

Motivation to Be Physically Active in a Work Setting

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INTRODUCTION

In late July 1996, the U.S. Department of Health and Human Services released a landmark report, the first by the Surgeon General to address the topic of physical activity and health (10). The message of the report was strong and clear: Americans need to incorporate physical activity into their lives in order to improve their health. As the report delineated, the health gains acquired through regular physical activity are numerous, from lowering the risk of coronary heart disease and hypertension to improved mental health.

Unfortunately, the ways Americans can incorporate physical activity into their lives are less clear. From lack of time to lack of a place to be active, there are numerous obstacles to physical activity. Melpomene has studied this topic over the past 13 years, through periodic membership surveys and published reports (2, 3).

In the pilot study reported in the article that follows, we took a closer look at the related subject of why women start and then continue physical activity. Using a framework developed by researcher Beth Marcus and her colleagues, we explored both motivators for and obstacles to activity as part of a process of change. This framework is useful in identifying not only a person's current level of participation but also her thinking about physical activity. Our goal was to compare similarities and differences of active and inactive women.

By exploring these topics in the context of the process of change, we found that both expectations and barriers were different for women who were active than for women who were not. For example, inactive women were more likely than active women to cite lack of discipline or lack of motivation as work-related obstacles to physical activity. Additionally, active women cited reasons to continue exercising that were not necessarily the same as their reasons for beginning physical activity.

LITERATURE REVIEW

Models of Exercise Behavior

Researchers have explored the question of motivation for exercise in a variety of ways. The most interesting and compelling model has been developed and tested by Beth Marcus and her colleagues. Their research focuses on a stages of change model (5,6,7,8).

Initially developed to aid individuals in ceasing such addictive behaviors as smoking, the model consists of five behavioral stages of change, which are precontemplation, contemplation, preparation, action and maintenance. These stages of change not only define behavior but also behavior intention.

Precontemplation is defined as having no intention to change or denying the need to change; **contemplation** as seriously considering change; **preparation** as making small changes; **action** as being regularly engaged in changing behavior; and **maintenance** as the continuation of successful change efforts. Movement through these stages often follows a cyclical pattern, during which people make many attempts to change before reaching their goal.

Strengths of the model include its emphasis on the dynamic character of health behavior change as well as the inference that behavioral change is not an all-or-nothing thing — people who stop doing something may start again.

In a 1994 study, Marcus and her colleagues applied this model to physical activity (5). The authors believe that the process of initiating physical activity can also be understood as the discontinuation of a sedentary lifestyle. They suggest that there is promise in using the model to assess individuals' stages of exercise adoption as well as the possibility of targeting intervention tailored to that stage.

An important component of the stages of change model involves decisional balance — the pros and cons of exercise behavior. In their 1994 study (5), Marcus and her colleagues identified and compared certain perceived positive and

negative expectations about exercise. The positive expectations included more energy for family and friends, relief of tension, better sleep, feeling good, better body image, less stress and better outlook on life. The negative components included being tired after exercise, weather problems, discomfort, less time for family and friends and exhaustion at the end of the day.

Factors Important for Physical Activity

In a 1985 review, Dishman et al. explored what motivated people to adopt and maintain a physical activity program (1). Environmental factors included both social and physical aspects.

Social influences on exercise behavior included the attitudes of family, peers and health professionals. A spouse's support and attitude toward physical activity were particularly important, often more important than the participant's attitude, in influencing exercise participation. Social reinforcement from program staff or an exercise partner was also found to be an important factor in continuing physical activity.

Physical obstacles included lack of time, the weather and distance from facilities. Other negative factors included lack of interest, commitment, intention, perceived inconvenience, lack of will power, low energy and disruption in one's daily routine (1).

The reasons given for adopting or maintaining a physical activity program were feelings of competency and enjoyment.

Rutherford et al. explored the importance of feeling competent in a physical activity setting (9). Those who felt this competence were more motivated and found physical activity enjoyable, interesting and important.

Past experience in sports increased the feeling of competence. Active people were found to believe in and expect health benefits from physical activity. They were self-motivated, had more such

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self-regulatory skills as goal setting, greater self-efficacy and support from spouses and did not perform exercises that required uncomfortable amounts of effort.

