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# Shifting Motivations: Young Women's Reflections on Physical Activity Over Time and Across Contexts

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This research analyzes motivations expressed by young, healthy, sedentary women before and after an exercise intervention. Young women (aged 18-30, $n = 39$) participated in focus groups or interviews during a 4-month exercise intervention. Afterward, 22 of these women and 20 controls completed physical activity diaries for 6 months and were interviewed. For the majority of women ($n = 24$), obligation to the study prevailed as the motivator during the intervention. Some ($n = 15$) became physically active for their own benefit. Afterward, exercisers and controls said they were physically active to feel better and/or healthy ($n = 20$), for body image and/or weight loss ($n = 20$), or both. Women expressed motivations for physical activity in ways that resonated with self-determination theory. Their commentaries expand on theory to include experiencing multiple motivations simultaneously and motivations shifting over time and in differing contexts. Social motivations were compelling, both those associated with societal values (research, health) and cultural trends (body image).

***Keywords:*** *motivation; physical activity; young women*

Regular physical activity at moderate to vigorous levels is known to decrease rates of chronic disease and premature mortality. The majority of adults, however, do not obtain sufficient levels of physical activity to derive the health benefits. This is true even among young adults, according to several reports. The 2007 Behavioral Risk Factor Surveillance System reports that among U.S. adults aged 18 to 24 years, 39% reported physical activity levels below the recommended guidelines of 150 minutes per week of moderate intensity activity; among adults 25 to 34 years, 46% reported levels below the recommended guidelines (Centers for Disease Control and Prevention, 2007a). The U.S. National Health and Nutrition Examination Survey Epidemiologic Follow-Up Study indicates physical activity declines 30% over a 7-year period in adult male and females between the ages of 18 and 30 years (Anderssen et al., 1996). Young women's low level of physical activity is of particular concern. According to national prevalence data, just one third of women ages 18 to 24 report obtaining recommended levels of leisure time physical activity, compared to 41% of men (Centers for Disease Control and Prevention, 2007b).

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Whereas the causes of physical inactivity are multiple, including factors that are individual, social, economic, political, and environmental (National Cancer Institute, 2005), it remains important to know why—for what reasons, motivations, purposes, and goals—young adults incorporate physical activity into their lives so as to assess their willingness to incorporate and maintain lifelong healthy practices. Little is known of motivations for physical activity among women in early adulthood or how their motivations may present themselves and alter in differing contexts over time. The aim of this study was to gain a closer, descriptive understanding of the reasons young adult women incorporate physical activity into their lives during their participation in an exercise intervention with a strict prescribed protocol and, afterward, in a physical activity diary study. We hypothesized that insights into modifiable determinants of lifestyle patterns, including motivation and lack of motivation for physical activity, will help suggest the specific means through which effective public health interventions can occur, including ways of targeting this subgroup of the population in health promotion strategies.

## METHOD

### Study Background

For this study, we recruited young women during and after they participated in a clinical trial examining the effects of aerobic exercise training on physiologic parameters hypothesized to lie on the causal pathway between the purported association of exercise and breast cancer risk. The women eligible for the trial (called WISER—Women in Steady Exercise Research, $N = 320$) needed to be healthy but sedentary (no exercise three or more times weekly in the prior 6 months), to have a self-reported menstrual cycle of 24 to 35 days in length, to have no hormonal use in the past 3 months, to have intact ovaries and uterus and lack a history of gynecological problems, to not be pregnant or breastfeeding within the prior year, to have a body mass index between 18 and 40, to be weight stable (no more than 10% change in prior year), to have no history of cancer or uncontrolled hypertension, to be nonsmokers, to consume no more than seven alcoholic beverages per week, and to not have medical conditions or medications prohibiting participation in a vigorous program of weight-bearing aerobics exercise.

Recruitment for the study was conducted from May 2006 to April 2009 and aimed to reach participants living in the 10-county Minneapolis–St. Paul metropolitan area. The main recruitment method was an e-mail sent to female state university students and staff in the age range of 18-30 years. Recruitment expanded from Year 2 forward to include an e-mail sent to county employees from the two major cities; fliers posted at area universities, colleges, and community colleges; and ads in the newspaper and a free weekly variety paper. Potential participants were directed to a website for online prescreening. Full screening was completed with 1,684 women; 75% (1,260) were found eligible and 31% (391) enrolled in WISER. Enrollment in WISER averaged 53 participants in years 2006 and 2009, when recruitment took place during just part of the year as the study was starting up and winding down; it averaged 142 participants in 2007-2008 when recruitment occurred all 12 months. Half the women were randomized into an exercise group and asked to complete 30 minutes of weight-bearing aerobic exercise five times weekly for 4 months. The workload started at 65-70% of the age-predicted heart rate maximum and increased by 5% monthly to 80-85% during the final month. Certified fitness professionals supervised the exercisers. The ethnic/racial breakdown of the enrolled participants in

WISER was as follows: 5.4% Hispanic/Latina; 0.3% American Indian/Alaskan Native; 14% Asian; 8.7% Black or African American; 71.8% White; and 5.1% more than one race. By comparison, in 2000 the Minneapolis–St. Paul metropolitan area population was 15% percent minority (U.S. Census Bureau, 2007). The dropout rate was 18.9%.

In the first 19 months (June 2006–December 2007) of the trial, all participants thus far enrolled in the exercise group who had completed at least 3 months of the 4-month WISER intervention were invited to take part in a focus group or interview to discuss their experiences with the exercise intervention. The pool of potential recruits for the focus group study was 77, including dropouts.

Upon finishing WISER, participants from the control and exercise groups were invited to take part in a study examining social, cultural, and contextual factors shaping the ways young adult women incorporated physical activity into their daily lives. Participants in WISER-Postscript (WISER-PS) were asked to complete a 12-week physical activity diary randomly assigned across 6 months (recording activity, time, perceived exertion, and pedometer steps), a 7-day travel diary, and two interviews (baseline and follow up). Unlike WISER, the postscript study had no prescribed amount or kind of activity but rather asked participants to record the physical activities they took part in on their own and to register their pedometer steps during the randomly selected weeks. WISER-PS participants were recruited through individual e-mails in fall 2006 through fall 2007 sent to the 117 intervention and control participants who had completed all data collection for WISER.

