

# UNDERSTANDING EXERCISE INTENTIONS AMONG WOMEN EXERCISING IN FITNESS CLASSES: AN APPLICATION OF THE THEORY OF PLANNED BEHAVIOUR

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**Abstract** The study was aimed at examining the usefulness of the Theory of Planned Behaviour (TPB) in predicting exercise intentions and exercise of women in fitness classes. On the theoretical plane it broadens state of knowledge on the TPB, but the findings are also important for the development of more effective interventions to promote and maintain exercise engagement of women in fitness centers. The study was carried out in the second quarter of 2016 in two fitness centers in Katowice, Poland. The participants were 95 women aged 17–66 ( $M = 37.40 \pm 12.15$ ). The obtained data were analyzed with the use of structural equation modelling (path analysis). Significant predictors of intention to exercise were perceived behavioural control and attitude, with the strongest effect observed in the former. The findings of the study suggest that interventions should focus on increasing the level of control over women's exercise behaviours and shaping attitudes toward them.

**Key words** theory of planned behaviour, exercise, women

## Introduction

It is well established that regular participation in physical activity, especially in the form of exercise, leads to manifold benefits, physical (physiological, morphological) and psychological as well (Dishman, Washburn, Heath, 2004). Awareness of the fact, despite being increasingly common among people, does not necessary leads to greater participation in exercise. It is because exercise – especially with recommended frequency of daily or in most days a week of at least moderate intensity (Randsell, Dinger, Huberty, Miller, 2009) – is a complex behavior, dependent on many factors, some of which are set in our personality (cognitive, emotional, motivational domain) and others in our environment, both physical and social (Anshel, 2014). Fitness professionals and scientists need to well understand them in order to help people stay active for a lifetime, especially that as research suggests even up

to 50% of people who start exercise programs drop them out within the first 6 months (Anshel, 2014). Recognizing factors that determine exercise behaviors could increase effectiveness of the process of establishing habits of regular undertaking them.

Among various theoretical models that try to explain how behaviour change occur, one the most commonly used is Ajzen's Theory of Planned Behaviour (TPB) (Biddle, Mutrie, 2001). According to the TPB immediate predictor of volitional behavior, such as physical activity, is behavioural intention defined as the degree to which a person formulates volitional plans of action and as such should not be confused with the notion of expectations, which are rather some form of wishful thinking and assessing behavior in terms of probability of undertaking it. Intention is determined by three factors. The first is attitude, defined as "the individual's positive or negative evaluation of performing the particular behaviour of interest" (Ajzen, 1988, p. 117). The second determinant of intention is subjective norm, defined as the perceived social pressure that individuals may feel to perform or not perform physical activity. Finally, the intention is controlled by a perceived behavioral control, which is the perceived ease or difficulty of performing the behavior, reflecting both past experiences with the behavior and anticipated impediments and obstacles of undertaking it (Ajzen, 1988, p. 132). Perceived behavioural control is the only determinant of intention that is supposed to exert also direct effect on the behavior, because the latter depends not only on motivation to do so but also on adequate control over it. In some cases, even very strong intentions to exercise ("I really want to make my exercise program in the gym") means nothing if a person come down with an illness or sustain an injury that forces her/him to stay in home ("but I am ill"). As Ajzen stated "perceived behavioural control can help predict goal attainment independent of behavioral intention to the extent that it reflects actual control with some degree of accuracy" (Ajzen, 1988, p. 134). The concept of PBC to some degree refers to Bandura's perceived self-efficacy, although the question whether both these notions could be identified is contentious, as while some authors treat both notions as synonyms, others argue that their complete identification is unfounded (Armitage, Conner, 2001; Hausenblas, Carron, Mack, 1997). Supporters of the latter approach point out that self-efficacy, as Bandura defines it, reflects only a degree to which a person perceives his or her control over the behavior, whereas the notion of PBC relates also to external aspects of such control, e.g. barriers of exercise.