On the other hand, sedentary people believed that exercise took too much time, would make them tired or would be unpleasant. They also cited work, schedule conflicts, program inaccessibility and lack of proper facilities. Reasons given for dropping out included lack of time, inconvenience, situational factors, medical problems and lack of motivation.

Motivation to begin a program may differ from motivation to maintain an exercise program, once started. According to researcher Christina Lee, the majority of inactive people of both sexes cited positive attitudes towards exercise but low levels of intention to actually do any physical activity themselves (4). Lee concluded that although positive attitudes may be helpful, they are certainly not sufficient for change for most people.

Dishman reported that motivation to increase physical activity resulted from learning such self-motivation skills as goal setting, planning, self-monitoring, self-reward and relapse-avoidance skills (1).

When people were involved in supervised programs, past participation was a good predictor of current participation. Health benefits were an initial motivator for those who were physically active, but feelings of enjoyment and well-being as well as health benefits were reasons for continuation.

Research Specific to Women

A few researchers have focused on factors that motivate women to be physically active. Dishman reported a strong trend for women involved in sports as youths to continue to participate in organized sports as adults (1).

Lee reported that barriers impeding women from regular physical activity included domestic responsibility, vocational activities, less time available for leisure, lack of social and family support and less access to financial resources (employed women often receive

lower wages than men in similar employment) (4). Older women found it difficult to overcome patterns of socialization. Other practical barriers for women included inconvenient exercise locations, lack of time, work and family commitments, injury, illness, poor weather and inconvenience.

Marcus et al. applied their theoretical model to exercise behavior among employed women (5). In examining the demographic characteristics of the women in the study, the researchers found that the presence of one or more children under 18 in the household was significantly related to a woman being at a lower stage of exercise adoption. Furthermore, single women reported engaging in significantly more minutes of vigorous exercise than married women.

METHOD

An eight-page questionnaire was devised by Melpomene researchers that incorporated questions on incentives and barriers to physical activity. We also included a question that allowed us to analyze our data based on Marcus's stages of change model (5,6,7,8).

A pilot questionnaire was completed by a sample of women aged 57 to 83 in the Melpomene longitudinal osteoporosis study. Based on responses from 81 of those participants, the questionnaire was analyzed and then revised.

The revised questionnaire was distributed to Minnesota Department of Health employees via their interoffice mailboxes. A follow-up postcard reminding employees to return the survey was also delivered to each employee. Questionnaires were returned to Melpomene through a Minnesota Department of Health employee collaborating with Melpomene on this study.

Responses to open-ended items on the questionnaires were analyzed for content and coded. Using the JMP Statistics program from SAS Institute, Inc., simple frequency distributions for each variable were examined. Statistical relationships between variables were calculated using chi-square tests for significance.

For the purpose of further analysis, the women in the sample were divided into groups according to their levels of physical activity. Those women who described themselves as currently not physically active and not intending to start and those who described themselves as currently not physically active but thinking about starting were categorized as "inactive." Those women who were physically active on a regular basis but had only been so for the prior six months and those who were physically active on a regular basis and had been for longer than six months were categorized as "active." Data were also analyzed for those women who were somewhat physically active, though not on a regular basis.

Description of the Sample

The sample consisted of 54 women employed by the Minnesota Department of Health. The mean age of the sample was 42 years. Seventy-two percent (72.2%) of the sample held professional positions; 18.5% held support positions; and 7.4% held management positions.

The women were well-educated, with 57.4% having a graduate degree, 25.9% having a college degree, 7.4% having some college, 3.7% having graduated from high school and 1.9% having professional training.

RESULTS

Level of Physical Activity

The women in the sample represent a wide range of physical activity levels, as shown in Table 1. When asked about the amount of time each week spent being physically active, 14.8% responded that

Table 1
Hours per Week
of Physical Activity

Less than 1 hour	14.8%
1-2 hours	18.5%
2-4 hours	33.5%
4-7 hours	27.8%
7 or more hours	5.5%

they were active less than one hour, 18.5% were active one to two hours, 33.3% were active two to four hours, 27.8% were active four to seven hours and 5.5% were active more than seven hours.

