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Muscle Gains and Emotional Strains: Conflicting Experiences of Change Among Overweight Women Participating in an Exercise Intervention Program

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In this study we explored the experiences of women who were classified as overweight while they participated in a physical activity intervention. In line with interpretative phenomenological analysis, eight women were interviewed prior to and following a 12-week dragon boat physical activity intervention. Data were transcribed verbatim and subjected to individual-level content analysis to explore change that informed group-level idiographic analysis. From the idiographic analysis three distinct profiles were created: (a) women who consistently struggled with negative self-perceptions; (b) women who consistently experienced positive self-perceptions; and (c) women who began with negative self-perceptions and developed more positive self-images. These profiles appeared to be associated with age, since the youngest women placed significant emphasis on the body and physical appearance, whereas the oldest participants reported the most significant shift from importance of body to a greater emphasis on health and well-being. The findings, which are reported in the context of self-determination theory, suggest that women in each of these profiles had unique physical and social self-perceptions and distinct social interactions within the dragon boat intervention.

Keywords: *exercise; obesity; phenomenology; self; weight management; women's health*

Overweight and obesity is a growing epidemic among women that has been linked to compromised physical health (Lean, 2000; Pi-Sunyer, 2002), emotional well-being, and quality of life (Palinkas, Wingard, & Barrett-Connor, 1996). Physical activity programs are a promising approach to health promotion since they might provide many benefits that are independent of weight change (Penedo & Dahn, 2005). Overweight women engaging in structured physical activity have reported benefits such as weight loss, enhanced fitness and strength, adherence, and improvements in psychosocial health and well-being (Gallagher, Jakicic, Napolitano, & Marcus, 2006; Jakicic, Wing, Butler, & Jeffery, 1995; Treasure, Lox, & Lawton, 1998). However, there has been limited focus on understanding women's experiences of physical activity programs and the meanings of physical activity to them. If we can better understand the lived experiences of women who are classified as overweight and their involvement in physical activity, then we can design more effective intervention strategies to support optimal health for this target population.

Theoretical perspectives provide templates to understand physical activity experiences and might be used to guide programs and interventions. Self-determination theory (SDT; Deci & Ryan, 1985) is a comprehensive framework for understanding the

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relationships among self-perceptions, motivation, and behavioral and emotional outcomes. In particular, perceptions of autonomy (ability to give input, be agentic, and be self-endorsing), competence (efficacy and ability to yield desired outcomes), and relatedness (feelings of being connected to and accepted by others) are considered three innate psychological needs that, when satisfied, support self-determined motivation and positive behavioral outcomes (Deci & Ryan, 2002). Also, SDT suggests that motivation is a multidimensional construct that lies on a continuum of controlling and autonomous motives. From this theoretical perspective, highly autonomous and self-determined motivation is linked to positive affective, behavioral, and cognitive outcomes, whereas non-self-determined (controlling) forms of motivation are associated with more negative outcomes (Deci & Ryan, 1985, 2002). Research on physical activity and exercise has supported SDT propositions showing satisfaction of the basic needs is linked to more autonomous motivation and subsequently to positive health outcomes (i.e., McDonough & Crocker, 2007; Thogersen-Ntoumani & Ntoumanis, 2006, 2007; Wilson, Rodgers, Fraser, & Murray, 2004; Wilson, Rodgers, Gesell, & Blanchard, 2003).

In spite of its holistic and humanistic theoretical perspective (Deci & Ryan, 1985, 2002), SDT has rarely been used to inform and understand experiences of physical activity motivation using an inductive lens. This theory might be an appropriate framework to explore personal experiences of physical activity since the core elements of SDT are centered on individual perceptions, beliefs, and attitudes. Furthermore, there is growing research on sport and physical activity focused on SDT (see Hagger & Chatzisarantis, 2007). A particular void in the current literature is an understanding of experiences associated with interventions and structured physical activity programs targeting at-risk populations, such as women who are classified as overweight or obese. Based on SDT tenets, coupled with empirical findings from physical activity interventions (Kahn et al., 2002), programs that enable social connections with others and that foster enhanced perceptions of competence and control are likely to be most effective.

Specifically, interventions that facilitate the development and maintenance of social networks and supportive relationships enhance activity rates and adherence (Briss et al., 2000; Kahn et al., 2002). Qualitative studies have also reported emotional and social benefits when women are exercising among similar others in terms of sex, culture, and social class (Castelnuovo & Guthrie, 1998; Eyler et al., 1998; McDermott, 2000, 2004). It has been suggested that women-only physical activity experiences are preferred and beneficial because they foster perceptions of equality in skill level, allow for learning and developing competence without intimidation, provide support, and enable feelings of relatedness (McDermott, 2000, 2004). Comparable findings have been reported among breast cancer survivors enrolled in dragon boating programs (Sabiston, McDonough, & Crocker, 2007, 2008). Based on SDT, social connections among similar others might be important to consider in physical activity intervention strategies for unique populations such as women who are classified as overweight or obese.

In addition to the social elements, comprehensive intervention strategies also focus on behavioral modification and information/education directed at enhancing perceptions of competence and autonomy (Kahn et al., 2002). For example, women who are classified as overweight benefit from enhanced physical activity self-efficacy that is gained through participation in intervention programs (Gallagher et al., 2006; Penedo & Dahn, 2005; Sherwood & Jeffery, 2000). Furthermore, women across the life span appear to benefit most from group-based interventions compared to individual home-based programs or information/education efforts (see van der Bij, Laurant, & Wensing, 2002) because they feel that they have choices in their physical activity behaviors. Combined, these intervention approaches might be seen as enhancing the psychological needs of autonomy and competence as outlined in SDT, and would enable positive health outcomes.

