



Team Cohesion and Achievement Motivation in Unified Basketball among Athletes with Intellectual Disabilities and Unified Partners

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ABSTRACT

The Unified basketball joins athletes with intellectual disabilities and partners without intellectual disabilities in one interdependent team. This study examined the association between individually reported team cohesion and achievement motivation in a Yogyakarta Unified basketball team. The original participant-level dataset contained paired responses from all 22 members, including 10 athletes with intellectual disabilities and 12 Unified partners. Team cohesion was measured using the 20-item CUB-C20, while achievement motivation was assessed using the 20-item UB-AM20. Both instruments used a five-category response format and a total score of 20-100. Before the main study, five experts reviewed the item relevance and clarity, eight participants completed cognitive interviews, and 40 members of four other Unified teams completed a pilot test. Internal consistency in the main sample was .934 for cohesion and .916 for achievement motivation. The total scores were positively associated, $r(20) = .681$, $p < .001$, 95% CI [.364, .857], with 46.4% shared variance. The confidence interval and sensitivity analyses indicate a positive but imprecisely estimated relationship within this team. Because the design was cross-sectional and involved one team, the result neither establishes causality nor supports generalization to other Unified Sport programs.

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INTRODUCTION

Unified Sports places athletes with intellectual disabilities and partners without intellectual disabilities in the same training and competition structure. The format is designed to create shared participation rather than two groups occupying the same court. Evidence from Unified programs shows that inclusive outcomes depend on reciprocal contact, equal-status relationships, and roles that allow athletes and partners to contribute to play (Hassan et al., 2012; McConkey et al., 2013). Participants themselves describe inclusion through togetherness, equality, friendship, participation, connection, and appropriate assistance (McConkey et al., 2019). These features make the internal functioning of the team central to the quality of the program.

Basketball intensifies interdependence because possession, spacing, transition, and defensive coverage require continuous coordination. A mixed-ability roster can therefore be numerically balanced while remaining unequal in actual decision making. Earlier Unified soccer research found psychosocial benefits for participants with and without intellectual disabilities, but also showed that outcomes vary with the way participation is organized (Özer et al., 2012). A recent review similarly concluded that athlete-reported experiences are generally positive while the evidence base remains small and methodologically varied (Accardo et al., 2023).

Sport cohesion theory defines cohesion as a dynamic process reflected in a group tendency to remain united in pursuit of its objectives and in meeting member affective needs. The established model distinguishes individual attraction to the group from group integration and it separates task from social aspects (Carron et al., 1985; Carron & Brawley, 2012). For adolescents, the Youth Sport Environment Questionnaire preserves the task-social distinction in language suited to younger participants (Eys et al., 2009). These distinctions are particularly relevant in Unified basketball, where coordinated play reflects task cohesion, whereas acceptance, equal standing, and continuing membership concern social cohesion.

Achievement motivation concerns how participants approach opportunities for success and manage the possibility of failure. Sport-specific approach-avoidance work distinguishes effort directed toward improvement and performance from withdrawal prompted by fear of error or defeat (Rushall & Fox, 1980). Self-determination theory offers a complementary account of why the social setting matters, as sustained effort is more likely when competence, autonomy, and relatedness are supported (Ryan & Deci, 2000, 2020). In sports, supportive interpersonal relationships have been associated with need satisfaction and more self-determined motivation (Jowett et al., 2017).

Cohesion and achievement motivation may therefore covary without being interchangeable. Shared goals can make effort consequential, dependable coordination can make repeated attempts worthwhile, and social acceptance can reduce the interpersonal cost of mistakes. Youth-sport evidence links stronger relationship climates with higher task and social cohesion and more autonomous forms of motivation (Freire et al., 2022), while team-building research shows that cohesion is responsive to organized group processes rather than being a fixed team attribute (Kwon, 2024). These findings do not establish that cohesion causes motivation, because motivated members may also contribute more strongly to cohesion and both scores may reflect coaching or prior team success.

Research on Unified Sports has concentrated mainly on social inclusion, attitudes, health, and program experiences. The direct association between individually perceived cohesion

and achievement motivation inside one established Unified basketball team remains less clearly documented. An Indonesian case adds evidence from a setting not well represented in the cited literature, but its contribution is analytical rather than national because it provides a transparent within-team estimate based on paired participant scores. Accordingly, this study tested whether higher individual cohesion scores were associated with higher individual achievement-motivation scores among all athletes and partners in the team.

METHODS

Design and Data Provenance

This study is an original cross-sectional correlational study of one Unified basketball team in Yogyakarta, Indonesia. The authors were the original investigators and retained the unpublished participant-level research file, complete item forms, scoring rules, pilot-validation record, and analysis output. The analysis used the original 22 paired records and did not use public or secondary data. Each row represents one participant and all item responses, reverse-scored totals, and reported statistics were checked directly against the file.

