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INITIAL VALIDATION OF COACHING BEHAVIOR SCALES IN VOLLEYBALL

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Original scientific paper

Abstract

The main goal of this research was to validate two measuring instruments for assessing coaching behavior in volleyball: Coaching Behavior Scale for Sport (CBS-S) and Leadership Scale for Sport (LSS). The research was conducted on a sample of 273 youth and junior male and female volleyball players. By validating the questionnaires of perceived coaching behavior it has been established that the reliability was good in all 7 scales of CBS-S, as well as in 3 out of 5 scales of the LLS questionnaire. The reliability was not satisfactory only in scales of autocratic behavior and positive feedback. The distribution shape and symmetry indicators indicate good sensitivity of all scales, and having the item selection performed in particular scales, all scales have good homogeneity. In the process of making the CBS-S questionnaire the views of top athletes and coaches were taken into consideration. It is why CBS-S can be recommended especially to those researchers willing to analyze the field of top sport. However, this research also proves that CBS-S can be used for assessing the behavior of coaches of young age groups.

Key words: juniors, cadets, LSS, CBS-S, questionnaires

INTRODUCTION

Coach is the factor that perhaps has the greatest impact on athlete's and the team's perception of efficacy. By the end of the 70s of the last century there has been surprisingly little research on the topic of "leadership" in sport. Most studies that have been conducted used models of leadership developed in the military and in industry. Chelladurai (1978) saw the need to design and implement a specific model for sport. He assumes that the quality of leadership in sport depends on the characteristics of leaders (coaches), as well as athletes but also on the specifics of the situation in which they are located. Thus was created a multidimensional model of leadership in sport.

The atmosphere and the general relationship between the players in the team are associated with leadership by the coaches. They depend on whether the coach is focused on improving the performance of athletes in a variety of physical training segments, or focused solely on the result, that is, to win the contest. If the coach is focused on performance, he gives positive feedback to the athletes and thereby rewarding their efforts, progress and good teamwork. On the other hand, coaches focused on the result predominantly use penalties when players do something wrong in training and competition, and thus encourage competitiveness among teammates, not cooperation (Dithurbide et al., 2011). Significant predictors of team's efficiency on the basis of perceptions of coaching behavior and relationship coach-players was confirmed by

Hampson and Jowett (2012). Pereira et al. (2008) also prove that coach's perceived behavior has a significant impact on the fellowship and player satisfaction.

Some of the most popular tools for coaching behavior assessment are Coaching Behavior Scale for Sport (CBS-S) (Cote et al., 1999) and "Leadership Scale for Sports" (LSS) (Chelladurai and Saleh, 1980). CBS-S is designed to assess all aspects of efficient coach treatment. The questionnaire was tested on athletes (Baker et al., 2000, 2003; Stevens et al., 2006) and showed good metric properties (Cote et al., 1999). LSS questionnaire consists of 40 items that assess the five components of coaching leadership.

Characteristics of volleyball are the active coach-players relationship during the game, not just during the training process. According to the rules of volleyball coach is allowed to move along the lateral line of the field and actively participate in the game by giving advice. The authors of this research failed to find even one scientific research in the field of volleyball in Croatia, where validated questionnaires of coach's perceived behavior are investigated. The consequence is lack of objective knowledge in this area. Based on the above, the main aim of this study was to determine the basic metric characteristics of CBS-S and LSS questionnaire for perceived coaching behavior assessment in a sample of Croatian volleyball players.

METHODS

The sample represented a total of 273 subjects (165 female and 108 male volleyball players) from cadet and junior age groups from 27 clubs (16 female and 11 male clubs). From 165 female volleyball players that completed the questionnaire there were 74 cadets (14-17 years) and 92 juniors (17-19 years). From 108 male volleyball players 52 were cadets (14 to 17 years), and 58 were juniors (17 to 19). The Ethical Committee of the Faculty of Kinesiology - University of Split verified that this investigation complied with all ethical standards for scientific investigations involving human participants.

"Coaching behavior scale for sport" (CBS-S) questionnaire is designed based on a number of qualitative and quantitative studies. CBS-S consists of seven dimensions of coaching behavior with a total of 47 statements to which is answered on a Likert scale from 1 (never) to 5 (always): Physical Training and Planning (PTP) (7 questions), Technical Skills (TS) (8 questions), Mental Preparation (MP) (5 questions), Goal Setting (GS) (6 questions), Competition Strategies (CS) (7 questions), Personal Rapport (PR) (6 questions), Negative Personal Rapport (NPR) (8 questions).

"Leadership Scale for Sports - LSS" questionnaire consists of 40 items that assess five components of coaching leadership: Training and Instruction (TI) (13 questions), Democratic Behavior (DB) (9 questions), Autocratic Behavior (AB) (5 questions), Social Support (SS) (8 questions), Positive Feedback (PF) (5 questions). Participants are evaluated on a scale from 1 (never) to 5 (always). The testing (filling in the questionnaire) took place on the final contests for cadet and junior age groups the day before the competition.

Data were analyzed using the Statistica for Windows 10.0 package. Statistical significance was set at $P < 0.05$. Reliability was analyzed by calculating Cronbach alpha coefficient ($C\alpha$). Homogeneity was analyzed by factor analysis with oblimin rotation (percentage of explained variance (% VAR)). The sensitivity of measuring instruments was tested with Kolmogorov - Smirnov test to determine normality (KS). After that basic descriptive data were calculated

(measures of central value and dispersion (Mean, SD, SKEW, KURT)).