## Focus Group and Interview Protocols

Exercise participants were asked these main questions relating to motivation at focus groups and interviews held during the WISER intervention: (a) What are the reasons you decided to participate in the WISER study? (b) How do you feel before, during and after a workout? (c) What has it been like for you to participate in the WISER study so far? What parts work well and not so well for you? (d) When it would be difficult to get a workout in, or if you don't want to do the workout, why do you go (when you go)? Participants unable to attend the focus groups due to scheduling conflicts were asked the same questions in individual interviews. This balance of focus group and interview material offered a means of cross checking of data sources and thus a means of improving the quality of the data (Malterud, 2001; Office of Behavioral and Social Sciences Research, 1999; Park et al., 2005).

After completing WISER-PS, participants took part in an interview. Initial questions concerned the physical activity diaries. If the subject of motivation didn't arise on the part of the participant or to prompt further elaboration, the interviewer asked, (e) What does motivate you to be physically active? Although WISER-PS had no prescribed protocol, simply recording their physical activities could be an incentive, as could the directive to wear a pedometer. In the follow-up interviews, as a means of assessing whether WISER-PS was itself motivating, we asked, (f) did you learned anything by participating in WISER-PS?

## Secondary Data From Clinical Trial

All participants of WISER completed the Modifiable Activity Questionnaire (Kriska, 1997) at baseline for the WISER study in face-to-face interviews with trained staff. The Modifiable Activity Questionnaire, a self-report physical activity survey, measures

physical activity in three domains: leisure time, occupational, and sedentary. All the information collected in this questionnaire is transformed into metabolic equivalents per hour per week (METS-h/week) using commonly accepted MET values for each activity. At baseline of the clinical trial, all WISER participants also provided demographic information (age, race/ethnicity, education, marital status, caregiving status).

Recruitment and procedures for the WISER and WISER-PS studies were approved by the institutional review board of the University of Minnesota, and all participants provided signed informed consent prior to beginning any study activities.

## Analysis

All tapes were transcribed. A content analysis of the transcribed focus groups and interviews was conducted following qualitative methods (Miles & Huberman, 1994). First, two coders read the transcripts independently, without consultation, in their entirety to get a sense of the whole. Next, the coders identified descriptive themes and subthemes for each question. Then they met to come to agreement on the coding of themes thus far. They reviewed the original transcripts further in their entirety to gather support for each theme, subthemes, and supporting quotations. As part of the overall process, every response was accounted for and made part of the coded data set, including negative examples and disconfirming and discrepant responses. The coders completed analysis only after accounting for all responses. No differences were observed between the focus group and interview formats, so responses were combined. Themes and subthemes relating to all questions were reexamined for frequency and content of response.

To maximize quality of data gathering and analysis, the principal investigator, a coinvestigator of WISER and anthropologist experienced in qualitative research, facilitated the focus groups and interviews, oversaw the data analysis, and took part in each phase. A cofacilitator was present at the focus group sessions to isolate each speaker (and thereby avoid redundant registering of frequency) and to record impressions of the interactions. The facilitator and cofacilitator debriefed following each session. The two coders were the focus group or interview facilitator and a research assistant. The facilitator, known to some of the WISER participants in connection with WISER study clinic visits, informed participants that she had no training in the field of physical education and that there would be no feedback to WISER staff of data gathered during the focus group study. The research assistant had no involvement with the WISER and WISER-PS study other than coding. At each phase of analysis, the two coders carefully and separately reviewed the transcribed data and then conferred to compare their coding results and to obtain agreement where disagreements occurred and to review and revise coding as indicated. All codes were reexamined to assess the propensity toward variability in the process of interpreting data leading to drift, that is, the tendency to assign data into a preexisting code rather than reassess and consider the need for a new code to capture a different theme. The coders checked consistency and accuracy of application of coding through constant comparison. The qualitative analysis software QSR International's NVivo (version 8) was used for data management.

At baseline of the WISER clinical trial, demographic characteristics across the two groups (exercisers and controls) were calculated as means for continuous variables (age and body mass index) and frequencies for categorical variables. For WISER-PS, differences between exercisers and nonexercisers were assessed by Student *t* test for continuous variables and $\chi^2$ tests for categorical variables. As a check on group differences in the sample, a regression analysis was performed to determine any differences in physical activity levels as measured at baseline of the WISER trial by the Modifiable Activity

Questionnaire (Kriska, 1997; Kriska et al., 1990) between participants from the exercise and control groups who went on to join WISER-PS.

## RESULTS

### Participants

A total of 39 women participated either in a focus group session (21 participants in 6 discussion groups of 5, 5, 4, 3, 2, and 2 women) or an individual interview (18 participants) after completing at least 3 months of the 4-month intervention. This sample constituted 51% of all 77 WISER exercisers enrolled during the time the focus group study took place. We later found that participants in the process of dropping out did not respond to the focus group recruitment e-mail, and we did not contact participants who had explicitly dropped out. Thus the 39 participants in this portion of the study were effectively drawn from the pool of 54 WISER study participants who were in the process of successfully completing the intervention.

The sample for the follow-up WISER-PS study of 60 women (35 from the exercise group and 25 from the control group) also constituted 51% of all participants who had completed WISER (117) by the end of 2007. Fourteen participants withdrew from WISER-PS, and 4 had incomplete data, leaving 42 (22 from the exercise group and 20 from the control group) with complete follow-up data. Participants who dropped out stated that they became busy or forgot to complete the diaries. The following data are from 22 exercisers and 20 controls who provided logs with complete information for all categories: form, frequency, intensity, and duration of physical activity as well as pedometer steps for the majority of days. The 22 exercisers counted among the 39 women who had taken part in the focus group or interview. (The other 17 focus group or interview study participants had also been invited to take part in WISER-PS but 8 declined the invitation, and 9 later withdrew.) The 20 controls completing the study were new recruits. The focus groups lasted approximately 90 minutes. The interview version of the focus group protocol took approximately 30 minutes. The follow-up interviews lasted an average of 45 minutes.

