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## Mental toughness in sport: In case of Mekelle university sport teams

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### Abstract

The purpose of this study was to examine the psychological profiles on mental toughness of Mekelle university Sport teams which participated in 8th public Universities sport festival hold in Adama University 2015. Thirty seven male athletes of the university team were selected as subjects belonging to three teams namely; Football (n=16); basketball (n=11); volleyball (n=10). Mental toughness questionnaire of Tiwari and Sharma (2006) was administered. Mean, standard deviation and one-way ANOVA were computed to compare means for differences among different teams. Level of significance was set at 0.05. Results revealed no significant difference on sub scales of mental toughness with regards to; self-confidence ( $p = .280 > .05$ ); motivation ( $p = .976 > .05$ ); goal setting ( $p = .099 > .05$ ); and visual imagery ( $p = .643 > .05$ ); in basketball, volleyball and football teams. Significant difference was seen on sub scales of mental toughness on; attention control ( $p = .01 < .05$ ); attitude control ( $p = .001 < .05$ ) and on overall mental toughness ( $p = .04 < .05$ ) in football, basketball and volleyball teams.

**Keywords:** Football, Basketball, Volleyball, Mental toughness, Comparison

### Introduction

Mental toughness is a collection of values, attitudes, behaviors and emotions, which enable an individual to persevere and overcome any obstacle, adversity or pressure experienced, but also to maintain concentration and motivation when things are going well, to consistently produce high levels of performance. In today's competitive scenario, the sportspersons, coaches, trainers and all other concerned with sports cannot depend only on physical fitness alone, they have to identify and determine psychological attributes which affects the performance.

Mental Toughness is a characteristic many believe to be important for success in sport; many coaches view mental toughness as a quality that must be considered in the recruitment of athletes as described by Weinberg, Butt, & Culp (2011). Gould *et al.* (1987) expressed that in fact, some view mental toughness as the most important psychological attribute in determining success. Fourie and Potgieter (2001) analyzed written responses from 131 expert coaches and 160 elite athletes. Their analysis identified twelve components of mental toughness including: motivation level, coping skills, confidence maintenance, cognitive skill, discipline and goal directedness, competitiveness, possession of prerequisite physical and mental requirements, team unity, preparation skills, psychological hardiness and ethics.

Jones *et al.* (2002) defined mental toughness as the natural or developed psychological edge that enables you to generally cope better than your opponents with the many demands that sport places on a performer. In contrast further work was needed to finalize a working definition of mental toughness. Specifically, be more consistent and better than your opponents in remaining determined, focused, confident, and in control under pressure. Middleton *et al.* (2004)<sup>[9]</sup> interviewed athletes from a variety of sports and proposed that the mental toughness is strong determination in the face of adversity. Clough *et al.* (2002) used four C's to describe mental toughness as challenge, commitment, control and confidence. While variability among the definitions exists, mental toughness related with the skillful demonstration of collection of psychological skills.

Kioumourtzoglou *et al.* 37, (1998) "Cognitive, Perceptual, and Motor Abilities in Skilled Basketball Performance." The differences among athletes of differing skill should assist successful identification and selection of the best athletes in a specific sport.

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For the purpose of this study, a laboratory study was conducted with a group of 13 men on the elite male national team of basketball players, 22 to 23 years of age, and a control group of 15 men of equal age (physical education class) to 69 assess differences in their scores on cognitive skills (memory- retention, memory-grouping analytical ability), perceptual skills (speed of perception, prediction, selective attention, response selection), and motor skills (dynamic balance, whole body coordination, wrist-finger dexterity, rhythmic ability). Analysis showed that elite male basketball players scored higher on hand coordination and lower on dynamic balance given their anthropometric measurements. Elite players were better on memory retention, selective attention, and on prediction measures than the control group. The above skills are important in basketball performance. Researchers may examine whether other factors contribute more in the development of perceptual and cognitive skills.

The concept of mental toughness has recently attracted significant attention from school and sport psychology researchers attempting to understand how psychological factors can underpin success in sport (Bull, Shambrook, James, & Brooks, 2005; Gucciardi, Gordon, & Dimmock, 2007; Jones, Hanton, & Connaughton, 2007) [5]. It's widely accepted by coaches and athletes that mental toughness is the most important psychological characteristic that determines athletic success. Loehr (1986) reported both athletes and coaches admitted that at least fifty percent of success is due to psychological factors that reflect mental toughness. Acknowledging the essential need of mental toughness, coaches have come to agree that mental toughness is a factor that could determine the success of an athlete (Gould, Hodge, Peterson & Petlichkoff, 1987) and it is also seen as an important element that could shape a successful athlete to be a champion (Norris, 1999)

**Purpose of the Study**

Although researchers have found that mental toughness have a better impact on athletes' performance, but In Ethiopia public Universities sport festival not many studies in this area of research. Therefore, in order to explore the mental toughness among mekelle university sport teams specifically, the study sought to:

- To Assess psychological profile on mental toughness among mekelle university sport teams
- To compare the mental toughness between Football, Basketball, Volleyball teams

**Materials and Methods**

**Subjects:** Thirty seven male players were selected as subjects belonging to three teams namely; Football (n=16); basketball (n=11); volleyball (n=10) of age ranging from 18 to 25 years old. All the participants were informed about the aim and methodology of the study and they volunteered to participate in this study. The purposive random sampling technique was used to select the subjects.