Based on the stages of change model, the sample was categorized as follows: 3.7% of the sample reported they were not physically active and did not intend to start (precontemplation stage). Twenty percent (20.3%) reported they were not currently active, but were thinking about it (contemplation stage). Twenty-nine percent (29.6%) described themselves as active, but not regularly (preparation stage). Nine percent (9.2%) reported they were physically active on a regular basis but had been so only within the prior six months (action stage), and 35.2% described themselves as physically active on a regular basis for more than six months (maintenance stage). Stages of change for this sample are shown in Table 2.

Physical Activities

Walking was the physical activity most commonly reported. Nearly thirty-nine percent (38.9%) reported that they walked or hiked. More than sixteen percent (16.7%) said they participated in aerobics, and 14.8% reported bicycling. Less than 10% reported participating in a other activities, such as running, lifting weights, swimming, dancing and using cardiovascular machines.

Support and Encouragement

From the participants' responses to questions about the importance of support

and encouragement from various people and organizations, we learned what were and were not considered important sources of motivation to be active.

The most important sources of encouragement were a spouse or partner, rated important by 50% of the women, and non-work friends, reported by 42.6%. Sources rated not important were health care providers (51.9%), worksite (50%), work friends (49.1%) and such organizations as the YMCA or a health club (40.7%). The importance of non-work friends was mixed, with 42.6% of the women rating them important and 42.6% rating them unimportant.

Expected Outcomes of Regular Physical Activity

Expected positive outcomes of physical activity included improved fitness and muscle tone (chosen by 81.5% of the women), enhanced psychological and spiritual balance (70.4%), improved body image (66.7%), weight control (59.3%), fun or enjoyment (55.6%), increased resistance to illness (53.7%) and weight maintenance (53.7%).

Negative expectations of being active on a regular basis were most frequently related to time constraints. Half of the women said they expected less time for other activities; 38.9% expected to have less time for family activities; and 14.8% expected to have less time for work. The likelihood of injury was also a negative expectation for 13% of the women. However, almost one-quarter of the women (24.1%) had no negative expectations of regular physical activity.

Barriers to Physical Activity

Lack of time or time constraints emerged as the leading barrier to physical activity. Lack of time was chosen as a barrier by 66.7% of the women. Weather was chosen as a barrier by 46.3%. (It is important to note that the questionnaire was administered during a particularly cold and icy Minnesota winter.)

Forty-six percent (46.3%) said lack of discipline was a barrier, and lack of motivation was chosen as a barrier by 29.6%. Lack of facilities was chosen as a barrier by 22.2% of the women.

We also asked about barriers to being physically active that were related specifically to work. Concern about appearance (for example, the need to shower or fix their hair) was chosen by 64.8% of the women. Lack of facilities was chosen by 51.8%. Weather was chosen by 27.8% of the women. While weather may not seem to be a barrier related to work, it is possible that it is too dark or too cold after work hours when many respondents have the time to be active. Lack of encouragement from management was also a barrier to being active for 22.2% of the women.

When asked what factors, conditions, programs or people in the workplace would make it easier to begin or continue regular physical activity, an exercise facility was the most common response. A place to exercise, a pool or exercise equipment was cited by 37.0% of the women. One woman said, "I would like a place to walk around that would be easy to get to and indoors in the winter." Another said their employer should "add a shower and fitness track, plus treadmills and rowing machines."

Time for physical activity during the work day was cited by 16.7% of the women as a factor that would facilitate physical activity. For example, some women suggested setting aside a specific time during the day to exercise; others suggested flex-time. Seven percent (7.4%) of the women mentioned support for physical activity, both management support and support in the form of an exercise partner. Three percent (3.7%) mentioned specific kinds of classes or programs, such as fitness classes.

