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SILENT SIGNALS: THE ROLE OF NONVERBAL COMMUNICATION IN TEAM SPORTS

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Abstract: *This article aims to analyze the role of nonverbal communication (NVC) in sports with a particular focus on how athletes and coaches use gestures, eye contact, touch, and other nonverbal elements to facilitate coordination, enhance motivation, improve performance, sustain team cohesion and optimize decision making. It synthesizes findings from 20 empirical and theoretical studies published between 2011 and 2024 that met the following criteria: explicit focus on NVC in sport or sport education; outcomes related to coordination, performance, motivation, decision-making, or cohesion.*

The paper emphasizes how nonverbal communication—including body language, facial expressions, gaze behavior, gestures, paralanguage, and haptic communication—contribute to effective decision-making, performance optimization, and interpersonal synchronization in high-stakes, time-sensitive sporting environments.

Keywords: *nonverbal communication; team sports; performance; motivation; body language.*

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INTRODUCTION

Nonverbal communication (NVC) refers to the transmission of meaning through behaviors that do not rely on spoken language. Within sport contexts, nonverbal cues often assume heightened significance due to the rapid, high-pressure, and auditory-challenging environments in which athletes and coaches interact. Effective performance depends not only on physical and technical proficiency but also on the efficient exchange of information, much of which occurs through nonverbal modalities. Consequently, NVC plays a critical role in shaping interpersonal dynamics and influences coordination, decision-making, performance outcomes, motivation, and team cohesion.

Athletes and coaches employ a broad repertoire of nonverbal behaviors—including facial expressions, gaze patterns, gestures, posture, touch, paralanguage, and spatial positioning—to express affect, communicate intentions, and regulate collective action. These behaviors can directly influence competitive performance; for example, a coach's assertive gesture may communicate strategic urgency, while a team captain's confident posture may reinforce collective efficacy.

Although the relative weight of nonverbal versus verbal communication remains debated, foundational research by Mehrabian (1971) underscores the substantial contribution of nonverbal signals to face-to-face interaction, estimating that 55% of communicative meaning is derived from body language, 38% from vocal tone, and merely 7% from verbal content. This framework has informed subsequent investigations into the communicative demands of sport.

This paper synthesizes empirical and theoretical research from the past two decades to examine the diverse functions of NVC in sport, with particular attention to emotional expression, tactical signaling, haptic interaction, and leadership processes. It evaluates how these mechanisms support athletic execution, enhance coaching effectiveness, and inform pedagogical models in sport education. Drawing on 20 peer-reviewed studies across various sporting contexts—including basketball, soccer, volleyball, handball, golf, and mixed-team settings—the review highlights the centrality of nonverbal communication in both sport performance and instructional practice.

LITERATURE REVIEW

Nonverbal communication has been shown to play a crucial motivational and affective role in sport education contexts, shaping athletes' emotional experiences, commitment, and satisfaction.

Coordination

In team sports, shared gaze behavior allows players to anticipate each other's actions, align spatial awareness, and respond rapidly to dynamic changes in the environment without relying on verbal cues. Coordinated gaze patterns—such as joint attention to a target, mutual eye contact, or synchronized scanning of opponents and teammates—serve as nonverbal signals that enhance situational understanding, cohesion, and trust among teammates. Teams with well-coordinated gaze demonstrate improved passing accuracy, tactical adaptation, and overall performance, as gaze acts both as an indicator and facilitator of shared intentions, enabling athletes to execute complex strategies under time pressure. Studies using eye-tracking and motion analysis show that athletes rely on gaze direction and subtle posture shifts to anticipate teammates' movements.

