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## Psychological factors influencing exercise adherence among young adult females in Pune city: A pilot study

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### Abstract

Physical inactivity remains a serious issue in our society, particularly for women. Among individuals who do initiate exercise programs, approximately half drop out during the first six months. Presumably, when individuals feel pressured to exercise, they lack the enjoyment and inner motivation to continue, causing them to discontinue their behavior. In this study ten female participants completed the survey, Participants ranged in age from 20–25 yrs. Adherence was determined based on a calculation of the difference between a participant's reported exercise goal and her average weekly exercise. The results from the current study partially supported this hypothesis. Compared to adherent women, non-adherent women were more likely to endorse body-related and health-related motives for exercising; however, the results did not indicate that adherent women were more likely to express intrinsic motives for exercising. Overall, the results from this study provide two key messages: 1) that body-related and health related pressures have the potential to detract from women's abilities to persist towards exercise adherence, and 2) that psychological well-being improves with exercise adherence.

**Keywords:** Exercise Adherence, Psychological factors, Young adult females

### Introduction

As we enter the 21st century, one of the greatest accomplishments to be celebrated is the continuous pursuit of fitness since the beginning of man's existence. Throughout prehistoric time, man's quest for fitness has been driven by a desire to survive through hunting and gathering. With passage of time, though no longer driven by subsistence requirements, fitness remains paramount to health and well-being. In The Dark (476-1000) and Middle Ages (900-1400) also Physical activity and fitness were prerequisites for survival. The renewed appreciation for human life, which evolved during the Renaissance, created an environment which was ready for the widespread development of physical education. It appears that as societies become too enamored with wealth, prosperity and self-entertainment that fitness levels drop. In addition, as technology has advanced with man, the levels of physical fitness have decreased. History offers little insight how to prevent or turnaround these recourses.

Physical activity is very important from fitness and health point of view, which is equally important for males as well as females; now a days female mortality rate is increasing due to various diseases and women specific health problems, so physical activities are vitally important for females and also we find females engaged in different health practices and fitness practices everywhere as prescribed by their physicians or mentors. Today, Social pressures focusing on health and physical attractiveness have been used to promote exercise among women. However, research has shown that motives driven by external sources result in decreased exercise participation i.e. it has shown a negative association with persistence. Physical inactivity remains a serious issue in our society, particularly for women. Among individuals who do initiate exercise programs, approximately half drop out during the first six months. Presumably, when individuals feel pressured to exercise, they lack the enjoyment and inner motivation to continue, causing them to discontinue their behavior. Women often report that their motivation to exercise is based on bodyrelated concerns, which reflect an external or interjected pressure. For example, Berman and colleagues (2005) reported that women endorsed weight and body related reasons for exercise, and though they did exercise, they continued to experience body dissatisfaction, pre- occupation with weight, and poor emotional

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well-being. Importantly, research suggest that women report weight management as a motivation for exercise more often than do men, which may make them particularly susceptible to exercise non-adherence. Results from other research have indicated that body-related motives are not only associated with social physique anxiety, depression, anxiety, reduced self-esteem, and body dissatisfaction, but also with less exercise participation. Other research showed that individuals who are more adherent to regular exercise programs, compared to those who are less adherent, experience greater improvements in fitness, physical function, quality of life, and disease specific outcomes. However, studies suggest that about 50% of adults who start a physical activity program will drop out within a few months. In this study the researcher will be attempting to find out the different psychological reasons for exercise adherence and non-adherence for particular area (Pune city), as habitat, environment, community also has greater impact on exercise adherence.

## Methods

### Participants

Ten female participants completed the online surveys detailed below. Participants ranged in age from 20–25 yrs. All subjects were recruited from PIT College Gym by convenient sampling method.

### Instrumentation

#### “Welcome Survey”

Participants reported their sex, age, ethnicity, and a specific exercise goal, in days per week, which they aimed to meet for each of the four weeks of the study.

