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Research article

INDIVIDUAL CHARACTERISTICS, EXERCISE MOTIVATION AND EMOTIONAL ASPECTS AMONG WEEKEND AND NON-WEEKEND EXERCISERS

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Patrizia Oliva, Sebastiano Costa, Francesca Cuzzocrea, Rosalba Larcan

University of Messina, Department of Human and Social Sciences, Italy

Abstract. *The purpose of this study was to examine the differences in personality traits, exercise motivation and mood states, in weekend exercisers and non-weekend exercisers. A sample of 536 individuals was included in the study. The results have shown that weekend exercisers have higher scores in certain personality aspects, self-determined regulation and positive mood states. These results seem to confirm previous research results on the prevalence of more intrinsic motives and positive emotional states in participants engaged in frequent exercise but also show that training on the weekend could represent a risk for the development of dysfunctional exercise behavior. These findings can have practical implication for potentially identifying individuals who may be at-risk for overtraining symptoms and can help to target and guide the implementation of a prevention program.*

Key words: *physical activity, personality, exercise motivation, mood state.*

INTRODUCTION

The positive impact that physical activity has on psychological and physical development has been amply demonstrated. In this regard, several studies have shown the association between sport and well-being (Edwards, 2006), and stress, depression and anxiety reduction (Hallal, Victoria, Azevedo, & Wells, 2006; Salmon, 2001). Despite the fact that the significant role of exercise on reducing negative emotional states and enhancing

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Corresponding author: Patrizia Oliva, Ph.D.
Via Nuova Panoramica, 1416-98168 Messina, Italy
Phone: +339 1136679 • Fax: +339 312394 • E-mail: poliva@unime.it
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positive has been established, the mechanism through which this occurs still remains unclear (Stathopoulou, Powers, Berry, Smiths, & Otto, 2006). For this reason, encouraging exercise, as well as the understanding of factors related to physical activity, are important research fields for promoting health and the prevention of serious disease (Jones, Harris, Waller, & Coggins, 2005). Several studies have attempted to explain this process, stressing the role of personality traits, sport motivation and mood states, in order to understand what it is that makes people less active or excessively engaged in physical exercise (Ingledew, Markland, & Sheppard, 2004; Lewis & Sutton, 2011).

Studies, based on the five-factor personality model, have demonstrated a significant relationship between personality characteristics and sport participation. Specifically, higher levels of extraversion and conscientiousness and lower neuroticism seem to be related to higher exercise frequency and time spent training (Bogg & Roberts, 2004; Bogg, Voss, Wood & Roberts, 2008; Courneya, Bobick, & Schinke, 1999; Rhodes & Smith, 2006).

The strong relationship correlates between personality and physical activity which provides new insights into the study of the psychological aspects related to exercise behavior. It is well known that exercisers who have a poor self-perception tend to decrease involvement in physical exercise and practice sport mainly with the aim of reducing their weight and improving their physical appearance (Ingledew & Sullivan, 2002). However, this particular extrinsic motivation may deprive athletes of their sense of autonomy and, as consequences, their sport engagement and performance could be strongly reduced (Markland & Ingledew, 2007).

In addition, in accordance with the Self-Determination Theory - SDT (Deci & Ryan, 1985), less self-determined exercise motivations seem to enhance exaggerated and dysfunctional activity levels (Markland, 2009). Deci and Ryan (1985) suggest motivation along a continuum ranging from amotivation (the absence of intent and interest in carrying out an activity), to extrinsic motivation (taking action for instrumental and external reasons), and to intrinsic motivation (doing an activity for pure interest). In this continuum we can distinguish between various forms of extrinsic motivation, according to the degree of self-determination. The less self-determined form of extrinsic motivation is based on External Regulation, to which the behavior is driven by external contingencies and means taking action with the sole purpose of receiving a reward or avoiding punishment. The Introjected Regulation is, however, a motivation controlled by internal factors; the subject has not fully identified with the values of the behavior and performs the action driven by contingencies, such as pride or avoiding feelings of guilt and shame. Individuals with an Identified Regulation perceive and consider the action as important and almost fully integrated with their cultural models. Finally, the Integrated Regulation consists in the most complete form of extrinsic motivation, because it not only involves identifying behavior, but the action is perfectly integrated with other self-aspects. Although the last two types of motivation share many characteristics with the intrinsic one, they are still considered forms of extrinsic motivation, because the behaviors are emitted to achieve important results from a personal point of view, rather than interest and pleasure.

