

Relationships among perceived body appearance, social physique anxiety, physical self-concept, and dispositional flow state of exercise participants

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Abstract

In the recent years, body related perceptions have become very important for both men and women. The purpose of this study was to investigate whether the dispositional flow state of exercise participants was predicted by social physique anxiety, perceived appearance, and physical self-concept. The study sample comprised of 137 men ($M_{age} = 23.00$, $SD = 3.14$) and 114 women ($M_{age} = 23.34$, $SD = 3.21$) exercise participants exercising regularly more than six months at different sport centers and university's sport centers. The participants have engaged in different sport and exercise types, such as fitness, plates, body building, swimming, team sports, walking, yoga, and capoeira. Participants have been exercising approximately three times in a week. Psychological questionnaires were used to measure the social physique anxiety, perceived appearance, physical self-concept and dispositional flow of exercise participants. A hierarchical multiple regression analysis suggested that social physique anxiety, perceived appearance, and physical self-concept significantly contribute to exercisers' dispositional flow. Findings suggest that the positive body related perceptions may influence the exercise participants' flow experience, then, enjoyment derive from the exercise may contribute to maintenance of exercise behavior. Therefore, to experience positive feelings in exercise setting, exercise participants' should focus what their bodies can do instead of focusing their physical appearance.

Key words: Appearance, exercise, flow, physical self-concept, social physique anxiety.

INTRODUCTION

A central concept in positive psychology (41) is the subjective experience called flow. Extensive research directed by Csíkszentmihályi (7,9,10) has revealed that when individuals become engaged in an activity that is challenging, controllable and intrinsically motivating, they experience a distinctive psychological state, commonly referred to as "flow". Flow is a harmonious subjective experience in which individuals become completely involved in an activity and mind and body work together effortlessly (7). Flow is an enjoyable psychological state that is reflected in a holistic sensation that people feel when they are totally immersed in the activity they do (7). Csíkszentmihályi (7,8) used the term 'autotelic experience' as a central construct in flow theory. According to flow theory, autotelic aspect of flow is an intrinsically rewarding experience known the end result of the other eight flow dimensions (challenge-skill balance, merging of action and

awareness, clear goals, unambiguous feedback, concentration on the task at hand, sense of control, loss of self-consciousness, transformation of time) providing high motivation toward further involvement (26).

Experiencing flow may result to an increase in people's level of positive affect such as feeling peppy, enthusiastic, and happy (1,4,11). For example, researchers (32) emphasized that happy individuals are generally more likely to enjoy their leisure activities and social interactions, so as to experience more "flow" states, and to become more satisfied with their activities. Schüler & Brunner (40) suggested that experiencing flow may contribute to the long-term adherence to physical activity because individuals feel like they are rewarded for their efforts and are motivated to do much more. Therefore, the flow experience is considered as a desired outcome since flow is an enjoyable state and a source of motivation for participants engaged in physical activity (28). If individuals experience a

feeling of enjoyment in an activity, they will continue being physically active. Overall, flow is considered as an important experience and an intrinsic motivation that affects individuals' future motivation to engage in physical activity. For this reason, flow experiences should be investigated from different point of views in order to explain the contribution to maintain exercise behavior and provide benefit from regular exercise participation of individuals.

Addressing the factors affecting flow state may lead to a better understanding of possible facilitators, preventers, and disruptors of flow experience. For example, the cognitive variables of planning and preparation, physical variables of preparation and readiness, experience, and optimal environmental factors facilitate athletes' flow experience in sport settings (22,23,27,29,38). On the contrary, a lack of motivation to perform, over arousal before a competition, negative or non-optimal team interactions, poor performance, and non-optimal confidence, self-doubt, and low levels of perceived sport ability affects flow negatively (27,29,26,38). In addition, a systematic review study (42) was conducted to investigate existing studies related to flow experiences in elite sport. According to this study, studies explored flow facilitators such as appropriate focus, optimal motivation, optimal arousal, positive thoughts and emotions, positive internal or external feedback, starting well, positive team play and interaction. The studies explored the preventing factors such as inappropriate focus, non-optimal preparation and readiness, non-optimal arousal, negative thoughts and emotions, non-optimal environmental and situational conditions, negative feedback, negative team play and interaction. Moreover, incomplete preparation, non-optimal motivation, loss of confidence, and performance mistakes were explored disruptors of flow state.

