Original Article (short paper)

Analysis of the relationship between personality traits and leadership characteristics of handball coaches of school teams in the state of Rio de Janeiro, Brazil

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Abstract — Aim: This study aimed to investigate the relationship between personality traits and leadership characteristics of handball coaches of school teams in the state of Rio de Janeiro, Brazil. Method: The sample was composed of 31 male individuals (41.71 ± 9.61 years) registered as coaches at the Federation of Student Sports of Rio de Janeiro (FEERJ). The data collection instruments were the Eysenck Personality Questionnaire, the Revised Leadership Scale for Sport and a sociodemographic questionnaire. Results: The Pearson correlation test showed a moderate negative correlation between working time as a coach and coach ages and Psychoticism (P); a moderate positive correlation between Extroversion (E) and Positive Feedback (PF) behavior; a moderate positive correlation between Neuroticism (N) and PF; a moderate positive correlation between N and autocratic behavior. The ANOVA revealed that coaches in the infantile category exhibited higher levels of N than those in the juvenile category. The Social Support (SS) given by the coaches of the junior categories presented superior levels to those of the juvenile category. The SS of the coaches of the infantile category showed higher levels than those of the juvenile category. Conclusion: It was concluded that certain personality traits are associated with the leadership characteristics of the investigated coaches.

Keywords: personality, coach, leadership, sports, sports psychology.

Introduction

The need to perform complex tasks often makes the choices for teamwork takes precedence over individual work. In general, the productivity of several people united, aiming to reach a common goal, tends to overcome the efforts of each one working alone¹. However, the expected results of teamwork are more likely to occur if a competent authority conducts them. Among the characteristics of this authority, are a quality academic formation, the ability to identify and solve problems, be understanding, communicative, empathic, endowed with emotional balance and ability to keep the team focused on achieving the goals outlined¹,². In theories of organizational management, the subjects duly qualified to perform this function are called leaders. They present the so-called leadership characteristic, which is the ability to positively direct the behavior of individuals².

Besides the organizational sphere, the presence of leaders is also important in the sporting context¹,³. Their performance is crucial for athletes to engage in training sessions; be competitive; to seek victories; acquiring security; plan their careers and self-determine performance goals consistent with their physical and psychic states¹,³. Often, the sports manager, the Physical Education teacher, and the coach are the subjects whose role is to lead their students and athletes³. Regarding the coach, since the 1950s, successive theoretical models have been built within the scope of sports psychology. The models intend to discriminate the qualities that must be developed to lead athletes of all levels and the variables involved in the exercise of that role⁵,⁶. In the last 20 years, the model that has become the main reference in the study of sports leadership is known by the name of Multidimensional Leadership Model⁶.

The Multidimensional Leadership Model seeks to situate the trainer’s behavior from three parameters: the required behavior; the preferred behavior and the actual behavior. The required behavior has to do with the conduct that the coach must take based on the situational aspects of the working environment and the characteristics of the team members. The situational aspects refer to the profile of the modality (individual or competitive); the level of competitiveness (high-performance sport or training); the instance of intervention (schools, clubs,
and universities); cultural values; current sports legislation and competition regulations. The characteristics of the team members are maturity; skill level; time of practice and degree of performance. The preferred behavior is one that athletes would like the coach to present from their personal motivations and expectations. The actual behavior refers to how the coach acts in the function of the experience acquired and, mainly, due to the personality characteristics.

A person’s personality is both the amount of information acquired throughout their socio-cultural interactions and a pattern of relatively stable and permanent traits that make them unique and distinct from others. The traits contribute to keeping behaviors regular overtime in the midst of the events. Hence, even though one person may resemble another in many points, this person still has a personality with own traits.

Thus, the above information allows us to assume that a trainer’s personality traits, insofar as they are conditioning factors that determine their actual behaviors, may interfere with the way they lead their athletes. Therefore, the present study aimed to investigate the relationships between personality traits and the leadership characteristics presented by handball coaches.

Methods

The present study corresponds to applied research of descriptive nature, of the Survey type, with transversal cut. The research population consisted of 64 Brazilian handball coaches, all enrolled to direct the student teams participating in the 36th edition of the Intercollegiate Championship of the State of Rio de Janeiro, Brazil, from August to November 2018 at the Nilton Santos Olympic Village. The list of competing teams was available on the website www.intercollegial.com.br from June 9, 2018.