Women who are classified as overweight or obese might particularly benefit from developing physical activity perceptions of competence and autonomy because they often report physical activity barriers that undermine such perceptions. For example, health concerns and stereotypes/weight discrimination are externally regulated factors undermining autonomy that might impede their physical activity participation (Ball, Crawford, & Owen, 2000; Chambliss, Finley, & Blair, 2004). Feelings of embarrassment and social physique anxiety (Hooper & Veneziano, 1995; Treasure et al., 1998), and less pleasure while exercising (Sherwood & Jeffery, 2000) are also reported as a result of lack of skill or ability, thus undermining perceptions of competence. Intervention approaches need to address these unique barriers to

enhance physical and emotional health for women who are overweight. Nonetheless, it is not understood why some intervention strategies are more effective than others at enhancing perceptions of competence and autonomy, and how they link to theoretical perspectives such as SDT.

Taken together, the evidence suggests interventions that are group based, foster relatedness, and facilitate perceptions of physical competence and autonomy are likely most effective for women's behavior change. However, based on the existing quantitatively driven research approaches, it is difficult to understand how interventions promote behavior change. As such, women's experiences of change in interventions have gone understudied. In the current study we sought to better understand women's experiences in a physical activity intervention targeting a group who were classified as overweight/obese. In particular, qualitative methods grounded in interpretative phenomenological analysis (IPA) were used because they support the exploration and understanding of unique perspectives and meanings associated with the lived experiences of women, overweight status, and physical activity (Smith & Osborn, 2003).

The intervention was a 12-week dragon boating (22- person canoe) physical activity program. Given the non-weight-bearing, flexible, strenuous upper body exercise, and social dynamics of dragon boating, this activity was conducive to women who are classified as overweight or obese. Drawing from reported experiences of women who have been treated for breast cancer (Courneya, Mackey, & McKenzie, 2002; Culos-Reed, Shields, & Brawley, 2005; McDonough et al., 2008; Parry, 2008; Sabiston et al., 2007; Unruh & Elvin, 2004), providing a dragon boating program to a group of women who share a common experience might lead to psychosocial health benefits, greater physical activity participation, and intrinsic motivation for exercise. The purpose of this study was to identify and explore the experiences of physical activity motivation and change in a group of overweight women following the implementation of a dragon boating program.

Method

An interpretative phenomenological approach (IPA) was used to gather and analyze the data. The data consisted of verbatim transcriptions from audiotaped semistructured interviews with eight adults who were involved in a dragon boating intervention for women who were classified as being overweight or obese. IPA (Smith, 1996; Smith & Osborn, 2003) is designed to examine how people understand their social and personal experiences, and is therefore well suited for exploring women's understanding of change during their exercise intervention experience (Smith, 2004). IPA is an inductive, phenomenological approach that fosters a data-driven theorizing perspective to try to gain an insider's perspective on a particular personal or social experience (Smith & Osborn, 2003). It involves two stages of interpretation: those of the participants appraising the meaning of their experiences, and those of the researchers interpreting the participants' reports of their meaning-making (Smith & Osborn, 2003). Therefore, the findings are a reflection of both the participants' communication of their experience of being in the intervention, and the researchers' interpretation of the women's thoughts, emotions, and behavior reflected in what they say and how it is communicated.

Participants

The participants in this study were drawn from the experimental group of a larger randomized controlled trial examining the effects of a dragon boating exercise intervention focused on physical and social self-perceptions, motivation and barriers for exercise, and social relationships among overweight and obese women. Participants for the larger study were recruited through posters located around the university and surrounding community. Eighty-one women who were 19 years of age or older, had a body mass index (BMI) of 26 kg/m^2 or higher, and who were exercising less than 30 minutes a day, 3 times per week, contacted the researchers. Sixty-six of those women participated in the larger experimental study. The women were randomly divided into an intervention group (n = 34) and a wait-list control group (n = 32).

Eight women from the intervention group were purposefully sampled (Patton, 2002) to participate in interviews for the current study. In line with IPA recommendations (Smith & Osborn, 2003), participants were all drawn from the relatively homogenous group (i.e., overweight, inactive women volunteering to participate in an exercise intervention) who were targeted for the intervention study. Specifically, all women in the intervention group were prescreened over the phone by answering a series of questions about weight status, current exercise habits (interviewing women who were familiar with activity would enable them to draw from familiarity and provide a

reference for their paddling experiences), past physical activity histories (we wanted to talk to women who had not recently participated in group physical activity to better explore this social aspect of dragon boat paddling), and to get a sense of any pre-existing injuries or physical conditions that might hinder their participation in a 12-week program (we wanted to talk to women who were physically healthy). All 8 women who were invited to participate in the interviews met the above criteria, represented information-rich cases (Patton, 2002), and consented to the qualitative aspect of the study.

The 8 participants ranged in age from 27 to 62 years and all described themselves as White. Four women had master's degrees, an additional 3 women had bachelor's degrees, and 1 participant had completed secondary school. Four women were married or in common-law relationships and the others were single ($n = 3$) or divorced ($n = 1$). Participants' names and identifying characteristics have been changed to protect their identities.

Procedure

Behavioral research ethics board approval was obtained, and participants were recruited for the experimental study and the current qualitative study as described above. Participants in the current research dragon boated twice a week for approximately 60 minutes per session. They were also given the *Handbook for Canada's Physical Activity Guide to Healthy Active Living*, which provided information on healthy, active lifestyle strategies, and were instructed to complete at least 20 minutes of physical activity at least 3 days per week in addition to dragon boating. The first three authors organized the intervention and trained research assistants to be dragon boat steerspeople and coaches. At each of the training sessions, one of the first three authors was present to oversee the intervention, along with three additional research personnel. Consistent with IPA (Smith & Osborn, 2003), the researchers were able to immerse themselves in the intervention study generally, and the lives of the participants more specifically, to grasp a phenomenological outlook.