Table 2
Stages of Change

Precontemplation: not active, no intention to start	3.7%
Contemplation: not active, thinking about starting	20.3%
Preparation: somewhat active, not regularly	29.6%
Action: regularly active, only within prior 6 mos.	9.3%
Maintenance: regularly active longer than 6 mos.	35.2%

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One woman described several difficulties associated with being active during the work day: "I believe there is an activity building close to work, about three blocks away, but it is almost impossible in an hour to walk both ways, exercise and maintain my appearance. I work 7:00 to 4:30. Most gyms open at 6:30 A.M. I have to be home (after work) ... and find it difficult to stay late."

ACTIVE AND INACTIVE WOMEN

Division of Women into Groups

For the purpose of further analysis, we divided the women into groups according to Marcus's stages of change theory. The "inactive" group consisted of women who described themselves as not physically active and not intending to start or as not physically active but thinking about starting. The "active" group consisted of women who described themselves as physically active on a regular basis but only within the prior six months or as physically active on a regular basis for longer than six months.

A mid group of women who described themselves as somewhat active, though not on a regular basis, was unlike both the active and inactive group. Because their responses to some questions were similar to the inactive group, while other responses were like the active group, they were not included with either.

It is important to note the findings about this mid group, however, because these women had started on the path of increased physical activity. If we can determine what obstacles threaten their movement to the next stage, there is a better chance women in this group will increase their level of physical activity.

The women in the mid group tended to expect more from physical activity than either the active or inactive women. For example, 100% of the mid group expected to improve their fitness and muscle tone, compared with 87.5% of the active women and 53.9% of the inactive women. A higher portion of the mid group —

68.8% — also expected weight maintenance to be a positive outcome of regular activity, compared to 62.5% of the active women and 23.1% of the inactive women. Sixty-eight percent (68.8%) of the mid group also reported that weight control was an expected outcome, compared to 62.5% of the active women and 38.5% of the inactive women.

In several instances, the percentages of the mid group fell between the inactive group and the active group. However, in many other instances, the mid group fell outside both the active and inactive women. For example, 43.8% of the mid group reported lack of facilities to be an obstacle to regular physical activity, compared to 30.8% of the inactive group and 4.2% of the active group.

When asked about expected negative outcomes as a result of regular activity, 6.3% of the mid group reported expecting less time for work, compared to 8.3% of the active group and 38.5% of the inactive group. While fewer women in the mid group expected to have less time for work, these women on the average worked more hours each week than the women in either of the other groups. The mid group of women reported working 40.6 hours a week, compared to 34.6 hours for the inactive women and 36.7 hours for the active women.

Differences between Active and Inactive Women

When asked about the importance of regular activity, 79.2% of the active women and 15.4% of the inactive women

said it was extremely important (Table 3). Twenty percent (20.8%) of the active women and 61.5% of the inactive women responded that it was somewhat important to be active. None of the active women and 23.1% of the inactive women were neutral. None of the active or inactive women felt it was unimportant or extremely unimportant to be active on a regular basis.

Respondents were asked to agree or disagree with the statement, "You can improve your health through regular physical activity." As shown in Table 4, 87.5% of the active women and 46.2% of the inactive women strongly agreed with the statement. Twelve percent (12.5%) of the active women and 46.2% of the inactive women agreed somewhat. None of the active women and 7.7% of the inactive women were neutral. None of the women, either active or inactive, disagreed or strongly disagreed.

Expectations about the benefits of physical activity differed between the active and inactive women (Table 5). The majority of active women (87.5%) expected to be in better physical shape, either from improved fitness or increased muscle tone, as a result of regular activity. Slightly more than half (53.9%) of the inactive women had this expectation.

The active women also had strong expectations about the benefit of exercise for losing and maintaining weight. Sixty-two percent (62.5%) of the active women and 38.5% of the inactive women felt that weight control was an outcome of regular activity. The women in the physically active group also chose weight maintenance as an expected benefit of

Table 3
Importance of Physical Activity
Response to "How important is it for you to be physically active on a regular basis?"

Importance	Inactive Women	Active Women
Extremely	15.4%	79.2%
Somewhat	61.5%	20.8%
Neutral	23.1%	0%
$p \leq .001$		

Table 4
Response to "You can improve your health through regular physical activity?"

