Team cohesion and its impact on individual and team performance in Ethiopian Premier League volleyball clubs

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ABSTRACT

This study aimed to examine the level of team cohesion, the relationship between cohesion and performance, and the key determinants of task and social cohesion in relation to individual and team performance among Ethiopian Premier League volleyball teams. A descriptive, cross-sectional research design was employed. The participants consisted of 51 players who actively competed during the 2020/2021 season. Data were collected using the Group Environment Questionnaire (GEQ) and analyzed with SPSS version 26. The findings revealed moderately high levels of cohesion across all four dimensions. A positive relationship was found between cohesion and performance; however, only task cohesion dimensions showed a significant correlation with team performance. Specifically, Attraction to Group-Task (ATG-T) was significantly associated with individual performance ($r = .327$, $p < .05$), and Group Integration-Task (GI-T) was strongly correlated with both individual and team performance ($r = .596$, $p < .01$). Overall, task cohesion was identified as a significant predictor of player performance ($p < .05$), while social cohesion showed no significant relationship ($p > .05$). Based on these findings, it is suggested that stakeholders develop strategies and organize social activities to enhance social cohesion, particularly within women's Premier League volleyball teams.

KEYWORDS

Social Cohesion; Task Cohesion; Absolute ATG-T; GI-T; Group Environment Questionnaire

1. INTRODUCTION

Cohesion in sports refers to a team's commitment to stay together and coordinate efforts to perform well. In sports, it is common that the team must stick together to perform to their fullest and greatest potential and achieve excellent results, and without cohesion, the team is most likely to fail. According to Carron (2001), cohesion is a dynamic process that is evident in a group's propensity to stick together and maintain its unity while pursuing its instrumental goals. This relates to how motivated a team is to collaborate and work as a unit to achieve their common objective for the enjoyment of each team member. It can be considered an indicator of how driven a team of athletes is to train, compete, and socialize as a unit.

In a sporting setting, group cohesion is crucial when the team needs to coordinate a reaction during a match. For a synchronous response, it's critical to comprehend players' skill sets, preferences, moods, and routines. In this context, cohesiveness stands for a shared social field where the goal is to get to know one another better to improve performance as a group (Pescosolido & Saavedra, 2012). Additionally, cohesion displays how strongly members of a group are connected socially and in terms of their work (Carron et al., 2016).

Unquestionably, team cohesion is one of the most crucial predictors of success, regardless of winning or losing, according to research by Pacewicz et al. (2020) in order for people to continue participating in sports, develop their sportsmanship, engage in physical activity, and raise the effort of athletes, the two key aspects of athlete satisfaction and team cohesion must exist (Brisimis et al., 2018). The four components of the team cohesiveness criterion are task integration, social attraction to the group, teamwork attraction, and social cohesion, in accordance with the team cohesion model developed by (Carron et al., 1985).

Teams must work as a unit and be productive regardless of the setting or type of team, according to Grossman et al. (2022) argument. Collaboration can accomplish results that the same number of people working alone could not. Accordingly, there is a positive association between team cohesion and performance; it is thought that cohesion influences future performance and performance influences future cohesion (Braun et al., 2020; Filho et al., 2014). A cohesive team, in fact, has roles and group standards that are clearly defined, common goals, a strong team identity, strong working relationships, shared responsibility, respect, positive energy, trust, a willingness to work together, unity, effective communication, pride in membership, and synergy (Mitra, 2021).

Without a doubt, the degree of a group's effectiveness and performance can be determined by the positive or negative impact of several factors (the group's homogeneity or heterogeneity, agreement or disagreement on the goals and objectives of the group, individual attraction to the group, the quality and frequency of interactions between the group members, the clear distribution of the tasks and roles within the group, the presence or absence of a leader within the group, etc.). In addition to these positive and negative cohesion factors, the athletes' personalities, levels of motivation and multifactor training, relationships between athletes and coaches, and peer pressure among group members can all be thought of as specific factors that affect group performance (Rusu, 2020).

