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A COMPARISON OF PERCEIVED TEAM COHESION IN ATHLETES OF INTERACTIVE AND COACTIVE SPORTS BASED ON THE GROUP ENVIRONMENT QUESTIONNAIRE

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SUMMARY

The Group Environment Questionnaire (GEQ) is one of the most applied instruments intended for the study of cohesion in sport teams. The main aim of this study was to compare perceived team cohesion in athletes from team and individual sports. The cross-culturally validated, modified Czech version of GEQ was utilized for this purpose. A total of 415 participants (179 men and 236 women) from team (218 players) and individual sports (197 athletes) completed the GEQ. For data analysis we applied non-parametric Kruskal-Wallis one way Anova. Results showed significant differences in perception between team and individual sports in specific subscales (IA-T and GI-T) and between men and women (regardless of type of sport) in three out of four subscales of team cohesion. The modified Czech version of GEQ might not be always suitable in team cohesion assessment in individual sports and it is important to use this tool with caution in these cases.

Key words: GEQ, team sport, individual sport, gender, Kruskal-Wallis analysis of variance

INTRODUCTION

Strong cohesion is regarded as a significant attribute of successful groups and by some authors considered to be one of the most important group variable in sport teams (Carron, Brawley, & Widmeyer, 2002; Cox, 2007). It can be defined as “the extent to which group members as a whole are strongly or weakly committed to the group (Sears, Peplay, Freedman, & Taylor, 1988, p. 360) or as “a dynamic process that is reflected in the tendency for a group to stick together and remain united in the pursuit of its instrumental objectives and/or for the satisfaction of member affective needs” (Carron, Brawley & Widmeyer, 1998, p. 213).

The construct of team cohesion is multidimensional and four basic characteristics can be distinguished: (a) dimensions of task and social cohesion, (b) dynamic nature, (c) instrumental base, and (d) affective dimension (Carron, Brawley, & Widmeyer, 2002).

In terms of the conceptual model of team cohesion it is important to differentiate the individual and the group as well as task and social interests of the group and its members. There are two conceptual categories: 1. Individual Attractions to the Group (individual perception about motivation acting to captivate and hold the individual in the group), and 2. Group Integration (likeness, affinity and bonding within the group and the degree of union of the group field) (Carron, Widmeyer, & Brawley, 1985; Zander, 1971). There are two aspects how the task and social interests of the group can be perceived – individual attraction to the group and group integration. On the bases of this it is possible to distinguish four related constructs that unify individuals in a group: (a) Individual Attractions to the Group – Task Cohesion (IA-T), (b) Individual Attractions to the Group – Social Cohesion (IA-S), (c) Group Integration – Task Cohesion (GI-T), and (d) Group Integration – Social Cohesion (GI-S) (Carron, Brawley, & Widmeyer, 2002; Carron et al., 1985; Widmeyer, Brawley, & Carron, 1985).

The definition of group cohesion from Carron et al. reflects it's character and can be found in most groups – among others sport and work groups, military units, social and friendship groups (Carron, Brawley, & Widmeyer, 2002).

Group can be defined as “two or more individuals who possess a common identity, have common goals and objectives, share a common fate, exhibit structured patterns of interaction and modes of communication, hold common perceptions about group structure, are personally and instrumentally interdependent, reciprocate interpersonal attraction, and consider themselves to be a group” (Carron & Hausenblas, 1998, p. 13–14).

Athletes training and competing in individual sports create groups as well. They belong to a sport club, training group, meet on a regular base, have social roles, and common goals. The team cohesion in this case might be of the same importance as in the team sports.

The main aim of the present study was to compare the perception of team cohesion in athletes from team and individual sports and between men and woman using the GEQ. For this purpose we utilized the modified Czech version of the Group Environment Questionnaire (Prokešová & Musálek, 2011).

METHODS

Subjects

In this research participated 415 adult athletes (179 men and 236 women) competing in team and individual (coactive) sports. In the team sports we addressed 218 players (mean age 23.1, SD 4.86) playing volleyball, handball and basketball and there were 197 athletes (mean age 25.2, SD 8.92) involved in individual sports (squash, tennis and kick box in case of men, aerobic and dance formation in women).

The Group Environment Questionnaire – Czech modified version

The GEQ is acknowledged as an international method and belongs to one of the most applied questionnaire in present team cohesion research. It is a four-scale instrument with 18 questions (Carron, Widmeyer, & Brawley, 1985), internally consistent and has a good content validity. The questionnaire was cross-culturally validated to Czech in modified version. Since the fit of the original GEQ 4-factor model was poor a modified Bi-factor structure with 4 specific concepts (IA-S, GI-S, IA-T and GI-T, taking into consideration that IA-T and GI-T have common general theoretical base) of the Czech version of GEQ (without five original items) was established (Prokešová & Musálek, 2011).