As inclusion criteria, the subjects should be effectively registered as coaches in the Federation of Student Sports of Rio de Janeiro (FEERJ), Brazil. It was excluded 16 coaches from school teams whose records were overdue and 17 coaches not yet officially recognized by the organization. Thus, the final sample consisted of 31 trainers, all males, of the child (n = 10; born between 01/01/2006 and 31/12/2008), infantile (n = 10; born between 01/01/2004 and 31/12/2005) and juvenile (n = 11; born between 01/01/2000 and 31/12/2002) categories. The athletes of these categories are aged between 10 and 18 years.

The Research Ethics Committee of the Rio de Janeiro State University (UERJ) approved the present study (CAAE: 24785614.0.0000.5259). The volunteers who agreed to participate in this study signed a consent form following by the Resolution No. 466/2012 of the Brazilian National Health Council and the Declaration of Helsinki.

Procedures

The accomplishment of this research counted on the collaboration of the organizing committee of the 36th edition of the Intercollegiate Championship of the State of Rio de Janeiro. Information on age, time of practice and identification of the coaches’ performance categories were collected through a supplementary questionnaire with a sociodemographic character. Each coach responded it individually after signing the consent form.

For the identification of the trainers’ personality traits, the Eysenck Personality Questionnaire (EPQ) was applied. It consists of 88 questions with an objective “yes” or “no” input answers. In the EPQ, besides the evaluation of the traits of Extraversion/Introversion (E), Neuroticism/Stability (N) and Psychoticism/Socialization (P), there is the Lie Scale (L), which are questions regarding the control of the falsification or dissimulation of the answers. This questionnaire is translated into Portuguese and validated for the Brazilian population. The EPQ has key scores for each trait; to each “correct” answer in a particular question of the trait, a point is added in the index. For the EPQ, it is considered for E scores between zero and 18 points; for N between zero and 23 points; for P between zero and 25 points; and for L between zero and 22 points.

The leadership characteristics measurement was made through the application of the Revised Leadership Scale for Sport (RLSS), the coach’s self-perception version. This instrument has also been translated into Portuguese and validated for the Brazilian population. The RLSS, the self-perception of the coach, is composed of 60 items distributed in 6 dimensions: Democratic Behavior or DB (12 items); Social Support or SS (8 items); Positive Feedback or PF (12 items); Training and Instruction or TI (10 items); Autocratic Behavior or AB (8 items) and Situational Consideration or SC (10 items). The respondent should evaluate the habitual attitudes through a Likert scale of 1 to 5 points, applied to 5 alternative answers: never (1 point); rarely (2 points); occasionally (3 points); often (4 points); and always (5 points). The total score ranges from 0 to 300 points. The scale has been considered appropriate because the items reflect how the coach handles athletes on a day-to-day basis.

Statistical Analyses

The data were analyzed by the IBM SPSS Statistics version 20.0 and presented as mean and standard deviation. The normality and homogeneity of the data were verified by the Shapiro-Wilk and Levene tests, respectively. One-way ANOVA was used, followed by Tukey’s post hoc, for comparisons of the variables among the coaches’ performance categories. The Pearson correlation test was used to analyze the associations between the study variables. The study admitted the value of $p < 0.05$ for statistical significance.

Results

Table 1 shows the average values of age, working time as a coach, personality trait scores, and leadership characteristics of the handball coaches analyzed in the present study.
Personality traits and leadership characteristics of handball coaches

Table 1. Descriptive results of the variables analyzed in the study (n = 31).

|     | Mean | SD   | p-value (SW) |
|-----|------|------|--------------|
| Age | 41.71| 9.61 | 0.730        |
| Work| 16.06| 8.81 | 0.467        |
| P   | 3.06 | 2.22 | 0.055        |
| E   | 11.81| 3.64 | 0.053        |
| N   | 9.55 | 4.61 | 0.797        |
| L   | 13.19| 3.34 | 0.619        |

|     | Mean | SD   | p-value (SW) |
|-----|------|------|--------------|
| DB  | 40.29| 6.43 | 0.655        |
| SS  | 31.65| 4.94 | 0.265        |
| PF  | 53.26| 5.16 | 0.052        |
| TI  | 44.90| 3.53 | 0.090        |
| AB  | 25.32| 4.85 | 0.422        |
| SC  | 43.19| 5.78 | 0.051        |