No differences were found in baseline physical activity between WISER-PS participants and WISER trial participants, including dropouts. Furthermore, no differences were found in age, race/ethnicity, education, marital status, or body mass index between the participants who completed WISER-PS and participants who had completed or dropped out of the WISER trial. Table 1 presents demographic characteristics of the participants in the two substudies.

In what follows, we present detailed results of the themes that emerged in the focus groups and interviews. The order of presentation in each theme and subtheme accords with the time frames of the study: motivations at the prospect of being in an exercise study, motivations during the study, and motivations in the follow-up diary study (see Table 2). No differences were found in the responses of participants drawn from the exercise group and the control group regarding their motivations in the diary study.

### Theme 1: Exercise Motivated by Something or Someone Beyond Oneself

*Wanting to Be Obligated to Exercise or Held Accountable for Exercise*. A key theme among focus group and interview participants was that they sought and responded to a structure that would obligate them to exercise and/or hold them accountable for exercise.

Table 1. WISER and WISER-PS Participants: Selected Characteristics

| Characteristics | WISER: Focus Group and Interview ($n = 39$) | WISER-PS: Control Group ($n = 20$) | WISER-PS: Exercise Group ($n = 22$) | All WISER-PS ($n = 42$) |
|---|---|---|---|---|
| Age ($M \pm SD$) | 25.8 ± 3.4 | 25.2 ± 2.8 | 25.9 ± 3.5 | 25.6 ± 3.2 |
| Education ($n$) | | | | |
| High school | 4 | 0 | 2 | 2 (4.8%) |
| Some college | 5 | 2 | 1 | 3 (7.1%) |
| College degree | 13 | 12 | 6 | 18 (42.9%) |
| Graduate or professional degree | 17 | 6 | 13 | 19 (45.2%) |
| Race ($n$) | | | | |
| Asian | 5 | 1 | 1 | 2 (4.8%) |
| Black | 3 | 1 | 2 | 3 (7.1%) |
| Latina | 5 | 0 | 4 | 4 (9.5%) |
| White | 24 | 15 | 15 | 30 (71.4%) |
| Multirace | 1 | 3 | 0 | 3 (7.1%) |
| American Indian | 1 | 0 | 0 | |
| Marital status | | | | |
| Single | 32 | 15 | 16 | 31 (73.8%) |
| Married/domestic partnered | 4 | 5 | 4 | 9 (21.4%) |
| Divorced | 3 | 0 | 2 | 2 (4.8%) |
| Have kids | 6 | 0 | 3 | 3 (7.1%) |

NOTE: WISER = Women in Steady Exercise Research; WISER-PS = WISER-Postscript.

The WISER study was advertized as an "exercise study" in which "volunteers will be randomized to a control group or to a exercise group—to do aerobic exercise five times weekly for about 15 weeks, where FREE gym membership will be provided for the exercise group and all participants will receive up to $300 upon completion of the study." Many participants (19) said that they joined the study because they wanted "accountability," "a push" to exercise, to be "made to exercise." One woman said, "I just wanted probably some accountability to someone other than myself; evidently, that's not enough motivation."

*Exercising Out of Obligation or Accountability to a Research Study*. Seven participants specified that at the prospect of an exercise study they believed they would feel obligated to exercise for the study. These participants also specified that they would not be likely to do it for their own personal benefit. Thus, another participant said, "When it's for myself and I'm telling myself I'm going to go work out, I'm kind of like oh, you know, 'I'm tired, I want to go home and watch my Netflix movie.' But for the study, it's like 'I can't let the study down,' so I have to go even though . . . and it's like when it's for something else or for someone else or like when you're being accountable and not just for your own well-being." One participant stated that doing something solely for herself seemed selfish. She said, "that's why I applied [to the study] was because then it was something I had to do and it was for a reason, rather than just for myself. . . . It's part of something else, rather than being selfish or . . . there's something along that line, like it's really warped in my brain." All such statements were by participants who wanted to exercise regularly but did not believe they would do so solely for their personal benefit. That

Table 2. Stated Motivations for Physical Activity Before, During, and After an Exercise Intervention

| Stated Reasons | At Prospect of Exercise Study ($n$ = 39 exercisers) | During Exercise Study ($n$ = 39 exercisers) | After, in Study Without Prescribed Exercise ($n$ = 22 exercisers, 20 controls) |
|---|---|---|---|
| THEME 1 | | | |
| To be obligated to exercise | 12 | | |
| To exercise for a study | 7 | 24 | |
| To contribute to research | 13 | | |
| Social forms of obligation | | 9 | 4 |
| THEME 2 | | | |
| Wanting to exercise | 16 | | |
| Wanting to become motivated to exercise | 13 | | |
| Exercising for itself or oneself | | 10 | |
| Exercising for fun | | | 6 |
| THEME 3 | | | |
| Exercising to be(come) healthy | 6 | | |
| To feel good/better | | 5 | 11 |
| Health concerns | | | 10 |
| Body image or weight loss goals | 2 | 3 | 20 |
| For transportation | | | 3 |
| Lack motivation | | | 5 |

would not provide sufficient motivation but doing so for a purpose beyond oneself (such as scientific research) would. Exercise participants also discussed what actually motivated them while taking part in the intervention. The majority of participants (24 of 39, or 62%) said that even when they did not want to go to a workout or it would be difficult to do so, they would do so out of a sense of obligation to the study. (The protocol limited the permissible number of missed sessions to 15 over 16 weeks and required some exercise each week.) One woman said in an interview,

> Well, actually my goal word is that "it's for science." So every time I have to wake up and I really don't want to go, I have to say, "it's for science." So that's why I go. That's my little mantra. And it's a good thing and you make a commitment. It's an overall health thing so it's like no questions asked, like you have to go. . . . You made a commitment and when you make a commitment, you have to go through with it.

The phrasing of 4 participants, "no questions asked," the directive "not to listen to yourself," or to give oneself "no choice" or "no option," indicated a strategy of overriding internal disinclinations in favor of an obligation to complete an exercise session. These responses suggest internal conflict quelled by counterarguments. This most frequent reason for overriding barriers to exercise—obligation to the study—arose in interviews and focus groups alike. In a focus group this exchange occurred:

> Participant A: "If it's a week where I won't have a chance to fit it in . . . you just have to really not listen to yourself."