Participants took part in two 60- to 90-minute semistructured interviews, one at the beginning and one at the end of the 12-week program. The interviews were designed to gain insight into the women's dragon boating experiences and involvement in a physical activity intervention. In addition, follow-up member-checking interviews were conducted approximately 3 months after the completion of the study. Semistructured interviews were designed on the principles outlined by Smith (1996) to gather information about participants' experiences, focusing on the uniqueness of each participant's perceptions, beliefs, attitudes, and general experiences during the intervention. Consistent with IPA and in line with self-determination concepts, the questions were collectively treated as a template rather than a dictation for the course of the data collection. These guiding questions addressed participants' motivation and goals (e.g., Why did you get involved and what do/did you expect to get out of your participation in dragon boating?), barriers (e.g., What are/were barriers to your participation in exercise more generally/the dragon boating program?), self-perceptions (e.g., How do you feel about your current level of physical activity/sport competence?), social support for exercise (e.g., Can you tell me about the people who support you in physical activity/sport and how they support you?), and social connections with others (e.g., Tell me about any connections that you made with other women in the program). The flexibility of the interview protocol allowed the exploration of emerging perspectives and was aimed at facilitating the participants' accounts of their experiences both in physical activity generally, and during the dragon boating intervention. All audio-recorded interviews were transcribed verbatim, and data was organized using the data storage software QSR N6 (QSR International Pty Ltd, 2002).

Smith and Osborn's (2003) recommendations for IPA were followed to analyze the data, with some modifications to incorporate input from each of the three interviewers. In the initial step, one pre-intervention transcript was read several times by the author who conducted that interview, and coded in a free textual analysis. Exploring the connections and interpretations made in the analysis then enabled the creation of higher-order themes that were given relevant titles. The interpretations were based on experiences discussed by the participants, the researchers' personal thoughts, and sensitizing concepts. Unique sensitizing concepts were focused on theories of physical self (first author), social support and relationships (second author), adult psychological development (third author), and physical activity and sport motivation, including self-determination theory (all authors). A table of codes and themes was created based on the analysis. At this stage, the other authors

independently read and coded each transcript and built on the list of themes. In cases where there was disagreement between the authors, all three authors went back to the original transcript, discussed the coding, and incorporated personal interpretations into the coding paradigm. Once the analysis had been completed for one pre-intervention transcript, another transcript was coded. The table of themes was used to code similar meanings in the same categories, and was expanded to incorporate new ideas as they emerged. During this process, the emerging themes were continually compared back to the original transcripts to ensure consistency. Once this process had been completed for all pre-intervention transcripts, each transcript was reread by the other authors to ensure that all themes were coded consistently (Smith & Osborn, 2003). The same process was repeated for the postintervention interviews.

An idiographic profile analysis was used to explore and describe the women's experiences of change associated with the dragon boating intervention. Similar idiographic approaches using IPA methods have been adopted in the sport psychology literature to explore changes in coping during a women's volleyball tournament (Holt, Berg, & Tamminen, 2007), in health psychology studies examining patients' adherence to therapeutic exercise programs (Dean, Smith, Payne, & Weinman, 2005), and the experience of living with diseases such as Parkinson's (Bramley & Eatough, 2005) and multiple sclerosis (Reynolds & Prior, 2003). For the current study, a profile was created for each participant using an inductive and iterative approach. To begin, the first author read each participant's transcripts (both pre- and postintervention) and consecutively coded them using an inductive approach that served to maintain an understanding of each woman's distinctness and change. The raw data in each category served as the basis for comparison between the pre- and postintervention experiences and was summarized in a matrix to ease interpretation by presenting patterns in the data (Miles & Huberman, 1994). Following the idiographic study of the participants' distinct changes, the first three authors also explored the commonalities across the group of women. In this way, we grouped and explored the emerging themes and phenomena of interest based on self-determination theory perspectives (i.e., changes in physical and social self-perceptions, including competence, autonomy, and relatedness); goals, motivation, and barriers; and social connections during the 12 weeks of dragon boating. Out of respect for our participants, we have chosen to present the descriptive features of each profile rather than provide labels because these women consistently discussed the negative implications of being "labeled" and "stereotyped" throughout their lives. There were three group profiles that emerged from the data: Profile 1 included women who consistently struggled with negative self-perceptions that undermined psychological needs and physical activity motivation; Profile 2 included women who consistently experienced positive self-perceptions that supported the basic needs and more externally derived motivation; and Profile 3 included women who began with negative self-perceptions and developed a more positive self-image and intrinsic motivation for physical activity over the intervention period.

Principles supporting IPA (Morse, Barrett, Mayan, Olson, & Spiers, 2002; Sparkes, 1998) were used in a process of verification. To improve trustworthiness of the data, the first three authors were intimately involved in the analysis and provided insights and interpretations based on their unique knowledge and research backgrounds. Cooperative inquiry enabled the participants to reflect on, agree with, and challenge the researchers' interpretations of the interview data in the member-checking interview. These follow-up interviews indicated that the findings were perceived to be relevant and accurate by the women in the study. One woman (Muriel) also brought a written, diary-like interpretation of her experience with her to the final interview and shared it with the researcher. These additional perspectives were included in the data interpretations. As a method of triangulation approach, the interview transcripts were compared to researcher field notes and provided consistency in the data. As a method of monitoring bias, researcher triangulation was employed. The researchers worked together using an iterative process of discussion and writing throughout both the intervention period and the data analysis and reporting stage. During this collaborative process, the researchers demonstrated empathetic neutrality (Patton, 2002) and mindfulness by focusing on understanding and interpreting participants' experiences while avoiding judgments. This process also reminded the researchers to explore the ways in which their involvement in the intervention influenced and informed the research in a way consistent with personal reflexivity (Nightingale & Cromby, 1999). In much the same way as empathetic neutrality and reflexivity were supported in the analysis phase of the study, the

researchers were open, sensitive, respectful, aware, and did not portray judgment during the interviews.

