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Comparative Study of Level of Aggression, Reaction Time and Balance Ability between Team Players and Individual Players of Kuvempu University

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ABSTRACT

The role of physical education extends beyond physical conditioning to the integration of psychological components that influence athletic performance. The present study examined and compared aggression, reaction time, and balance ability between individual and team game players of Kuvempu University. Sixty participants (30 from individual sports wrestling, judo, table tennis and 30 from team sports football, kabaddi, handball) participated in the study. Measures included the Buss-Perry Aggression Questionnaire, an audio-visual reaction timer, and the Y-Balance Test Kit. Data were analyzed using an independent t-test with a significance threshold of 0.05. The findings revealed a significant difference in aggression scores: individual players exhibited higher aggression levels (M=97.20±17.45) compared to team players (M=87.60±8.83). However, no significant differences were observed in reaction time or balance ability between groups. The study concludes that psychological factors, particularly aggression, are more prominent among individual athletes, possibly due to their elevated sense of responsibility and competitive stress. Recommendations are made for targeted psychological training to ensure optimal performance

outcomes.

INTRODUCTION

The most crucial component of general education is physical education. It is education through physical activities, which means that just as much weight is placed on physical aspects in physical education as on psychological ones. Human development as a whole is the goal of education. Through physical activities, physical education promotes a child's complete development and is not a substitute for regular education (Sukashant and Patil, 2013). Children are naive at birth, and they pick up nearly all of their virtues and vices from the sociocultural context in which they are raised. Instead of being inherited at birth, the majority of their traits—both social and antisocial—are created and evolved over the course of their individual and collective lives. Aggression is a significant human motivation and a significant aspect of personality. Pushing, elbowing, grabbing, and hitting are examples of physical aggression that are used to obtain and hold onto the ball in this contact sport. To make it easier for other teammates to score, a team may deploy its most aggressive players to block or cripple the best opponents. The aggressive player's teammates may become more self-assured and effective as a result, gaining prestige and enjoyment from controlling others without putting themselves in danger. (Arjun Singh, 2016).

Aggressive behavior has historically proven detrimental, much like a physical assault. According to Sigmund Freud, aggression is created in the body and expelled through excessively violent behaviors that escalate to a dangerous and unbearable degree in situations involving discrimination, speech, drugs, sports, exercise, etc. aggressiveness is defined as the damage of property, physical harm, and psychological harm that can result from verbal and physical aggressiveness. Aggression, according to some sports psychologists, is a behavior whose sole intent is to do harm to the target. According to Cashmere, aggression is defined as behavior that demonstrates a desire to do bodily or psychological harm to another person. (Harpartap Singh, 2018). Since psychological factors play a significant role in athletic performance, psychological training is also required. Motivation, aspiration, anxiety level, arousal, hostility, and team cohesion are examples of psychological criteria (Sukashant and Patil, 2013).

Sport aggression

Numerous studies on sport-related violence have concentrated on specific situational causes, examining factors associated with its occurrence within a sporting context. Aggression entails directional components, some being verbal, while in their most severe forms, leading to self-destructive actions like suicide. The perceived positive link between violence and success in sports is not surprising. Aggression,

characterized as inflicting an aversive stimulus on another person, whether physically, verbally, or gesturally, represents a behavioural act rather than an attitude. It materializes through actions intended to harm others, encompassing various athlete and spectator behaviours such as striking a fellow team member, engaging in physical violence, and issuing threats of harm or intimidation.

Balance ability in sports

The ability to coordinate is a manifestation of motor coordination, which is essential for athletic motions. Coordination skills are a major factor in movement quality. A movement's rhythm, flow, accuracy, consistency, amplitude, and other characteristics are all manifestations of motor coordination, making them heavily reliant on the degree of different coordination skills. Therefore, coordination is necessary for all sports, whether they are contact, semi-contact, or non-contact, but it can be challenging to determine which sports call for which kind of coordination. The capacity to stay balanced when moving the entire body and to rapidly return it after a balance-disturbing movement is known as balancing ability.

