

# Personality traits and exercise modes: Review article

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## ABSTRACT

Over the last few decades, Physical Exercise has been touted as one of the most important behavioural health practices. Personality has been considered a predictive variable for the adoption of behaviours such as involvement in Physical Exercise programs. Therefore, this study analysed the relationship between personality and the choice of exercise modes. The literature suggests the need to investigate more on this topic. In the analysed studies, no statistically significant differences were found between personality profiles and exercise modes practiced. However, differences were found between personality profiles and aspects related to the context in which the exercise is practiced, such as intensity, space and place where they practice, whether they practice alone or accompanied and with or without the assistance of a professional. The results obtained need not only more investigation, but also need to cover more aspects related to the exercise modes practised.

**Keywords:** Physical exercise, Personality traits, Personality profiles, Physical exercise modes.

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## INTRODUCTION

Regular Physical Exercise (PE) is an effective means to reduce the risk of morbidity and mortality, also showing generalized improvements in physical and mental health (Box, Feito, Brown and Petruzzello, 2019).

In recent decades, there has been a lot of evidence that PE is important to decrease the risks associated with metabolic diseases, osteopathic diseases, cardiovascular diseases, neurovascular diseases, as well as some types of cancer (Box et al., 2019). In addition, evidence suggests that greater PE behaviour is related to reduced levels of anxiety, depression symptoms, and stress-related disorders (Arem, Moore, Patel, Hartge, Gonzalez, Visvanathan and Linet, 2015; Box et al., 2019).

Despite the benefits that have been proven over the years in health promotion, the number of individuals who practice any form of PE is extremely low (Troiano, Berrigan, Dodd, Masse, Tiler and McDowell, 2008). Tucker, Welk and Beyler (2011) add that less than 20% of the world's population practices enough PE to obtain any health benefits. Women and elderly people living in developed countries are at higher risk of physical inactivity (Hallal, Andersen, Bull, Guthold, Haskell, Ekelund and Wells, 2012; Sallis, Bull, Guthold, Heath, Inoue, Kelly, Oyeyemi, Perez, Richards and Hallal., 2016).

With the world's population aging rapidly, there is an emerging need to focus efforts to promote and encourage an active lifestyle (Karvonen, Törmäkangas, Pulkkinen and Kokko, 2020). Thus, a strong theoretical understanding of the factors associated with PE is warranted in order to create effective and targeted interventions. This has been a concern in recent decades, and interventions aimed at increasing EF have been promising in public health (Lachman, Lipsitz, Lubbon and Castaneda-Sceppa, 2018; WHO, 2018). To optimize the effectiveness of such interventions, factors/barriers to the adoption of active lifestyles must be taken into account and the receptivity of individuals to change. These factors include not only an individual's state of health, or the social and environmental context, but also psychological factors such as personality traits (Bauman, Reis, Sallis, Wells, Loos and Martins, 2012). Personality traits are associated with engagement in, or abstinence from, health behaviours that affect health across the lifespan (Friedman, 2000). The concept of trait refers to a stable characteristic, which makes individuals behave in specific ways in different situations. The combination of several personality traits allows indicating the individual's personality profile (AAP, 2018).

In recent decades, the relationship between personality profiles and the practice of PE has been the subject of considerable research, with the intention of understanding whether the personality profile influences an individual's adherence to PE behaviours (Allen and Laborde, 2014).

In the personality approach, one of the most used models is the 5-profile model presented by McCrae and John (1992), also called "*Big Five*" or "*Five Factor Model*" (Box et al, 2019; John and Srivastava, 1999; McCrae and Costa, 1987; Rhodes and Boudreau, 2017). These 5 profiles are related to traits that generally define the person (McAdams, 1992), which are: Neuroticism, which corresponds to the tendency towards a negative emotional state, anxious, self-conscious and vulnerable, therefore, they are nervous, pessimistic individuals and easily disturbed; Extroversion, which is the propensity to be gregarious, assertive and seek excitement, these individuals are talkative, sociable, assertive and energetic; Conscience, which is the inclination to be orderly, obedient, self-disciplined, and achievement-oriented, these being cooperative, responsible, reliable, good-natured individuals; Openness to Experience, which corresponds to the tendency to be perceptive, creative, reflective and aesthetic, therefore being intellectual and imaginative people;

Kindness, which is associated with the tendency to be kind, cooperative, friendly and trustworthy, these individuals are warm, with good nature (Box et al., 2019; Rhodes and Smith, 2006).

This model makes it possible to group individuals according to their individual characteristics, which influence their behaviour. As such, over the last few decades, several studies have proven the relationship between personality profiles and PE behaviour (Rhodes and Smith, 2006). In this follow-up, the objective of the present study is to investigate the relationship between personality profiles and the choice of practiced PE modes. Clarifying this relationship could be an added value in the development of PE promotion programs, enhancing the involvement and adherence of individuals with them, thus expecting a healthier life. Table 1 presents a summary of the main articles that study the topic under analysis.

Table 1. Relationship between personality profiles and PE behaviour.