However, few studies have investigated possible factors associated with flow state in exercise setting. For example, Karageorghis et al. (30) examined the relationship between flow and the post-exercise feelings of positive engagement, revitalization, tranquility, and physical exhaustion on aerobic dance participants. They found that flow in aerobic dance exercise was moderately associated with the experience of positive post-exercise feelings. Furthermore, body related perceptions such as body image satisfaction, social physique anxiety (SPA), and perceived body attractiveness might be possible factors influencing the flow

experiences of exercise participants since many people worry about how they appeared to others during exercises (6,13,31). Studies showed that the perception of physical appearance predicts exercise motivation and behavior (21,39), affects frequency of exercise participation, exercise types and preferences related to exercise environments (14,31). Quinn et al. (37) and Tiggemann & Kuring (44), reported that externally oriented appearance consciousness leads to heightened body shame and appearance anxiety, body disgust, insensitivity to bodily cues, diminished cognitive resources, performance decrement and decreased experience of "flow" states. Fredrickson & Roberts (16) also stated that if one's self-awareness increases and perceptions of the others gains recognition, a heightened self-consciousness and reduced flow experiences may occur.

In addition to body related perceptions, positive self-concept and positive thinking about us contributed to both state and dispositional flow (29). However, Jackson & Csíkszentmihályi (24) stated that individuals gained positive self-concepts by experiencing flow. Moreover, physical self-concept factors were positively and significantly correlated with the flow factor since it has been considered to influence key factors involved in activity levels such as task choice, sustained effort, persistence, and motivation (34). Therefore, based on the above reasons, this study focused on specific variables such as SPA, perceived appearance and physical self-concept which assume the influence of flow experience of exercise participants. The contributions of these variables have not been frequently studied in the previous studies. Thus, the results of this study might indicate additional potential enablers and barriers to experiencing flow in exercise settings.

The aim of the current study was to investigate the role of SPA, perceived body appearance, and physical self-concept in the dispositional flow state of exercise participants. Previous studies have not found a significant difference in flow state with regard to gender (38). Therefore, we did not hypothesize that there would be gender differences between women and men in the total dispositional flow. It was hypothesized that SPA would negatively predict exercise participants' likelihood of dispositional flow experience. On the other hand, we hypothesized that perceived appearance and physical self-concept would positively predict the dispositional flow experience of exercise participants.

MATERIAL AND METHODS

Participants

The sample comprised of 137 men ($M_{age} = 23.00$, $SD = 3.14$) and 114 women ($M_{age} = 23.34$, $SD = 3.21$) exercise participants (age ranges from 18 to 30) who were regularly exercising more than six months ($M = 34.89$, $SD = 37.93$) at different sport centers and university's sport centers in Turkey. The participants engaged in different types of exercises including fitness, plates, body building, swimming, team sports, walking, yoga, and capoeira. Participants exercised on average of three times ($M_{women} = 2.82$, $SD = 1.37$, $M_{men} = 3.45$, $SD = 1.25$) per week.

Measures

Physical Self-Description Questionnaire (PSDQ, 33): The questionnaire consists of 70 items, and measures nine specific elements of physical self-concept including perceptions of strength, body fat, physical activity, endurance/ fitness, sports competence, coordination, health, appearance, and flexibility. There are also two general scales, general physical self-concept and self-esteem. Responses to these items were rated on a 6-point rating scale (from 1- "false", to 6- "true"). On the scale from appearance the participants were asked how they are to agree or disagree "I am good looking", and on the scale from general physical self-concept the participants were asked how they are to agree or disagree "I feel good about the way I look and what I can do physically". Reliability and validity of the PSDQ for Turkish university students were determined in a cross-cultural study by Marsh et al. (35). Furthermore, the alpha coefficients were .90 for appearance and .89 for general physical self-concept. The alpha coefficients for the current sample were .81 for appearance and .94 for general physical self-concept.

Social Physique Anxiety Scale (SPAS, 19): The original SPAS is a 12-item one-dimensional scale designed to assess over-concern or anxiety when presenting the physique in evaluative contexts. Items (e.g., "It would make me uncomfortable to know others were evaluating my figure") are presented on a 5-point rating scale (from 1 'not at all true' to 5 'extremely true'). In this study, a 7-item Turkish version SPAS was used as suggested by the recent work of Hagger et al. (18). The 7-item version of the SPAS reliability coefficient is 0.83 for Turkish sample (18). The alpha coefficient for the current sample was .78.

