

**ANALYSIS OF THE MENTAL SKILLS STATUS OF VOLLEYBALL AND
FIELD HOCKEY PLAYERS IN NATIONAL LEAGUE CLUBS IN KENYA**

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SCHOOL OF HOSPITALITY, TOURISM AND LEISURE STUDIES,
KENYATTA UNIVERSITY**

NOVEMBER, 2018

DECLARATION

I confirm that this thesis is my original work and has not been presented for a degree in any other university.

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DEDICATION

This work is dedicated first to God for His immense and extravagant grace. To all the volleyball and hockey players who have made and continue to make Kenya proud by their past and present performance, keep up the good work.

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ABBREVIATIONS AND ACRONYMS

ACSI	-	Athletic Coping Skills Inventory
CSAI	-	Competitive State Anxiety Inventory
KHU	-	Kenya Hockey Union
KVF	-	Kenya Volleyball Federation
KUSA	-	Kenya Universities Students Association
MST	-	Mental Skills Training
OMSAT-3	-	Ottawa Mental Skills Assessment Tool Version 3
POMS	-	Profile of Mood States
PSC	-	Private Self-Conscious
SCAT	-	Sport Competition Anxiety Test
SIQ	-	Sport Imagery Questionnaire
TAIS	-	Test of Attentional and Interpersonal Style

OPERATIONAL DEFINITIONS OF TERMS

Activation control: Ability of an athlete to easily apply energizing techniques to increase energy levels when tired during training and before a competition to achieve an optimal level of performance.

Athlete: A registered player in the Kenyan national league of volleyball or hockey.

Cognitive mental skills: Core skills used by the brain to think, read, remember, reason, plan and pay attention. These include focusing attention, refocusing attention, imagery ability, mental practice ability and competition planning.

Commitment: Ability of an athlete to remain focused on continuously improving in their sport and becoming an outstanding competitor while being determined to never give up in their sport.

Competition planning: Having a regular set of things to do before and during a competition. This includes certain thoughts and cue words that an athlete says to himself/herself in competition.

Elite athletes: National league volleyball and field hockey players who have participated in international competitions such as continental and world championships.

Fear control: The ability to train and compete successfully despite the potentially dangerous things involved in one's sport.

Focusing attention: The ability by athletes to hold concentration during all training situations and find it easy to get unexpected event off one's mind during competition.

Foundation mental skills- Skills that lay an important base upon which other mental skills are built. These include goal setting, self-confidence and commitment.

Goal-setting: Difficult but achievable targets set by athletes that include desired training and competition level of proficiency and that push them to work harder.

Imagery: Having clear mental images relevant to either volleyball or field hockey performance and being able to create and change such images easily.

Mental practice: Being able to exercise planned mental rehearsal in either hockey or volleyball with maximum performance in mind and to use one's imagination to practise critical situations in competition.

Mental skills: Psychological profiles/attributes that an athlete uses in order to optimize performance whether in training or during competitive settings. These comprise of foundation, psychomotor and cognitive abilities that athletes possess.

National league: Categories of Kenya's volleyball and hockey league.

Non-elite athletes: Volleyball and field hockey players who have competed in national competitions such the national league in Kenya.

Pre-elite athletes: Volleyball and field hockey players who have competed in regional competitions such as playing against the East African countries.

Psychomotor mental skills: Skills that built on the 'foundation laid' by foundation mental skills and are used by athletes during training and actual competition. These include fear control, relaxation, activation control and stress reaction.

Refocusing attention: The ability of an athlete to find effective strategies to maintain concentration and to get an unexpected event off one's mind during training and competition.

Relaxation: Ability of an athlete to consciously and effectively decrease tension in the muscles during critical moments in a competition and to avoid unnecessary tightening of the body during competition.

Self-confidence: The belief by an athlete that they can succeed in their chosen activity in spite of the obstacles they encounter; a belief that one has the personal capacity to achieve their goals and have faith in their performance.

Self-regulation: The process by which athletes manage their own behaviours that are directed towards achieving specific goals.