Article	Sample	Instruments	Results	Conclusions
Courneya And Hellsten, (1998)	N=264 university students; 62% female; 21.3±3.0	NEO FFi (Personality); Questions drawn from a survey by Stephens and Craig (1990) for PE preference	1 - <u>Extroverts</u> : prefer to train in a group; supervised training. 2 – <u>Openness to Experience</u> : they prefer to exercise outdoors; higher scores in walking/running and lower in skating; lower scores for supervised, scheduled exercise; higher scores for recreational exercise and lower scores for competition. 3 – <u>Kindness</u> : higher scores in aerobics and lower in bodybuilding; higher scores in recreational exercises and lower in competition. 4 - <u>Conscious</u> : prefer programmed and high-intensity exercises; 5 – <u>Neurotics</u> : prefer lower intensity exercises.	- Possibly the main characteristics of an activity have less to do with the activity itself and more to do with the context in which the activity takes place (e.g. alone vs. in a group; low intensity vs. high intensity).
Hagan And Hausenblas, (2005)	N=507 university students; 52.3% male; 21.27 ±9.76	NEO Pi-R (Personality – extended version); 9 questions similar to those used by Courneya and Hellsten (1998) for PE preferences.	Significant differences for personality domains and exercise intensity preferences; company (alone vs. accompanied); training space/place. There were no significant differences for the type of exercise (cardiovascular vs. weight training). 1 – <u>Extroversion</u> : higher scores in high-intensity exercise; group training; in a mixed gym; 2 – <u>A. Experience</u> : higher scores in high-intensity exercise. 3 – <u>Awareness</u> : higher scores for high-intensity exercise; in mixed gym. 4 – <u>Neuroticism</u> : they prefer to train alone, ideally at home.	- Information obtained about preferences and personality domains can be used in PE prescriptions to increase the likelihood of participation and adherence.
Box, Feito, Brown And Petruzzello, (2019)	N=403 adults; 35.5% male; 36.3 ±11.6	Big Five Inventory (Personality); Questions related to the participants' primary modes of PE.	Controlling for age and sex differences, no significant differences were found in personality profiles as a function of primary PE modes.	- There is uncertainty about how the 5 personality profiles might relate to PE mode.

Source: Own elaboration

## DISCUSSION

The literature review did not allow finding significant differences between personality profiles and exercise modes (see table 1). Regarding this result, it is important to point out that both the population used for the sample (university students, mean age  $\pm$  21 years) and the instruments (*NEO* short and extended version, respectively) used in the first two studies are different from those used in the third study (adults, mean age  $\pm$  37 years; *Big Five Inventory*).

Box et al. (2019) justify these results by arguing that individuals, regardless of the primary mode of exercise they practice, are physically active and may have similar personalities. This justification raises some disagreement in the literature, as for Pacheco and Sisto (2003) traits are personality tendencies and are immutable. However, Sisto and Oliveira (2007) share the opinion of Costa and McCrae (1992) and state that these personality tendencies are relatively stable in the way of thinking, feeling and acting with people, characterizing, however, possibilities for changes, such as product of people's interactions with their social environment. Therefore, it is an open question and it is important to clarify.

Courneya and Hellsten (1998) refer that these results indicate that it may be the characteristics, the involvement of the modalities that relate to the personality and not the activity itself. Regarding the intensity of the exercise (high/low intensity), the space where it is performed (home/gym), whether it is done alone or with a partner, the type of instruction (with a professional/self-directed) and the location (outdoor/indoor), the studies by Courneya and Hellsten (1998) and Hagan and Hausenblas (2005) are in line. Individuals with high scores on Extroversion, Conscientiousness, and Openness to Experience tend to prefer moderate and vigorous intensity exercise, whereas those with high anxiety scores on Neuroticism prefer lower intensity exercise. The latter also tend to choose to exercise alone, without supervision, ideally at home.

Individuals with high scores on Extroversion and Conscientiousness prefer to train in a group, with supervision, ideally in the gym. Therefore, the findings made in both studies help to understand some aspects about the context in which individuals prefer to exercise due to their personality. Such information should be taken into account when creating PE intervention/promotion programs and combating abandonment.

As for the mode of exercise, it will still be important to clarify a few more questions: in the first article (Courneya and Hellsten, 1998), the sample participants answered questions about their preference for PE, making it possible to perceive, for example, that individuals with high in Openness to Experience prefer walking to skating; high scorers on Agreeableness prefer aerobics to strength training. However, in the second article (Hagan and Hausenblas, 2005), although the sample participants also answered questions about exercise preference, the options were only cardiovascular training and weight training, which seems to be somewhat limiting when there is a wide range of options. Bunch of options. In the third article (Box et al., 2019) individuals were grouped according to the primary mode of exercise they practiced. This division of groups raises some doubts, for example, *CrossFit* is a modality practiced in a group, with a competition aspect, how can one justify the non-inclusion of these practitioners in the sport/competition group, or in group training, or in aerobic training? This lack of clarification may have affected the results or made their analysis more difficult.

Hagan and Hausenblas (2005) and Box et al. (2019) suggest that gaining more information about potential individual differences and PE preferences may contribute to more optimal PE prescriptions and contribute to increasing the likelihood of participation and adherence.

Therefore, it is clear that, on this subject, there is still much to be clarified, strengthening the idea that it is necessary to investigate further and expand the field of investigation. The effectiveness of behaviour change interventions, implementation of PE practice, may depend on individual differences and can be improved when personality is taken into account (Stiegger, Robinson, Bisson and Lachman, 2020).

## CONCLUSIONS

Personality profiles have been associated with the adoption of certain behaviours, such as a tendency towards physical inactivity, or, on the other hand, involvement and adherence to the practice of PE. In the present study, we investigated the possible responsibility of personality profiles in the choice of practiced exercise modes. Through the existing literature it was possible to verify that there are no statistically significant differences between the personality profiles and the exercise modes practiced. However, it was found that personality profiles influence certain aspects related to the context of exercise practice, such as the place of practice, whether individuals prefer to train alone or with others and the intensity of exercise. It is important to clarify these results, to broaden the field of research on this subject, covering different modes of exercise and different contexts associated with the practice, in order to obtain more concrete conclusions.

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No potential conflict of interest was reported by the author.

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