#### The Exercise Motivation Inventory-2 (EMI-2)

The EMI-2 is a 51-item scale administered to assess the degree to which participants endorse specific motivational factors. Participants answered each item on a Likert-type scale, ranging from 0 = *not at all true for me* to 5 = *very true for me* (Mark-land & Ingledew, 1997) [2]. They received an average score for each of 14 subscales, which fall under five major scales. The Cronbach’s alpha, mean, and standard deviation for each of these five scales in the current sample were: psychological motives ( $\alpha = 0.90$ ,  $M = 50.35$ ,  $SD = 13.75$ ); interpersonal motives ( $\alpha = 0.90$ ,  $M = 19.36$ ,  $SD = 14.54$ ); health motives ( $\alpha = 0.80$ ,  $M = 28.33$ ,  $SD = 7.26$ ); body motives ( $\alpha = 0.87$ ,  $M = 30.65$ ,  $SD = 7.96$ ); and fitness motives ( $\alpha = 0.84$ ,  $M = 27.20$ ,  $SD = 5.73$ ).

#### The Physical Self-Efficacy Scale (PSES)

The PSES is a five-item scale used to assess participants’ beliefs in their ability to overcome specific barriers to maintaining their exercise intentions (Schwarzer & Renner, 2005) [3]. Participants answered each item on a Likert-type scale, ranging from 1 = *very uncertain* to 4 = *very certain*. The Cronbach’s alpha, mean, and standard deviation for the current sample were:  $\alpha = 0.89$ ,  $M = 13.56$ ,  $SD = 3.61$ .

#### The Positive and Negative Affect Schedule (PANAS)

The PANAS is a 20-item scale that was used to assess participants’ affective well-being. Ten items comprise the positive affect subscale; the other 10 items comprise the negative affect subscale. Participants answered each item on a Likert-type scale, ranging from 1 = *very slightly or not at all* to 5 = *extremely*. The Cronbach’s alpha, mean, and standard deviation for each of the scales in the current sample were: positive affect:  $\alpha = 0.90$ ,  $M = 34.66$ ,  $SD = 7.15$  and negative affect:  $\alpha = 0.90$ ,  $M = 22.15$ ,  $SD = 7.81$ .

#### The Satisfaction with Life Scale (SWLS)

The SWLS is a five-item scale that was used to assess participants’ global judgment of their satisfaction in various life domains (Diener *et al.*, 1985) [4]. Participants answered each item on a Likert-type scale, ranging from 1 = *strongly disagree* to 7 = *strongly agree*. The Cronbach’s alpha, mean, and standard deviation in the current sample were:  $\alpha = 0.93$ ,  $M = 22.72$ ,  $SD = 7.54$ .

#### “Weekly Survey”

Participants reported a) the days of the week they exercised, b) the duration of exercise on each day, c) a subjective rating of their exercise intensity (low, moderate, high), and d) a subjective stress rating of their week, ranging from 0 = *not at all stressful* to 10 = *extremely stressful*.

## Results

Adherence was determined based on a calculation of the difference between a participant’s reported exercise goal and her average weekly exercise. Because reported goals were subtracted from average weekly exercise, a score greater than or equal to zero indicated that a participant met or exceeded her goal, while a score less than zero indicated that a participant failed to meet her goal. Of the 10 females, exactly 50% met or exceed their goals. An independent-samples *t*-test indicated that there was no difference between adherents and non-adherents in terms of goals set,  $t(10) = -1.28$ ,  $p = 0.21$ ; adherents  $M = 4.39$ ,  $SD = 1.20$ ; non-adherents  $M = 4.78$ ;  $SD = 1.24$ . In addition, there was not a significant difference in the median age between the adherent group ( $Mdn = 23$  years) and the non-adherent group ( $Mdn = 22.5$  years).

A Pearson correlation of participants’ motives for exercise and their exercise consistency across the four-week data collection period indicated that motives were largely unrelated to exercise consistency. Body-related motives were the only significant correlate,  $r = -0.30$ ,  $p = 0.02$ , indicating that participants who reported greater body-related motives were less consistent in their week-to-week exercise behaviour. An independent-samples *t*-test was performed to assess differences between adherents’ and non-adherents’ motives for exercise. Mean comparisons indicated that compared to adherents, non-adherents reported significantly greater health-related and body-related motives for exercise,  $t(10) = -2.04$ ,  $p = 0.05$ ;  $t(10) = -2.07$ ,  $p = 0.04$ , respectively.