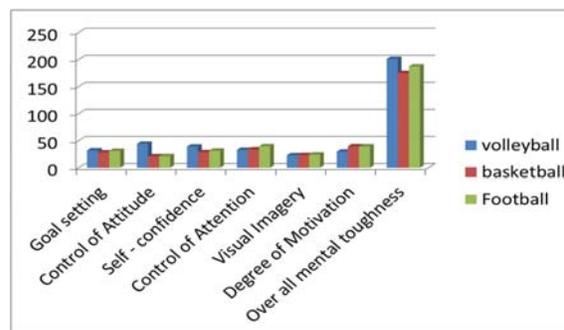
**Statistical Analyses:** Data was analyzed using SPSS Version 20.0 (Statistical Package for the Social Sciences, version 20.0, SPSS Inc, and Chicago, IL, USA). The mean, standard deviation along with t test were computed to check the differences between samples mean of the teams. The level of statistical significance was set at 0.05 levels.

**Results and findings**

**Table 1:** Mean and Standard Deviation of Teams

Sub scales	N0	Mean	Std. Dve
<b>Results of football team</b>			
Goal setting	16	31.12	2.74
Control of Attitude	16	21.37	3.2
Self - confidence	16	31.37	4.1
Control of Attention	16	39.62	4.03
Visual Imagery	16	24.25	2.43
Degree of Motivation	16	39.37	4.30
Over all mental toughness	16	187.12	15.11
<b>Results of basketball team</b>			
Goal setting	11	28.28	4.53
Control of Attitude	11	21.14	3.33
Self - confidence	11	28.71	3.68
Control of Attention	11	33.85	6.86
Visual Imagery	11	23.28	2.81
Degree of Motivation	11	39.57	3.59
Over all mental toughness	11	174.85	17.71
<b>Results of volleyball team</b>			
Goal setting	10	32	2.4
Control of Attitude	10	44.25	2.21
Self - confidence	10	39	4.54
Control of Attention	10	33	1.82
Visual Imagery	10	23	2.38
Degree of Motivation	10	29.75	1.5
Over all mental toughness	10	201	5.71

\*p < 0.05



**Fig 1:** Mean Scores of Different Sport Teams on mental toughness

**Table 2:** Analysis of Variance of Mental Toughness in football, Basketball and volleyball Teams in Mekelle University

Sub Scale	F- value	df	P- value
Goal setting	2.681	2,18	.099
Control of Attitude	12.508	2,18	001*
Self - confidence	1.378	2,18	.280
Control of Attention	5.7	2,18	.01*
Visual Imagery	.453	2,18	.643
Degree of Motivation	.025	2,18	.976
Over all mental toughness	3.967	2,18	.04*

\*p < 0.05

**Analysis of results from the above tables and graphs revealed following**

**Goal Setting:** Analysis of variance could not reveal any significant difference on goal setting among different teams (p = .099 > .05).

**Control of Attitude:** Analysis of variance revealed significant difference on attitude control among different teams (p = .001 < .05).

**Self Confidence:** Analysis of variance could not reveal any significant difference on self-confidence among three different teams ( $p = .280 > .05$ ).

**Control of Attention:** Analysis of variance revealed significant difference on attention control among different teams ( $p = .01 < .05$ ).

**Visual Imagery:** Analysis of variance could not reveal any significant difference on visual imagery among different teams ( $p = .643 > .05$ ).

**Degree of Motivation:** Analysis of variance could not revealed a significant difference on motivation among different teams ( $P = .976 > .05$ ).

**Overall Mental Toughness:** Analysis of variance could reveal any significant difference on overall mental toughness among different teams ( $P = .04 < .05$ ).

### Discussion on Findings

The present study was aimed to find out whether or not football, basketball and volleyball teams of Mekelle University differ on mental toughness namely; self-confidence, attention control, motivation, goal setting, visual and imagery and attitude control.

Our results revealed that there was a significant difference on mental toughness among football, basketball and volleyball teams. Our finding does not support the findings as reported by bull *et al.* that mental toughness is a personality trait that does not vary from situation to situation. As suggested by bull *et al.* that mental toughness might be specific to certain sport; we also found that this notion was reflected in our results.

Jones *et al.* and Middleton *et al.* had stated that elite athletes should possess better experience and knowledge compared to the sub elite athletes and thus, they should have be better in their mental toughness. Our findings on contrary showed that sub elite handball players are more mentally tough than elite water polo (who were part of national team) and basketball players. Lorentzen also suggested that elite players should have a higher level of mental toughness because they have experienced playing in an international championship.

The reason why sub elite handball players are more mentally tough than elite water polo and basketball players could be as explained by Middleton *et al.* in their study where they stated that researchers believe that psychological skills should be formally exposed and carried out systematically during the training session because it is obvious that elite players have not mastered this skill yet. Exposure should be given in an early stage of 12 years old because previous studies show that an elite player starting from the age of 12 could already master mental toughness.

However, a caution is required here as present study recruited a small number of elite and sub elite athletes only.

### Conclusions

- ✓ There were no significant differences on self-confidence, motivation, goal setting and visual imagery among different teams of the university.
- ✓ There was a significant difference on attention control, attitude control and overall mental toughness among different teams of the university.

- ✓ Significant difference was found between paired means of handball and basketball teams on overall mental toughness.
- ✓ Significant difference was found between paired means of handball and basketball teams on attention control.
- ✓ Significant difference was found between paired means of handball and football teams on control of attention.

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