Reaction time ability in sports

The capacity to respond swiftly and efficiently to a signal is known as reaction ability. Although both skills are crucial in many activities and sports, it can be challenging to determine which sports call for which skills (Bisht, R. et al., 2017). Sports have become an integral aspect of modern life. It is a well-known truth that, in addition to other aspects, an individual's performance in any game or sport is primarily influenced by physical, physiological, and psychological factors. Physical, mental, and physiological capacities, as well as personality qualities, vary from person to person. Sports are about having fun and competing (Pintu Debnath, 2020).

However, limited comparative evidence exists regarding aggression, reaction time, and balance ability between team and individual athletes at the university level. This study seeks to fill that gap with a structured comparative analysis among Kuvempu University players.

Methodology

Participants

A total of 60 student-athletes from Kuvempu University were sampled:

- Team games (N=30): Football, Kabaddi, Handball (10 each)

- Individual games (N=30): Wrestling, Judo, Table Tennis (10 each)

Variables and Measures

- Aggression: Buss-Perry Aggression Questionnaire (29 items, Likert 5-point scale).
- Reaction Time: Audio/Visual reaction timer (milliseconds/seconds).
- Balance Ability: Y-Balance Test Kit (cm).

Table 1. Variables and Measurement Instruments

Variable	Test	Measurement Unit
Aggression	Buss-Perry Questionnaire	Points
Reaction Time	Audio/Visual timer	ms/sec
Balance Ability	Y-Balance Test Kit	Centimeters

Test Procedure

Data were collected during tournaments. For aggression, questionnaires were administered with oral instructions to ensure proper comprehension. Reaction time was recorded under controlled laboratory conditions. Balance was assessed via the standard Y-Balance procedure.

Statistical Analysis

Independent t-tests compared group means at the 0.05 level of significance.

Results

Table 2. Mean and S.D of Variables Across Groups

Variables	Individual Players (M±SD)	Team Players (M±SD)
Aggression	97.20 ± 17.45	87.60 ± 8.83
Reaction Time	0.24 ± 0.05	0.23 ± 0.04

Variables	Individual Players (M±SD)	Team Players (M±SD)
Balance Right Leg	1.22 ± 0.13	1.22 ± 0.12
Balance Left Leg	1.28 ± 0.15	1.23 ± 0.11

Table 3. Independent t-test Results

Variables	t-value	p-value	Significance
Aggression	2.475	0.019	Significant
Reaction Time	0.812	0.424	NS
Balance (Right Leg)	0.042	0.967	NS
Balance (Left Leg)	1.218	0.233	NS

- **Aggression**: Significant difference—individual players more aggressive.
- **Reaction Time**: No significant difference.
- **Balance Ability**: No significant difference (both legs).

Discussion

The study demonstrated that individual athletes exhibit greater aggression than team players. Several factors may explain this:

1. *Personal Accountability*: Individual athletes bear full responsibility for performance, heightening stress responses.
2. *Opponent Contact*: In close-contact individual sports (e.g., wrestling, judo), frequent physical collisions may escalate aggression.

3. *Psychological Load*: The absence of teammates during performance amplifies competitive anxiety.

Conversely, team games distribute performance pressure. Social regulation within teams could provide a moderating effect, reducing overt aggression. This aligns with findings by Kanthraj (2016) that contact games elevate aggressive behavior.

Reaction time did not differ significantly, though prior studies (Turkeri et al., 2019) observed faster reactions in team players due to continuous practice in decision-making under pressure. Findings here suggest reaction ability may be influenced by training protocols more than game type,

Balance ability was nearly identical, suggesting balance improvements rely more on overall physical conditioning than sport type.

Conclusion

The study concludes that:

- Aggression is significantly higher among individual athletes than team players.
- No differences were evident in reaction time or balance ability.
- Psychological preparation is critical, particularly for individual athletes, to channel aggression constructively.

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