

## Requirements to Validate a Sport Psychosocial Assessment Questionnaire.

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### Abstract

This aim of this study was to verify the possibility of validation of a questionnaire of the coach behaviours. Athletes modify themselves due to the coach behaviours, but also, that the coach can be influenced by the relations that establish with his athletes. Thus, in one sport team, the emotional states and the coach's behaviours influence the satisfaction of the athletes and, therefore, its performance. In this study 140 participants (n=140) of both sex, practitioners of collective sports, had participated. After the application of the questionnaires, one exploratory factor analysis, was done, in way to group the several items in relation to the factors that constitute the contents. The results show an apparent validity, with KMO and a Barlett's Test of Sphericity of 0.805 for a  $X^2=1203.979$  with 153° of freedom, being this value enough for the analysis of the main components. The construct of a test can only be validated if it can really put theory into practice. These behavioural relationships between different individuals validate the construct. Any behaviour that is assessed has to take into account the information given by the individuals who filled out the questionnaire.

**Keywords:** Sport Validation; Exploratory Factor Analysis; Psychosocial Development; Student Behavior; Coaching Context.

## **1. Introduction**

Assessing provides an effective diagnosis of the performance of students or athletes, allowing to conduct the process of coaching and teaching according to the specific needs of each individual [1]. Furthermore, Sports and Physical Activity have the purpose of offering its practitioners the opportunity to live through various physical and intellectual experiences [2]. Following this line of thought, it is fundamental and extremely important the existence of validated instruments to assess the different areas connected with the practice of sports. Throughout this work, the requirements for the elaboration and validation of a psychosocial questionnaire related with the practice of sports were followed.

Given the important role of coaches in the training process and given the need to know and understand the preferences of athletes regarding the conduct of the coach, the theme of Leadership related with sport, was selected.

A questionnaire with the purpose of knowing the kind of behaviour the athletes prefer from the coach has been made, so that the coach can use this information to better the relationship with his athletes.

In no other context than sport so many people can be found, from children to youngsters to adults who voluntarily accept someone's authority, in particular, that of their coach [3, 4].

Several concepts of leadership, throughout history, were finding, who studied the definition of this concept, however, the definition which is most often quoted and therefore consensual is that of [5] which generally defines leadership as a behavioural process that seeks to influence individuals and groups in order to achieve defined goals. There were several authors who stressed this definition [6, 7, 8].

The initial theoretical approaches to the study of leadership emerged in contexts were not connected with sport and were designated by the "Personality Trait", approach since they intended to study the characteristics or personality traits that were common to great leaders

[9]; and the behavioural approach, as it was concerned with the findings of predominant and dominant behaviours of effective leaders [10].

Later in the 1970's, situational and interactive theories emerged due to the failure of the initial approaches to separate effective from ineffective leadership and also to the inability to make the concept applicable to different contexts. The Multidimensional Model of Leadership developed by [6], is specific and adapted to sports and it is the best known and most tested by researchers [8]. This theory conceptualizes leadership as an interactive process, since it is contingent either to situational factors or to the characteristics of the leader/coach and group members (athletes). Thus, leadership may vary depending on the characteristics of athletes and the setbacks of the situation [11].

The effectiveness of leadership is context-specific. The leader's behaviour varies depending on the athletes and the particular context they are engaged in. This model identifies as being the critical dimensions of leadership, the leader and his characteristics (personality, experience, knowledge), the subordinates (age, gender, skills, experience in sport) and the context (situation, structure and philosophy of the club, of the team).

Sometimes a relationship is established between athletes' satisfaction and the leadership style used by the coach [12]. Thus, for example, it is shown that athletes are more satisfied with their coaches when they demonstrate behaviours such as positive reinforcement, social support, training and democratic behaviours, in that order. On the other hand, there is less satisfaction in athletes when the coaches exhibit autocratic behaviour [9].

In general, the studies point to behaviours such as training and positive reinforcement as preferred by athletes. Regarding the preference of athletes on the style of decision, the autocratic behaviours are, in general, less desirable as referred to by [6].

However, leaders who get better results on the level of satisfaction and performance of athletes do not use just one style of leadership. They rely on the same day and the same week

on different styles, depending on the situation and the group they are interacting with, and shifting from one style to another when necessary [9].

The results obtained by the team of athletes often reflect the investment made by the coaches, thus being crucial the relationship and cooperation between the coach and the athletes.

According to [13], the simplest way to understand the training is to observe the interaction between the coach, athletes and the situation. The compatibility between these three virtues will determine success. Experience, performance and group cohesion will also be decisive for the group.

## **2. Methodology**

For this study, 140 participants (N=140) were selected, all practitioners of team sports, and all from the Northern Region of the country. The questionnaires were applied in two different age-groups, one from 12 to 15 years old (N=58) and another from 18 to 26 years old (N=82) from both sexes (female, N=79; male, N=61).

