressing.

Compared to nonadherers, adherers were more accepting of who they were and what they looked like. Some felt the same expectations as nonadherers to be thin but knew they were healthy and that was all that mattered. The adherers were more likely to realize that looks and vanity were not as important as how they felt about themselves (e.g., "My body image is not the primary reason for exercising. My prime objective is to be active with my family;" or "It isn't about weight. It is about getting strong, being able to compete with somebody").

Accessing Support. Adherers and nonadherers mentioned the importance of accessing support, which included being accompanied by a friend, sibling, parent, or partner or receiving verbal encouragement from others, such as family members, doctors, or instructors. Two themes were associated with nonadherers' inability to access support. The first was a lack of resources. Nonadherers tended to be aware of their need for others to be active with them; however, they did not access people for support, were not active with friends or family members, did not take activity classes in groups, and they did not work with exercise, fitness, or health professionals. Some nonadherers expressed the need for reinforcement from others but worried about what others might think of them and were afraid to ask for support. A few nonadherers wished their families would support them; others were unwilling to do anything by themselves but were not trying to find anyone with whom they could be active.

> —I just need that social support, somebody to say, let's do this now. Someone who knows what you are going through, someone who isn't going to say do 50 when you can only do 10.

> —A friend of mine got me into it, and she left town and I quit.
> —I don't like walking, or anything I have to do by myself.

Another theme related to accessing support was having a supportive instructor, which usually meant continual, long-term reinforcement. Without this type of support, nonadherers were less likely to feel good about themselves and more likely to feel insecure and unnoticed—all contributing to their lack of adherence. Unfortunately, the nonadherers did not attempt to access supportive instructors, just as they did not access friends or family. Characteristics they needed from an instructor included being attentive to their fitness levels, providing alternative exercises for those who were not in "great shape," acknowledging that they had done a good job, and using long-term, continual reinforcement.

For adherers, feeling supported helped them feel good about themselves and added to their motivation to be active. Specifically, they were more likely to believe it was important to have instructor support. The act of using or accessing resources was the major difference between the adherers' and nonadherers' need for support. As mentioned, nonadherers were less likely to use support although they were aware of the need for it, whereas adherers had access to and used support resources because they knew they needed it. Adherers acknowledged that a way to ensure adhering to their PA program was to use social support; thus, they did what was necessary to get it (e.g., "I have a friend to go [exercise] with all of the time, which is good, because we reinforce each other;" and "I tried to meet with one of the women in class to work out together, our schedules didn't match, so I asked a coworker. Now she likes to go more than I do).

Adherers tended to believe the instructor's awareness of their lack of fitness, their need for special attention and support, and their ability to make activity fun played a large role in their desire to maintain PA. Adherers attended classes with the same instructor to ensure that support and feel like they fit in. Instructor support helped boost their confidence to try any type of activity. For example:

> I had this instructor who was great about [encouragement]. I had to follow her all over the valley to have her tell me I was doing a good job, [be]cause not everyone knew I needed that. Now I think I can go to any aerobics instructor and it's okay.

Self-Regulation. Self-regulation includes monitoring behavior (e.g., keeping logs), setting goals, and maintaining positive self-talk and is often suggested as a strategy to increase PA (Dishman et al., 2005; White et al., 2005). Nonadherers did not mention using self-regulation strategies. To the contrary, adherers repeatedly mentioned goal setting and other self-regulation means. Adherers found that goal setting helped them maintain activity and track their achievement. They felt a sense of achievement when challenging activities became easier (e.g., "Goal setting and attainment makes activity more enjoyable, to be able to be on a machine for a longer period of time and not feel like I'm gonna pass out;" and "For me, it's just doing it every day; that is my goal").

Discussion

The purpose of this study was to qualitatively examine factors related to PA adherence to understand why women continue to participate in long-term exercise after completing a structured exercise program. We found several major categories that were similar between adherers and nonadherers; however, the categories were operationalized differently in the two groups. Our study is the first to qualitatively examine adherence perspectives, and the results should help fitness and health professionals more effectively design strategies to help women remain active.

One of the most important findings was that participants' self-worth was associated with almost all factors related to adherence or nonadherence. Additional factors were: (a) increasing motivation to participate in PA with a belief it would enhance quality of life, (b) developing strategies that enhanced enjoyment, (c) emphasizing the need to prioritize PA above other demands, (d) maintaining a healthy body image, (e) accessing support, and (f) developing self-regulation skills.