Interviewer: "What kind of thoughts shouldn't you listen to?"
Participant A: "Like, 'oh they'll understand, stuff comes up. They can't expect you to work out for 4 months and not have something come up here and there'—or you had an emergency. You start coming up with fake emergencies in your head. [laughter] 'I'm really sick today!'"
Interviewer: "So, again, why *do* you go?"
Participant A: "Because of the guilt. The guilt, like this is for a purpose. It might affect something badly if I don't go. It's bigger than just me, you know? It has bigger consequences than just, you know?"
Participant B: "With me it's always talking myself out of getting that extra *x* amount of minutes of sleep or an hour of sleep. . . . Maybe I'm not okay, maybe I really, really, really need to stay in bed. [laughter] . . . It's kind of like having that big picture and you're just this little tiny part and you don't want to screw it up at all."

Of the participants, 16 were students, including 9 graduate students. Even if, as some said, they didn't know exactly what the effects were if they varied from the protocol, they appreciated the stakes and identified with the study.

*Making a Contribution to Society by Participating in a Research Study*. Another theme related more specifically to the clinical trial as a motivator. Several participants (13) wanted to participate in research. Five of the 13 specified wanting to help cancer research. Three women mentioned knowing someone who had had breast cancer. One of these women added,

> So I thought this is a wonderful opportunity to at least do something productive . . . to help, if not these people, then people in the future. And then the $300. So you'd be getting paid for doing exactly what you have been doing. Either way a win–win situation. And 'cause I need some of the external commitment to follow through on the days when I won't want to do it.

*Exercising Out of Obligation/Accountability to Other People*. For some participants (9), the sense of obligation to the study was expressed in interpersonal social terms as accountability to the trainer or to the research staff and/or as not "letting someone down."

Similarly, in interviews conducted following the WISER-PS physical activity diary study, 4 participants (including three from the WISER exercise group) emphasized being physically active only through social motivations. One participant said, "Like I said before, the obligation [to others] definitely is a motivating factor for me because I'm not answering to myself. I can easily justify it to get myself out of doing something." Another participant said, "During the study that was motivation out of obligation. . . . I would go right now if someone told me I had to, but no one has told me that." Another reported that her kickboxing instructor was very motivating:

> And he yells at me all the time and I like that, I don't know why. [laughter] . . . I need interaction with someone to keep me going, to keep me in there. . . . There has to be some kind of external motivation for me to do it. The only thing I have any internal motivation for is swimming and I don't do that as often as I would like.

(Note that the participant, and not the interviewer, introduced the words *internal* and *external motivation*.)

## Theme 2: Exercising for Oneself

Theme 1 emphasized participants who linked their motivations to a purpose or to something or someone outside of themselves. Responses in the second theme highlight exercising, working out, being physically active itself and related motivations as the stated goal.

*Wanting to Exercise, Wanting to Become Motivated to Exercise*. Many participants (16) said that they had joined the study because they wanted to exercise. It is important to note, however, that in this time frame (with exercise as a prospect), all but one noted this goal along with another purpose: wanting to be obligated to exercise (7), wanting to gain motivation (7), and wanting to help research (4). Evidently, the participants who stated they wanted to exercise wanted some impetus or structure for exercise. In addition were many women (13) who pointed out their hope that the study would prompt motivation to exercise. All but one stated additional reasons: wanting to exercise (5), wanting to help research (4), wanting to be obligated to exercise (3), or wanting to be healthy (1). These responses appear more accurately to express wanting to want to exercise. As one participant said,

> I've been wanting to get back into exercising on a regular basis and felt like I needed some motivation to do that. So, I thought the accountability of the study would kind of force me to exercise more. Just because I'm doing it for the study, so that would kind of make me want to do it more, other than if it was just me on my own. I'd be like "oh, I can skip." But knowing that there's people who are looking at the data and, you know, counting on the data, and kind of being accountable to the study.

Responses in this subcategory, therefore, have some crossover with Theme 1 and its subthemes.

*Working Out for Itself and for Oneself*. When it came to discussing reasons for staying the course of the exercise intervention, 10 participants said they were doing the workout for themselves. Discussions of a sense of doing the workout for oneself were strikingly different from discussions of obligation to the study. One of the women who gave this response spoke forcefully: "I actually want to work out. So for me it doesn't have anything to do with the WISER study." Another woman derived personal satisfaction from completing the exercise:

> I would have worked out anyway. I guess I was pretty proud of myself that I always seemed to work things out during the study. . . . Probably it was for the study, and maybe a little personal like "can you do this, can you work this out?" type thing.

This last comment about pride suggests personal motives developing during the course of participation in the exercise intervention. For some this benefit was independent of the exercise benefit, extending to a sense of self-control, persistence, and accomplishment. A woman said,

> And I think a big thing was it was also proving my self-control 'cause when I joined the gym for like 3 months, I didn't go that often. And I feel like it's just kind of disappointing when you're spending all that money and you don't go. Being in the study helped promote my self-control.

Another participant (who did not want to follow suit with her drinking and smoking friends) said, "Because I wanted to succeed. I wanted to finish it. At some point I was like, this is not worth it. But I want to be able to follow through with things more in my life."

*Being Physically Active for Fun*. There were 6 participants who said, following the WISER-PS diary study, that they were physically active out of enjoyment and in particular enjoyed being outdoors.

### Theme 3: Exercising as a Means to an End

This theme encompasses several distinct subcategories that have in common that exercise was presented as a means to a desired end. These responses were clearly distinguishable from Theme 1, which instead emphasizes orientations and motivations outside the self, and from Theme 2, which emphasizes physical activity itself as the goal. More often these themes were expressed following WISER-PS.

*Exercising as a Way to Be(come) Healthy*. Six participants said they had joined the WISER study to be(come) healthy. Four of the 6 stated their aims of health and wanting to exercise. One woman shared that she was reacting against unhealthy habits among her friends:

> I was like bored. I was looking for different kinds of things to do other than just like hang out with my friends. And they drink and smoke and I quit smoking and didn't want to be doing any of that.