	Inactive Women	Active Women
Strongly agree	46.2%	87.5%
Somewhat agree	46.2%	12.5%
Neutral	7.7%	0%
$p \leq .05$		

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of the active women and 23.1% of the inactive women said their health was worse than most people their age. No one in either group said her health was much worse than most other people her age.

Obstacles to Physical Activity Specific to Work

The lack of a place to be active or lack of exercise equipment was a work-related barrier for the women in both groups, although it was much more frequently cited by inactive women (Table 9). Seventy-six percent (76.9%) of the inactive women and 33.3% of the active women reported the lack of a facility or exercise equipment was a work-related obstacle.

Concern about appearance, ridicule and lack of confidence were also reported as obstacles related to work. For 30.8% of the inactive women and 8.3% of the active women, concern about their appearance was a barrier. Thirty percent (30.8%) of the inactive women cited lack of confidence in their physical skills as a barrier; none of the active women cited this as an obstacle. Twenty-three (23.1%) of the inactive women and none of the active women reported a fear of teasing or ridicule as a work-related obstacle to being physically active. The attitude of co-workers was a barrier for some inactive women. Fifteen percent (15.4%) of the inactive women but none of the active women reported that a co-worker's belief that they could not be active due to

Table 9
Obstacles to Physical Activity Specific to Work

	Inactive Women	Active Women	Sig.
Concern about appearance while being physically active	30.8%	8.3%	N.S.
Co-workers' belief that I couldn't be active (no ability or skill)	15.4%	0%	N.S.
Fear of teasing or ridicule	23.1%	0%	p<.05
Lack of confidence in my own physical skills/abilities	30.8%	0%	p<.01
Lack of encouragement from management	7.7%	25%	N.S.
Lack of physical activity facilities	76.9%	33.3%	p<.05
Lack of physical activity partners	15.4%	0%	N.S.
Lack of transportation to a physical activity facility	23.1%	4.2%	N.S.
Weather conditions	38.5%	25%	N.S.

a lack of ability or skill was an obstacle.

The active women reported lack of encouragement from management as a work-related barrier to being physically active. Twenty-five percent of the active women but only 7.7% of the inactive women said they had experienced lack of support or encouragement from management.

External barriers to physical activity were reported more often by inactive women. Lack of a physical activity partner was reported as an obstacle by 15.4% of the inactive women and none of the active women; lack of transportation to a facility was reported by 23.1% of the inactive women and 4.2% of the active women; and weather conditions were a barrier for 38.5% of the inactive women and 25% of the active women.

Motivation for Physical Activity for Active Women

The active women provided reasons why they began physical activity and why they continue to be active regularly. As shown in Table 10, the reasons given for beginning to be physically active were varied. Twenty percent began to improve

their health or fitness; 20% began out of habit; 16% began for fun or enjoyment; 16% began to control their weight; and 8% began for such psychological benefits as stress relief.

The reasons for beginning physical activity, however, were not always the same reasons that women gave for continuing to be active. Thirty-two percent of the women continued to be active for the health and fitness benefits; 24% continued for psychological benefits; 16% continued for weight control; 8% continued for fun and 8% did so out of habit.

When asked to name a single best aspect of regular physical activity, the active women reported it was to feel better, physically and psychologically. For example, respondents said that the best part of exercise is "an increased energy level," "a feeling of vitality" and "flexibility." One woman wrote, "Physical activity improves my psychological outlook on work, my body image and self-esteem."

Discussion

Our findings regarding beliefs and expectations about physical activity are consistent with much, but not all, of the research. Our data agrees with research finding that women who are physically active believe it is important. The data also supports the thesis that women who are physically active believe they can improve their health through an active lifestyle.

Dishman has documented that people who perceive themselves to be in poor health are less likely to start or continue

Table 8
Compare Your Health to Others Your Age

	Inactive Women	Active Women
Much better than most	7.7%	16.7%
Better than most	7.7%	45.8%
	15.4%	62.5%
The same as most	61.5%	33.3%
Worse than most	23.1%	4.1%

Table 10
The Main Reason Active Women Began Physical Activity

Improved health, fitness	20%
Habit	20%
Fun, enjoyment	16%
Weight control	16%
Psychological benefits	8%
Other	4%

an exercise program (1). Our findings are similar – the physically active women in our study were more likely to report that they were in much better (16%) or better (48%) health than other people their age. In contrast, the inactive women reported most often that their health was the same (61.5%) or worse than (23.1%) most other people their age.