Eccles and Tran (2012) emphasized that achieving team coordination requires effective communication about roles, responsibilities, and shared game plans. Their example of a quarterback and receiver exchanging raised eyebrows after a miscommunication illustrates how nonverbal cues signal the need to realign collective understanding. Building on the importance of nonverbal sensitivity, Lausic, Razon, and Tenenbaum (2014) demonstrated that doubles tennis teams with higher sensitivity to nonverbal cues and consistent implicit communication showed superior coordination and performance, highlighting that nonverbal attunement is central to successful team synchronization. Advancing methodological approaches, Fasold et al. (2021) used mobile eye-tracking technology to study three-person basketball officiating teams in dynamic real-world settings. By capturing simultaneous gaze data and analyzing it with custom software, they revealed how groups collectively distribute visual attention and how such patterns can be used to enhance training for athletes and officials. Most recently**,** Ono, Yoshimura, Shinkai, and Kizuka (2024) examined expertise differences in eye–head coordination during a ball-catching task, showing that skilled softball players exhibited lower head and eye velocity than tennis players or novices. This more stable and efficient gaze strategy suggests that expert athletes conserve attentional resources and rely on refined perceptual mechanisms for anticipating and executing movement. Together, these chronologically aligned studies demonstrate the evolution of research on coordination—from

foundational understanding of communication demands, to the role of nonverbal sensitivity, to advanced gaze-tracking analyses—highlighting how shared perceptual strategies underpin real-time team cohesion and performance.

Performance

Research on performance in sport demonstrates that nonverbal behaviour, emotional expression, communication dynamics, and posture exert substantial influence on athletes' outcomes. Early work by Furley, Dicks, and Memmert (2012) showed that dominant versus submissive body language in soccer shapes observers' expectations of success, with dominant preparatory cues—such as forward-facing orientation, longer preparation duration, and assertive posture—leading to more favourable judgments of penalty takers. Their experimental video manipulations indicated that submissive displays were associated with lower perceived likelihood of success. Additional evidence emerged from Bijlstra, Furley, and Nieuwenhuys (2020), who found that goalkeepers not only judged dominant penalty takers more favourably but were also less accurate in predicting shot direction when faced with dominant body language. This suggests that dominant nonverbal cues can directly impair an opponent's perceptual–motor accuracy during performance situations.

At the team level, Lower-Hoppe et al. (2020) examined communication networks in Division I football and found that team captains' centrality within communication structures positively related to performance in the previous week, underscoring the role of intrateam communication leadership in shaping performance trajectories. Shifting toward coach–athlete interactions, Moll and Davies (2021) investigated how coaches' nonverbal emotional displays—pride, shame, happiness, or neutrality—affect athletes' emotional states and performance in a football passing task. Their results showed that pride and happiness improved performance outcomes, especially when the athlete–coach relationship was strong, whereas shame and neutral cues failed to yield similar benefits and sometimes impaired performance. Nonverbal expressiveness also plays an important role in athletes' behavioural presence during competition; using a longitudinal cross-lagged panel model, Buenemann and Schweizer (2021) demonstrated that nonverbal behaviour in basketball at time t–1 significantly predicted performance at time t, whereas performance did not predict subsequent nonverbal behaviour. This suggests that dominant or assertive nonverbal cues may enhance short-term performance but are not simply consequences of previous performance levels.

The importance of communication skills in regulating performance is further evidenced in studies of team sports. Bedir, Agduman, Bedir, and Erhan (2023) found that communication skills mediated the effects of empathy and team cohesion on performance among curlers competing in the Turkish Curling League, indicating that communication competence strengthens the pathway through which socio-emotional processes translate into competitive outcomes. Similarly, Ben Chikha, Zoudji, and Khacharem (2023) showed that coaches' pointing gestures significantly improved novices' recall performance, visual search behaviour, and reduced mental effort when interpreting tactical diagrams, particularly in conditions involving complex content. Experts benefited from gestures primarily when content complexity increased, suggesting that pointing cues support cognitive processing under demanding conditions. More recent research has highlighted the emotional and multimodal dimensions of nonverbal communication on performance. Decarli, Vitali, Zasso, and Franchin (2024) demonstrated that synchronized ice skaters' emotional states and team performance were shaped by coaches' facial expressions, with pleasant expressions enhancing arousal, hedonic tone, and affect, while unpleasant expressions altered performance trajectories depending on relational familiarity. Expanding this multimodal perspective, Rahmalina, Putri, Hilmi,