Another participant spoke of wanting to maintain a healthy control over her weight after losing and gaining weight in graduate school. After the WISER-PS diary study, 20 participants said they were motivated to be physically active to be healthy. Seven participants, who said that health and fitness was their motivation, emphasized that body image was *not* a concern or motivator. Said one exerciser,

> I've completely forgotten about my body shape. I don't really think about it much. I concentrate more on getting the exercise and how I'm feeling when I'm running. When I initially started the WISER study, I was more concerned about my body shape. But I think I have gotten to be at a good shape that I'm comfortable with and a good weight. It's been consistent for like 6 to 8 months now. I'm training to run a half marathon, so I'm more focused on finishing that day's training.

*Working Out to Feel Good/Better*. During the intervention, 5 participants spoke specifically of doing a workout to feel good or better. After saying she had been tired in the past, before starting the study, a participant said, "I say to myself, 'if you don't go, you're gonna feel awful . . . you're gonna crash again in the middle of the day.'" Another said,

> There are times too when if we had gone out, like the night before, and I really just felt like sleeping in, like in the back of your head knowing that after you work out you feel better and that you will feel better after you go out.

Another woman said she exercised to achieve a better work–life balance.

After the intervention, 11 participants said they were physically active to feel good or better either while being physically active or afterward. One exercise participant said,

"It does make me feel better going to the gym too. I mean it helps me relieve stress from work. I usually feel better about myself." She noted she had formed exercise goals for herself after completing the WISER study: "I've kind of wanted to maintain that three or 4 times a week and so I feel like 'oh, I really should go. I haven't gone in a day or two.'" Another exercise participant's comments suggested that she felt better during and after being physically active: "I just have a desire to feel energized, so I'll go and exercise." This participant was a full-time caregiver. Another one of the few mothers in the group, who had full-time paid employment, expressed a sense of gaining relief from daily work and homelife stressors through exercise. About as many participants were physically active for stress relief (4) as said that stress demotivated them—because it would cut into scarce time (3).

*Exercising for Health Concerns*. After the WISER-PS study, 10 participants stated that specific health concerns motivated them to be physically active: Four noted family members with chronic disease (high cholesterol, diabetes, heart disease); 2 had specific health problems; and 2 wanted to be in shape in view of future pregnancy plans.

*Exercising for Body Image or Weight Loss Goals*. Although just 2 women specified having body image or weight motivations at the prospect of the study, and 3 mentioned it as a reason for staying in the intervention, in discussions after WISER-PS, 20 participants said they were motivated to be physically active out of concern with body image or weight. Of these responses, 12 were from women who had been in the exercise group. One exercise participant, a woman wanting to get in shape for her wedding, emphasized her lack of concern for health compared to body image:

> When I do work out, it's for that, not necessarily, you know, it makes you sleep better, you know, it's good for your heart, all those other reasons that you know you should exercise for, but it's more for the vanity reasons [laughter], wanting to look better, wanting to keep your body looking young and all those kinds of things. . . . I would like to increase my physical activity more because I would like to make some changes in my body before the wedding. I'm getting married and, you know, I want to look good in my wedding dress and so that has been my motivation.

Another participant was concerned about fitness but body image was more important:

> Looking good is the top motivator, and having a tight, toned body that I don't need to think twice about when doing any activities. I don't want to have my body be the excuse for why I don't do something.

Several women referred to their high school years as they assessed their current body shape or size and image. One of the 10 married women (a control participant) said,

> It's more—honestly, getting a glimpse of myself before going into the shower. I feel bad 'cause of how I used to look. . . . I mean just a couple of years ago I could wear a bikini. Now I wouldn't dare. I just ugh! . . . We both [husband and herself] have gained a lot of weight since we got married. And we've both gotten older, but it still bothers me. And that can sometimes get me motivated.

Four women spoke explicitly of weight loss as a motivator. One participant said, "The scale is probably the biggest motivator, and I wouldn't really call it body image." Another participant said,

> Sometimes it's a number on a scale and sometimes it's feelings of being lazy. . . . Maybe it's that, you know, my favorite pants feel a little tight or something that'll motivate me. . . . It does make me feel better about myself when I do the walking or just being outside.

Two women's motivations had to do with feeling too skinny. One of these women commented after the interview that if any women in the study said body image was not a motivating factor (for being physically active), they were "lying."

*Exercising for Transportation*. Three participants were physically active primarily for transportation.

### Counter Theme: Lacking Motivation or Interest in Exercise

Five women expressed a lack of motivation to be physically active. One (an exerciser) emphasized that because she is young and healthy, health and fitness aims didn't motivate her. She said, "I really don't care. If you don't do anything, what good does endurance do me? I mean really!" [laughter]. And when directly asked about body image, she said it wasn't a priority or motivator either. This single mother noted that she "use[s] relaxation or kind of unwinding as an excuse for not really doing much of anything." She also said, however, that she would be drawn by wanting to "get away from it all" and to gain a feeling of "well-being."

### Multiple and Shifting Goals: Social and Societal Motivations, Health, Body Image, All of the Above

In this study we took care to analytically isolate the many voiced motivations for exercising or being physically active in differing contexts and time points. When faced with a future prospect of exercising regularly for a research study, most women (77% or 30 of 39) advanced multiple reasons for joining the study, notably including ones which suggest a perceived desire for motivational aids. The most general sense one obtained from discussions of the prospect of being in an exercise study is both recognition that exercise was something the participants thought would be good to do along with an acknowledgement, for most, that they would not have their own motivation to exercise regularly and that they, therefore, specifically sought motivational aids (of obligation or accountability).

We were interested in learning whether the exercise participants' motives changed during the intervention as compared to their expressed reasons for joining an exercise study. Roughly two thirds of the exercisers (26 of 39) shifted their motivation during the course of the intervention. Comparison of the first two time points showed that more than one third of participants (15 of 39) expressed a change toward motives revolving around feeling better or other personal motives (Table 2). By contrast, one quarter of participants (11) that had originally expressed multiple motives for exercising as reasons for joining the exercise study then expressed fewer motives or one motive for exercising during the study: an obligation to the study. This may have meant a more general narrowing of motives or it may have indicated an acknowledgement that there was a "bottom line" motivator stemming from the study protocol requiring exercise multiple times per week. The shifts in motivation were, therefore, in two directions: social and societal motives and personal motives.