Additionally, a health condition or illness was cited as an obstacle by 38.5% of the inactive women and none of the active group.

Our data does not support Dishman's thesis that while belief in the health benefits of exercise is a motivator for exercise initiation, enjoyment of physical activity is a stronger factor in adherence to a program once started. In our study, 16% mentioned fun and enjoyment as a reason for beginning physical activity. However, the fun and enjoyment factor declined in importance the longer the women in our study were physically active. Only 8% mentioned fun as a reason to continue to be active. In contrast, 20% listed health and fitness benefits as a reason to begin physical activity, and 32% listed them as reasons to continue activity.

Our study also found that weight maintenance and weight control were important factors for women to begin as well as continue exercise.

Our data supports Lee's research, which found that women with children under 18 were less likely to be physically active (4). While time was listed as an obstacle by both active and inactive women, those who had children at home were more likely to cite less time available for family activities as an obstacle. Forty-six percent of the inactive women and 24% of the active woman had children living at home.

Physically inactive women tended to report more obstacles to being active. Lack of time was the obstacle most frequently reported by both groups.

A striking finding was the difference in internal barriers between active and inactive women. The two obstacles cited most often by inactive women were lack of discipline (61.5%) and lack of motivation (61.5%). In contrast, 33.3% of

the active women cited lack of discipline and 16.7% cited lack of motivation.

The Surgeon General's report documents the low levels of physical activity in the United States and also says efforts must be made in various settings to enhance the possibility that more Americans will be physically active (10). Since so many women work outside the home, our study asked how the work setting affected our participants' levels of physical activity.

The results show more negative than positive features are operating in the workplace. This makes it more difficult for currently inactive women to change their lifestyle patterns. Inactive women in our study were more likely to say that in a work setting they feared being teased or ridiculed, lack confidence in their abilities and feel that co-workers doubt their abilities. One woman wrote, "I'm just not comfortable exercising at work or with co-workers." For some women, size was a problem. One woman wrote, "Because of my size, I would not feel comfortable exercising at work at all."

One-quarter of the physically active employees said that lack of support or encouragement from management was an obstacle to being active. For example, when asked what conditions or factors at work would make it easier to begin or maintain a program, one active woman wrote, "Support through all levels of management."

It is possible that physically active employees feel that they must expend all or most of the effort necessary to see that physical activity does not interfere with their work day. Only 7.7% of the inactive women chose this response, which indicates they perceived other obstacles as more important.

If the Surgeon General's report is to have an impact, we must further explore the obstacles to participation in physical activity during the work day. Overcoming obstacles to physical activity during the work day, whether it is finding a compatible workout partner or transportation to a health club for a commuter, may make the difference between being regularly active or not.

CONCLUSION

The women who responded to this survey were more physically active than the general population. Less than 4% were in the first stage of change (precontemplation) and had no intention of beginning physical activity. Almost half (45.4%) were physically active on a regular basis, and 35.2% of those were in the highest level of change, or maintenance stage.

The mid group, the 29.6% of the group who said they were currently but not regularly active, were women who should be able to move most easily to the next stage. Our research suggests, however, that this group of women had higher expectations and may therefore drop out more quickly when their expectations are not met. How can these expectations be addressed in the workplace, work programs or written materials?

There is merit in conducting surveys among employees about these questions. It would be even more important to make changes that would encourage physical activity. Our data suggests that an on-site facility would benefit some but not all employees. Those women who are self-conscious would probably see better results if they could have a shorter work day or flex time. Almost a third of those who were currently active said lack of support or encouragement from management was an obstacle.

While time was the number one barrier to physical activity, our most important finding was that inactive women reported that the internal barriers of lack of motivation and lack of discipline were almost as difficult to overcome. While experts in the field of motivation suggest participation in an exercise program can be enhanced through the development of such motivation skills as goal setting, planning and self-reward, tackling this problem on an individual basis remains elusive and problematic. ●

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