SD: Standard Deviation; SW: Shapiro-Wilk normality test; Work: working time as a coach; P: Psychoticism; E: Extraversion; N: Neuroticism; L: Lie scale; DB: Democratic Behavior; SS: Social Support; PF: Positive Feedback; TI: Training and Instruction; AB: Autocratic Behavior; SC: Situational Consideration.

In table 2, there is the correlation matrix between the Pearson correlation coefficient “r” and personality traits, age, working time as coach and leadership characteristics. The time working as a coach and the age of the coaches showed a moderate negative correlation with P. Between E and PF, there was a moderate positive correlation. It was observed a moderate positive correlation between N and PF. There was a moderate positive correlation between N and AB.

Table 2. Pearson correlation coefficient “r” and personality traits, age, working time as coach and leadership characteristics.

| Work | r      | p-value |
|------|--------|---------|
| P    | -0.449 | 0.011   |
| E    | -0.068 | 0.715   |
| N    | 0.062  | 0.742   |
| L    | -0.019 | 0.919   |
| DB   | -0.003 | 0.988   |
| SS   | -0.238 | 0.198   |
| PF   | -0.205 | 0.273   |
| TI   | 0.449  | 0.011   |
| AB   | 0.217  | 0.453   |
| SC   | 0.140  | -0.437  |

| Age  | r      | p-value |
|------|--------|---------|
| Work | 0.881  | 0.000   |
| P    | -0.438 | 0.014   |
| E    | -0.037 | 0.843   |
| N    | 0.137  | 0.463   |
| L    | -0.024 | 0.897   |
| DB   | -0.219 | 0.112   |
| SS   | -0.291 | 0.112   |
| PF   | -0.429 | 0.020   |
| TI   | 0.016  | 0.745   |
| AB   | 0.285  | 0.685   |
| SC   | 0.248  | 0.333   |

Work: working time as a coach; P: Psychoticism; E: Extraversion; N: Neuroticism; L: Lie scale; DB: Democratic Behavior; SS: Social Support; PF: Positive Feedback; TI: Training and Instruction; AB: Autocratic Behavior; SC: Situational Consideration.

Table 3. Mean and standard deviation of the variables analyzed and the coaches’ performance categories.

| Age | Mean      | SD     |
|-----|-----------|--------|
| Junior (n = 10) | 37.10±10.81 | 43.20±9.44 |
| Infantile (n = 10) | 17.80±9.60 | 17.18±6.52 |
| Juvenile (n = 11)  | 12.50±4.28 | 12.18±4.61* |
| DB | Mean      | SD     |
| Junior (n = 10) | 38.50±5.89  | 41.10±7.40 |
| Infantile (n = 10) | 46.10±9.40  | 41.18±6.23 |

Work: working time as a coach; P: Psychoticism; E: Extraversion; N: Neuroticism; L: Lie scale; DB: Democratic Behavior; SS: Social Support; PF: Positive Feedback; TI: Training and Instruction; AB: Autocratic Behavior; SC: Situational Consideration; * p<0.05, Infantile vs. Juvenile; # p<0.05 Junior vs. Juvenile.
The ANOVA test applied to personality traits and the leadership characteristics of the coaches by performance category identified the existence of statistically significant differences in N (F = 6.673; p = 0.004) and SS (F = 10.560; p < 0.001). The coaches of the infantile category exhibited higher levels of N (p = 0.003) than those of the juvenile category. The SS of the coaches of the child category presented levels superior to those of the juvenile category (p = 0.002). The SS of the coaches of the infantile category showed higher levels than those of the juvenile category (p = 0.001).

**Discussion**

The relationships between personality traits and the leadership characteristics presented by handball coaches of school teams in the state of Rio de Janeiro were analyzed in the present study. A negative and moderate correlation was observed between the working time as a coach and the age of the trainers with the P trait. This means that the handball coaches who remain for the longest time exercising this occupation are those in which the presence of the superego is striking. Individuals with this trait tend to be sociable, interactive, and rate hard work as positive. In addition, they see failures as learning opportunities and seek to develop effective mental strategies to overcome adversities.