Results

Information provided during the pre- and postintervention interviews was coded into themes of (a) goals, expectations, and accomplishments, (b) motivation and barriers, (c) physical and social self-perceptions, and (d) social connections and support. A data matrix was created to organize the findings as a first step in the identification of meaningful profiles based on the women's experiences, and can be obtained from the first author.

Three profiles seemed to capture the women's experiences of change and the underlying meaning of these experiences. Profile 1 consisted of 2 participants (Amber and Claire) who expressed consistently negative physical and social self-perceptions throughout the intervention, and internalized these experiences to reflect personal failure toward physical improvement. Profile 2 included 4 participants (Amy, Bianca, Jocelyn, and Ruth) who described consistently positive self-evaluations throughout the dragon boating program, and expressed strong desires to maintain their identities and physiques. The third profile included 2 participants (Belinda and Muriel) who reported strong negative self-perceptions initially, and then more positive self-evaluations at the completion of the intervention. For these 2 women, their personal reflections were important aspects of their continual motivation for physical and emotional health.

The profiles of change appeared to be linked to the participants' ages. Those with more chronic negative physical self-perceptions (Profile 1) were in their early 30s, whereas those who reported more stable positive profiles (Profile 2) were in their early 50s except for Bianca, who was 27. Bianca was also the only participant to have recently immigrated to Canada. The women who experienced positive changes (Profile 3) were the oldest (59 and 61 years of age). There were no additional associations between descriptive characteristics and profiles of change.

The Physical Self-Perception Paradox: "It Would Be Lovely to Have a Better Earth Suit"

The 2 women described in Profile 1 were not satisfied with their physical selves and physical activity competence, and this weighed heavily on their self-esteem. Pre-intervention, Amber and Claire felt that they would be able to dragon boat because of their general physical activity skills and the importance of sport and exercise to their sense of self. They were probably the most experienced athletes in the sample, having played sports at various points in their lives. However, they both felt that they did not improve in dragon boating and felt that they gained very little in terms of sport skill acquisition. As reported by Amber, "I was sadistically amused by my participation." They reported no change in perceptions of physical competence: "I'm not where I want to be yet, I'm just not quite comfortable doing all the things I want to do" (Claire). They expressed disappointment at not reaching their physical goals of losing weight, gaining physical activity skill, and enhancing their identities as physically active women.

Both Amber and Claire experienced small fitness improvements, but no change in body image: "It's great to have the strength and the cardiovascular ability and everything else but you still, you still look funny in your clothes" (Amber); and "The physical fitness is improving and hopefully the body image will slide away with all of that as well" (Claire). Whereas women in Profiles 2 and 3 reported shifts in focus from physical appearance to health and physical function, the women in Profile 1 continued to struggle with the importance of body shape and physical appearance. During both interviews, these women placed a lot of emphasis on social comparisons and feelings of body-focused self-consciousness around others. The perceived physique judgments from others were not welcomed, were a source of stress, and were constant reminders that these women felt like they failed at becoming slimmer, firmer, and more talented following the intervention.

The improvements in self-perceptions of strength and fitness created a dichotomy in identity between being fit and yet appearing overweight. Postintervention, the focus was on the incongruence between what they could accomplish and how they appeared in physical activity environments. Claire and Amber's physical identities as larger women did not fit with their mental images of the women they used to be, and the athletic attributes they both valued and yearned for:

> I've always been quite muscular and um lean, believe it or not, so its just like I can feel . . . I can feel my real self underneath all this . . . how to describe myself? It's just like, I'm a Bond girl waiting to come out . . . but could be described as fat bastard right now. (Amber)

For these women, the identity of an athlete was important to their sense of self, but contradicted their physical characteristics, and this incongruence was associated with negative affect. Unfortunately, both women reported the prospect of their bodies being on display or the social nature of physical activity as barriers to exercise in general, and the intervention did not dampen these barriers. This meant that Amber and Claire were less likely to exercise.

Social gains were also tempered for these women. Amber and Claire found it difficult to make meaningful social connections because of the age differences among the women in the group, and this was frustrating and disappointing for them: "I met a few new ladies, but the thing that I was kind of hoping for that I didn't get was I was hoping for more interactions between the teammates" (Amber). Additionally, perceptions of dissimilarity in goals seemed to hinder social ties. During the initial interview, Claire spoke of the personal importance of exercising with a group of women "with . . . at least one similar interest in improving physical fitness." However, the second time, Claire discussed the discord among the participants and the lack of similar goals. She described one group who accepted themselves physically and didn't want a challenge, but liked the social aspects, and other women who wanted a fitness challenge and were motivated to change their lifestyles. As a result of this discord, neither woman felt they related to others in the intervention: "I found that the women, a lot of it wasn't my peer group, so I didn't necessarily get as much out of . . . 'cause I didn't have a lot in common with most of them" (Claire). Nonetheless, Claire became aware of the importance for her to exercise with partners who were at least matched to her physical fitness level. Following the intervention, she developed a strategy of posting notices for exercise partners and seeking personal trainers to help her overcome barriers to physical activity.

In summary, Amber and Claire did not experience change in physical self-efficacy for dragon boating, or physical competence for activity more generally. This was frustrating for them, and confirmed in their individual minds that they were failing "again" at trying to be healthy. They reported change in their fitness and strength self-perceptions but these changes were tempered by the lack of change in their appearance or body shape/size, which was most important to them. They lacked perceptions of control of their physical activity experiences, and reported minimal social relatedness. Overall, they were disappointed with their experiences.