RESULTS AND DISCUSSION

During the validation of the first and last dimension of the CBS-S questionnaire (Physical Training and Planning and Negative Personal Report) factor analysis resulted in two significant components. Due to insufficient homogeneity of the scales one question was omitted from further analysis. After the selection only one significant component was extracted explaining 54.8% and 63.5% of the variance of the system.

Principal components analysis with oblimin rotation of the first, second and fourth dimension of the LSS questionnaire resulted in two significant components as well. Despite the high reliability of the scales, due to inhomogeneity one question with the highest projection on the second component was omitted. This resulted in homogeneous scales with a high level of reliability suitable for further data processing, and interpretation of the results. In contrast to these dimensions, the remaining two scales of the LSS questionnaire had sufficient homogeneity, but their reliability is slightly below the limit. The reason is probably the fact that the two scales have a smaller number of particles (questions), and for the additional improvement of metric characteristics adding more particles should be considered.

Joint review of the basic features of validated measures of coaching behavior shows that all scales have good or high reliability except for two of them. Parametric data processing is recommended for all validated measures because the indicators of shape and symmetry of the distribution are satisfying, although the results of several scales deviates significantly from the normal distribution. Only one variable of CBS-S (Autocratic Behavior) has coefficients of symmetry and form of distribution exceeding the value of 1.00.

Table 1. Metric characteristics of two questionnaires for coaching behaviour assessment (descriptive statistics, reliability, sensitivity and homogeneity)

Variable	Mean	SD	C α	Factor analysis		KS	SKEW	KURT
				No. of extracted factors	% VAR			
CBS-S_PTP	3,65	0,81	0,80	1 ^A	54,80	0,090*	-0,49	0,49
CBS-S_TS	4,14	0,71	0,90	1	58,51	0,140*	-0,74	-0,20
CBS-S_MP	3,37	1,10	0,93	1	77,56	0,099*	-0,27	-0,79
CBS-S_GS	3,40	0,99	0,91	1	69,78	0,080	-0,26	-0,36
CBS-S_CS	3,83	0,72	0,83	1	49,40	0,073	-0,35	-0,37
CBS-S_PR	3,69	0,86	0,79	1	53,18	0,075	-0,39	-0,28
CBS-S_NPR	4,05	0,79	0,84	1 ^A	53,49	0,187*	-1,23	1,20
LSS_TI	4,07	0,64	0,90	1 ^A	47,17	0,080	-0,84	1,25
LSS_DB	3,03	0,85	0,88	1 ^A	53,96	0,068	0,09	-0,52
LSS_AB	3,48	0,86	0,68	1	51,03	0,079	-0,50	-0,12
LSS_SS	3,65	0,81	0,85	1 ^A	53,13	0,085*	-0,16	-0,58
LSS_PF	4,06	0,61	0,68	1	45,22	0,094*	-0,30	-0,25

Legend: *significance of KS test; ^Aafter eliminating one of the questions

By comparing the contents of LSS and CBS-S questionnaire it is obvious that some of the dimensions in one questionnaire are very similar or identical by name to the other questionnaire (autocratic behavior, social support and physical training and planning). While the scales of social support and physical training and planning are similar in content, it is necessary to point out the significant differences in content between the LSS and CBS-S questionnaire scales for assessing autocratic behavior. In LSS questionnaire some sort of rigidity of the coach and lack of communication in relation to the players is estimated. CBS-S questionnaire assesses very negative coaching procedures (intimidation and manipulation, neglect towards players and even physical threats). This is probably the reason of lower values in CBS-S questionnaire in relation to the LSS, which is in any case positive because it shows that intimidation, manipulation and physical threats are quite rare among coaches of youth volleyball players in Croatia. It is also important to emphasize the specificity of CBS-S and LSS questionnaire. CBS-S was created in order to cover a wide range of elite coach's tasks which significantly surpasses the area of technical and tactical training (Mallet and Cote 2006). Therefore, besides the assessment of coach's communication style, the questionnaire is comprised of the questions for assessment of fitness and mental aspect of training, helping the players in setting short and long term goals, coaching strategies and procedures in the event, as well as organization of training and competitive process. In the process of designing

the questionnaire the views of top athletes and their coaches were taken into consideration. Therefore, the CBS-S questionnaire can be recommended especially to those researchers willing to analyze the area of top-level sport.

Besides that, this research also suggests that the CBS-S questionnaire has good metric features for the assessment of behavior of younger age groups volleyball coaches. Unlike CBS-S questionnaire, LSS questionnaire was constructed based on the theoretical framework and applied mainly in samples of young athletes, amateur athletes and semipro (Frontier, 2006). Its disadvantage is that all scales are mainly related to the actions and behavior of coaches at training, while other important areas of coaching job are not covered (strategy of competition, goal setting and mental preparation of athletes).

PRACTICAL ASPECTS

Finally, there are versions of the LSS and CBS-S questionnaire for trainers also. By comparing his results with the results of his players coach can get an insight into how their perceptions are similar and can be educated about the possible actions to adjust his style of leadership with the wishes of his players. The scientific value of this research is reflected in the fact that the most frequently used questionnaires of team features in the world are translated and validated on a representative sample of young Croatian volleyball players.

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