AN EXPLORATORY STUDY OF SELF-LEADERSHIP
IN PHYSICAL ACTIVITY SETTINGS

Ioannis Proios[1],
Eleni Fotiadou[1],
George Doganis[2],
Sofia Batsiou[3],
Miltiadis Proios[4i]

[1]Department of Physical Education and Sport Science,
Aristotle University of Thessaloniki,
Greece
[2]Prof., Department of Physical Education and Sport Science,
Aristotle University of Thessaloniki,
Greece
[3]Assist. Prof.,
Department of Physical Education and Sport Science,
Democritus University of Thrace,
Greece
[4]Prof., Department of Physical Education and Sport Science,
Aristotle University of Thessaloniki,
Greece

Abstract:
The present study aimed to investigate the perceived extent of competence of self-leadership as well as the extent to which the participants exercise self-leadership strategies in physical activities (competitive and recreational). Additionally, the existence of potential individual differences in gender- and form of physical activity-related self-leadership strategies. Three hundred seventy-three undergraduate students from a Greek university (n = 197 men, and n = 176 women) with age range were between 18–24 years (M = 20.12, SD = 2.35) participated. All participants participated in physical activities. They filled out a validated Greek version of the Revised Self-leadership Questionnaire (RSLQ). Results revealed that participants reported (a) some positive self-leadership tendencies and (b) higher scores in the strategies such as self-goal setting, natural rewards and self-talk. Additionally, the findings demonstrated that self-leadership strategies may interact with gender and type of physical activity.

[i] Correspondence: email mproios@phed.auth.gr

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1. Introduction

Many people participate in various activities such as physical activities (competitive or recreational) during their lives. A characteristic trait of the physical activities is the ongoing effort of participants to enhance their performance. For improving performance, it is reported that self-leadership presents an impressive potential (Neck, Manz, & Houghton, 2017). Studies have revealed that self-leadership skills' training has a positive impact on individual performance outcomes (Stewart, Carson, & Cardy, 1996).

According to Manz (1986), Neck and Houghton (2006), and Neck and Manz (2010), self-leadership is a process of self-assessment and self-influence through which people influence themselves to achieve the self-direction and self-motivation necessary to behave and perform in desirable ways. The function of self-leadership as a psychological concept is based on theoretical frameworks of several classical theories of self-influence, such as self-regulation theories (Kanfer, 1970; Carver & Scheier, 1981), self-control (Cautela, 1969; Mahoney & Arnkoff, 1978, 1979; Thoresen & Mahoney, 1974), intrinsic motivation (e.g., Deci & Ryan, 1985), and social cognitive theory (e.g., Bandura, 1986).

The concept of self-leadership states that it is a process by which a person controls their own behaviors, creates influence, and leads oneself using specific behavioral and cognitive strategies (Manz, 1986, 2015; Manz & Neck, 2004; Manz & Sims, 2001). Self-leadership strategies include three characteristics: behavior-focused, natural reward, and constructive thought pattern strategies (Manz & Neck, 2004; Neck & Houghton, 2006; Prussia, Anderson, & Manz, 1998).

Behavior-focused strategies heighten self-awareness and facilitate personal behavioral management towards the obligatory works that are not very attractive (Houghton & Neck, 2002; Manz & Neck, 2004). The implementation of these strategies is carried out through methods such as self-goal setting, self-reward, self-punishment, self-observation, and self-cueing (Houghton & Neck, 2002). Natural reward strategies help people build pleasant and enjoyable features into activities without any external effect (Houghton, Bonham, Neck, & Singh, 2004; Mahembe, Engelbrecht, & De Kock, 2013; Manz, 1986; Manz & Neck, 2004). Constructive thought pattern strategies help in the formation of constructive thought patterns and habitual ways of thinking that can positively impact performance (Manz & Neck, 2004; Neck & Manz, 1992). These strategies are executed through identification and replacement dysfunctional beliefs and assumptions, mental imagery and positive self-talk (Manz, 1992; Neck, 1996; Neck & Houghton, 2006; Neck & Manz, 1996).

Self-leadership is argued to be a learned behavior rather than a natural trait (Manz, 1986). This shows that people differ from one another, for example, in relation to gender or activities they participate in. The literature discusses the existence of individual differences in the self-leadership (Neck et al., 2017). The study of individual differences in the self-leadership is vital because the cognition of innate or learned self-leadership

abilities and skills can help to shape the characteristics and tendencies in what one wants to be.