The choice of these age-groups was due to the fact that previous studies had pointed differences between genders and age groups, when evaluating the conduct of the coach. The athletes get older and gain experience so do their preferences for autocratic behaviour and the desire and need for social support by the coach [8].

Before creating the questionnaire, some of the studies on leadership related with sport were analysed, so that it could develop a questionnaire that would meet study ends.

Since it was interested in analysing the behaviour of the coach, one of the studies used was [6]. It is based on the dimensions of the Leadership Scale for Sport in which the behaviour of the coach is divided into five dimensions. After a careful reading of this article sixth dimension was added - permissive behaviour, which happens when the coach has little or no interference in the training process, allowing athletes to control the situation [14].

While preparing the questionnaire, the items were decided randomly. Furthermore, in order to fulfil study objectives and as the questionnaire would be applied by different coaches to different groups, it was decided to standardize procedures and so: ask the coach to hand out the questionnaires before the weekly training. This way the athletes would be more focused and not so tired or eager to hurry to the shower.

Notebooks were provided to athletes and pens, so that they could complete the questionnaire at the same time and in similar conditions. They were handed out fifteen (15) minutes before the beginning of practice inside the sports hall, since the lightening is often better than the existing in the locker room. The sports hall was silent during this process.

All procedures were ethically approved and recognized by an Institutional Review Board and were carried out as specified. The participants consent about all the experimental procedures, according to Helsinki Declaration, defined in United Nations Declaration, as the model for the conduct of research in which humans are participants. The data analyses accomplished appropriate participants permissions.

In order to avoid misread instructions and induce a more informal conduct, during the application of the questionnaire, each researcher had been previously briefed on its content. All doubts were clarified for its correct completion. Furthermore, it seemed important to present the purpose of the questionnaire, try to motivate and arouse the interest of the athletes so that their answers would be more sincere [15].

The factor analysis started with an initial set of psychological traits and tried to achieve a smaller set of hypothetical variables (factors) in order to simplify the key ideas of the elements. Thus, several items were grouped, in accordance with the factors, form the construct. The exploratory analysis should be as simple and as short as possible, so that the information can be more easily analysed.

For the exploratory analysis it is crucial to follow a set of determined steps, so that the questionnaires may be validated:

1. Selection of variables for analysis;
2. Conducted a descriptive factor analysis, selecting the Initial Solution option, with the purpose of presenting the commonalities, the eigenvalues and the percentage of variance explained. Then the KMO (Keiser-Meyer-Olkin) test was selected and Bartley's sphericity test, in order to know whether the application of factor analysis is valid for the chosen variables;
3. Choose the extraction of factors, favoured the method of major components and the analysis of the correlation matrix for the eigenvalues greater than 1;
4. Transform the coefficients of the major components in simplified structures, rotation. The aim is to divide the initial set of variables into subsets with the greatest degree of independence possible. The use of the Varimax method for orthogonal connections was to select the significant weights and all others to be close to zero;
5. Turn to Factor Scores and choose the method by which scores are calculated for each case. These Scores give the value of the components for each individual;
6. Finally, selected Options, to choose how the Missing are treated and to control the final appearance of the matrix.

At the end of this process, the number of factors can be specified, or the eigenvalues, above which the factors are obtained. In this case, six factors were selected: democratic, autocratic, of social support, rewarding, of training and permissive.

### **3. Results**

The KMO test result was 0.805, indicating the analysis of the different components is good, making it possible to use the analysis of the major components. The Bartlett sphericity test

result was  $X^2=1203.979$ ; with 153 degrees free. This result shows that the variables are correlated.

Through the methods used to extract the factors, five components were obtained, as they are only 5 that have a value greater than 1. The five components explain over 68% of the variance from the initial data.

When creating the questionnaire and based on the theories analysed items were grouped to be studied in six factors; however when the statistical analysis have been done, the software used grouped them into five factors. Nonetheless, it's interesting to know which would be the best way to group the items since first intention was to group them into six factors. That's why rotation of the data was done, and selected in the method for extracting the factors, through the analysis of the major components, six factors for subsequent grouping of items.

After a careful analysis of the grouping of items into six factors, it came across a division that does not correspond to the one previously developed. Taking into account all the requirements for the development and validation of a psychosocial assessment questionnaire related with sport, to verify if the questionnaire (questionnaire about the behaviours of the coach) is fit for further validation [16]. The construct of a test can only be validated if it can really put theory into practice. Each construct is designed to explain and organize the consistency of the answers given. These behavioural relationships between different individuals validate the construct. Thus, for this validation to occur there must be a gradual accumulation of information gathered from the participants in question [17].

Any behaviour that is assessed has to take into account the information given by the individuals who filled out the questionnaire [17]. Only by comparing this information with the theoretical setting can the validation of the test be successful.

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