On Being Physically Self-Accepting: "I Like Being My Size Because I Get to Do What I Want"

Amy, Bianca, Jocelyn, and Ruth (Profile 2) reported an overall acceptance of being overweight during the pre- and postintervention interviews. Like all of the women, they expressed some desire to lose weight, but it was not a priority or even a specific goal. They discussed struggling with weight loss throughout their lives and the process of coming to the realization that it was not going to change. They also spoke about the benefits of being overweight. As discussed by Ruth:

> I like being my size because I get to do what I want to do without being harassed, picked up, yelled at, talked to. . . . That's why I am quite pleased with being larger, because it's deemed not to be attractive which in some ways is a real benefit.

This perspective was also supported by Jocelyn, who discussed being a single mother and wanting to be a strong role model: "[B]ut I think there's also an aspect of wanting to keep the weight, there's advantages to it, and also in keeping men away, there's that one." Although none of the women in this group lost weight during the intervention, improvements in physical fitness and strength were meaningful changes that made them feel better about their health and well-being. Looking more muscular seemed to be an inspiring change for these women, with an emphasis on the importance of their arms being more toned. Also, sport and physical activity perceptions of competence were enhanced during the program as a result of challenging drills and realized accomplishments. Generally, the women remarked on how enhanced competence and strength transferred to managing tasks of daily living and becoming involved in other activities.

There were times when the dragon boating intervention appeared to challenge this group's acceptance of their identities. Ruth spoke about the cultural stereotypes identified with overweight women as being seen as incapable, weak, and flawed. She felt that dragon boating highlighted these stereotypes by having a group of larger women exercise together in an open social forum. In particular, she spoke about a situation in which the group of women were waiting to get into the boat and a couple of men were overheard discussing the women's incompetence in dragon boating as a result of their size:

> I thought . . . you don't know anything about us and you just made this whole judgment call and yet you can sit in this boat and I bet you if you put a team of us together we could whoop your butt . . . the sense I was getting from them was that we were sort of pathetic.

Ruth felt that if the women themselves were content, the social sphere around them should be as well. Amy, Bianca, and Jocelyn supported this view and were frustrated by the constant reminders of being a group of women who were overweight—because they were accepting of themselves. This support and acceptance of a larger body size was unique to the women in this profile, as the other groups of women described social isolation and ridicule as something they "deserved" for being overweight.

This group of women also discussed how the dragon boating intervention provided a unique perspective on their size:

> I guess in the program it was quite good because I was one of the smaller people, and I guess that kind of helped . . . that sounds really, really nasty that I was just thinking, "I'm smaller than these people," but it did make me feel, actually, on the whole span of things, I'm actually kind of near the other end rather than kind of the obese end. (Bianca)

This comparison was important to her because it provided an alternative gauge of her physique. In general, dragon boating allowed some women to feel good physically and provided opportunities to learn from others through role modeling and support.

All of the women in this profile mentioned having a difficult time making close friendships with others in the group, but spoke about learning indirectly from them:

> It was really neat to see these women who were totally capable, totally confident and totally dealing with their life issues and the things they had to deal with. I found them very interesting. (Ruth)

Bianca also mentioned feeling supported by the coaches in the dragon boating program through information-sharing and esteem enhancement. Although Ruth shared these perceptions, she felt at times there was too much support provided:

> If somebody's always around saying, "I'll help you, I'll help you," you never get a chance to figure it out yourself and it's kind of assumed that you can't, well of course we all could, right? We just needed the opportunity to learn how to do it and to make mistakes and then figure it out.

Amy and Jocelyn mentioned that the homogeneity of the group, in terms of size and shape, made the exercise environment less threatening than other physical activities they had attempted in the past, and this was important to them. For Amy, these shared social experiences in dragon boating fostered the realization that she enjoyed group physical activity: "I think having done this experiment thing I will be more confident to join a group." Overall, the women reported that they felt connected to others generally, but close relationships were not developed. Amy, Bianca, Jocelyn, and Ruth all reported having social support outside of dragon boating, and thus the lack of friendships did not deter their enthusiasm for the program.

In summary, Amy, Bianca, Jocelyn, and Ruth reported improved dragon boating self-efficacy and general physical competence, enhanced physical self-perceptions of fitness and strength, and support from many women in the group. These women reported being accepting of their physicality and having more functional body images at the outset of the dragon boating, and discussed no change in this view of the physical self following the intervention. Overall, these women were comfortable in their own skin and appeared to feel physically, mentally, and socially fulfilled by the intervention.

The Process of Self-Perception Change—"I Can Change My Destiny; I'm Not a Victim"

The two women in Profile 3 experienced changes in self-perception by highlighting the positive experiences afforded by the dragon boating context. These women appraised the experience as beneficial and felt that they had been continuously challenged in physical, social, and emotional ways. Similar to the group of women who expressed consistently positive self-perceptions, Belinda and Muriel described gains in physical strength and enhanced physical competence that carried over to daily tasks. These women also described a variety of new physical activities that they had tried or were planning to do. Furthermore, Belinda and Muriel discussed strategies that they had developed to help overcome personal barriers for physical activity, such as keeping a logbook of dragon boating practices, and associated emotions and reflections of these experiences. These strategies also supported general self-awareness, which was undervalued

by Belinda and Muriel prior to this experience but was now an integral part of their respective health journeys. Of particular salience to these women was a general sense that they no longer feared failure in physical and social contexts.

For these women, the focus on the social environment appeared to be much stronger pre- versus post-intervention. For example, Muriel described the negative emotions associated with attempting novel activities for fear of not being able to do them, coupled with appearing overweight:

> Well if you know you don't fit into a status quo you know you're . . . you just want to, kind of want to blend in and . . . oh no, you never draw attention to yourself.