The retained records did not include the fieldwork date and ethics approval number, both of which required verification before resubmission. The anonymized analytical file used participant codes P01-P22 and contained no direct identifiers.

Participants and Unit of Analysis

The study used total-population sampling within the team. All 22 members participated, including 10 athletes with intellectual disabilities (45.5%) and 12 Unified partners without intellectual disabilities (54.5%). The available age categories were younger than 16 years ($n = 2$), 16 years ($n = 12$), 17 years ($n = 7$), and 18 years ($n = 1$). The file recorded that male and female members were included but did not retain sex-specific counts. The unit of analysis was the individual participant. Cohesion was operationalized as each member perception of the team, not as a team-average climate. One individual cohesion total was paired with one individual achievement-motivation total for every participant.

Table 1. Characteristics of the Unified Basketball Team ($N = 22$)

Characteristic	Category	n	%
Team role	Athlete with intellectual disability	10	45.45
	Unified partner without intellectual disability	12	54.55
Age	<16 years	2	9.09
	16 years	12	54.55
	17 years	7	31.82
	18 years	1	4.55

Note. Percentages are based on all 22 participants and may differ slightly from 100% because of rounding. Sex-disaggregated counts were not present in the retained file.

Measures

The research team used two study-specific Indonesian-language instruments. Both measures referred to the preceding four weeks, used response categories from 1 (never) to 5 (always), and were administered as individual self-report measures. The Cohesion in Unified Basketball 20-item scale (CUB-C20) covers individual attraction to the group-task, individual attraction to the group-social, group integration-task, and group integration-social. Items

C05, C10, C15, and C20 were reverse scored. The Unified Basketball Achievement Motivation 20-item scale (UB-AM20) covers approach to success in training and competition and avoidance of failure in training and competition. Items AM11-AM20 were reverse scored so that a higher total consistently represented a more adaptive achievement orientation. Each scale yields a continuous total from 20 to 100.

Before the main study, five reviewers representing sport psychology, adapted physical education, measurement, Unified coaching, and accessible language rated every item. Aiken's V ranged from .85 to .90 for relevance and from .75 to .85 for clarity. Items with the lowest clarity ratings were reworded and retained because their relevance ratings remained high. Cognitive interviews with four athletes with intellectual disabilities and four partners examined comprehension, recall of the four-week period, selection among response categories, and use of a response card. Seven of eight participants distinguished all five categories and used the reference period without additional explanation. All eight participants found the basketball examples and numbered response card helpful.

The revised forms were piloted with 40 members of four other Unified basketball teams in Yogyakarta (20 athletes and 20 partners), none entered the main sample. For CUB-C20, corrected item-total correlations ranged from .241 to .722, Cronbach's alpha (α) was .913, and McDonald's omega (ω) was .924. For UB-AM20, the corresponding values were .258-.612, .859, and .886. A 10-day retest with 24 pilot participants produced ICC (2,1) values of .971 for cohesion and .974 for motivation. The pilot was adequate for usability and preliminary score consistency, but not for a definitive factor analysis or measurement-invariance test. This distinction is retained because high internal consistency alone does not demonstrate dimensional validity (Dunn et al., 2014). Complete Indonesian item wording is provided in Appendix A.

Table 2. Instrument Specifications and Score Evidence

Property	CUB-C20	UB-AM20
Target score	Individual perception of team cohesion	Individual achievement orientation
Dimensions	ATG-T, ATG-S, GI-T, GI-S	Approach-success and avoidance-failure in training and competition
Items / response	20 items; 1 (never) to 5 (always)	20 items; 1 (never) to 5 (always)
Reverse scoring	C05, C10, C15, C20	AM11-AM20
Total range	20-100	20-100
Pilot evidence (N = 40)	Aiken V = .75-.90; α = .913; ω = .924	Aiken V .75-.90; α = .859; ω = .886
Main-sample alpha	0.934	0.916

Note. ATG-T = individual attraction to the group-task; ATG-S = individual attraction to the group-social; GI-T = group integration-task; GI-S = group integration-social. Pilot values refer to participants who were not included in the main study.

Accessible Administration and Scoring

Data collection used a quiet setting and standardized instructions. Participants first practiced the response categories. They could complete the forms independently or have each item read aloud by a trained administrator, and a large-print numbered response card was available. Administrators could repeat an item or point to the response choices but did not interpret the participant intended answer or recommend a category. The two forms required approximately 20-30 minutes. No item-level responses were missing. Reverse scoring was applied before the four subscale scores and each total score were calculated.