The importance of studying self-leadership lies in the fact that self-leadership encompasses a comprehensive set of strategies that address what should be done (the standards and objectives), why it should be done (strategic analysis) and how it should be done, a process of self-regulation aiming for the enhancement of personal performance of trainees. It is observed in the literature that interest of researchers for the study of self-leadership focused, mainly, in the work contexts for improving the performance of employees in enterprises of the broader social domain (see, Kern, Phillips, Tewari, Jones, & Edwards, 2017; Neck et al., 2017; Ross, 2014; Sesen, Tabak, & Arli, 2017; Stewart, Courtright, & Manz, 2011). Despite increasing awareness of the importance of self-leadership, it is supported that the self-leadership model can be applied to sociopsychological research with the analysis of empirical relationships between sport participants' self-leadership as well as their commitment and adherence to exercise (Bum, 2018). A recent study has investigated the direct and indirect relationship between self-leadership strategies and career success, using self-efficacy as a mediator, through the sample of 418 registered individuals in sports organizations (Megheirkouni, 2018). On the contrary, Bum (2018) – instead of using employees – investigated the structural relationships between self-leadership, exercise commitment, and exercise adherence intention with a sample of 280 sport participants.

Purpose of the present study was to investigate not only the perceived extent of competence of self-leadership but also the extent of exercising of self-leadership strategies participants' in physical activities (competitive and recreational). Additionally, the existence of potential individual differences in gender- and form of physical activity-related self-leadership strategies.

2. Method

2.1 Participants
The participants in this study were 373 undergraduate students from a Greek university (n = 197 men, and n = 176 women). Their age range were between 18-24 years (M = 20.12, SD = 2.35). All participants were participated in physical activities (competitive and recreational).

2.2 Procedure
Prior institutional permission was granted before conducting the research. Data were collected from undergraduate physical education classes after permission granted by the competent Professors and after the participants were informed of the nature of the study. Participation was voluntary, and no incentives were provided.

2.3 Measure
Self-leadership. A validated Greek version (Proios, 2019) of the Revised Self-leadership Questionnaire (RSLQ; Houghton & Neck, 2002) was used. It was 25 items to be answered

on a 5-point Likert-type scale with anchors 1: Totally disagree and 5: Totally agree. The Greek version of the Revised Self-leadership Questionnaire (RSLQ-Gr) consist eight distinct sub-scales representing the three primary self-leadership dimensions (1) Behavior-focused consists four strategies: Self-goal setting (four items, e.g., I establish specific goals for my own performance), Self-reward (three items; e.g., When I do an assignment especially well, I like to treat myself to some thing or activity I especially enjoy). Self-punishment (four items; e.g., I tend to get down on myself in my mind when I have performed poorly). Self-cueing (two items; e.g., I use written notes to remind myself of what I need to accomplish). (2) Natural reward strategies consist by single sub-scale with two items (e.g., I seek out activities in my work that I enjoy doing). (3) Constructive thought pattern consists three strategies: Visualizing (four items; e.g., I visualize myself successfully performing a task before I do it). Self-talk (three items; e.g., Sometimes I find I'm talking to myself (out loud or in my head) to help me deal with difficult problems I face). Evaluating beliefs and assumptions (three items; e.g., try to mentally evaluate the accuracy of my own beliefs about situations I am having problems with). The reliability of the RSLQ-Gr was calculated using alpha coefficient. Alpha coefficients for the self-goal setting was ($\alpha = .74$), self-reward ($\alpha = .84$), self-punishment ($\alpha = .64$), self-cueing ($\alpha = .78$), natural rewards ($\alpha = .62$), visualizing ($\alpha = .77$), self-talk ($\alpha = .88$), and beliefs ($\alpha = .65$), indicating good reliability for each The values (.62, .64, and .65) can be considered satisfactory since these factors comprises less than ten items (viz. two, four and three items respectively) (Ntoumanis, 2001; Pallant, 2010).

2.4 Data analyses

Descriptive statistics were obtained, and preliminary data analyses were conducted to estimate people's responses on self-leadership strategies. Inferential statistics (MANOVA) were used to analyze the extent to which self-leadership varied based on demographic variables (gender and form physical activity).

An effort has been made to interpret the scores in this study (see, Neck et al., 2017). The interpreting of scores was based on the separate evaluation of scores for each strategy and the set of ratings for each self-leadership strategy as a whole. In particular, the scores ranged from 2 for a strategy with 2-item, 3 for a 3-item, 4 for a 4-item (a total absence of the strategy in current behavior) to 10 for a strategy with 2-item, 15 with 3-item, 20 with 4-item (a very high level of the strategy in current behavior), in order to understand the current trend of each strategy of self-leadership. The scores of each strategy were divided into five levels: very low, low, moderate, high and very high.