In summary, the TPB posits that physical activity will be the more probable and the more intensified, the stronger is the intention to perform it. Next, the latter will be more likely to occur if people believe that exercise will produce positive – emotional as well instrumental – outcomes, experience other's support for their behaviours and believe that they possess personal resources enabling them exercising. Despite some reservations expressed toward the said theory (see for example: Armitage, Conner, 2001; Latimer, Ginis, 2005; Courneya, Plotnikoff, Hotz, Birkett, 2000), it is considered as a model of proven value in explaining volitional physical activity (Hagger, Chatzismantis, Biddle, 2002). In fact, it has been successfully used to explain such behaviours in various populations, like adults (Dodd, Forshaw, Ward, 2012), children and adolescents (Plotnikoff, Lubans, Costigan, McCargar, 2013, Mummery, Spence, Hudec, 2000; Martin, Oliver, McCaughtry, 2007), diabetics (Plotnikoff, Lippke, Courneya, Birkett, Sigal, 2010), breast cancer survivors (Vallance, Lavalley, Culos-Reed, Trudeau, 2012), college students and academic teachers (Kirk, Rhodes, 2012, Blanchard et al., 2008). One population that seem "understudied" are people with different training status, including those attending fitness classes. Therefore the purpose of the study was to determine the capability of the TPB constructs to predict exercise participation among women attending fitness classes.

## Material and methods

The study was carried out in the second quarter of 2016 in two fitness centers in Katowice, Poland. The participants were 95 women aged between 17 and 66 ( $M = 37.40$ ,  $SD = 12.15$ ). A diagnostic poll method of research was adopted and the participants voluntarily filled in an anonymous questionnaire designed by the author for the needs of the study and based on Ajzen's suggestions on how to develop a TPB questionnaire published by (Ajzen, 1988, 2002).

The respondents' behaviour was assessed by a question regarding frequency of their attendance to fitness centre with the range of responses from "once a week" to "everyday". The TPB constructs – intention, attitude, subjective norms and PBC – as suggested by Ajzen were measured by 7-point bipolar adjective scales anchored to statements concerning: in the case of intention- the strength of plans and intentions to continuing regular participation in the fitness class for at least next six month; in the case of attitude – evaluation of emotional and instrumental outcomes of exercises, in the case of subjective norms – the strength of perceptions of other's will and acceptance of exercise behaviors of the respondents and in the case of perceived behavioural control – the strength of beliefs that exercise behaviors are under volitional control of the respondents.

The reliability of the scales measuring TPB variables was assessed by Cronbach's coefficient  $\alpha$ . According to Sokolowski and Sagan (1999), an instrument is reliable if  $\alpha > 0.6$ . All scales fulfilled this criterion, obtaining  $\alpha$  values from 0.72 to 0.88.

For determining relationships between the TPB variables, the structural equation modelling technique was adopted. The theoretical model was tested using the GLS > ML (generalized least squares > maximum likelihood) method. The underlying assumption of this method is that variables are normally distributed. Because our data were non-normally distributed and despite growing evidence that this method performs well also under non-normal distribution of variables, we used power Box-Cox transformation of dependent variables for purposes of normalization of data.

The evaluation of goodness-of-fit of the model to the data was performed with the use of:  $\chi^2/df$  (which should be less than 2), goodness-of-fit index (GFI) and adjusted goodness-of-fit index (AGFI) (in both cases a model is considered as good-fitted to the data if values of both indexes are  $>0.95$ ), root mean square error of approximation (RMSEA) (when  $<0.05$ , the model is considered as good-fitted, when  $<0.01$  – as excellent-fitted), and Akaike Information Criterion (the more this index is close to 0, the better the model fits the data). All calculations were carried out in Statistica 10.0 (Statsoft, PL).