Statistical Analysis

Analyses used the 22 paired individual totals. Means, standard deviations, medians, and observed ranges described both variables, while Cronbach's alpha summarized internal consistency in the main sample. The assumptions for Pearson correlation were examined from the participant-level data using scatterplot form, Shapiro-Wilk tests for each total and the regression residuals, studentized residuals, Cook's distance, and leave-one-out estimates. Pearson's product-moment correlation was reported with a two-sided p value and a 95% confidence interval calculated with Fisher's z transformation. The coefficient of determination was computed as r squared and interpreted only as shared variance. Spearman's rho served as a rank-based sensitivity analysis. The significance level was .05.

RESULTS

CUB-C20 total averaged 61.23 (SD = 15.76; median = 61; observed range 29-85). UB-AM20 total averaged 59.45 (SD = 14.97; median = 57.5; observed range 35-91). The main-sample internal consistency estimates were .934 and .916, respectively. Table 3 reports these score properties.

Table 3. Descriptive Statistics and Internal Consistency for The Main Sample

Measure	n	M	SD	Median	Observed range	Alpha
Team cohesion (CUB-C20)	22	61.23	15.76	61.00	29-85	.934
Achievement motivation (UB-AM20)	22	59.45	14.97	57.50	35-91	.916

Note. Both scores have a possible range of 20-100. Alpha was recalculated from the 20 scored items in the participant-level dataset.

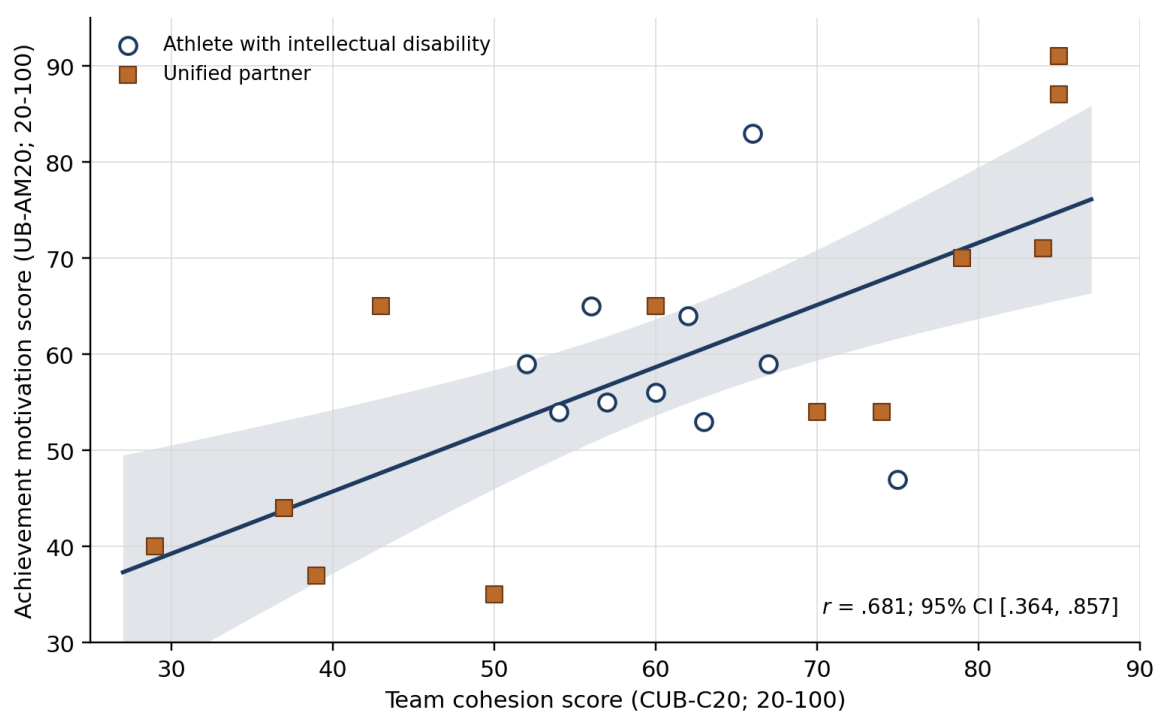
The scatterplot was compatible with an approximately linear positive pattern. Normality was not rejected for cohesion ($W = 0.970$, $p = 0.719$), motivation ($W = 0.958$, $p = 0.447$), or the regression residuals ($W = 0.984$, $p = 0.963$). The largest absolute studentized residual was 1.98. Participant P22 had the largest Cook's distance (0.223), removing one case at a time yielded Pearson coefficients from 0.629 to 0.744. Thus, the direction and substantive size of the relationship did not depend on one observation.

Team cohesion and achievement motivation were positively associated, $r(20) = .681$, $p < .001$, 95% CI [.364, .857]. The interval indicated appreciable uncertainty, values from a moderate to a strong positive relationship remained compatible with the data. The corresponding r squared was .464, or 46.4% shared variance. It did not indicate that cohesion caused 46.4% of motivation. The rank-based sensitivity analysis was also positive, Spearman's $\rho = .592$, $p = .004$. The reported positive association was therefore consistent with the directional hypothesis within this team.