3. Results

3.1 Descriptive statistics

Descriptive statistics (Table 1) initially revealed the total profile in self-leadership (overall scores in the strategies) people that were used in the present study. Specifically, the descriptive statistics showed that participants in physical activities are distinguished by a relatively high-level self-leadership. In addition, descriptive statistics showed the

tendencies for each self-leadership strategies. More specifically, descriptive statistics as presented in Table 1 have shown that strategies "self-goal setting", "natural rewards" and "self-talk" scored relatively in high level. While, concerning strategies "self-reward" "self-punishment", "self-cueing", "visualizing" and "beliefs" scored relatively in moderate level.

Table 1: Descriptive Statistics of Total Scores
(Means, Standard Deviation and Strategy Levels)

Variables	*M*	*SD*	Strategy Levels
Self-leadership Strategies			
Self-goal setting	16.64	2.17	High
Self-reward	8.89	2.46	Moderate
Self-punishment	14.31	2.70	Moderate
Self-cueing	6.01	2.13	Moderate
Natural rewards	7.83	1.23	High
Vizualizing	14.89	2.84	Moderate
Self-talk	11.14	2.65	High
Beliefs	10.85	1.78	Moderate
Total Scores	76.92	9.29	High

3.2 Effect of gender and form physical activity in the self-leadership strategies and dimensions

Separate multivariate analysis used the hypothesis that self-leadership varies strategies and dimensions depending on gender and form physical activity. To determine gender-related changes in self-leadership strategies, firstly, a one-way multivariate analysis of variance was performed with the use of the eight strategies as dependent variables and the Gender as independent variable (Table 2). The multivariate test revealed a significant main effect of gender (Wilks = .866, $F(8, 364)$ = 7.05, $p < .001$, n^2 = .134). According to J. Cohen (1988) guidelines for interpreting an eta-square (n^2) is that .01 indicates a small effect, .09 indicates a moderate effect, and .25 indicates a large effect. Therefore, our finding n^2 =134, indicates that 13.4% of the total variance in variables of self-leadership is accounted for by gender differences and as such it can be classified as a moderate effect. Univariate results showed significantly different effects for strategies "self-reward" ($F(1, 371)$ = 5.61, $p < .05$, n^2 = .015) with female (M = 9.21; SD = 2.35) reporting significantly higher scores than male (M = 8.61; SD = 2.53), "self-punishment" ($F(1, 371)$ = 14.29, $p < .001$, n^2 = .037) with female (M = 14.86; SD = 2.71) reporting significantly higher scores than male (M = 13.82; SD = 2.61), "self-cueing" ($F(1, 371)$ = 23.18, $p < .001$, n^2 = .059) with female (M = 6.56; SD = 2.07) reporting significantly higher scores than male (M = 5.52; SD = 2.07), "natural rewards" ($F(1, 371)$ = 4.37, $p < .05$, n^2 = .012) with female (M = 7.97; SD = 1.24) reporting significantly higher scores than male (M = 7.70; SD = 1.26), "self-talk" ($F(1, 371)$ = 4.43, $p < .05$, n^2 = .012) with female (M = 11.45; SD = 2.65) reporting significantly higher scores than male (M = 10.87; SD = 2.78),. On the other hand, mean scores for the strategies "self-goal setting", "visualizing" and "beliefs" showed no significant differences between males and females.

Table 2: Descriptive Statistic Scores for Gender
(Means, Standard Deviation and Significance Differences)

Variables	Gender				Differences (sign.)
	Male		Female		
	M	*SD*	*M*	*SD*	
Self-leadership Strategies					
Self-goal setting	16.68	2.18	16.58	2.17	>.05
Self-reward	8.61	2.53	9.21	2.35	<.05
Self-punishment	13.82	2.61	14.86	2.71	<.001
Self-cueing	5.52	2.07	6.56	2.07	<.001
Natural rewards	7.70	1.26	7.97	1.24	<.05
Vizualizing	15.06	2.75	14.71	2.93	>.05
Self-talk	10.87	2.78	11.45	2.65	<.05
Beliefs	10.99	1.78	10.69	1.76	>.05
Differences (sing.)	λ = .866, $F(8,364)$ = 7.05, p < .001, n^2 = .134				