One of the assumptions of the Multidimensional Leadership Model points out that experience and personality correspond to factors linked to the actual behavior of the coach. However, this model does not show that they may also present some type of association among them. Taking into account that practice time serves as an indicator of the experience accumulated by the coach over the career course, the present study, by acknowledging the validity of an empirical interrelationship between experience and personality, indicates that this assumption of the Model can be reviewed and improved.

The existence of personalities with outstanding superego presence was observed in the qualitative case study carried out by Mallet and Coulter with four Australian coaches with professional career times over 30 years. After the application and analysis of structured interviews, the authors concluded that the subjects investigated based their way of acting in the establishment of goals, cooperation, discipline, and collective planning. Similarly, Pan, Huang, and Lee, through a Survey applied to 130 male and female basketball coaches in Taiwan schools, observed that those with greater professional longevity were the ones who most valued positively the effects of intense, systematic and planned training. These results converge with the findings of the present study.

There was also, in the present study, a moderate positive correlation between personality trait E and PF. Extroverted individuals excel in communicability, optimism, quick thinking, and jocosity. The PF refers to the mental strengthening of the athlete through the double action of encouragement in the face of mistakes and rewards for efficient performance. Evidence holds that the coach’s PF contributes to motivating athletes to train, develop self-confidence, and cultivate fellowship.

In a cross-sectional investigation of the Survey type, Soane, Butler, Stanton analyzed the perception of effective leadership that 122 Olympic-level English sailors had of their trainers, relating it with their personality traits. In the end, they found that the trainers considered effective leaders stood out by extroversion and the provision of positive individual feedback to each one during the training and regattas. Some of these coaches extrapolated the training and competition environment, even sending complimentary e-mail messages to their athletes. This result is consistent with the findings of the present study and reaffirms the importance of assertive leaders in the management of interpersonal relationships within the group.

On the other hand, Schliermann, Stoltz, Anneken conducted a cross-sectional survey with 57 German soccer coaches involved in an initiation program for young people with cognitive disorders. The authors observed that subjects with introversion characteristics also showed efficiency in providing PF to the participants. When compared, the study in question and that of Soane, Butler, Stanton allow us to hypothesize that, as the degree of competitiveness and performance requirement of sports contexts increases, coaches with extroverted personality start to stand out the provision of PF. Further research is needed regarding the confirmation of this association. In terms of the Multidimensional Leadership Model, such information shows that the actual behavior of encouraging, correcting, praising, and stimulating is relevant in motivating athletes to overcome difficulties, and does not depend on extraversion or introversion as personality traits.

The present study identified a moderate positive correlation between the personality trait N and the PF and AB leadership characteristics. The greater the N in a person, the lower the tolerance to situations of prolonged stress, which makes this person prone to excessive states of anxiety and emotional unrest. The AB presupposes that the trainer adopts unilateral attitudes, offering few opportunities for the athletes to participate in the decision-making about the conduction of the training process.

The positive correlation between N, PF, and AB found in the present study contradicts the results of the cross-sectional survey conducted by Dixon, Turner, Gillman with 105 male soccer coaches. In it, the authors found that those more emotionally stressed in training and games tended to act authoritatively and offered little PF to athletes. One possible explanation is given by Dixon, Turner, Gillman where communicating PF requires accurate assessments of the causes of the mistakes and the correctness. Coaches with high levels of stress and anxiety present difficulties in making diagnoses of this nature because it is a task that requires the establishment of causal links, which are more accurately delineated when untimely emotions can be kept under control.

In contrast, a transversal investigation conducted by Heidari and Arani with 86 handball coaches in Iran during an international championship showed that individuals with N...
profile might adopt different leadership strategies, including the combination of PF with AB. This is possible because, according to these authors, the emotional states of neurotic subjects may vary abruptly when changes occur in their subjective perceptions of environmental stress. Consequently, the means adopted to interact with other people reflect this circumstance. In the study by Heidari and Arani, coaches with a neurotic profile modified leadership strategies, as they felt more relaxed or anxious during training and games. When it comes to the Multidimensional Leadership Model, it is possible to affirm that the coach with a strong neuroticist trait, depending on the feeling and reaction to environmental stress, shows oscillations in the real behaviors due to sudden changes in affections and mood. This circumstance can lead the coach to take unwanted actions with the athletes. Such attitudes negatively affect the confidence that athletes attribute to the coach to lead.