Salas et al. (2015) noted that team members who lack a sense of cohesion are less motivated and less likely to engage in the "teaming" behaviours that enable the numerous advantages of teams. Undoubtedly, teams with a lack of cohesiveness are more likely to fail since their members cannot work as a unit. In order to achieve a given result, the team must be cooperative, i.e., willing to stick together and operate as a unit. However, it is believed that if consistency is lacking, performance would most likely be hindered since members of a team would work more individually and focus more on their own success than that of the entire team, which would most likely result in failure. It is essential to look into the elements affecting cohesion given the crucial role it plays in sustaining sports engagement.

Despite the fact that volleyball has been played in Ethiopia for many years. However, the female volleyball premier league is not well developed, and the national volleyball team did not exist in the country for a long time. Due to this fact, Ethiopian female volleyball premier league teams frequently fail to achieve the desired results. This deterioration results in poor performance and unattainable success for a team.

Even though various researchers from different nations conducted studies on the subject. A quantitative analysis of early sports activities and their demographic, anthropometric, and physiological responses, for instance, can be used to examine the personal factors that contribute to success for volleyball players. Few academics have examined volleyball participation, though, and have pinpointed the circumstances in which specific outcomes are most likely to occur (Teshome et al., 2022).

Consequently, the researcher felt it was crucial to carry out a study on the subject in order to support and enhance female volleyball achievement throughout the country. However, no research

on female current study on premier league has been done in Ethiopia, and no scientific proof has been produced. The current researcher was unable to locate any studies that looked at the team cohesion and relation with individual and team performance in Ethiopia's female premier league volleyball clubs. Therefore, it is crucial to evaluate team cohesion in relation to players' performance in Ethiopian female volleyball premier league team. As well as this study was guided by three research questions.

This research aims to address three main questions. First, it seeks to determine the level of team cohesion in a volleyball team. Second, it investigates whether the team's cohesiveness has a significant relationship with the performance of volleyball teams in the premier league. Finally, it explores whether there is any significant relationship between individual and team performance in relation to the four subscales of cohesion.

2. METHODS

2.1. Design and Participants

The researchers used the cross-sectional survey design due to its relevance to the nature and objectives of this study. Participants were selected using comprehensive sampling method so that all volleyball players in the five premier league teams were samples of the study. Due to small number of club players in Ethiopian female premier leagues, the researchers used all 51 players in this study. All volleyball players from Ethiopian premier league clubs, namely Addis Ababa University, Wolaita Sodo University, Federal prison (Maremia), Geta Zeru, and National Alcohol Industry female volleyball teams were included.

- *Inclusion criteria:* All Premier League female volleyball players who do not miss more than 20 training days in 2021–2022, In this regard, out of a total of 51 players, 46 (or forty-six) players who had no absences during training were included in this study.
- *Exclusion criteria:* Five players were excluded from the study due to a lack of detailed information on team cohesion and player performance.

2.2. Instrument

The group environment questionnaire (Brawley, Carron, & Widmeyer, 1987) The GEQ assesses the four dimensions of team cohesion: individual attraction to group tasks (ATG-T), individual attraction to group social tasks (ATG-S), group integration tasks (GIT), and group integration social tasks (GI-S). The questionnaire comprises 18 items scored on a Likert scale from 1

(strongly disagree) to 9 (strongly agree). The questionnaire measures four dimensions of cohesion: The ATG-T and GI-S factors include 4 items each, while ATG-S and GI-T have 5 items each to determine the level of achievement. Ethiopian female premier league volleyball players' performance is measured by win/loss records (Table 2). According to Wilson (1998), performance outcome is calculated as an absolute measure that establishes a win/loss ratio for each team.