Individuals who adhered to exercise after completing a structured exercise program were motivated by an intrinsic desire to improve their quality of life. Their behavior and perceptions were cyclical in that they participated in PA, felt good about their health, felt good about themselves, and, therefore, continued to participate. This process supports the important role of intrinsic motivation as part of Deci and Ryan's (1985) self-determination theory. A tenet of this theory is that motivation varies along a continuum from intrinsic (participating for the enjoyment and satisfaction of the behavior itself) to extrinsic (participation based on contingencies, external demands, and/or feelings of guilt and shame; Deci & Ryan, 1985). Previous researchers suggested that motivation to exercise changes from extrinsic to intrinsic over time and that poorer psychological well being is related to extrinsic motives while enhanced psychological well being is related to intrinsic motives (Markland & In-

gledew, 1997; Maltby & Day, 2001). Thogersen-Ntoumani (2007) examined motivational predictors of body image and found that intrinsic motivation positively predicted physical self-worth. The adherers in this study reported more intrinsic reasons to continue participating in PA, which is consistent with the literature. It is important for fitness professionals to facilitate intrinsic motivation in light of society's prevalent emphasis on external motives, such as physical appearance.

With the goal to promote greater exercise adherence, there is a need to create more enjoyable environments in which women can be physically active, thus developing intrinsic motivation. This study helped identify ways to increase exercise enjoyment that are consistent with previous findings, such as encouraging women to try various exercises to find what they like, to "multitask" while exercising (e.g., read a book, listen to music, or watch a favorite TV program), and/or to make exercise more convenient (Sallis, Hovell, & Hofstetter, 1992; Wininger & Pargman, 2003; White et al., 2005). Professionals who try to help women increase their intrinsic motivation and enhance their self-esteem, should: (a) emphasize the PA benefits related to improved quality of life and health (vs. the perfect physique), (b) ensure that exercise classes have momentum (e.g., continue beyond a set time period, meet more than twice per week, and don't cancel classes), (c) encourage women to focus on their own improvement, not others' or some societal ideal, and (d) emphasize "nonweight loss" (White et al., 2005) and the more intrinsic, positive psychological benefits of exercise (Maltby & Day, 2001).

The concept that adherers made exercise a priority in their lives, whereas nonadherers did not is consistent with the literature. Eyler and Vest (2002) found that rural Euro American women had guilt feelings (extrinsic motive) as a result of taking time to be physically active. Our study and the Eyler and Vest study illustrate that women who experience such feelings may need unique PA programming that addresses both guilt and adherence. Our study adds to the literature by highlighting reasons that explain the low priority of exercise among nonadherers (e.g., low self-worth, responsibilities, and expectations) and reinforcing the notion that adherers make exercise a priority and devise strategies to ensure they continue to exercise, even under difficult circumstances. Helping nonadherers reexamine their priorities is a concept that warrants future research in PA adherence in women. Suggestions for helping nonadherers increase their priority on exercise include incorporating the family into the exercise routine (Ransdell, Dratt, Kennedy, O'Neil, DeVoe, 2001; Ransdell et al., 2003), and combining preferred sedentary leisure time activities (e.g., reading and watching TV) with indoor exercise on a machine.

We reported that body image contributes to adherence. Our findings agree with others who reported that women who did not participate in regular physical activity typically had poor body image, which may be related to low self-esteem, high social physique anxiety (i.e., fear of public presentation), and a lack of desire to participate in future physical activity. To the contrary, women who participated in physical activity typically had a more favorable body image, higher self-esteem, and lower social physique anxiety (Henry, Anshel, & Michael, 2006; McAuley, Bane, Rudolph, & Lox, 1995; Ransdell, Wells, Manore, Swan, & Corbin, 1998). In this study, women who adhered to exercise were more accepting of their appearance and physical shape, and their primary reason for exercising was not to drastically improve their looks. Our findings are consistent with others who recommended that exercisers focus on self-acceptance and personal accomplishment instead of weight loss (Pinto & Trunzo, 2004; Ransdell et al., 1998; White et al., 2005)

The last major category consistent among adherers and nonadherers was self-regulation. Goal setting was a skill practiced by adherers but not nonadherers. The importance of goal setting in exercise adherence is not unique to this study, and our findings confirm those of others (Marcus & Stanton, 1993; Nies, Reisenberg, Chruscial, & Artibee, 2003) that have used pedometers. Researchers have shown an increase in PA among sedentary women using pedometers to set goals, at least over the short-term (Sidman, Corbin, & LeMasurier, 2004; Wilde, Sidman, & Corbin, 2001). However, in considering future interventions, setting realistic, yet challenging, personalized goals is important (Sidman, et al., 2004). Although more long-term studies are needed, it is clear the pedometer, among other self-regulating skills, is a useful tool for obtaining immediate and specific feedback in measuring goal progress, and that the ability to self-regulate is valuable.

