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## Abstract

Few studies have examined whether factors predicting obligatory exercise differ by gender. 303 participants completed the Obligatory Exercise Questionnaire and the Reason for Exercise Inventory. All variables correlated significantly. However, the correlation between exercising for fitness and obligatory exercise was significantly stronger in women than men. In women, obligatory exercise was predicted by exercising to improve body tone, fitness, and to enhance mood; in men, obligatory exercise was predicted by exercising to improve body tone, enjoyment, and perceived attractiveness. Implications for treatment are discussed.

**Key words:** reasons for exercise, obligatory exercise, gender differences

## 1. Introduction

Obligatory exercise has three dimensions: 1) frequency and intensity of exercise, 2) negative emotionality (e.g., guilt for missing an exercise session), and 3) preoccupation with exercise (e.g., planning the day around exercise) (Ackard, Brehm, & Steffen, 2002; Steffen & Brehm, 1999). Given the frequency of obligatory exercise in college students (De Young & Anderson, 2010; Garman, Hayduk, Crider, & Hodel, 2004) and its numerous physical and psychological consequences (Ackard et al., 2002; Adams & Kirby, 2001; Brehm & Steffen, 1998; Steffen & Brehm, 1999), it is important to ascertain factors that predict obligatory exercise. One variable that would seem to be predictive would be one's reasons for exercising. One study of collegiate women found that exercising for appearance/weight management correlated with obligatory exercise (Thome & Espelage, 2007). However, no other studies have examined this issue.

### 1.1 Present Study

Although research has established several predictive factors for obligatory exercise (Hall, Kerr, Kozub, & Finnie, 2007; Rodgers, Hall, Blanchard, & Munroe, 2001; Thome & Espelage, 2007), no study has examined whether reasons for exercise influence obligatory exercise behavior. In addition, although research has established gender differences in reasons for exercise (Furnham, Badmin, & Sneade, 2002; Murcia, Galindo, & Pardo, 2008; Van Niekerk, 2010), no studies have examined gender differences in reasons for obligatory exercise.

The goal of the present study was to expand previous research in factors that may be predictive of obligatory exercise, specifically in the relation between obligatory exercise and reasons for exercise (e.g., weight control, tone, fitness, mood, health, attractiveness, and enjoyment). Based on gender differences in reasons for exercise, it was hypothesized that the reasons for obligatory exercise behaviors would differ between sexes, with women focusing more on appearance motives and men focusing more on health and fitness motives (Furnham et al., 2002).

## 2. Method

### 2.1 Participants

Participants in this study were from general psychology classes (155 females and 151 males; 80.5% Caucasian, 3.4% African-American, 8.1% Latino, 3.4% Asian, 1.3% Pacific Islander, 0.7% Native American, and 2.7% Other). After completion of the survey, each student was awarded class credit for their participation. This study was approved by the Institutional Review Board before data collection commenced.

## 2.2 Measures

### 2.2.1 Obligatory Exercise Questionnaire.

This 20-item questionnaire assesses all three components of obligatory exercise (Pasman & Thompson, 1988). Items (e.g., "I engage in physical exercise on a daily basis", "I have exercised when advised against such activity (i.e., by a doctor, friend, etc.)") were measured on a Likert scale with responses 1=*never*, 2=*sometimes*, 3=*usually*, 4=*always*. Higher scores indicate more obligatory exercise behaviors ( $\alpha=.88$ ).

### 2.2.2 Reasons for Exercise Inventory.

Participants were asked to respond to 24 items rating the importance of exercise for specific reasons (Silberstein, Striegel-Moore, Timko, & Rodin, 1988). Items (e.g., "to lose weight", "to improve my muscle tone", "to cope with stress, anxiety", "to be attractive to members of the opposite sex") were measured on a Likert scale ranging from 1=*Not important at all* to 7=*Extremely important*. Each item fit into one of seven subscale categories for reasons to exercise: weight control (2 items,  $\alpha=.69$ ), fitness (4 items,  $\alpha=.81$ ), mood (4 items,  $\alpha=.84$ ), health (4 items,  $\alpha=.85$ ), attractiveness (3 items,  $\alpha=.82$ ), enjoyment (3 items,  $\alpha=.75$ ), and tone (3 items,  $\alpha=.76$ ). Items were averaged to create scale scores.