Once again, it is important to note that for some of the participants this was not an either/or shift. Among the 15 women who highlighted their personal motives for physical activity during the WISER intervention were 6 who said they worked out owing to both senses of commitment (to the study and to the self). Interestingly, some of the responses about feeling better seemed to indicate less a bodily feeling than a moral one. A woman said,

> I know that I feel better after I've done it so it's kind of a motivator. . . . Like part of it's just emotional—feeling better—and part of it's okay, it's done. I don't have to worry about it anymore. . . . Like, I'm committed to the study. So I just have to follow through with it.

Another woman said,

> Sometimes I would try to procrastinate, but otherwise I didn't miss any for motivation purposes 'cause I knew that it was that obligation. And again, I'm an accomplisher and somebody that has to accomplish. . . . I think I have a pretty good work ethic.

Yet when the interviewer asked, "Do you consider the obligation to someone or is it an obligation to yourself?" she indicated obligation to others. "I would view it as to someone. Because if it's to myself, then I can easily talk myself out of it."

Thus, although we pay close attention to distinguishing the ways the women expressed their interest and motivation for exercise, given the overlap in expressed motivations, it seems more pertinent to register that the women linked these reasons: They wanted to exercise and to be motivated to do so and, for several, to be motivated through a higher level of obligation or purpose than the personal one. For some, taking on a socially valued engagement, to contribute to research, elevated the obligation and made it more relevant and compelling.

For more than half of the exercise participants (22 of 39), we had a third time point of comparison: motives after the intervention ended and during the "PS" study largely involving completing physical activity logs. What comes out most strikingly is the shift, after the exercise intervention, toward discussing means-end goals, most commonly to health and concerns for body image or weight. The 22 women from the exercise group of WISER who participated in WISER-PS included 10 who maintained motives relating to feeling better or feeling fit. Nearly half the women in WISER-PS indicated body image or weight control or loss as a key motivator. Seven of the women from the exercise group appear to have added body image or weight loss as a motivator. It is possible that these motives were present during the exercise intervention but not discussed because women were asked not to lose or gain weight during the WISER study.

In the follow-up interviews of WISER-PS, several participants voiced multiple reasons for being physically active. Nine said that body image and health and fitness were both motivators, 5 noted health and fitness and feeling better were both motivators, and 2 said body image and feeling better were both motivators. One woman said, "Feeling good and looking good. I think it's pretty much equal." Another participant noted health benefits, feeling better, and weight control all as motivators. She said,

> It makes me feel good after it's done. I know it's good for you and that there are long-term benefits from being active. You read it everywhere. I think it's a good stress relief and gives me time to think. . . . I mean I care about my body and my feelings about my body enough to be willing to do what I have to.

Another said,

> When you're done . . . like I don't know if the adrenaline kicks in or your endorphins, but you just feel like you had a good workout and you feel a lot better about yourself. . . . I think that's my biggest thing. If you can break a sweat while working you know you are working out well.

Finally, in the follow-up interviews, we asked participants whether they had learned anything by participating in WISER-PS. We obtained responses from 33 participants. All these participants affirmed that they had learned from the pedometers that their physical activity levels varied. With all but 4 participants, though, the realization of not getting in as many steps at times did not motivate changes.

## DISCUSSION

This study aimed to explore motivations expressed by young women at different time points and in different contexts: during an exercise intervention and afterward, in a follow-up physical activity diary study. We conducted an open analysis of the data and subsequently considered our findings in light of existing health behavior theories. In the process, we found that the women expressed their goals and motivations for physical activity in the two contexts in ways that resonate with concepts of self-determination theory (SDT; Deci & Ryan, 1985; Ryan & Deci, 2000).

SDT initially posits two poles of motivation: intrinsic motivation, described as motivation tied to enjoyment of the activity, and extrinsic motivation, which is externally imposed. The theory also posits intermediary forms. Introjected regulation connotes a conflict of one's internal volition against external regulation of activity. An example of introjected regulation in the realm of health would be struggles to maintain a healthy, nutritious diet known to be good for the body when one is accustomed to and desires high-fat, high-density food. Further along the continuum in the direction of intrinsic motivation is identified regulation, associated with a sense of value for the still externally regulated activity. Continuing with the same example, with identified regulation, one doesn't struggle to maintain a healthy diet; instead, one incorporates it, having learned to accept it as beneficial. Whereas identified regulations may be set apart from other activities closely coherent to one's values and life, with integrated regulation, the activity has been fully integrated into one's life. In this example, the nutritious diet would be part of a broader healthy lifestyle. The theory has been applied similarly for many behaviors and orientations toward them, including physical activity.

Complementing SDT is a set of three concepts considered to be the social environmental supports for motivation. The concept of autonomy support fleshes out the basic reasoning of SDT, which hypothesizes that people in the long run will choose to do those activities they feel are self-determined, that is, coming from their own volition rather than from coercion. A sense of competence is seen as a supporting mechanism for engaging in an activity. From research on school behaviors, the theory suggests that a sense of relatedness is a third social support for an activity. The theory also posits amotivation, which is considered to stem from lack of competence, lack of connectedness to outcomes, or lack of support in the broader environment (Ryan, 1995). Thus, SDT offers a potential explanation for why social support but not social norms are associated with physical activity. From the perspective of SDT, it would make sense that people

would respond positively to positive inducements and react against coercive measures (Chatzisarantis, Hagger, & Brickell, 2008). Coercive forms of motivation would hinder the growth of autonomous regulation (Wilson & Rodgers, 2004). Numerous cross-sectional studies have found support for SDT applied to physical activity (Hagger & Chatzisarantis, 2007a; Ryan & Deci, 2002).

Several themes and subthemes that emerged in this study can be quite specifically compared to forms of motivation as outlined in SDT and revisions of it. Externally imposed forms of motivation were expressed in Theme 1, which revolved around women wanting to be obligated to exercise or held accountable for exercise by someone or something outside themselves. The women clearly indicated not having what SDT calls intrinsic motivation to become more physically active and wanting to avail themselves of what SDT calls extrinsic forms of motivation. It should be noted, however, that SDT doesn't suggest that people would desire extrinsic forms.