Sirait, and Kurniati (2024) examined elite badminton players and found that nonverbal communication—including facial expressions, body movements, and intonation—was far more dominant than verbal communication during high-pressure moments. Their three-stage qualitative analysis showed that differences in teams' nonverbal patterns influenced performance outcomes, reinforcing the role of nonverbal cues in regulating emotions, cohesion, and strategic coordination. Horcajo, Mateos, and Tannion (2024) demonstrated across three studies that upright posture validates positive self-talk, improving performance in tasks such as soccer dribbling, push-ups, and pull-ups. Perceived validity of self-statements and self-efficacy mediated these effects, indicating that posture modulates how strongly athletes believe in and benefit from their self-talk. A parallel description of their findings, provided by Horcajo, Mateos, and Tannion (2024), further notes that upright posture enhances the performance benefits of positive self-talk, whereas slumped posture reduces its impact by undermining perceived credibility of one's internal statements. Collectively, these chronologically ordered studies show that performance is shaped by a complex interplay of nonverbal behaviour, emotional expression, communication structures, gesture use, multimodal interaction, and posture-supported psychological processes.

Motivation

Motivational dispositions influence how athletes perceive and interpret nonverbal cues in competitive settings. Furley, Schweizer, and Wegner (2019) demonstrated that individual differences in implicit motivational needs shape the decoding of nonverbal behaviour in sport. In their study, participants viewed video clips of elite athletes displaying either dominant or submissive body language and judged whether the athletes were leading or trailing in competition.

The findings revealed that individuals with a stronger implicit power motive were significantly more accurate in detecting submissive nonverbal cues, while their ability to perceive dominant cues did not differ from those with lower power motives. This pattern suggests that the implicit power motive heightens sensitivity specifically to indicators of submissiveness, highlighting that motivation-related traits systematically influence how observers interpret nonverbal signals and social hierarchies in sport performance contexts.

Decision-Making and Team Cohesion

Research on decision-making and team cohesion consistently shows that communication quality—both verbal and nonverbal—plays a central role in shaping how athletes coordinate, regulate conflict, and commit to collective goals. The foundational work of Sullivan and Short (2011) strengthened the assessment of communication in sport by refining the Scale for Effective Communication in Team Sports (SECTS). Across two studies, confirmatory factor analyses supported a four-factor structure, and the scale demonstrated strong construct validity through its positive correlations with team cohesion.

Their second study further showed that team performance was negatively associated with the communication dimension of *Distinctiveness*, suggesting that communication patterns vary in their functional relevance for team success. Building on this, Kim, Magnusen, and Andrew (2016) used cohesion as a moderating variable to demonstrate that intra-team communication exerts an indirect effect on team commitment through both task and social cohesion. In their study of 340 intercollegiate athletes in Hong Kong, the acceptance dimension of intra-team communication predicted higher cohesion, whereas negative conflict predicted lower cohesion.

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These patterns were echoed by McLaren and Spink (2017), who found that among 139 youth soccer players, positive and negative conflict communication strongly predicted both task and social cohesion. Acceptance emerged as a predictor of task cohesion, while distinctiveness predicted social cohesion, underscoring the nuanced ways communication behaviors influence different dimensions of team functioning. More recently, Aznan, Rafi, Kassim, Miswan, and Samat (2022) examined how communication barriers affect team cohesion in volleyball and handball athletes, highlighting how decision-making processes and team coordination suffer when communication obstacles arise during training or competition. Using data from 231 athletes who completed the Communication Barriers Questionnaire and the Group Environment Questionnaire, they found a strong association between athletes' awareness of communication barriers and higher levels of team cohesion. Importantly, athletes who were more aware of communication obstacles were better able to address and overcome these issues, resulting in stronger unity and more effective interaction. Collectively, these chronologically aligned findings demonstrate that communication—its clarity, acceptance, conflict management, and barriers—plays a fundamental role in shaping team cohesion and decision-making processes across various sports contexts.

METHODOLOGY

This paper does not present new empirical research but synthesizes existing studies from communication science and sports psychology, supported by illustrative case examples from a wide range of sports. A review of 20 studies was conducted to examine the central role of nonverbal communication in team sports performance. Articles were selected based on their relevance to five core constructs:
(1) coordination,
(2) performance,
(3) motivation,
(4) decision-making, and
(5) team cohesion.