In sports, studies aspects related to sport motivation play a crucial role in fostering the greater involvement of athletes and, above all, depend on the outcome of athletic performance. In this sense, Ryan and Deci (2007) have shown that intrinsic motivation and more autonomous forms of extrinsic motivation are associated with a greater involvement and engagement in sport (Vlachopoulos & Karageorghis, 2005), better performance (Pelletier, Vallerand, Brière, & Blais, 2003), greater psychological well-being (Burton,

Lydon, D'Alessandro, & Koestner, 2006), and negligible levels of diseases (Vansteenkiste, Ryan, & Deci, 2008).

Although numerous studies have emphasized that physical activity and motivation are able to reduce negative emotional states and promote greater well-being, the relationship between sport motivation and personality traits and how these aspects can influence mood states and exercise participation is still not clear.

It is known that physical health can be improved by a few hours of physical activity, however, carried out on a regular basis. Being aware of these benefits strengthens the motivation for exercise. The daily and moderate exercise may be able to defeat a sedentary lifestyle, which is the cause of many disorders and chronic diseases, related to cardiovascular disease, increased blood pressure, higher levels of body fat, and malfunctioning of glucose metabolism. Another gain is also a more general well-being, with lower levels of stress, depression, and anxiety.

Nevertheless, many say they do not have time to devote to exercise, but sometimes it is just an excuse. It is true that many work commitments do not leave much time for us, so it is necessary to organize our time the best way possible. To maintain the momentum and to remain constant over time, it would be useful to carefully plan for the time devoted to physical activity and exercise, or decide from day to day depending on own time. In any case, one should not go overboard either one way or the other: avoid laziness, but do not overloading the weekend. Actually, more and more people are devoted to physical exercise during the weekend, either because they have more time, or because they think that intense physical activity carried on for more days ensures efficient results in terms of fitness and well-being. In reality it is not so, because a recent study (Conroy, Elavsky, Hyde, & Doerksen, 2011) shows exactly the opposite effect: rigid behaviors in training lead to becoming less motivated and carry out training on a regular basis. Specifically, research shows that exercisers who have the strongest motivations and strive to do more sport are those that have more stable intentions and plan physical activity during the week even though they have many other commitments, such as going to class or work. Those who train more during the week also decide to rest on the weekend, when they devote themselves to social activities or just sleep more.

Despite these findings, the exploration of the interaction between individual characteristics, motivation and emotional aspects in predicting exercise behavior is still at an early stage and for this reason it is necessary to explore the mechanisms that underlie physical activity engagement. For this reason, based on previous considerations, this study aimed to analyze the differences between weekend and non-weekend exercisers in terms of personality traits, motivation for exercise and mood states.

THE METHOD

Participants

The participants were 536 gym frequenters who exercised regularly over a year. Exercisers were recruited from fitness clubs and consented to complete a number of questionnaires. Based on information about their exercise frequency, the participants were divided into two groups, created as follow: the first group of weekend exercisers (WE) consisted of 86 participants (55 males and 31 females), age 34.51±12.978 years (Mean±Std.Dev.), who reported exercising even on weekends (6-7 days a week). The second group of non-

weekend exercisers (NoWE) consisted of 450 participants (209 males and 241 females), age 37.78±13.587 years (Mean±Std.Dev.), who only trained three times a week, excluding the weekend. Participation was voluntary and the study met the criteria for the University's ethical approval process.

Measures

Socio-demographics: The participants were asked several questions about age, gender, weight, height and questions about their exercise frequency.

Personality: Personality traits were measured using the Big Five Questionnaire (BFQ; Caprara, Barbaranelli, & Borgogni, 1993). The BFQ contains five domain scales: Energy/Extraversion, Agreeableness/Friendliness, Conscientiousness, Emotional Stability (vs. Neuroticism), and Openness. For each of the 132 items, the participants indicated the extent to which they assigned personal relevance on a 5-point scale ranging from very false for me (1) to very true for me (5).

Motivational regulations for exercise: To measure the motivational regulations for exercise an adapted Italian version of Behavioral Regulation Exercise Questionnaire-2 (BREQ-2; Markland & Tobin, 2004) was used. It comprises 19 items scored on a five-point scale ranging from 0 (not true for me) to 4 (very true for me) and five scales: Amotivation, External Regulation, Introjected Regulation, Identified Regulation, and Intrinsic Regulation.

Mood States: The Profile of Mood States (POMS; Farnè, Sebellico, Gnugnoli, & Corallo, 1991) was administrated to assess mood states. The Italian version of the instrument comprises 65 items scored on a five-point scale ranging from 0 to 4 and measures six sub-scales: Tension/Anxiety, Depression/Dejection, Anger/Hostility, Vigor/Activity, Fatigue/Inertia, and Confusion/Bewilderment.