Regarding self-leadership dimensions multivariate test revealed a significant main effect of gender (Wilks = .957, $F(3, 369)$ = 5.54, p < .001, n^2 = .043). The effect size for gender on self-leadership dimensions estimated power as small (n^2 = .043; 4.3% of variance). Univariate results showed significantly different effects for dimensions "behavior-focused" ($F(1, 372)$ = 10.42, p < .001, n^2 = .027) with female (M = 32.52; SD = 4.52) reporting significantly higher scores than male (M = 30.82; SD = 4.64) and "natural reward" ($F(1, 372)$ = 4.37, p < .05, n^2 = .012) with female (M = 7.97; SD = 1.24) reporting significantly higher scores than male (M = 7.70; SD = 1.26). While for the "constructive thought pattern" dimension there is no significant effect.

The same procedure was followed for the checking the differences in self-leadership scores relation with the form of physical activity (competitive and recreational) (Table 3). The multivariate test revealed a significant main effect of type physical activity (Wilks = .918, $F(8, 364)$ = 4.05, p < .001, n^2 = .082). The effect size for type of physical activity on self-leadership dimensions estimated power as small (n^2 = .082; 8.2% of variance). Univariate results showed significantly different effects only for strategies "self-goal setting" ($F(1, 371)$ = 10.59, p < .001, n^2 = .028) with of the competitive activities participants (M = 16.93; SD = 2.04) reporting significantly higher scores than recreational activities participants (M = 16.19; SD = 2.29), "self-reward" ($F(1, 371)$ = 5.04, p < .05, n^2 = .013) with of the competitive activities participants (M = 8.66; SD = 2.47) reporting significantly lower scores than recreational activities participants (M = 9.24; SD = 2.42) and "visualizing" ($F(1, 371)$ = 5.37, p < .05, n^2 = .014) with of the competitive activities participants (M = 15.17; SD = 2.86) reporting significantly higher scores than recreational activities participants (M = 14.48; SD = 2.76). On the other hand, mean scores for the strategies "self-punishment", "self-cueing "natural rewards "self-talk" and beliefs showed no significant differences between competitive and recreational activities.

Table 3: Descriptive Statistic Scores for Physical Activities
(Means, Standard Deviation and Significance Differences)

Variables	Physical Activities				Differences (sign.)
	Competitive		Recreational		
	M	*SD*	*M*	*SD*	
Self-leadership Strategies					
Self-goal setting	16.93	2.04	16.19	2.29	<.001
Self-reward	8.66	2.47	9.24	2.42	<.05
Self-punishment	14.46	2.58	14.09	2.88	>.05
Self-cueing	5.96	2.12	6.09	2.15	>.05
Natural rewards	7.73	1.32	7.97	1.14	>.05
Vizualizing	15.17	2.86	14.48	2.76	<.05
Self-talk	11.23	2.73	11.01	2.52	>.05
Beliefs	10.96	1.78	10.68	1.76	>.05
Sign. Differences	$\lambda = .918$, $F(8,364) = 4.05$, $p < .001$, $n^2 = .082$				

4. Discussion

The primary purpose of this study was to investigate the perceived extent of self-leadership participants' in physical activities (competitive and recreational). A reason for this was the claim that self-leadership plays a vital role in better self-management behavior (Manz & Sims, 1980). Manz (1986) argued that although behavior is influenced by as external forces such as a leader, actions are ultimately controlled by internal forces such as self-leadership. This is in line with other researchers' claim that processes of self-leadership help in controlling of behavior (Manz, 2015; Manz & Neck, 2004; Manz & Sims, 2001).

The results from descriptive statistics, initially, suggest that participants in physical activities already possess some positive self-readership tendencies. More specifically, the findings of the present study revealed that participants tend to use the self-goal setting, natural rewards and self-talk strategies. The use of the self-goal setting strategy in physical activities seem to lead in the use of personal goals. This strategy is behavior-focused and aims at personal behavioral management in performing unwanted tasks (Houghton & Neck, 2002; Manz & Neck, 2004). Cox, Pearce, and Perry (2003) claim that the strategy of self-leadership is designed to encourage positively desirable behaviors that lead to the success and suppression of negatively unwanted behaviors that can lead to unwanted outcomes.

Regarding the use of the natural rewards strategy by the participants, it seems possible to try to create situations that can motivate them to achieve the pleasant aspects of their activities without some external effects (Houghton et al., 2004; Mahembe et al., 2013; Manz, 1986; Manz & Neck, 2004). Natural rewards strategy allows individuals to find enjoyment in a particular job or activity as well as results in the increase of positive feelings related to their ability, self-control, and a sense of purpose (Deci & Ryan, 1985). Focusing on building positive attributes in the work of the actions creates emotions of intrinsic motivation (D'Intino, Goldsby, Houghton, & Neck, 2007).