Belinda supported this perspective by reporting extreme body-focused self-consciousness in social situations. The salience of the social context was also evident in the following pre-intervention comments:

> It will be interesting when I lose the weight just to see what society does or what social morals that we have, how it is going to impact me because I might be carrying this albatross around and it doesn't mean a hill of beans to people . . . well I thought about that too and you can't do it for other people, you've got to do it for yourself. (Muriel)

During the second interview, both Belinda and Muriel discussed the importance of personal perceptions and alluded to the fact that their own perceptions of being overweight were "self-inflicted." This shift in personal focus appeared to be critical to their enhanced physical acceptance during the dragon boating intervention. It appeared that Belinda and Muriel were able to make their own decisions and choices without feeling pressured by societal norms and perceptions of others' judgments. As such, they developed a sense of autonomy that was critical to their motivation.

The intervention led to significant physical and emotional changes for these women. Belinda discussed being able to cross her legs, which she had not been able to do 12 weeks earlier, and described her new shape: "The image . . . I think I feel more like I don't take much space . . . I look and I sort of, I'm not sticking out like that or something." However, it was evident in her interview that feelings of well-being and increased energy were more important to her than losing weight. Muriel shared this process of shifting her focus away from physical appearance and weight and toward health:

> I think there's an attitude adjustment in there too, like there's a, well it's like muscles. When you stretch that muscle and tear it, it become[s] stronger and I think that's the way with your thinking too, if you just get a little bit of a stretch in there you think . . . oh yeah that is right, so then it does mean a change of attitude or an adjustment, I think it's an attitude adjustment that you want to keep for the rest of your life.

The dragon boating experience was described as this attitude stretch, and was extremely fulfilling to these women.

Belinda and Muriel felt that the dragon boating environment dispelled some societal standards. They typically had difficulty developing social connections in other areas of their lives because of their size, but the dragon boating environment highlighted their erroneous perceptions:

> But it was really interesting too because when you're really heavy I think it's almost a persecution complex because you know you're a failure in some [social] areas, but this one girl that I met, she was the one that approached me [to be partners in the boat], which was different, because usually when you're heavy you think no one likes you, but it's not so. I mean she was tall and slim. (Muriel)

This revelation seemed to elicit social empowerment, and also appeared to foster social connections for Muriel: "Socially I did gain a couple of friends. . . . I wouldn't be friends with all of them . . . so two out of that 12-week program is, you know, pretty good I'd say." Belinda felt connected to some of the women in the program and met one close friend with whom she started a physical activity program after dragon boating. Furthermore, both women mentioned receiving information support from teammates in terms of general health material and lifestyle habit advice. Neither of these women had goals of developing social affiliations and connections, and felt it was an unexpected yet appreciated outcome. They described the dragon boating experience as meeting their needs for social connectedness.

It is interesting that these two women had the only reports of negative social support changes from their families. Muriel mentioned that her overweight family members did not support her in dragon boating or other lifestyle changes because they felt she should stay overweight so as to fit the family profile. This was disappointing to her during the first interview, but

when approached again following the intervention she did not seem bothered by it—and actually felt it was her family who were losing out. Belinda discussed the negative support she received from her husband, who continually said that dragon boating was not helping her lose weight. Belinda felt that she would never feel connected to her husband and, although disappointed, was empowered by the idea that he was incorrect and that dragon boat paddling was making a difference to her both physically and mentally. Therefore, these women gained social affiliation along with enhanced physical self-perceptions and competence, but also had to deal with the lack of social connectedness and support from their families. Combined, these changes fostered a sense of physical acceptance and overall empowerment that was not evident pre-intervention.

In summary, Belinda and Muriel reported increased dragon boating self-efficacy, physical competence, physical self-perceptions, and enhanced physical acceptance following the intervention. They felt challenged, and reported physical and social gains that they had not achieved elsewhere. A shift in priorities was evident, whereby the emphasis on weight and body shape was lessened and the importance of social relationships and physical health emerged. This shift was important to them, altered their priorities, and empowered them.

Discussion

Qualitatively exploring physical activity experiences enabled us to identify and understand how changes interact to foster or inhibit physical activity participation for women who are overweight. Three profiles emerged from these evaluations. The unique experiences among the three profiles appeared to be driven by key differences in perceptions of physical self, the status of psychological needs attainment, and subsequent motivation for physical activity. Consistent with IPA, which is centered on the participants' experiences and the researchers' interpretations of these experiences, we have chosen to discuss the meaning of the unique profiles using both additional participant quotes and supporting empirical evidence.

Overall, the women in all three profiles reported improved perceptions of fitness, strength, and physical activity competence. For the women with characteristics fitting Profile 1, these improvements were not sufficient based on their goals and did not appear to transfer to other activities:

> I'm totally trying to get there [better fitness], and I just like, waiting for the magic ball to drop where everything sort of falls into place. . . . I just didn't get the results that I thought I should get. (Claire)

The women in Profile 2 were satisfied with their improved perceptions of physical self and competence in dragon boating, and discussed possibly becoming involved in other group physical activity programs: "Getting more fit, which I definitely, I think that has improved . . . and knowing I can do it" (Bianca). Belinda and Muriel (Profile 3) described the most change in their physical self-perceptions, felt they gained incredible confidence to be physically active, and had already participated in other physical activities: "Knowing you're doing something you've never done before and that you can actually do it was just so wonderful" (Muriel). Some of these findings are similar to previous results with physical activity interventions targeting weight management (Gallagher et al., 2006) in that perceptions of competence were integral to motivation for physical activity and subsequent weight loss. In the current study, the focus was not directed at weight loss; however, it might not be a coincidence that Belinda and Muriel were the only two women interviewed who reported weight loss and actively seeking additional physical activity opportunities.