Data analysis

The Statistical Package for the Social Sciences (SPSS) was used to conduct a non-parametric analysis to determine differences between two groups. Three Mann-Whitney Tests for two independent samples were calculated to verify differences in personality traits, exercise motivation and mood states between weekend and non-weekend exercisers.

RESULTS

Personality traits

Table 1 shows the means and standard deviations of the personality traits questionnaire. Significant differences between groups were identified in Energy/Extraversion [$U=15802.5$, $p<.05$] and in Agreeableness [$U=14733.5$, $p<.01$]. Specifically, weekend exercisers showed higher Energy/Extraversion than non-weekend exercisers but they revealed lower Agreeableness levels. All the other comparisons are not significant.

Table 1. Descriptive Statistics (mean and standard deviation) of the Big Five Questionnaire (BFQ).

	Weekend		No-weekend	
	M	SD	M	SD
Energy/extraversion	81.32	11.758	78.82	11.027
Agreeableness/friendliness	77.74	11.615	81.34	11.789
Conscientiousness	80.81	14.739	81.54	13.339
Emotional stability	71.29	12.791	71.31	15.015
Openness	73.46	18.740	67.52	24.953

Exercise motivation

Table 2 shows the means and standard deviations of the exercise motivation questionnaire scales. A comparison of the weekend and non-weekend groups using the Mann-Whitney-test showed that exercisers (weekend vs. non-weekend) differed on all the motive sub-scales except for Amotivation. Specifically, in line with previous research and the predictions of the Self-Determination Theory, those who exercised often and for a long time (the weekend group) had a significantly higher score for Introjected Regulation [$U=15968.5$, $p<.05$], Identified Regulation [$U=13251.5$, $p<.01$], and Intrinsic Regulation [$U=140953.5$, $p<.01$], than the non-weekend group. While the non-weekend group showed a higher level of External Regulation than the other group [$U=16684.5$, $p<.05$], revealing less autonomous motives.

Table 2. Descriptive Statistics (mean and standard deviation) of the Behavioral Regulation Exercise Questionnaire-2 (BREQ-2).

	Weekend		No-weekend	
	M	SD	M	SD
Amotivation	.83	1.689	.86	1.874
External regulation	.73	1.973	1.19	2.312
Introjected regulation	3.77	3.036	2.84	2.503
Identified regulation	12.52	2.556	11.02	2.755
Intrinsic regulation	14.17	2.854	12.54	3.643

Mood states

Table 3 reports descriptive statistics of mood states sub-scales (Tension/Anxiety, Depression/Dejection, Anger/Hostility, Vigor/Activity, Fatigue/Inertia, Confusion/Bewilderment).

Data analysis showed differences between groups on POMS scores; particularly for Vigor/Activity [$U=12847.5$, $p<.01$]. Specifically, weekend exercisers appear more vigorous and active than those who prefer to relax over the weekend. All the other comparisons are not significant.

Table 3. Descriptive Statistics (mean and standard deviation) of the Profile of Mood States (POMS).

	Weekend		No-weekend	
	M	SD	M	SD
Tension/Anxiety	8.72	5.461	8.74	5.653
Depression/Dejection	7.23	8.109	7.93	9.422
Anger/Hostility	9.95	8.643	9.76	8.992
Vigor/Activity	21.62	6.235	17.65	7.021
Fatigue/Inertia	6.90	5.113	7.78	5.084
Confusion/Bewilderment	8	4.295	8.46	4.668

DISCUSSION

This study aimed to analyze the differences between weekend and no-weekend exercisers in terms of personality traits, motivation for exercise and mood states. As expected from previous research (Bogg et al., 2008), Energy/Extraversion was found to be more present in athletes who exercise with a higher frequency, though no differences were found for Emotional Stability, Conscientiousness or Openness. It has been demonstrated that the tendency to be assertive, sociable and outgoing (Extraversion) is associated with higher exercise participation and increased activity levels and with an outgoing lifestyle (Rhodes, 2006). The current study confirmed this tendency and further emphasized the significant role of Energy/Extraversion on fitness outcomes and performances. In contrast, the Agreeableness factor seems to feature those who do not overload their weekend. This personality trait reveals the tendency to be cooperative, helpful and friendly, and it could be a protective factor for unhealthy exercise behaviors. High scores on Agreeableness indicate more interest in social relations and more attention to other needs and desires. In this finding, non-weekend exercisers, who do not excessively engage in physical activities, scored high on Agreeableness, confirming their tendency to not reduce or give up social, occupational or recreational activities. For this reason, friendly people could probably be less likely at risk for dysfunctional exercise behaviors.