Although this study adds to the literature, it is not without limitations. It is possible that the women's characteristics and the traditional views in this study are specific to the environment in which they lived. First, participants were highly educated and had high to moderate incomes. Most were employees at the University of Utah. Utah is predominantly Euro American, and most of the residents are members of the Church of Jesus Christ of Latter-Day Saints (LDS or Mormon). It is important to acknowledge that women of Mormon faith may have more specific and/or demanding gender role expectations than those who are not Mormon (Conley, 1990; Merrill & Thygerson, 2001). In the Mormon culture, family and church-related responsibilities may increase the feelings of guilt associated with taking time to exercise and neglecting marital, child-rearing, and church-related responsibilities when participating in PA. However, only 6 participants in our study were LDS, which makes the findings generalizable beyond Mormon

women. Although the sample was not representative of more diverse cultures, this study is the first to consider adherence after completing a structured exercise program and presents a model that can be tested more completely in the future.

In spite of this study's potential limitations, the implications are extremely important for exercise, fitness, and healthcare providers who design PA programs for women. These programs should focus on strategies for improving self-worth, which in turn may facilitate an increase in PA and help individuals maintain activity on their own. Most of the literature has focused on the beginning of educational/behavioral interventions. Programs may need to address adopting PA as well as the barriers to continuing PA. The end of a program may be the proper time to reinforce behavioral and educational components related to self-worth, as the participants are prepared to continue activity on their own. Another important strategy for improving adherence is helping a woman understand that to be the best provider for her family she must take care of herself first. To enhance adherence, women need to feel good about themselves,

Table 1. Strategies for addressing barriers to physical activity adherence in women

Barrier	Strategies
Need to feel supported	• Teach women ways in which to access social support. • Teach women how to ask for support from their families. • Role play and/or practice a conversation asking for social support. • Provide resources (e.g., walking clubs, group exercise classes) that are available in the community for women.
Responsibilities/female expectations	• Teach women that making time for themselves is just as important as making time for other responsibilities. • Inform women that they can't take care of others if they are not well. • Discuss with women that quality of life is directly related to capacity to care for others. • Inform women of various options to share responsibilities (e.g., family involvement) so they can pursue physical activity.
Lack of time/prioritizing	• Emphasize the need to plan ahead. Help women think about the most difficult circumstances and make a plan to be active regardless of those circumstances. • Teach self-monitoring skills to help prioritize daily activities (e.g., schedule PA time as if it was the most important appointment of the day, set alarm earlier in the morning to fit PA before excuses can develop, move dinner time to one hour later to participate in PA right after work). • Brainstorm lifestyle activities that can replace sedentary activities (i.e., gardening, walking, taking the stairs instead of elevator).
Poor body image	• Help women to focus on their own progress and personal accomplishments, not comparing themselves to a societal ideal. • Assist women in changing their beliefs about physical appearance. • Educate women about the importance of quality of life (i.e., improved sleep, energy level, ease of daily activities) vs. appearance.
Guilt	• Assist women in identifying when thoughts or feelings of guilt arise and how to replace those with realistic thoughts (e.g., it is ok to ask my family to expect dinner at 6 p.m. instead of 5 p.m. so that I can be active; it is important to take care of myself because I will take better care of my job and my family).
Desire for a better quality of life	• Brainstorm with women about how physical activity will personally affect their life (e.g., If a woman has heart disease in her family how does physical activity impact her risk?; If a woman has children, how will PA participation impact quality of life with her children over the long-term?).
Lack of motivation /lack of enjoyment	• Provide women options to enhance intrinsic motivation and enjoyment (e.g., listen to books on tape while walking, join a women's PA group, listen to music while cleaning the house, try one new activity a week, experiment with different environments in which to be active. • Teach women how to replace thoughts of "should" do or "supposed" to do with "can" do. or "want" to do.

feel comfortable in a PA setting, and be prepared to deal with feelings such as anxiety and embarrassment in various PA situations. Table 1 presents a brief list of barriers to PA and strategies to help women overcome them.

Much of the literature related to PA adherence is based on programs lasting fewer than 6 months. A number of studies have suggested that a qualitative examination of factors related to long-term adherence is needed. The present study was the first investigation, to our knowledge, to conduct such an examination. Several concepts presented in the quantitative literature are confirmed and enhanced. Future studies should be conducted to continue to assess the relationship and mediator/moderator status of self-worth, physical self, and other dimensions of the self in relation to PA adherence. It is our hope that this study will facilitate continued discussion and research findings relative to increasing PA adherence in a population that is currently one of the most inactive in the United States.

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