An independent-samples *t*-test was performed to assess differences between adherents and non-adherents on physical self-efficacy, positive affect, and satisfaction with life, as reported by participants in the “Welcome Survey” at the beginning of the data collection period. Contrary to expectation, mean comparisons indicated that adherents reported significantly lower physical self-efficacy,  $t(10) = -2.36$ ,  $p = 0.02$ ; positive affect,  $t(10) = -2.07$ ,  $p = 0.04$ ; and satisfaction with life,  $t(10) = -2.74$ ,  $p = 0.01$ . Of note, these factors were significantly correlated with each other among adherents and non-adherents alike.

To assess change across time, a  $2 \times 2$  (group  $\times$  time) repeated measures ANOVA was conducted for self-efficacy, positive affect, and satisfaction with life. Results indicated a significant group  $\times$  time interaction for self-efficacy,  $F(1, 10) = 9.75$ ,  $p < 0.01$ . Follow-up comparisons indicated that the adherents experienced a significant increase in self-efficacy across time,  $F(1, 5) = 8.00$ ,  $p < 0.01$ , while the non-adherents did not,  $F(1, 5) = 1.49$ ,  $p = 0.23$ . Similar results were found for positive affect and satisfaction with life. For positive affect, the overall repeated measures ANOVA indicated a

significant group x time interaction,  $F(1, 10) = 6.87, p < 0.05$ , and follow-up comparisons indicated that adherents experienced a significant increase in positive affect over time,  $F(1, 5) = 8.31, p < 0.01$ , while non-adherents did not,  $F(1, 5) = 2.31, p = 0.21$ . Finally, the group x time interaction was also significant for satisfaction with life,  $F(1, 10) = 7.57, p < 0.01$ . There was a significant increase in satisfaction with life among adherents,  $F(1, 5) = 8.38, p < 0.01$ , and there was no significant change in satisfaction with life among non-adherents,  $F(1, 5) = 2.06, p = 0.16$ . Ratings of physical self-efficacy, positive affect, and satisfaction with life at the end of the study were also significantly correlated among adherents and non-adherents alike.

An independent-samples *t*-test was also performed to assess group differences in the ratings of physical self-efficacy, positive affect, and satisfaction of life at the end of the data collection period. Mean comparisons indicated that adherents and non-adherents did not differ on their ratings of these three variables at the end of the four-week data collection period: physical self-efficacy,  $t(10) = 1.21, p = 0.23$ ; positive affect,  $t(10) = 1.41, p = 0.16$ ; and satisfaction with life,  $t(10) = 0.53, p = 0.60$ . However, at this time, adherents' scores were greater than non-adherents' score (though, not statistically significantly so) on each of these three variables.

### Discussion

Specifically, it was expected that adherent women would be more likely to express intrinsic motivation, while non-adherent women would be more likely to identify extrinsic motives for exercising. The results from the current study partially supported this hypothesis. Compared to adherent women, non-adherent women were more likely to endorse body-related and health-related motives for exercising; however, the results did not indicate that adherent women were more likely to express intrinsic motives for exercising. Further confirming the difference found related to extrinsic motives, the data also showed that overall, body-related motives were negatively associated with exercise consistency. Thus, women who reported greater body-related motives for exercising were less consistent in their exercise behavior over the course of the four-week study, and they were less likely to meet their own exercise goals during that time period. It is relevant to note that adherent

Consistent with the hypothesis, adherent women showed significant increases in reported feelings of psychological well-being over time. Over the course of the four-week study, there was a significant increase in physical self-efficacy, positive affect, and satisfaction with life among adherent women. Thus, as they continued to meet their goals, they felt an increased sense of psychological well-being. From this data, it is difficult to determine if increased psychological well-being resulted in greater exercise adherence, or vice versa. Also, there is a possibility that these factors could share bi-directional relationships. Nevertheless, the significant and positive increase they reported in these factors is notable, particularly as they relate to the women's exercise adherence.

Overall, the results from this study provide two key messages: 1) that body-related and health related pressures have the potential to detract from women's abilities to persist towards exercise adherence, and 2) that psychological well-being improves with exercise adherence. It may be more helpful to women if societal messages aimed to promote physical fitness focusing on factors that are more intrinsic, such as competence, autonomy, and relatedness. If this shift helped more women to approach their goals with greater self-

determination, the effects could be profound women would likely

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