Revisions and refinements to SDT theory underscore that whereas some activities may well be undertaken for sheer (intrinsic) enjoyment exercise is generally undertaken for the outcome more than or rather than for the experience itself (Edmunds, Ntoumanis, & Duda, 2006; Ryan, 1995). Furthermore, it has been noted that whereas many childhood physical activities may be intrinsically enjoyable, adult practice more often relates to external sources. Preassigning a given activity a certain kind of motivation (i.e., sports as intrinsically motivated versus exercise as extrinsically motivated) has, however, been questioned (Gillison, Osborn, Standage, & Skevington, 2009). Very few women in WISER and WISER-PS indicated that enjoyment of physical activity was a motivator. With less or even no expectation that the goal for exercise should be to attain intrinsic motivation, one suggestion is that identified regulation may be a worthwhile and more feasible goal (Ryan, 1995; Vallerand, Pelletier, & Koestner, 2008; Wilson, Mack, & Grattan, 2008). Some maintain that external forms of regulation may be helpful in early adoption of a practice, including as early incentives for activities not intrinsically satisfying (Markland & Ingledew, 2007a).

More than one third of the exercise participants emphasized that they were motivated to exercise during the intervention because they had developed a sense that they wanted to exercise for themselves (Theme 2). Working out for oneself after having been sedentary appears to indicate an incorporation of a value, or identified regulation. The intervention served to bolster women's volition to continue the practice and possibly to integrate the practice into their lifestyles. The several participants who also indicated a sense of accomplishment by adhering to the exercise regimen recalled two of the concepts hypothesized in SDT to support motivation: a sense of autonomy and of competence.

Exercising out of obligation or external accountability was, however, the most commonly expressed motivator by participants in the exercise group during the clinical trial. When some participants in a sense silenced one form of self-talk in favor of a "just do it" form of self-talk and others noted a sense of guilt, they appeared to be expressing the externally imposed, introjected motivation. Other studies have reported similar findings. O'Brien-Cousins and Gillis (2005) learned from 40 adults contemplating increasing their physical activity that they found it advisable to avoid self talk other than to tell themselves "don't think about it" or "just do it." Gillison et al.'s (2009) study of 18 girls and boys found that girls lacked social inducements from peers but were motivated by guilt, whereas boys had lots of social inducements and pressures for physical activity. These studies and ours draw attention to the potential importance of sociodemographic differences (here, age and gender) in relation to motivation.

There is concern that introjected regulations will backfire in time (Edmunds, Ntoumanis, & Duda, 2007). This prediction has been made in particular in relation to body image and weight loss goals. The literature on motivation for exercise generally posits body image as an external (introjected) form of motivation and warns that it will not be sustaining. From the perspective of SDT, in time the person who is physically active to obtain this outcome might react against this kind of external inducement, as it counters individual autonomy, or if the desired result of improved body shape or weight change does not occur, the theory predicts the person would lose motivation for the activity (Markland & Ingledew, 2007b; Ryan, Frederick, Lepes, Rubio, & Sheldon, 1997). Cross-sectional and intervention research appear to support the perspective that exercising for certain kinds of goals may—or may not—be sustaining. A national survey of U.S. adults found that adults reporting dissatisfaction with their body sizes had lower levels of physical activity (Kruger, Lee, Ainsworth, & Macera, 2008). A meta-analysis of research on the impact of exercise on body image found positive correlations: women (and especially men) had more positive body images after an intervention (Hausenblas & Fallon, 2006).

A revision to SDT raises the point that it is important to consider people's purposes, reasons, or goals distinct from whether the motivation was autonomous or controlled (Markland & Ingledew, 2007a). Theme 3 on exercise as a means to an end (including subthemes of exercise as a way to be[come] healthy and prevent disease, working out to feel good or better, exercise for body image or weight control goals, and exercise for transportation) is relevant to this discussion of exercise motivated by specific goals as well as motivations. Many WISER participants expressed having more than one motivation at a time and that these could include both external and internal motivations and goals. Some women said they employed both kinds of motivation (inward and outward directed) for adhering to the exercise protocol. Although the majority of women exercised out of obligation to the study rather than for themselves, within this group were several who also indicated a sense of identification with the clinical trial and/or staff and a sense of value for scientific research. This identified regulation also recalls one of the three environmental supports of SDT theory: a sense of relatedness as being motivational. After the intervention, without the context of the external obligation, motivations shifted for many: Half expressed a sense that they exercised out of concern for health or well-being and half expressed a desire for improved body image or weight control or loss. Whereas some women strongly endorsed one goal and adamantly rejected the other, more women endorsed both. Taking into account these shifting motivations and goals, we suggest that theories of motivation should be conceived of as potentially acting in a nonlinear fashion or, better, through a dynamic process in which people may have multiple, simultaneous motivations. Models of motivation could indicate this more complex quality.

The question arises as to outcomes where there are multiple motivations. To the extent that having multiple motivations from external and internal sources produces tension, from the perspective of SDT, one would predict a future shift to resolve this conflict either by discontinuing the activity (an outcome not sustaining positive behavior change) or a positive resolution of the conflict in motives. Regarding the latter, one might predict for some a shift, in time, to more sustainable motives. A carry over appears to have occurred with a subset of WISER exercisers who developed their own motives of exercising (i.e., for their own benefit) during the intervention and carried them over into the context lacking a prescription. Similarly, a 12-week exercise study found an increase in a sense of competence and relatedness and in identified and intrinsic motivations (Teixeira et al., 2006; Wilson, Rodgers, Blanchard, & Gessell, 2003). A 16-month intervention for weight change with physical activity saw a change from extrinsic motives

of appearance and weight control early on to enjoyment and revitalization later, in maintenance (Ryan, 1995; Teixeira et al., 2006). Another study found that physical activity practices introduced to teens at school were transferred and practiced in the home setting (Hagger & Chatzisarantis, 2007b). Changes in a positive, linear direction form part of the existing SDT model. It is important to keep in mind that many identified motivations are the result of a process of internalization. There is yet another way of looking at having multiple goals. It may be that having just one goal (e.g., weight loss) may lead to disappointment and discontinuation if the desired results are not forthcoming. Having an additional goal (e.g., feeling better) could provide stability and sustainability to the practice. In the time frame of this study, we found that the two goals had the potential of being complementary.