For the evaluation of the team cohesion in the present study the 13 items modified Czech version of GEQ sports was utilized consequently. The particular items are indicated in Appendix 1.

Since the obtained data are categorical ordinal we utilized non-parametric Kruskal-Wallis one way Anova in statistical software NCSS 2007 (Hintze, 2007) that contrasts the medians of two or more samples to determine if the differences are significant.

The analysis was divided into two parts. In the first part we compared how the perception of team cohesion differs based on type of sport (team \times individual). In the second part the difference of perception was studied in both team and individual sports comparing male and female athletes.

The statistical significance was set up at $p < 0.05$. The particular items were analyzed overall in the respective subscales of the GEQ.

RESULTS

The first analyzed factor was the “type of sport” (team \times individual). The results of the non-parametric analysis of variance (Tab. 1 – Tab. 4) showed that team perception in Individual Attractions to the Group – Social Cohesion and Group Integration – Social Cohesion subscales (that describes how an individual athlete perceive the group as similar and cohesive in interpersonal relationships and feelings about his/her personal interactions with the group) were not significantly different in athletes from team and individual sports.

On the opposite the statistical differences were found in items from Individual Attraction to the Group – Task Cohesion and Group Integration – Task Cohesion subscales that focus on an athlete’s involvement in a common goal and his/her perception of closeness, similarity and relationships within the team related to their goal. Athletes from individual sports score better than athletes from team sports (players).

Table 1. Subscale IA-S, team vs. individual sports

Item	Chi-square
1. I do not enjoy being a part of the social activities of this team.	0.071
3. Some of my best friends are on this team.	0.0000009
5. I enjoy other parties more than team parties.	2.69

*statistical significance $p < 0.05$

Table 2. Subscale GI-S, team vs. individual sports

Item	Chi-square
8. Members of our team would rather go out on their own than get together as a team.	0.12
10. Our team would like to spend time together in the off-season.	1.87
12. Members of our team do not stick together outside of practice.	0.79

*statistical significance $p < 0.05$

Table 3. Subscale IA-T, team vs. individual sports

Item	Chi-square
2. I am unhappy with my team's level of desire to win.	27.29*
4. This team does not give me enough opportunities to improve my personal performance.	4.87*
6. I do not like the style of play on this team.	8.69*

*statistical significance $p < 0.05$

Table 4. Subscale GI-T, team vs. individual sports

Item	Chi-square
7. Our team is united in trying to reach its goals for performance.	24.32*
9. Our team members have conflicting aspirations for the team's performance.	16.08*
11. If members of our team have problems in practice, everyone wants to help them so we can get back together again.	28.28*
13. Members of our team do not communicate freely about each athlete's responsibilities during competition or practice.	8.34*

*statistical significance $p < 0.05$

In the second part the team cohesion perception was contrasted based on gender. Results can be found in Tab. 5 – Tab. 8. The significant differences between men and women in perception were found in three out of four subscales of team cohesion. Specifically women scored higher in 1. and 5. indicator in IA-S subscale, and lower in 4. indicator in IA-T subscale, and 9. indicator in GI-T subscale.

Table 5. Subscale IA-S, male vs. female

Item	Chi-square
1. I do not enjoy being a part of the social activities of this team.	4.19*
3. Some of my best friends are on this team.	2.89
5. I enjoy other parties more than team parties.	4.13*

*statistical significance $p < 0.05$

Table 6. Subscale GI-S, male vs. female

Item	Chi-square
8. Members of our team would rather go out on their own than get together as a team.	0.48
10. Our team would like to spend time together in the off-season.	1.14
12. Members of our team do not stick together outside of practice.	2.15

*statistical significance $p < 0.05$

Table 7. Subscale IA-T, male vs. female

Item	Chi-square
2. I am unhappy with my team's level of desire to win.	0.037
4. This team does not give me enough opportunities to improve my personal performance.	9.94*
6. I do not like the style of play on this team.	0.28

*statistical significance $p < 0.05$

Table 8. Subscale GI-T, male vs. female

Item	Chi-square
7. Our team is united in trying to reach its goals for performance.	3.20
9. Our team members have conflicting aspirations for the team's performance.	3.87*
11. If members of our team have problems in practice, everyone wants to help them so we can get back together again.	3.52
13. Members of our team do not communicate freely about each athlete's responsibilities during competition or practice.	0.52

*statistical significance $p < 0.05$

DISCUSSION AND CONCLUSION

The main goal of this study was to find possible significant differences between perception of group cohesion in athletes from team and individual sports. This study can also partly answer the question of suitability of the modified Czech version of GEQ for studies of team cohesion in individual sports.