While a recent study (Lin, Wang, & Cheng, 2007) suggested that individuals who have a high Extraversion level would be more motivated to engage in physical activities for their vigor and sociable nature, Ingledew et al. (2004) recommend an analysis of the underlying reasons for exercise, using SDT (Deci & Ryan, 2000), because it represents a more detailed motivation study. Researchers have noted that personality and motivation are significantly linked to exercise participation and frequency. Also in our study, this relationship is confirmed. Specifically, weekend exercisers, who are high on Extraversion, showed more Intrinsic, Identified and Introjected Regulation. While those who relax over the weekend (the non-weekend group) seem to be more influenced by external motives. These findings suggested that self-determined exercise regulations are associated with increased Extraversion and exercise participation. Unfortunately, the study is not able to clarify the reasons why exercisers not engaged in physical activity are also those who show less self-determined motives. In this sense, a more detailed analysis of the basic psychological needs (autonomy, competence and relation) could be crucial for a better understanding of this exercise behavior. In particular, a decreasing autonomous exercise

regulation may indicate a lack of satisfaction of basic psychological needs in other areas of an individual's life.

Regarding emotional states, the results showed that weekend exercisers felt greater Vigor and Activity than non-weekend exercisers. This positive affective state could reinforce and maintain an excessive exercise behavior that could be "unhealthy" for those who like overtraining. Excessive exercise that is extreme in frequency and both psychologically and psychosocially impairing may become the most important priority in the life of this exerciser and all other responsibilities, such as one's family, career, and social engagements, could be suffering. Adhering to a very rigid fitness schedule forces the individuals to compulsively exercise even though they are tired or injured, in the end causing more physical problems for themselves. Future studies should better understand this aspect and try to understand if mood states and other individual variables are affected by physical activity or whether exercise is a consequence of negative emotional states and more serious psychological disorders.

This study presents several interesting findings, but there are some limitations. The participants of each group were not matched and were recruited at fitness center, limiting statistical significance. The use of more representative samples would increase the generalization of the findings. Also the reasons for participating in exercise can be more extensive than those explored in this study, so future research could better analyze this aspect, referring to an alternative effective theoretical model. This could help us to clearly understand what it is that makes people engage in more frequent exercise, even giving up their free time.

CONCLUSION

Focusing on the effects of personality, exercise motivation and mood states together has facilitated the explanation processes of why some people exercise excessively, in contrast with others that are still too sedentary. In light of these findings, applied practitioners and trainers are stimulated to monitor such personality traits, mood states and behavioral regulations in order to enable early recognition of such dysfunctional exercise behavior and possibly inhibit the development of exercise dependence. Moreover, it is recommended that practitioners recognize all aspects of sport involvement, with the intention of implementing well-structured interventions aimed to satisfy basic psychological needs of active people.

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POJEDINAČNE ODLIKE, MOTIVACIJA PRI VEŽBANJU I EMOTIVNI ASPEKT VEŽBANJA KOD OSOBA KOJE VEŽBAJU VIKENDOM I OSOBA KOJE VEŽBAJU TOKOM NEDELJE

Patrizia Oliva, Sebastiano Costa, Francesca Cuzzocrea, Rosalba Larcan

Cilj ovog istraživanja bio je da se istraže ralike između odlika ličnosti, motivacije za vežbanje i emotivnih stanja među osoboma koje vežbaju vikendom i onih koji vežbaju tokom nedelje. Uzorak koji je činilo 536 ispitanika uključen je u istraživanje. Rezultati su pokazali da osobe koje vežbaju vikendom postižu veće vrednosti kod nekih aspekata odlika ličnosti, samostalnog određivanja redovnog vežbanja i pozitivnog raspoloženja. Ovi rezultati potvrđuju rezultate prethodnih istraživanja o prevalenci intrinzičnih motiva i pozitivnih emotivnih stanja među ispitanicima koji se bave fizičkim aktivnostim, ali isto pokazuju da bi vežbanje vikendom moglo da predstavlja rizik za razvoj disfunkcionalnog vežbanja. Ovi nalazi mogu da imaju praktične implikacije za potencijalno određivanje pojedinaca kojima bi mogao da preti rizik od simptoma preteranog vežbanja i koji bi mogli da pomognu da se odrede i oblikuju poboljšanja u programu prevencija sposobnosti.

Ključne reči: *fizička aktivnost, ličnost, motivacija za vežbanja, emotivno stanje.*