The clear difference in motivations in each study (prescribed protocol and descriptive diary) underscores the question of context to motivations. In this study and in a previous study of a physical activity intervention with women (O'Dougherty et al., 2008), we found women motivated to continue an intervention in part because of the imposed obligation and/or accountability (introjected regulation) and in part because it was for social purposes above and beyond themselves. In this study, some expressed this motivation in interpersonal terms and others expressed it as a shared value (a scientific cause of societal benefit). They identified with the study in part because of their social values: These values were themselves motivational. Frederick-Recascino (Frederick-Recascino, 2002) has called for a broadening of the SDT construct to consider social motivations. Women's motivations during and after the WISER clinical trial also register the relevance of shifting social and cultural motivations. Models of motivation might be enlarged to more fully capture people's social as well as psychological motivations and priorities. Along these lines, Miquelon has identified intrinsic forms of motivation as hedonic enjoyment in contrast to motivations associated with self-realization and/or with a sense of higher purpose and meaningful relationships (Miquelon & Vallerand, 2008; Ryff, 1989).

Also regarding context, the lack of difference in the kinds of motivations expressed during the follow-up diary study on the part of those from the exercise group and from control participants was a noteworthy finding and leads us to consider possible reasons why. It is important to keep in mind that all women were eligible for the original study because they were young (aged 18-30) and healthy but sedentary. Commonalities possibly accounting for the similarity in motivation were gender, age, and generation together engendering a strong concern for body image and for health, respectively. Thus when we speak of context, it is important to recall that the research contexts themselves are embedded in a broader sociocultural context and that context will likely override the smaller, more short-lived one.

The model of SDT has been fruitful in stimulating work on qualitative differences in motivation (Vallerand et al., 2008), and it has provoked further questions over what the model implies. It has been suggested that motivation may or may not carry over in different contexts (Hagger & Chatzisarantis, 2007b); that people may experience more than one kind of motivation over time with a given activity (Vallerand et al., 2008); and that the SDT model needs to be seen dynamically, without sharp breaks or without necessarily following a linear order, as a stage model of change (Prochaska, 1983) suggests (Rose, Parfitt, & Williams, 2005). The findings of this study offer support to these refinements and modifications of SDT.

This study had strengths and limitations. The use of focus groups and interviews introduced some variability in the study data collection: Focus groups have different dynamics from individual interviews, so matters may be differently addressed in each

format. However, the same questions were made by the same facilitator throughout, and using two different formats can offer a balancing effect. Focus group dynamics and content may also have been affected by the fact that the facilitator was part of the clinical trial. As a result, responses may have been more than usually affected by social desirability. We handled this by underscoring the lack of training and experience of the facilitator with exercise. A further limitation was that we did not recruit dropouts from the WISER study for the focus groups or for the follow-up diary study. The sample for the focus group study was thus comprised of finishers, that is, participants who did succeed in completing a 16-week exercise program in which the last 4 weeks entailed vigorous exercise. (Why exercisers dropped out of the WISER trial is the subject of future study.) Another potential limitation is that participants were asked to retrospectively assess their motivations for joining the exercise study 3 or 4 months into the trial. Their responses may have been altered in some way by the experience of study participation. Strengths include the in-depth nature of the study. This study counts among the few explorations of how people themselves verbally formulate their motivations for physical activity. To our knowledge, it is the first study exploring motivations among young women at more than one time point and context.

## Implications for Practice

The findings of this study have specific and general implications for interventions and for health-promotion efforts aiming to sustain positive behavior change of physical activity at levels that will afford health benefits. The ideas, that context is important for the shaping of motivations and that motivations can be multiple and shift dynamically in differing directions, have direct implications. Many women voiced a preference for being held accountable or obligated to something or someone outside themselves. This study joins others in indicating that these kinds of motivational aids may be especially important in the early phase of adoption of a lifestyle change, in this case, increasing physical activity among the inactive.

This study found that social and societal motivations were compelling to women, both those associated with societal values (scientific research) and cultural trends (body image). Some women said they would not be likely to work out for themselves but instead would do so for others and societal benefits. Some indicated further that they always want social motivators to maintain a practice. Whereas participants with altruistic or societal oriented goals may serve immediate research aims, the findings of this study suggest that one should not expect them to be transferable outside this context unless parallels in the community are found or put in place. It might prove beneficial to acknowledge the expressed need for social and community supports for physical activity as valid and develop forms of health promotion to create such supports. One possible direction for interventions to take might be to overtly discuss the lack of internalized motivation and, where relevant, the social values of taking time to be physically active (if not for oneself, then to be healthy to care for one's family or to study or work at one's best). Interventions should anticipate shifts in motivations and develop social supports for sustainable goals. It would be worthwhile to place greater research emphasis on the maintenance phase, as the markedly different context will yield differing motivations and goals.

Regarding cultural trends, it seems useful for practitioners to recognize and be supportive of the multiple goals women have for physical activity and also to draw attention to the more sustainable ones (health, well-being, sense of accomplishment). This study shows that some women came to be motivated by these more sustainable goals and that

their experiences of being physically active also affirmed these goals. Again, it may be worthwhile to raise the subject of social and cultural motivations to an explicit level of discussion with women so that practitioners can more effectively communicate about the common need for physical activity to involve means–end purposes or entail meaningful experiences in accordance with values and other life commitments. To increase long-term effectiveness of physical activity interventions and create more successful health-promotion campaigns, it may be useful to identify multiple goals (individual and social) in various subgroups of the population that will support sustained physical activity in the maintenance phase of interventions and in daily life.

## Future Research

This study of how physical activity fits into young women's lives has been guided by a growing understanding that researchers' conceptualization of motivation should direct them to explore motivation not only as psychological (the individual vis-à-vis society) but social (individuals grounded in a social context). The results of this study support as well as revise and expand on SDT as a means of understanding motivation for physical activity behavior in young women. The findings also suggest the need to expand researchers' sense of motivation to encompass social and cultural orientations to the communities, cultures, and values. There is need for further research among different subgroups of the population to specify social, cultural, and societal sources of motivation and goals for physical activity.

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