The results revealed significant differences in perception between team and individual sports in specific subscales (IA-T and GI-T) of the modified Czech Version of GEQ. It is surprising that athletes from individual sports perceived higher task cohesion compared to the participants from team sports. The significant differences in responses were found out in all seven indicators of these two concepts. This reveals some differences compared to results of a study presented in the GEQ test manual (Carron et al., 2002). There were also higher scores in two subscales in athletes from individual sports, but specifically IA-T and GI-S subscales. High perception of task cohesion is important for interactive sport teams because they are more likely to experience performance success then. There were several examples in the history when sport teams were successful despite well-publicized dissonance, if they were able to get along and work together for a common goal (Cox, 2007). It might be possible, that the higher scores of task cohesion in individual sports were perceived, because of a different level of importance in the studied groups. As it was already stated, high level of task cohesion in interactive sports is substantial for the team success, which could made those athletes more critical during assessment. High team cohesion is also associated with the actual success of the team (Brawley, 1990) which was not measured in our study but anyway we can not suppose that all the measured teams were “down” in the time of assessment.

During the analysis of the statistically different items was confirmed that the character of some indicators (e.g. question no 6. I do not like the style of play on this team) might not be always suitable in team cohesion assessment in individual sports. Their application must reflect the type of sport, training team structure or system of competition. It is important to use the questionnaire with caution in individual sport settings and consider rewording of unsuitable items.

Other significant differences were found in scores of team cohesion (regardless on type of sport) between men and woman. The important differences in perceived cohesion between men and women were found in IA-S subscale (1. I do not enjoy being a part of the social activities of this team, and 5. I enjoy other parties more than team parties), in IA-T (4. This team does not give me enough opportunities to improve my personal performance), and GI-T (9. Our team members have conflicting aspirations for the team’s performance). Women perceived higher scores in the 1. and 5. questions from the IA-S subscale and lower scores in the others. This is in agreement with some other studies, that revealed that female athletes were significantly more group oriented than male athletes (White, 1993; Wrisberg & Draper, 1988) and demonstrated higher affiliation compared to men (Deaux, 1976). On the opposite, Carron et al. (2002) did not discover any gender difference in team cohesion. In the research in team cohesion, female athletes have received very little attention (Glenday & Widmeyer, 1993, as cited in Spink, 1995). It will be desirable to provide more studies with female as participants to be able to understand this field more precisely.

The indicators in IA-T (4. This team does not give me enough opportunities to improve my personal performance), and GI-T (9. Our team members have conflicting aspirations for the team’s performance) displayed significant differences in both parts in analysis (individual vs. team sports and men vs. women). The future research utilizing the item analysis should be done for better understanding.

The results showed significant differences in perception of team cohesion between athletes in team and individual sports. We can conclude that the modified Czech version of GEQ in the present form is suitable for an assessment of team cohesion in individual sports, but it will be probably more appropriate to modify the present version to be more suitable for a particular group. After the revision, this version of questionnaire can help the coaches to identify weak parts of the team cohesion and focus on the improvement.

Following the results of our study we can conclude that lower results in women teams should be warning for the coaches as they seem not to be a standard.

Our study also disproves the common opinion that the team cohesion, and especially the task cohesion, is lower in individual sports. Or, the future research may ask what the coaches in individual sports do or do not do to have athletes with better task cohesion than players.

Based on found differences in perceived team cohesion between man and woman we suggest that it would be interesting to focus on team cohesion in coeducated sport teams.

The team cohesion, as a social psychological topic, belongs to an important factor for enhancing team performance and perceived satisfaction among group members. It is considered as a complex concept, which requests further study and additional research for the full comprehension and appreciation (Cox, 2007).

The findings of the present study will be utilized in pedagogical process, specifically in Sport psychology subject.

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POROVNÁNÍ VNÍMANÉ TÝMOVÉ KOHEZE U KOLEKTIVNÍCH A INDIVIDUÁLNÍCH SPORTŮ POMOCÍ DOTAZNÍKU GROUP ENVIRONMENT QUESTIONNAIRE

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SOUHRN

Dotazník Group Environment Questionnaire (GEQ) patří mezi jeden z nejčastěji využívaných nástrojů pro studium týmové koheze u sportovních týmů. Hlavním cílem této studie bylo porovnat vnímanou týmovou kohezi u sportovců z individuálních a kolektivních sportů. Pro tyto účely byla využita kros-kulturně validizovaná modifikovaná česká verze dotazníku GEQ. Studie se účastnilo 415 sportovců (179 mužů a 236 žen) z individuálních (179 sportovců) a týmových (218 hráčů) sportů. Data byla analyzována pomocí neparametrické Kruskal-Wallis one way Anova. Výsledky ukázaly významné rozdíly ve vnímání koheze mezi týmovými a individuálními sporty v jednotlivých subškálách (IA-T and GI-T) a mezi muži a ženami (bez souvislosti s typem sportu) u třech ze čtyř subškál týmové koheze.

Klíčová slova: GEQ, kolektivní sport, individuální sport, pohlaví, Kruskal-Wallis analýza rozptylu

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