Table 4. Primary Association and Sensitivity Estimate

Association	n	Pearson r	95% CI	p	r ²	Spearman rho	p
CUB-C20 with UB-AM20	22	.681	[.364, .857]	<.001	.464	.592	.004

Note. All probability values are two-sided. The confidence interval for Pearson r used Fisher's z transformation. r² is shared variance, not a causal proportion.

**Figure 1.** Participant-Level Relationship between Team Cohesion and Achievement Motivation

DISCUSSION

The principal finding is a positive association between individual perceptions of team cohesion and individual achievement-motivation scores in one Unified basketball team. The point estimate is substantial, but the confidence interval is wide enough to support several effect magnitudes. The result should therefore be read as a bounded within-team estimate rather than a precise value for Unified basketball generally. The agreement between Pearson and Spearman results, together with the leave-one-out range, reduces concern that the finding arose solely from one extreme case, although the small sample still limits stability.

The association is theoretically coherent with the task and social components of cohesion. In basketball, shared task goals and predictable cooperation can make individual effort more consequential, whereas social acceptance can make errors less costly to the member standing in the group. Those conditions may support persistence and willingness to face challenge, which are represented in the achievement-motivation score. This interpretation is consistent

with sport research that places cohesion and motivation within the same relationship climate (Freire et al., 2022) and with self-determination accounts of competence, autonomy, and relatedness (Jowett et al., 2017; Ryan & Deci, 2020). However, none of these processes was tested as a mediator, and the present coefficient cannot distinguish between cohesion influencing motivation and motivated members contributing more strongly to cohesion.

The Unified context changes the practical meaning of a cohesion score. Cohesion should not be equated with smooth play if coordination is achieved through partner control or reduced decision opportunities for athletes with intellectual disabilities. Participant accounts in earlier Unified research emphasize equality, participation, connection, and assistance that does not erase membership (McConkey et al., 2019). The CUB-C20 therefore included perceived role fairness and equal treatment alongside conventional task and social content. The current sample was too small for defensible athlete-partner comparisons or measurement-invariance testing. The different plotting symbols in Figure 1 are descriptive only.

Both instruments were documented through their item wording, response anchors, scoring rules, pilot work, and participant-level responses. The current total-score alphas were high, and the pilot included expert review, cognitive interviews, item analysis, omega, and retest agreement. Accessible self-report is defensible when wording and response supports are tested with people with intellectual disabilities rather than replaced by proxy judgment (Kooijmans et al., 2024; Kramer et al., 2023). Even so, the $N = 40$ pilot was not large enough to confirm the four-dimensional structures or to establish measurement invariance. The total scores should therefore be interpreted as study-specific global indices pending larger psychometric studies.

For coaching practice, the finding justifies attention to how cohesion is experienced, not a claim that a cohesion intervention will raise motivation. Coaches can examine whether shared goals require meaningful contributions from both roles, whether help is requested or imposed, and whether feedback allows a player to attempt the next decision. Team-building evidence suggests that structured group processes can affect cohesion, especially its task component (Kwon, 2024), but those interventions and outcomes were not evaluated here. Any coaching program derived from this result should be tested prospectively with behavioral indicators and repeated participant reports.

Several limitations remain. The sample is a census of one team, not a probability sample of Unified Sport participants. The cross-sectional design cannot establish temporal order or rule out common influences, such as coaching style, attendance, prior success, or response tendencies. Age was retained only in categories, sex-specific counts and playing history were unavailable, and the sample did not support subgroup modeling. The main study was also too small for confirmatory factor analysis. Finally, the exact fieldwork date and ethics approval identifier were not included in the retained study files and require verification from official records before resubmission. Future studies should recruit multiple teams, preserve governance and administration logs, test factor structure and invariance, distinguish within-team from between-team effects, and follow cohesion and motivation across a season.

CONCLUSION

Within this single Yogyakarta Unified basketball team, members who reported stronger cohesion also tended to report stronger achievement motivation. The corrected coefficient of determination indicates shared variance rather than a causal proportion. The finding is limited to 22 paired individual scores from one team and cannot be generalized to Unified Sport programs as a whole. It supports further study of cohesion and motivation using fully documented and accessible measures, repeated observations, and samples large enough to examine athletes and partners without conflating individual perceptions with team-level climate.

DATA AVAILABILITY

The anonymized participant-level item responses, scoring documentation, and pre-use validation record accompany the submission. Access beyond the journal review process is subject to participant permissions and the investigator institutional requirements.

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AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. The authors confirmed that the paper was free of plagiarism.

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