The women fitting characteristics of Profile 1 were looking to make specific connections with other women, yet felt that their participation in the dragon boating program did not fulfill this goal. Claire wanted to connect with women who were motivated to enhance their health, but perceived the group to have varying motives that were not in line with her goal:

> It's not necessarily that I don't have any one person to exercise with, it's that I don't have necessarily someone that's out there with the same motivation that I have . . . if you aren't with someone who has that same level of commitment, that can be difficult . . . there were not many women out there [in the dragon boats] with the same commitment or motivation.

Amber echoed these comments: "I guess its hard to find someone who is, I think at the same . . . [who] had the same interest and the same level [of fitness] so that we would have been compatible." These sentiments suggest that Amber and Claire did not perceive that the other women were similar enough to connect with, and thus did not experience relatedness (Deci & Ryan, 2002) in the context of the dragon boating

intervention. Perceptions of similarity have been important to breast cancer survivors' continued involvement in dragon boating (McDonough et al., 2008; Sabiston et al., 2007), and might be critical to psychological need fulfillment and self-determined motivation within the SDT framework.

Alternatively, women fitting the characteristics of Profiles 2 and 3 were not looking for social connections as part of their involvement, yet appeared to learn from and connect with their teammates and coaches: "Well, I am fitter in terms of knowledge about how to get fit or stay fit or whatever . . . learning and watching . . . was excellent" (Ruth). These women (Amy, Belinda, Bianca, Jocelyn, Muriel, and Ruth) did not place an emphasis on the similarity of others per se, but reported informal connections with women regardless of age, ability, or motivation:

> I met quite a few people and it was good fun. (Bianca)

> I enjoyed being part of a team, because that is unusual for me . . . where you have to absolutely work together. (Jocelyn)

> It was nice . . . I managed to get out on the water and have somewhat of a social life. (Belinda)

Women in Profiles 2 and 3 felt that they worked well together, provided feedback and information, and were generally connected within a comfortable environment. However, one aspect that differentiated the women in Profiles 2 and 3 was the extent of social support for exercise and connections that they reported outside of the dragon boating context. All women in Profile 2 reported support from family and friends for physical activity and health-enhancing efforts. Belinda and Muriel (Profile 3) discussed the difficulty of having family members with whom they did not feel connected in an exercise/health context. Although frustrating, this seemed to translate into greater connections with women in the dragon boating program. According to Gallagher and colleagues (2006), overweight women who elicit social support and are open to making connections with others are more likely to lose weight and to engage in more exercise compared to women who do not seek out these relationships. SDT (Deci & Ryan, 1985, 2002) perspectives generally, research with adults involved in dragon boating (McDonough & Crocker, 2007), and empirical findings with adults classified as overweight (Edmunds, Ntoumanis, & Duda, 2006) suggest that greater relatedness is associated with self-determined motivation and subsequent health behaviors and affect. Therefore, the profiles that emerged from the data in the current study can be differentiated in part by the extent of social connections and relatedness.

There were also differences in the women classified in the profiles based on support of and changes in perceptions of autonomy. Amber and Claire (Profile 1) elaborated extensively on the inherent controlling features of societal standards of feminine beauty and athleticism. These women felt that their exercise strategies were governed by extrinsic means rather than intrinsic motives. Amber revealed her struggles to have a "better earth suit" and "psychological warfare" to ward off perceived opinions and judgments of others. Claire consistently ruminated about how people must see her as unfit and unhealthy because she is overweight. These women certainly did not feel agentic in their physical activity and other health behaviors, and dragon boating did not dampen these perceptions. Based on sport and physical activity research employing a SDT lens, perceptions of autonomy are often among the strongest correlates of self-determined motivation (Amorose & Anderson-Butcher, 2007; Fortier, Sweet, O'Sullivan, & Williams, 2007; Gagné, Ryan, & Bargmann, 2003). Although most of the existing literature is focused on coaches', peers', and health care practitioners' provision of autonomy support, there is limited research exploring the possible detrimental role of stereotypes, perceived body shape standards and ideals, and even social physique anxiety (Hart, Leary, & Rejeski, 1989) as mechanisms undermining autonomy support. It has been suggested that debilitating social conditions, such as situations in which individuals feel they cannot make positive physique impressions on others, might undermine people's fulfillment of these basic psychological needs (Deci & Ryan, 1985). Social physique anxiety might therefore undermine psychological need satisfaction. Thogersen-Ntoumani and Ntoumanis (2006) linked body-related affect, in the form of social physique anxiety and physical self-worth, to less self-determined motives for physical activity. Our findings support this research and SDT theoretical tenets, yet further evidence is warranted.

The women classified in Profile 2 were very much in control of their physical activity actions and beliefs. In addition to the perceptions of "I like being my size because I get to do what I want" (Ruth), all

women also reported perceiving the coaches and peers in the dragon boating program to be autonomy-supportive by providing options for training and warm-up, and personal feedback. Autonomy-supportive actions from coaches and peers in sport and exercise contexts are strongly linked to more self-determined motivation (Hagger & Chatzisarantis, 2007; Wilson & Rodgers, 2004). The finding that these perceptions of autonomy were linked to intrinsic motivation for dragon boating (and physical activity more generally) is in line with SDT (Deci & Ryan, 1985) perspectives. Nonetheless, there was some evidence that the researchers undermined autonomy in some instances by providing too much assistance to the participants and not letting them learn and "figure it out on [their] own" (Ruth). There is emerging yet underdeveloped research on social control, overprotectiveness, and pressure related to sport and physical activity (Lox, Martin-Ginis, & Petruzzello, 2006; Wolfenden & Holt, 2005). Implementers of physical activity programs should be aware of the possibility of providing too much support, and allowing participants the opportunity to make mistakes and seek out assistance personally rather than receiving unsolicited support.