## 3. Results

Before determining whether men and women obsessively exercise for different reasons, we first believed it was important to determine whether men and women did in fact differ in any of our key variables. While there were no gender differences in obligatory exercise ( $M_{Women} = 2.30, SD = .52; M_{Men} = 2.29, SD = .45$ ),  $t = .17$ , there were gender differences in three exercise motives. Women were more likely than were men to exercise for weight control reasons ( $M_{Women} = 5.53, SD = 1.31; M_{Men} = 4.48, SD = 1.49$ ),  $t = 6.52, p < .001$ , to improve mood, ( $M_{Women} = 5.03, SD = 1.34; M_{Men} = 4.70, SD = 1.25$ ),  $t = 2.21, p < .05$ , and to tone their bodies, ( $M_{Women} = 5.40, SD = 1.22; M_{Men} = 5.01, SD = 1.07$ ),  $t = 2.97, p < .01$ . No other gender differences were found.

Because there were gender differences in some of the reasons for exercise, we correlated the OEQ to each of the REI subscales separately for men and women (see Table 1). We then statistically compared the correlations between the OEQ and the REI subscales for men and women using Fisher's  $r$ -to- $Z$  transformation. The correlation between the OEQ and exercising for fitness reasons was significantly greater in women than in men,  $Z = 2.09, p < .05$ . There was a trend for a significant difference between the correlation between the OEQ and exercising for weight control,  $Z = 1.95, p < .10$ . No other gender differences were found.

Because there were some gender differences in the magnitude of the relationship between the OEQ and some of the REI subscales, in order to determine the reasons for obligatory exercise among men and women, stepwise regression analyses were performed separately for men and women. Results using the stepwise method can be seen in Table 2. For women, results indicate that the primary reasons for obligatory exercise are tone,  $R^2 = .27, F(1,142) = 51.24, p < .001$ , fitness,  $R^2 = .30, R^2\Delta = .03, F(2,141) = 30.47, p < .001$ , and mood,  $R^2 = .32, R^2\Delta = .02, F(3,140) = 22.25, p < .001$ . For men, results from this study indicate that their primary reasons for obligatory exercise are tone,  $R^2 = .17, F(1,140) = 28.41, p < .001$ , enjoyment,  $R^2 = .24, R^2\Delta = .07, F(2,139) = 22.08, p < .001$ , and attractiveness,  $R^2 = .27, R^2\Delta = .03, F(3,138) = 16.79, p < .001$ . Factors that were measured but were not significant were not included in Table 2.

## 4. Discussion

Similar to previous studies (Bushman & Brandenburg, 2009; Chu, Bushman, & Woodard, 2008), there were no gender differences in obligatory exercise in the present study. However, as expected, there were gender differences in reasons for exercise and in the magnitude of the relation between reasons for exercise and obligatory exercise. Similar to Furnham et al. (2002), women in the present study were more likely than were men to exercise for weight control reasons, to improve mood, and to tone their bodies. Interestingly, the correlation between the OEQ and exercising for fitness reasons was significantly greater in women than in men, and there was a trend for a significant difference between the correlation between the OEQ and exercising for weight control, again with a stronger correlation being displayed in women than in men. These results are contradictory to previous studies (Furnham et al., 2002), who found that weight control and fitness were predictive of disordered eating in teenage males, but not

in teenage females. It is unclear whether this should be attributed to the differences in population (teenagers v. college students) or the difference in constructs (obligatory exercise v. disordered eating). Future research should examine this issue.

As hypothesized, the results of this study also suggest that men and women do engage in obligatory exercise for different reasons. Based on Furnham et al.'s (2002) study of teenagers, it was hypothesized that obligatory exercise would be predicted by exercising for appearance motives in women, and exercising for health and fitness motives in men. Contrary to our hypothesis, the present study found that women engaged in obligatory exercise for mood enhancement, tone, and fitness, whereas men engaged in obligatory exercise for tone, enjoyment and to enhance their perceived physical attractiveness.

#### **4.1 Women**

Unlike Thome and Espelage (2007), it is interesting that in the present study, exercising for weight control was not a predictor of obligatory exercise among women; however, exercising to be more toned was. It should be noted that Thome and Espelage only tested the weight control scale of the REI, and the weight control scale did correlate with obligatory exercise in the present study, it just did not emerge as a predictive variable in the regression analysis. Regardless, this is an intriguing finding and should be explored further. It is not surprising that exercising to be toned was predictive of obligatory exercise as it also predicts disordered eating (Mond, Hay, Rodgers, Owen, & Beumont, 2004), and disordered eating and obligatory exercise are related (Adkins & Keel, 2005). Similar to previous research, the present study also found that women engage in obligatory exercise for fitness and mood reasons as well. This is perhaps not surprising given that women are more likely than men to cite fitness as a reason for exercise (Kolt, Driver, & Giles, 2004; Murcia et al., 2008), and the use of exercise as a mood enhancer in women is well-established (Smith, Wolfe, & Laframboise, 2001).