Dispositional Flow Scale-2 (DFS-2, 26): The instrument consists of nine subscales and 36-item assessing the flow experiences associated with a particular physical activity, in general (25). Each of the dimensions contains four items: challenge-skill balance (e.g., "I am challenged, but I believe my skills will allow me to meet the challenge"), merging of action and awareness (e.g., "I make the correct movements without thinking about trying to do so"), clear goals (e.g., "I know clearly what I want to do"), unambiguous feedback (e.g., "It is really clear to me how my performance is going"), concentration on the task at hand (e.g., "My attention is focused entirely on what I am doing"), sense of control (e.g., "I have a sense of control over what I am doing"), loss of self-consciousness (e.g., "I am not concerned with what others may be thinking of me"), transformation of time (e.g., "Time seems to alter either slows down or speeds up"), and autotelic experience (e.g., "I really enjoy the experience"). Items on the DFS-2 are scored according to a 5-point rating scale with response ranging from 1 "Never" to 5 "Always". By summing up all the scores, a global flow score can also be derived to represent the individual's overall propensity to experience flow. Thus, the higher the score, the more likely the individual will experience flow. DFS-2 was adapted to Turkish by Aşçı et al. (2). The internal consistencies of subscales for the present sample ranged from .75 (autotelic experience) to .83 (sense of control and loss of self-consciousness), and the internal consistency of total dispositional flow was .92 for the current sample.

Procedures and Data Analysis

Before administering the instruments, necessary permissions were obtained from the Human Research Ethical Committee at the Middle East Technical University. The primary investigator contacted individuals who are regularly exercising, to inform them about the purpose of the study and to request their participation in the study. Before administering the questionnaires, informed consents were given to the participants. The questionnaires were administered to the participants before or after their exercise sessions and it took approximately 15 minutes for completion.

The following tests were applied to analyze the data: preliminary analysis (for screening hierarchical regression assumptions), descriptive statistics, bivariate correlations and hierarchical regression analysis. Finally, to examine the role of SPA, perceived appearance and physical self-concept in

the prediction of flow in an exercise setting, a hierarchical regression analysis was conducted. Dispositional flow state was set as a dependent variable. SPA and perceived appearance were entered in the first step, and physical self-concept was entered in the second step of the hierarchical regression. Analyses performed using IBM SPSS Statistics 20.0.

RESULTS

Data were screened for hierarchical regression assumptions. After checking Mahalanobis distance criterion according to Tabachnick and Fidell (43), 23 outliers were removed from the original sample, leaving a final sample consisted of 251 participants. Exploration of the assumptions associated with regression analyses (normality, homoscedasticity, linearity, multicollinearity) suggested that there were no notable problems in the data. Both linearity and homoscedasticity assumptions were acceptable according to a scatterplot of the residuals. Moreover, to explore whether the data were marked by multicollinearity, both variance inflation factor (VIF; 1.03-1.17) and tolerance statistics (.72 - .96) were examined (36). The obtained values were within acceptable limits.

Means, standard deviations of participants' exercise duration, SPA, appearance, physical self-concept, and total dispositional flow scores are

presented in Table 1. Women ($M = 16.91$, $SD = 4.90$) scored higher SPA than men ($M = 14.35$, $SD = 4.54$).

A series of independent t-test was employed as the primary analysis. Results of the analyses revealed that there was a significant difference between women and men exercise participants' SPA ($t = 4.28$, $p = .000$) scores (Table 1). On the contrary, there was no significant differences between women and men participants' perceived appearance ($t = .66$, $p = .513$), physical self-concept ($t = -1.51$, $p = .131$), and total dispositional flow ($t = -.57$, $p = .572$).

SPA was negatively correlated with perceived appearance, physical self-concept, appearance, and dispositional flow as can be seen in Table 2. Small to moderate positive correlations were observed among exercise appearance, perceived appearance, physical self-concept, appearance, and dispositional flow.

A hierarchical multiple regression analysis was conducted to determine how SPA, perceived appearance, and physical self-concept predicted the total dispositional flow state of the participants. As mentioned before, in the first step of the regression analysis, we considered participants' SPA and appearance perception as independent variables. Secondly, after controlling participants' SPA and perceived appearance, physical self-concept entered as a predictor variable.

Table 1. Means, Standards Deviations, Independent t-test Results of Study's Variables by Gender

	Women		Men		t	p
	Mean	SD	Mean	SD		
1. SPA	16.91	4.90	14.35	4.54	4.28	.000*
2. Appearance	29.95	4.22	29.61	4.02	.66	.513
3. Physical self-concept	28.86	5.28	29.82	4.74	-1.51	.131
4. Dispositional flow	134.27	16.18	135.39	15.18	-.57	.572

* $p < .05$

Table 2. Pearson correlations for the study variables.

	1	2	3	4
1. SPA	-			
2. Appearance	-.15*	-		
3. Physical self-concept	-.53**	.36**	-	
4. Dispositional Flow	-.22**	.32**	.34**	-

* $p < .05$, ** $p < .01$.

Table 3. Predictive analysis of total dispositional flow state.