2.2.1. Validity of the Instrument

According to Ghauri et al. (2020), validity explains how well the collected data covers the actual area of investigation. Furthermore, Straub & Gefen (2004) mentioned that the degree to which items in an instrument accurately reflect the content universe to which it will be generalized is known as content validity. Using a statistical method is another way to assess content validation. This was accomplished by determining the content validity ratio (CVR) of the questionnaire, which was completed by ten professionals, and the applicability of the items included in the subscales. The relevance of the survey items was evaluated, with scores ranging from 1 for irrelevant to 3 for extremely relevant. The content validity ratio (CVR) was derived using a method by Lawshe (1975).

Concerning the Group Environment Questionnaires' 18 items, the obtained content validity ratio showed that 9 of them have a value of (CVRI) 1.0, indicating that professionals have rated them as very appropriate; 7 of the items have been given a value of 0.8, indicating that they are also appropriate; and 2 of the items have been given a score of 0.7, indicating that they are moderately appropriate. As may be deduced from the ratings, all 18 of the items included in the group environment questionnaires were thought to be appropriate.

2.3. Data Analysis

The independent variable was cohesion (ATG-S, GI-S, ATG-T, and GI-T). The dependent variable was absolute performance (ranking teams at the end of the season). Descriptive statistics were used to calculate (mean and standard deviation, frequency) the level of cohesion, and the Cronbach alpha was computed to show the reliability of cohesion, which was 0.849. The Pearson correlation coefficient between the dimensions of cohesion and absolute performance was calculated. Finally, a linear regression analysis was performed to confirm whether the sub-score of cohesion found between the study variables significantly predicted the outcome variables. The statistical program SPSS 26.0 was used for data analysis.

3. RESULTS

Table 1 shows the demographic characteristics of Ethiopian female Premier League volleyball players. Out of the total population of 51, 46 of them filled out and returned the questionnaires. All of them were female players taking part in the Premier League. In the Ethiopian female volleyball premier league, players from five clubs were included. Addis Ababa University had 10 players (21.7%), Wolaita Sodo University had 10 players (21.7%), National Alcohol and Araki Club had 8 players (17.4%), Maremia had 10 players (21.7%), and Geta Zeru had 8 players (17.4%). Concerning educational level of players, 25 of the players which means (54.4%) enrolled in secondary education, 21 (45.7%), had diploma and above. Concerning their experience in the clubs, 25 players (54.4%) had playing experience 1-4 years, followed by 11 players (23.9%), above 9 years of experience, and lastly, those with 1-4 years of experience , includes 10 players (21.7%).

Table 1. Characteristics of respondents by clubs, age, educational level, and experience

No.	Variables with their category		Frequency	Percent
1	Name of Club	Federal prison	10	21.7
		National Alcohol	8	17.4
		Addis Abeba University	10	21.7
		Wollaita sodo University	10	21.7
		Geta Zeru	8	17.4
		Total	46	100.0
2	Age group in years	15-17 years	10	21.7
		18-25 years	25	54.3
		26 and above	11	23.9
		Total	46	100.0
2	Educational level	Grade 1-8	0	0
		Grade 9-12	25	54.3
		Diploma and above	21	45.7
		Total	46	100.0
3	Experience in years	1-4 years	25	54.3
		5-8 years	10	21.7
		9 and above years	11	23.9
		Total	46	100.0

In the following, Table 2 indicates that 'National Alcohol' was a winning team in the competition year of 2020/2021 with performance or result of 20 points. The second and the third ranking teams were 'Wolaita sodo' and 'Maremia Betoch' with points 18 and 15 respectively. The last in a rank was 'Addis Ababa University' with 0 points.