A targeted search was conducted across Google Scholar, Scopus, Web of Science, ResearchGate, Scopus and Frontiers. Search terms included combinations of: *nonverbal communication*, *body language*, *gaze behaviour*, *gesture*, *posture*, *paralanguage*, *team cohesion*, *coordination*, *decision-making*, *motivation*, *sport performance.* Studies were included if they examined nonverbal communication within a sport or sport-education context, reported empirical findings or theoretical insights relevant to one of the five target constructs, focused on athletes, coaches, or sport teams and used a recognized scientific methodology (experimental, observational, survey, qualitative, or technological approaches such as eye-tracking).

This methodological approach allows for a systematic, evidence-based understanding of how nonverbal communication functions not as a peripheral aspect of sport, but as a fundamental mechanism supporting athlete interaction and collective performance.

RESULTS AND DISCUSSION

Across the 20 studies reviewed, nonverbal communication emerged as a fundamental mechanism shaping athletes' coordination, performance, motivation, and team functioning. Research on coordination consistently showed that athletes rely heavily on shared gaze behaviour, perceptual

attunement, and implicit sensitivity to partners' movements to execute rapid, context-dependent actions. Eye-tracking studies revealed that experts develop efficient gaze–head strategies that conserve attentional resources, while earlier work emphasized how even minimal cues—such as eye contact or raised eyebrows—signal shifts in shared understanding. These findings collectively indicate that effective coordination is grounded not in verbal exchange, but in the subtle, continuous flow of nonverbal signals that align situational awareness and support real-time team cohesion.

Performance-related evidence further underscored the power of nonverbal communication in shaping competitive outcomes. Dominant postures, expressive facial expressions, and confident gestures enhanced both athletes' own performance and observers' expectations of success, while multimodal communication patterns were shown to guide emotional regulation, strategic decision-making, and cognitive processing under pressure. Coaches' emotional expressions influenced athletes' arousal and execution, and posture-based interventions strengthened the effects of positive self-talk on performance.

Motivation findings indicate that nonverbal communication interacts with internal psychological processes. Individuals high in implicit power motive showed greater sensitivity to submissive nonverbal cues, demonstrating that motivational dispositions influence how athletes perceive interpersonal signals. Posture-based studies also reveal that upright, validating nonverbal displays enhance the effectiveness of positive self-talk, increasing self-efficacy and physical performance. These findings suggest that motivation in sport is partly constructed through body-based signals that regulate confidence and cognitive appraisal.

Decision-making and cohesion results emphasize the importance of communication quality within teams. Acceptance and constructive forms of communication consistently predicted both task and social cohesion, whereas negative conflict hindered unity. Awareness of communication barriers emerged as a protective factor, helping athletes anticipate and navigate interaction challenges during training or competition. Measurement studies demonstrated strong links between effective communication patterns and cohesion, supporting the idea that decision-making is strengthened when teams maintain clear, open, and adaptive communication structures.

Together, these results demonstrate that nonverbal communication is not peripheral but central to athletic behaviour, functioning as a key driver of synchronization, psychological readiness, relational dynamics, and overall team performance. It facilitates the alignment of perceptual frames, shapes emotional and motivational states, influences performance outcomes, and supports cohesive decision-making processes within teams. Across all sports and methodologies represented, nonverbal behaviour emerges as a multi-level mechanism—operating moment to moment within plays, across relationships such as coach–athlete or captain–team, and throughout longer-term team dynamics. This integrated evidence underscores the need for sport practitioners to incorporate nonverbal awareness, perceptual training, emotional expression, and posture-based interventions into coaching, leadership development, and athlete support programs.

CONCLUSIONS

This paper demonstrated that nonverbal communication is integral to athletic performance and team functioning shaping how athletes coordinate actions, interpret intentions, regulate emotions, and sustain team cohesion across a wide range of sports. Effective coordination depended on shared perceptual processes, while performance was strongly influenced by both athletes' and coaches' nonverbal expressiveness. Motivation was shown to interact with bodily cues, and decision-making

benefited from communication patterns that supported clarity, acceptance, and constructive conflict management.

These findings highlight the importance of integrating nonverbal awareness, perceptual–cognitive training, and communication-focused leadership into coaching practice. Future research should expand multimodal methods and intervention-based studies to better understand how nonverbal communication can be systematically trained and leveraged to improve team effectiveness and athlete performance. For coaches and educators, embedding NVC training into sport pedagogy provides a silent but powerful tool to elevate performance and learning.

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