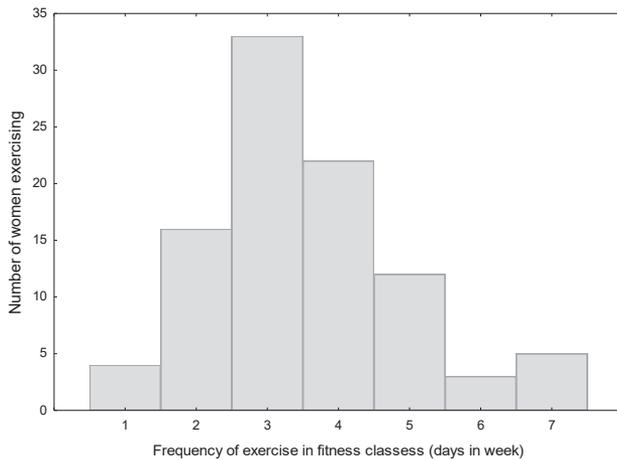
## Results

Descriptive statistics and correlations between variables are presented in the Table 1. Significant correlations were observed between intentions and exercise frequency, intentions and attitude and between perceived behavioral control and subjective norms. The highest means in the predictor variables were observed in the case of attitudes ( $6.80 \pm 0.33$ ) and intentions ( $6.61 \pm 0.85$ ) suggesting both strong, positive evaluations of usefulness of exercising and strong intentions to continuing participations in it. Over half of the respondents declared exercising three to four times a week, although the range of participation extended from once a week ( $n = 4$ ) to everyday ( $n = 5$ ) (see Figure 1).

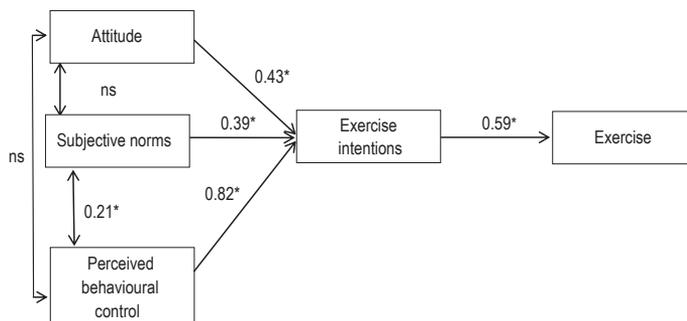
**Table 1.** Descriptive statistics and correlation matrix of the study variables

Variable	M	SD	Exercise	Intention	Attitude	Subjective norm	PBC
Exercise	3.54	1.39					
Intention	6.61	0.85	0.20*				
Attitude	6.80	0.33	0.18	0.20*			
Subjective norm	4.99	1.52	0.12	0.13	0.14		
PBC	4.99	0.80	-0.17	-0.12	-0.07	0.21*	

PBC – perceived behavioural control; Correlations marked with \*superscript are significant at  $p < 0.05$ .



**Figure 1.** Frequency of exercise in fitness classes per week in the study group



\* path coefficients significant at  $p < 0.05$ . By convention, values greater than .50 are considered as indicating "large" effect, while values around .30 "medium" effect.

**Figure 2.** Path diagram showing causal relationships between the TPB variables and values of the standardized path coefficients found in the study

The assessment of causal relationships between variables was performed with path analysis. As the priori model showed not satisfactory fit to the data one modification was introduced: dropping the non-significant relationship between perceived behavioral control and exercise. This modification resulted in improvement of the model fit indices that were as follows:  $\chi^2/df = 1.14$ ; GFI = 0.97; AGFI = 0.92; RMSEA = 0.05, Akaike Information Criterion = 0.29. Causal relationships between the variables and obtained values of structural path coefficients are shown on the path diagram in Figure 2.

As it can be seen, the intention toward performing exercises in fitness classes had a significant and strong influence on frequency of attending to them ( $\beta = 0.59$ ,  $p < 0.05$ ). Among the cognitive variables, perceived behavioral control had the strongest effect on intentions with standardized path coefficient of  $\beta = 0.82$  ( $p < 0.05$ ). As the value of the coefficient is closer to one the stronger the relationship between two variables, the obtained results could be verbalized as the large effect ("strong influence") of PBC to intentions. The effects of attitude on intentions were significant and of moderate strength, while the effect of subjective norms showed only tendency toward significance ( $\beta = 0.39$ ,  $p = 0.06$ ).