Table 2. Female premier league volleyball ranking clubs of the Season 2020/2021

Name of club	Point	Rank	Remark
Addis Abeba University	0	5	
National Alcohol	20	1	The winner
Wollaita sodo University	18	2	
Geta Zeru	6	4	
Maremia Betoch	15	3	

Source: The Ethiopian Volleyball Federation

Below, Table 3 shows that the average score for ATG-T is (M=6.6467, SD=1.92) and GI-T (6.3152, SD=1.65) has a high mean score, while ATG-S (M=5.278, SD=1.45) and GI-S M= (5.3967, SD=1.97). Generally, from the mean score of the types of cohesion observed, the mean score of all cohesions is higher than 5.0, which implies that the level of team cohesion is moderate to higher level.as we can see from Table 3. Due to several factors that affect players' social activities on female volleyball teams, the findings of descriptive statistics showed that the Ethiopian female premier league volleyball players' team had low level mean and standard deviation score on social cohesion than task cohesion.

Table 3. Descriptive statistics of cohesion

Types of cohesion	Minimum	Maximum	Mean	Std. Deviation
ATG-S	2.60	9.00	5.2783	1.45479
GI-S	2.00	9.00	5.3967	1.96679
SC	3.33	7.22	5.3309	1.05708
ATG-T	3.00	9.00	6.6467	1.92756
GI-T	2.50	9.00	6.3152	1.64668
TC	1.00	9.00	5.9041	1.97217

As presented in Table 4 below, the four subscales of cohesion were organised to examine their relationship with measures of performance, as presented in Table 4. The task included both measures of task cohesion, ATG-T and GI-T, and social cohesion included both measures of social cohesion, GI-S and ATG-S. The results show that ATG-S r=-176 (p>0.05), and GI-S r=- -.065 (p>0.05) have a negative and insignificant relationship with performance, whereas ATG-T r= 327[*] and GI-T r= .586[**] has a positive and significant relationship with performance (p<0.01). From the below results we can conclude that task cohesion sub score have a positive relationship with players' performance.

Table 4. Correlations between team cohesion and absolute performance of female Ethiopian premier league

		The performance level of teams
ATG-S	Pearson Correlation	-.176
	Sig. (2-tailed)	.242
GI-S	Pearson Correlation	-.065
	Sig. (2-tailed)	.668
GI-T	Pearson Correlation	.586**
	Sig. (2-tailed)	.000
ATG-T	Pearson Correlation	.327*
	Sig. (2-tailed)	.027

*Note. **. Correlation is significant at the 0.01 level (2-tailed); *. Correlation is significant at the 0.05 level (2-tailed).*

In the following, Table 5 presents the results of multiple regression analyses examining how individual and team interaction effects influence performance, specifically in relation to the four subscales of cohesion.

Table 5. Multiple regression analyses of individual and team interaction effect on performance related to the four subscales of cohesion (N=46)

Variable	Individual cohesion interaction effect on performance			Team cohesion interaction effect on performance		
	B	SE	Sig	B	SE	Sig
ATG-S	-.936	788	242	-.995	.660	.139
ATG_T	1.309	.571	.027	.717	.515	.171
GI-S	-.255	.591	.668	-.610	.484	.214
GI-T	2.751	.573	.000	2.467	.601	.000
R^2		.108			410	
F		5.319			7.13	
N		46			46	

Based on the results of Table 5, the individual performance regression model showed that it only accounted for 10.8% of the variance in the data and was not a good predictor of individual performance F= 5.319, ATG-T (P-value 0.27 P < 0.05), and GI-T F=7.13 (P-value 000 <0.05). Of the four subscales of cohesion, two of them were ATG-T and GI-T are significant predictors of individual performance.

For team performance, results of the regression model showed that it accounted for 41.0% of the variance in the data and was a relatively good predictor of team performance F = 7.13, and GI-T (p-value 000 = p<005) was the only major contributor in predicting team performance, In general, the result of multiple regression in team and individual performance in (Table 4) indicated that, a sub scores of task cohesion variables (ATG-T and GI-T) predictor of individual and team performance respectively. Whereas social cohesion (ATG-S and GI-S) neither predict team nor individual performance.