Women fitting the characteristics of Profile 3 reported a shift in autonomy support throughout the dragon boating intervention. During the first interview, and in line with characteristics portrayed in Profile 1, the women reported actions as a result of societal standards and not wanting to "stand out" (Belinda), or "you just want to kind of blend in" (Muriel). However, Belinda and Muriel's participation in the dragon boating program created a shift in their perceptions of agency that were more in line with the characteristics of Profile 2. They reported changes in the importance they placed on others' judgments and evaluations focused on the physical self, and felt they were out there, in dragon boating and in additional new physical activities, for themselves. This shift in perceptions of autonomy, coupled with new social connections and perceptions of competence, appeared to translate into a shift from controlling to more autonomous motives for physical activity.

Many researchers have linked autonomous motives to the development of personal empowerment (Balcazar, Seekins, Fawcett, & Hopkins, 1990; Chavis & Wandersman, 1990; Thomas & Velthouse, 1990; Zimmerman, Israel, Schulz, & Checkoway, 1992). For the women classified in Profile 3, the development of enhanced psychological needs and more self-determined motivation was associated with empowerment. Empowerment is a process whereby individuals gain mastery over issues of concern to them (Rappaport, 1987). Concerns were centered on women's weight and health in this study, and it was the feeling of gaining control over these issues that enabled Muriel and Belinda to feel empowered:

> I never let my car go without an oil change. Never. I wouldn't think of it. Well how much more valuable are we than a car and I had to be 60 [years old] before I realized that . . . and actually feel like I can do something about it, accomplish [something]. (Muriel)

Several qualitative studies exploring women's experiences of physical activity have reported physical and social empowerment as integral outcomes (Castelnuovo & Guthrie, 1998; McDermott, 2000, 2004), and our findings within the Profile 3 characteristics of change support existing evidence. Based on Zimmerman's (1995) nomological model, self-determined motivation is an intrapersonal antecedent of psychological empowerment:

> Because I enjoy this [physical activity] now, it is just something I do . . . and it's not so much about weight . . . because I have more energy and I feel more like it . . . more confidence to do it. (Belinda)

Additionally, Muriel and Belinda's mastery of physical activity skills, transfer of skill to other physical fitness pursuits, and enhanced awareness of the negative impact of social stereotypes pertaining to obesity and exercise are interactional components of psychological empowerment experiences (Zimmerman, 1995). Feelings of empowerment were a distinct outcome of the intervention for the women in Profile 3.

Taken together, the results from this study are in line with SDT tenets suggesting that need fulfillment is a precursor to self-determined and autonomous motivation (Deci & Ryan, 2002). The women classified in Profile 1 revealed unmet psychological needs, extrinsic motivation, and more negative affective and behavioral outcomes such as disappointment and lack of physical activity participation. Women in Profile 2 appeared to feel competent, related, and autonomous in physical activity contexts, reported exercising for primarily intrinsic means, and felt good. The remaining women (Profile 3) gained perceptions of competence, social connections, and feelings of personal control during the dragon boating intervention; they revealed feeling extrinsically motivated to exercise when they started the program and yet intrinsically

motivated to continue to exercise following the program, and they reported becoming involved in additional physical activities.

Although there were a number of benefits of this study, there were also limitations. The participants were a self-selected group of overweight women who volunteered for the larger study. Although the qualitative approach to exploring experiences pertaining to the dragon boating physical activity intervention was a strength of this study, we are aware that our backgrounds in physical self, social support, and physical activity motivation theoretical frameworks provide only one set of perspectives to the findings. Furthermore, the size and homogeneity of the sample were strengths of the study in terms of IPA perspectives; however, a more varied sample would further elucidate experiences in physical activity programs. Finally, the participants' critical analyses of the program might have been limited because of the researchers' roles in the intervention and as interviewers. Nonetheless, these dual roles enabled the researchers to be immersed in the data collection, provided a more comfortable interview environment, helped in understanding the described situations and experiences, and provided the opportunity for detailed research notes. Based on the findings, we are able to advance theoretical propositions and provide meaningful participant perspectives related to the provision of a physical activity program.

In spite of these limitations, the dragon boating program combined many of the intervention strategies suggested for effective behavioral modification (Briss et al., 2000; Kahn et al., 2002; van der Bij et al., 2002) and self-determination theory (Deci & Ryan, 1985) perspectives. The program focused on group exercise, provided a framework for developing (and supporting) psychological needs, enabled the enhancement of physical competence and skill acquisition, and indirectly aided in general self-awareness. These benefits, as told by the participants, were foundational to assisting overweight women engage in and adhere to a physical activity program. Future research should focus on further classifying participants in intervention studies based on their psychological needs, motivational profiles, and perceptions of physical self. It is likely that profiles should be treated as moderators of the physical activity experience for overweight women. Generally, these profiles are important contributions to the literature because they highlight the conflicting experiences of change among overweight women participating in an exercise intervention program.

Rather than close with our words, we will end with Muriel's written affirmations and revelations, which she brought to her final interview:

> (1) I still am very overweight . . . but I am healthier and still overweight. I'm stronger and still overweight. I'm more outgoing and still overweight. . . . It's not about being overweight anymore; (2) more energetic—exercise is not tiring but is stimulating; (3) planned exercise made me more aware; (4) sense of accomplishment is a personal thing: (5) I can change my destiny. I'm not a victim; (6) Attitude affects change hugely; (7) personal struggles are common to many individuals. If I dare to ask the question someone will have an answer; (8) I lost 18 pounds; (9) Losing weight does not mean I am more socially acceptable; (10) I feel better emotionally and physically; (11) I am stronger with more muscle tone; (12) I have improved complexion; (13) when you make a commitment and the doubts keep coming, the sense of accomplishment is undervalued; and (14) I have a wonderful understanding of perseverance . . . and what that really means right now is a word that has had no meaning to me in the past, but I think perseverance will become a tangible thing with me.

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