#### **4.2 Men**

Regression analyses for variables predicting obligatory exercise among men indicate that the three main reasons men obsessively exercise are tone, enjoyment, and attractiveness. Given that Pritchard et al. (2011) found a relationship between drive for muscularity and obligatory exercise in men, and men tend to be more focused on building muscle than leaning out (Grieve, Jackson, Reece, Marklin, & Delaney, 2008), it is perhaps not surprising that exercising to tone up was the primary predictor of obligatory exercise in men in the present study. In addition, given that exercise frequency (Puente & Anshel, 2010), and hours spent exercising per week relate to exercising for enjoyment in men (Brown & Graham, 2008), it is also not surprising that exercising for enjoyment reasons relates to obligatory exercise in men in the present study. Although most studies (Furnham et al., 2002; Murcia et al., 2008) report that women tend to endorse exercising for appearance reasons more than do men, one study of collegiate athletes, found that both male and female obligatory exercisers cited appearance as a reason (Stodel, 1996).

#### **4.3 Limitations**

There are several limitations in the present study that should be addressed. First, our sample consisted of college students. Future studies may wish to broaden the subject pool to ascertain whether these findings still hold in the adult population at large. Second, the lack of diversity in our sample makes it difficult to generalize the results to non-Caucasians. Future studies should examine these issues in a more racially and age-diverse sample. Third, the present study was correlational in nature. Future studies should examine whether reasons for exercise are predictive of obligatory exercise over time.

Finally, reasons for exercise accounted for approximately one-third of the variance in obligatory exercise in the present study. Clearly, other variables influence exercise behaviors and should be included in future studies.

#### **4.4 Conclusion**

In summary, this research is beneficial to health professionals working with individuals who display signs of exercise addiction. These professionals may need to consider what predicts these behaviors and why individuals participate in these behaviors. Specifically, if medical doctors and counselors know what may be predicting these behaviors in men and women, they would be more aware and know how these issues could be related to one

another. Since these behaviors are potentially harmful to one's health and well-being, counselors and doctors could create treatments to successfully resolve these issues.

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Table 1

*Correlations between the Obligatory Exercise Questionnaire (OEQ) and the Reasons for Exercise Inventory Subscales in Women (n=155) and Men (n=150)*

Scale	1	2	3	4	5	6	7	8
1. OEQ	--	.43***	.51***	.45***	.39***	.41***	.35***	.51***
2. REI Weight control	.23***	--	.64***	.46***	.52***	.78***	.34***	.81***
3. REI Fitness	.37***	.27***	--	.55***	.78***	.63***	.41***	.75***
4. REI Mood	.33***	.36***	.45***	--	.65***	.60***	.53***	.56***
5. REI health	.29***	.30***	.76***	.53***	--	.57***	.47***	.64***
6. REI Attractiveness	.41***	.34***	.51***	.43***	.46***	--	.41***	.82***
7. REI Enjoyment	.39***	.24***	.29***	.34***	.26***	.40***	--	.42***
8. REI Tone	.41***	.62***	.53***	.45***	.47***	.48***	.41***	--

*Note.* Correlations marked with two asterisk (\*\*\*) were significant at  $p < .001$ ; correlations above the diagonal represent findings in women; correlations below the diagonal represent findings in men

Table 2

*Summary of the stepwise regression analysis for variables predicting obligatory exercise among women and men*

Variable	B	SE B	$\beta$
<b>Women</b>			
<i>Step 1</i>			
Tone	.22	.03	.52***
<i>Step 2</i>			
Tone	.13	.04	.30**
Fitness	.14	.05	.29**
<i>Step 3</i>			
Tone	.10	.05	.24*
Fitness	.11	.05	.23*
Mood	.07	.03	.18*
<b>Men</b>			
<i>Step 1</i>			
Tone	.18	.03	.41***
<i>Step 2</i>			
Tone	.13	.04	.30***
Enjoyment	.11	.03	.29***
<i>Step 3</i>			
Tone	.11	.04	.24**
Enjoyment	.09	.03	.24**
Attractiveness	.08	.03	.19*

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$