4. DISCUSSION

The aim of this study was to measure the level of cohesion, and to find out the relationship between cohesion and performance. Additionally, the study sought to determine whether a task or social cohesion had a stronger relationship with individual and team performance in Ethiopian female premier leagues. So our discussion is based on three research questions:

1. *What is the level of team cohesion in a volleyball team?*

The results showed that athletes who participate in highly interactive sports have high levels of perception of group cohesion (Dobrijević et al., 2020). The results of descriptive statistics on our findings in Table 3 indicate that the level of cohesiveness among premier league players is moderately -higher (greater than 5.0).

Our results are more in line with those of Dobrijević et al. (2020), who found that the cohesiveness dimension displayed a high to moderate level. additional our finding is in line with the research of (Brisimis et al., 2018), which showed that high levels of each of the four cohesiveness dimensions occurred in the same sports. We also support the findings of Cotterill (2012), who contends that cohesiveness requirements will increase as sports require more cooperation.

In contrast, the findings of Dobrijević et al. (2020), are different with what we discovered. They found that ATG-T had a lower mean score in water polo, whereas ATG-S had a higher mean score in basketball. The results of our study demonstrate higher levels of task cohesion than social cohesion. It can be concluded that team players are more united towards achieving their mutual goal, instead of developing good relationships for social purposes.

2. Did the teams' cohesiveness have any significant relationship with the performance of volleyball teams' in the premier league?

The result of Pearson correlation coefficient analysis in Table 4, showed that team cohesion has a relationship with team performance. However, not all components of team cohesion have a significant relationship with players' performance, rather only task cohesion. The result of our finding is related to the findings of Casey-Campbell & Martens (2009); Chiocchio & Essiembre (2009); Kidd & Castano (2013); Salas et al. (2015); Zaccaro & Lowe (1988) where they suggest that high task cohesion facilitated positive and significant relation with performance.

On the contrary, Michalisin et al. (2004) had different viewpoints on the relationship between team cohesion and team performance. Based on their study, team cohesion is independent of team performance and depends on other teams' attributions. Tziner et al. (2003) reported a significant relationship between perceptions of social cohesion and winning soccer matches (r=0.27, p<0.0001), this indicates that there is a link between teams social cohesion and team performance. In general, we can conclude that not all cohesion dimensions are related to teams' performance but task cohesion has a strong relationship with team   performance.

3. Is there any significant relationship between individual and team performance when related to the four subscales of cohesion?

Based on Table 4, the findings of two regression models showed that among the four cohesiveness subscales, the two task cohesion are a determinant factors of team performance [ATG-T (for individual and GI-T (for both individual and team performance)].

The finding of Dobrijević et al. (2020), is more relevant to our study as a result; their findings demonstrated that ATG-T and GI-T are more associated to individual and team performance.

In a comparable way, the findings of Kozub & McDonnell (2000) are consistent with the current investigation. They discovered that the two task cohesion dimensions were effective predictors of teams' performance, with group integration-task serving as a somewhat more effective predictor than individual attraction to the group task.

Another finding that contradicts our study is that of Brisimis et al. (2018) which showed a significant effect of team sports on ATG-S and GI-S, but no significant effect on ATG-T and GI-T. Based on these results, we conclude that task cohesion is a determining factor for both group and individual performance.

5. CONCLUSIONS

Team cohesion can serve as a valuable reference point when studying team members' performance. Our findings indicate that the level of cohesion is moderately high, with task cohesion being higher than social cohesion. In other words, if a team has a high level of cohesion primarily due to strong task attraction, this may be a positive indicator of strong individual performance. Cohesion is particularly important because it fosters team unity, which is essential for good performance.

Regarding the relationship between team cohesion and player performance, our study found that not all dimensions of cohesion are related to team performance. However, task cohesion appears to be more strongly associated with sports performance. In terms of the relationship between team cohesion and both individual and team performance, higher values in individual attraction to the group and group integration around task objectives seem to be beneficial and are associated with better overall performance.

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CONFLICTS OF INTEREST

The authors declare no conflict of interest.

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