Regarding the personality traits by category of performance, it was verified in the present study that the coaches of the infantile category had higher levels of N compared to those in the juvenile category. The period between 12 and 14 years of age corresponds to the stage of entry into puberty of males. In it, complex physical and psychic transformations occur, such as the rapid growth and development of bone and muscle tissues, changes in body composition and loss of children’s features. These transformations have repercussions on the body image, perception of efficiency and social adjustment, often leading the puberty to exhibit ambiguous attitudes, ranging from insecurity and isolation to the questioning of the authorities, seeking autonomy and recognition of other youths. Accelerated gains in muscle mass and height at this stage are not accompanied by proportional increases in strength and coordinating abilities, making sports motor performance unstable and irregular. Allen and Laborde recommend that coaches of this age group be patient, tolerant and able to mediate conflicts through the direct involvement of all involved. The authors further suggest that sports managers should frequently monitor these coaches, as inconstancy in the performance of sports motor skills by pubertal athletes may trigger the emergence of intense stress sensations and exacerbated emotional reactions. In extreme cases, Allen and Laborde endorse the provision of therapeutic support to coaches with this characteristic.

Coaches with low tolerance to stress are one of the causes of the abandonment of young talents of the sphere of the formation sport. Cross-sectional studies with basketball players, swimmers, artistic gymnasts and adolescent athletics practitioners in Hong Kong, Greece, Brazil, and Taiwan indicate that dropping out of sports practice may be related to the rebound caused by excessive reprimands by coaches towards other training colleagues. This situation indicates that, from the point of view of the Multidimensional Leadership Model, when the actual behavior of the coach differs markedly from the preferential behavior that the athletes would like the coach to exhibit, a possible consequence is the athletes’ withdrawal from continuing in sports practices. The present study identified that SS given by coaches in the child and infantile categories presented higher levels than those offered by juvenile coaches. Coaches with this attitudinal bias seek to advise athletes on the best way to solve private problems and make the sport be seen as something important in their lives.

Gardner, Magee, Vella conducted a survey with 313 Australian students who practice netball, soccer, dance, and swimming, whose ages ranged from 11 to 15 years. They observed that the more frequent the SS given by coaches to youngsters with a lower time of practice, the more the athletes self-declared motivated to train. Similarly, Reynolds and McDonough found in a study with 142 young American footballers aged 12-15 years that the desire for technical improvement was greater among individuals whose coaches provided incessant SS.

One limitation of the present study concerns its transverse nature since this approach does not allow identifying temporal variations of the leadership strategies adopted by the coaches according to the identification of their personality traits. Another limitation concerns the profile of the sample since only male trainers composed it.

**Conclusion**

The present study allows concluding that, in the case of the investigated coaches, certain personality traits were associated with the manifestation of some leadership characteristics. In the individuals where the E trait presented a higher score, the offer of PF to the athletes also stood out. As for the trainers in which the N trait preponderated, they presented both PF and AB. Therefore, the guiding hypothesis of the investigation according to which personality traits are associated with leadership characteristics was ratified. Additionally, there was a concentration of coaches with N trait in the junior category compared to the infantile and juvenile ones. Still, on the categories of performance, the junior and infantile coaches supplanted the juveniles in terms of SS.

Based on the observation of the previous factors, it can be said that extroverted coaches and directors of actions in line with positive social values are likely to have a longer sports career. Moreover, athletes run by coaches with this personality trait and leadership characteristic feel encouraged staying for longer in sports practice. In contrast, discontent is recurrent in the case of athletes trained by neurotic subjects.

Future studies should analyze the associations between personality traits and leadership characteristics, taking into account a longitudinal perspective, as well as the inclusion of female coaches in the sample.

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*Manuscript received on June 9, 2019*
*Manuscript accepted on July 14, 2019*