## Discussion

The present study set out to investigate the usefulness the Theory of Planned Behaviours to understand participation of women in fitness classes. The obtained results suggest that the TPB may be a useful theoretical framework for explaining exercise behaviours of women attending fitness classes. From the three socio-cognitive predictors of behavioral intentions assumed by the TPB perceived behavioural control emerged as the strongest determinant of it and subjective norms as the weakest- with only tendency toward significance of the effect. The last observation is consistent with the conclusions of other studies and meta-analyses which suggest that social environment of people has little or even no impact on their intentions to exercise (Hausenblas et al., 1997; Hagger et al., 2002), including in the context of fitness and sports centers (Chang-Ik, HeeSun, 2015). However, such conclusion could be premature, as there are many studies outside the TPB context in which social factors are important determinants of people's physical activity (Vrazel, Sounders, Wilcox, 2008). According to Latimer and Ginis weak predictive value of subjective norms may arise do to its dependence on other – usually uncontrolled – variables, like the extent to which people are concerned with others' approval of them. As the said researchers have demonstrated in their study, among people highly concerned with receiving disapproval from others (i.e. with high fear of negative evaluation) the influence of subjective norms on intentions to exercise was stronger than for people with weaker worries about how they will be evaluated by others. However, voices also rose that the true problem with the construct of subjective norm is inaccuracy of its operationalization which should rather reflect social support, than perceived social pressure or others will (Courneya et al., 2000; Rhodes, Jones, Courneya, 2002).

Somewhat to our surprise attitude toward exercising in fitness classes was only marginally stronger predictor of intentions than the abovementioned subjective norms. It is also important to stress strong influence of perceived behavioral control on intentions, reflected in high value of path coefficient. At the same time, however, this variable has not shown to be direct predictor of exercise. The question of such an influence, although assumed in the theory, is not conclusive amongst investigators; while some of them have found significant and strong influence of it on behaviors, others have not and therefore claim to ignore the path between the both kinds of variables (Hausenblas et al., 1997; Smith, Biddle, 1999). Our study supports the premise of significant influence of perceived behavioral control on behavioral intention, but not for the behavior itself.

## Conclusions

To our knowledge this study was the first one that utilize the TPB to understand women exercising in fitness classes. We believe our findings have considerable theoretical and practical values. From the theoretical point of view our study broadens the state of knowledge on the TPB, going out to meet the demand of Hausenblas et al. (1997) that researchers should examine the TPB in different contexts of exercise behaviors and different categories of people. As it was described earlier, attitude and perceived behavioral control were found to predict intentions of women to continue participating in fitness classes and that the intentions, on the other hand, predicts frequency of this kind of behaviors. These results are important from the practical point of view, i.e. for the development of interventions aimed at reinforcing and/or increasing engagement of women in exercising in fitness classes. First of all, it means convincing women that they possess appropriate resources (such as skills, willpower etc.) to perform the behaviour of interest, and secondly, persuading women about the benefits of exercising (instrumental attitude) and fostering their positive emotional experiences with this kind of behavior (affective attitude).

Despite our belief that our study has considerable values, some limitations of it should also be acknowledged. First, subjects for the study were selected with the use of convenience sampling technique and therefore the wider applicability of the findings is limited. Secondly, the number of participants was relatively small considering path analysis, as sample sizes between 100 and 200 are more desirable. However, there is no universal rule regarding the required number of respondents, and according to some recommendations minimal sample size should be eight times the number of variables in the model plus 50 more or at least 15 cases per measured variable or indicator. Considering such recommendations our sample size fulfilled the criterion. Thirdly, as the study was based on self-report measures, the findings are sensible to social desirability biases. Finally, as a measure of exercise engagement the frequency of participation in fitness classes was adopted. Meanwhile, exercise frequency may reflect other factors (time constraints, financial issues etc.) and not only the “strength” of exercise habit. Notwithstanding these limitations, we are convinced that our study brings about valuable data on women’s exercise behaviors.

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