The finding of the trend of using self-talk strategy suggests that those participating in physical activities possibly produce thoughts about themselves that help in creating constructive thought patterns. The positive self-talk, the evaluation of the conditions that exist and the ways of thinking can enchase constructive thinking (Van Zyl, 2008). When individuals become aware of the content of internal dialogues, they can eliminate the negative outcomes and, at the same time, engage in more optimistic self-talks (Seligman, 1991).

The investigation of individual differences in the shaping of self-leadership was the secondary objective of this study. In particular, in this study, we examined the potential of self-leadership to interact with personality factors like gender and type of physical activity. Neck et al. (2017) reported that gender is a factor that may have some bearing on a person's self-leadership, although studies have generally found no relationship between gender and self-leadership. The findings of this study revealed significant differences between the self-leadership scores of males and females, thus reinforcing the above-mentioned assertion for the possible existence of differences in self-leadership related to gender. A similar finding has been revealed in another study where the females scored significantly higher than males (Norris, 2008). Specifically, in the present study, females scored significantly higher than males on the self-reward, self-punishment, self-caring, natural rewards and self-talk strategies, while significant gender-related differences were not found to exist in the other strategies. The above findings are supported by the claim that gender may influence leadership style because, generally, women are more democratic in their leadership style, while men are more autocratic (Eagly & Johnson, 1990).

Individual differences in self-leadership were also examined in physical activities-related strategies, as a form of experience in different workplaces. Experience is the catalyst that initiates the self-leadership development process (Ross, 2014). Cameron and Caza (2004) claim that experiences, especially successful experiences, are pivotal in developing self-leaders because successes create the foundation for more successful experiences. Experience in different sports activities may lead to the creation of individual differences in self-leadership as work experiences (Neck et al., 2017). The findings of this study confirmed the above claim, revealing significant differences in self-leadership between competitive and recreational activities. More specifically, participants in competitive activities scored significantly higher than participants in recreational activities on the self-goal setting and visualizing strategies, while the opposite happened in the self-reward strategy. The lack of findings from other studies does not allow further discussion. This subject is further exploring in the discussion for future investigations.

4.1 Limitations

One potential limitation of this study was the procedure utilized for selecting participants. Survey respondents included students enrolled in undergraduate courses, and the sample was not randomly selected. Future researchers may be interested in confirming the results of this study with a randomly selected sample. Another limitation

of the study was the assessment of self-leadership dimensions based on self-reports. Additionally, a limitation was the size of the sample. The findings cannot be generalized to the broader population that participate in physical activities without further replication; further, it cannot be applied to other age groups because the sample that was used consisted of mostly young people (18–24 years).

5. Conclusions

The findings of this study led to the conclusion that self-leadership in physical-activity settings demonstrate some positive tendencies in self-goal setting, natural rewards and self-talk strategies. This reveals the need for training of self-leadership skills in physical-activity settings. Moreover, it is concluded that gender and type of physical activity are crucial developmental factors when evaluating scores of self-leadership strategies.

About the Authors
Ioannis Proios (MSc., University of Democritus)
PhD candidate, Department of Physical Education and Sport Science, Aristotle University of Thessaloniki. e-mail: johnyproios@gmail.com
MSc. Proios research interests focus in the study of people with physical disabilities.

Eleni Fotiadou (PhD, University of Aristotle)
Associate Professor, Department of Physical Education and Sport Science, Aristotle University of Thessaloniki. e-mail: fotiadi@phed.auth.gr
Dr. Fotiadou research interests focus in the study of people with disabilities.

Sofia Batsiou (PhD, University of Democritus)
Assistant Professor, Department of Physical Education and Sport Science, Democritus University of Thrace. e-mail: smpatsio@phyed.duth.gr
Dr. Batsiou research interests focus in the study of people with disabilities.

George Doganis (PhD, University of Aristotle)
Professor, Department of Physical Education and Sport Science, Aristotle University of Thessaloniki. e-mail: doganis@phed.auth.gr
Dr. Doganis research interests focus in the sport psychology.

Miltiadis Proios (PhD, University of Aristotle)
Professor, Department of Physical Education and Sport Science, Aristotle University of Thessaloniki. e-mail: mproios@phed.auth.gr
Dr. Proios research interests focus in the study of human behavior (morality in the physical education, sport, religion).

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