Predictor	B	SE (B)	β	R ²	F
Step 1				.13	19.24**
Social physique anxiety	-.57	.19	-.18**		
Perceived appearance	1.12	.23	.30**		
Step 2				16	16.17**
Social physique anxiety	-.23	.22	-.07		
Perceived appearance	.89	.24	.24**		
Physical self-concept	.67	.23	.22**		

*p < .05, **p < .01.

As seen in Table 3, 16 % of the variance in dispositional flow score was explained by this model. The first step and second step of the model contributed independently to the prediction of flow experience. At Step 1 of the regression analysis, SPA and perceived appearance 13 % of the variance in dispositional flow, $F(2, 248) = 19.24$, $p < .01$. The SPA ($\beta = -.18$) and perceived appearance ($\beta = .30$) were considered as contributors for explaining the variance of participants' dispositional flow.

At Step 2 of the regression analysis, physical self-concept explained 3 % of the variance in dispositional flow $F(3, 247) = 16.17$, $p < .01$. The physical self-concept explained ($\beta = .22$) is regarded as a very small contributor for explaining the variance participants' dispositional flow. Results indicated that SPA, perceived appearance, and physical self-concept predicted exercise participants' flow experiences in this current study.

DISCUSSION

The purpose of the current study was to investigate the role of SPA, perceived appearance, and physical self-concept in determining the dispositional flow states of exercise participants. The results indicated that SPA, perceived appearance, and physical self-concept predicted the total dispositional flow.

Consistent with the hypothesis, the findings of the current study revealed that SPA predicted negatively dispositional flow for this model. As found by Hurst et al. (20), the reduction of SPA can lead to the higher participation of the people in physical activities and sports which, in turn results to the increase of the likelihood of flow experience. In addition, studies have reported that SPA is associated with maladaptive exercise experiences in self-presentation (3,6), and exercise motivation (5,13) in sport and exercise settings. One of the key elements of flow is the loss of self-consciousness or self-awareness that results from being totally

absorbed in the activity at hand. Fredrickson & Roberts (16) suggested that increased awareness of the self and how others perceive the self might create a heightened self-consciousness, and might lead to negative psychological outcomes including diminished awareness of internal states such as bodily sensations and emotions, and reduces peak motivational states (12). In this regard, we might conclude that positive body related perceptions especially appearance related positive perceptions can positively influence flow experience of exercise participants. However, contrary to expectations, SPA and perceived appearance did not explain much variation in dispositional flow state in this model. It would be the results related to participants' exercise experience as previous experiences facilitate flow state by means of reducing anxiety, enhancing confidence and control (17). Average exercise experience of the participants' is approximately three years and participants exercise at least two times per week. Thus, these results might be due to the exercise experience of the participants who took part in this study.

Physical self-concept has a very small but statistically significant influence on exercise participants' dispositional flow state in the current study. Physical self-concept has been viewed as an important determinant of behavior and a contributor to mental health and well-being (15). Although little is known about the relationship of athletes' and exercise participants' physical self-concept to flow experiences, it was assumed that high perceived physical self-concept might meet mental demands of sport and exercises which facilitate flow experience. However, results of the current study did not support this hypothesis.

The present study has limitations that should be considered while interpreting and generalizing the findings. Firstly, the use of a correlational nature of the study does not explain a causal inference among variables, and the causal direction of the

examined relationships cannot be definitively determined. Second, additional data sources such as interviews would be useful for interpreting the influence of exercise participants' body related perceptions on their flow state. Third, the sample of the study consisted of exercise participants in varied exercise settings involving a number of different activities. Due to the lack of equal sample size of participants from different exercise and sports types, we were unable to examine whether types of exercise and sport have any influences on the flow experiences. For example, certain types of sports (body-building, swimming, dance, yoga and Pilates), focusing on one's body, may affect individuals' body related perceptions. Depends on the exercise type, exercise environment also affects exercise participants' awareness of their own physiques (i.e., mirrors, exercising with groups, and clothing). Therefore, the experiences and perceptions of exercise participants might be quite different in terms of exercise types.

In conclusion, we attempted to examine the relationships among SPA, perceived appearance, physical self-concept and total dispositional flow state of exercise participants. The findings from the present study can provide valuable information regarding the relationships between body-related perceptions and dispositional flow. The positive perceptions related to appearance might facilitate flow experience; while negative physical perceptions (i.e. SPA) might inhibit the flow experience. In this respect, positive body related perceptions seem to be more important to both women and males in facilitating the likelihood of experiencing a flow state in the exercise settings. Therefore, individuals should persuade to change their attitudes toward their physical appearance to enjoy their exercise, and exercise participants should consider exercise as an opportunity for experiencing the positive psychological benefits rather than viewing exercise as a mean to improve their physical appearance. To experience positive feelings in exercise setting, exercise participants should focus what their bodies can do instead of focusing their physical appearance.

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