Skill: An athlete's ability, knowledge and experience to successfully compete in their chosen sport.

Stress reaction: An athlete's response to varying degrees of uncomfortable situations such as big crowds in competition and performance problems because of nervousness.

Team B: The second team for the respective clubs playing in the volleyball and field hockey national league.

ABSTRACT

Mental skills as applied in sports are psychological profiles/attributes that athletes use to achieve excellent performance in sports. Mental and physical agility combine forces to enhance athletic performance. The purpose of the study was to assess the mental skills status of volleyball and field hockey players in national league clubs in Kenya. The study sought to determine the relationship between gender, type of sport, level of participation and mental skills status of the respondents. The study used a survey research design and targeted a total of 159 volleyball and 171 field hockey players using the Ottawa Mental skills Assessment Tool (OMSAT-3). The mental skills included foundation mental skills (that is goal-setting, self-confidence and commitment), psychomotor mental skills (that is fear control, relaxation control, activation control and stress reaction) and cognitive mental skills (that is focusing attention, refocusing attention, imagery ability, mental practice ability and competition planning). Simple random sampling was used to get a sample of 330 athletes; 207 (62.7%) males and 123 (37.3%) females playing in the Kenyan national leagues of volleyball and field hockey. Independent t-test and one way ANOVA were used to compare differences in the means of the variables. Significance was set at $p < .05$. Results indicated that there were more male volleyball and field hockey players than female players participating in the national league. A higher percentage of participants were aged between 19 and 21 years (33.3%) while the elite population of participants formed the largest sample of the study (45.2%). T-test results revealed that the mean differences between volleyball and hockey players were significant in foundation ($t=7.85$, $df=2$, $p < .001$) and psychomotor mental skills ($t= -4.99$, $df=2$, $p < .001$) and not significant in cognitive mental skills ($t=-0.387$, $df=2$, $p=0.699$). There was no significant difference between males and females in foundation and cognitive mental skills. However, there was significant differences between male and female players in psychomotor mental skills in relaxation control ($t=-4.21$, $df=328$, $p < .001$). Based on composite means, male and female players' mental skills status was found to significantly differ ($t=-4.4$, $df=328$, $p < .001$) in favour of male athletes. Elite players had the highest mean score ($3.43 \pm .51$) in all the twelve mental skills. However, there was no significant difference in the means between elite, pre-elite and non-elite volleyball and field hockey players ($F=1.69$, $df=2$, $p < .019$). Conclusions drawn on foundation, psychomotor and cognitive mental skills among Kenyan volleyball and field hockey players show that foundation mental skills are the basic skills that form the base for other mental skills and volleyball players had a better grounding than their field hockey counterparts. Secondly, mental skill status does not differ based on level of competition and exposure of volleyball and field hockey players in national league clubs in Kenya. This shows that Mental Skills Training (MST) is not prioritised in training. The study recommends that Kenya Hockey Union (KHU) and Kenya Volleyball Federation (KVF) should champion the recruitment and inclusion of more female teams in order to bridge the participation gap that currently exists. Attention could be given to expanding the league so that there are more non-elite and pre-elite players. The finding that foundation mental skills were the most developed can be used by KVF and KHU to prioritise equipping volleyball and field hockey players through offering MST that is geared towards enhancing goal setting, self-confidence and commitment. More studies comparing the mental skills of elite and non-elite athletes in different sports and the influence of gender on mental skills in varying sport disciplines are recommended.

CHAPTER ONE: INTRODUCTION

1.1 Background to the Study

The mental skills that are involved in athletic performance have long been of interest to athletes, coaches, sport psychologists and sports scientists. Athletes and coaches are becoming more aware of the significance of mental skills training in order to achieve excellent performance in sports and sports competitions. According to Maleki, Mohammadi and Nazarian (2014), coaches and athletes continue to search for ways to improve their performance through both physical and mental training. This is because physical and mental skills training have been found to improve performance significantly. As advanced by Wang (2010), the extent to which genetic factors play a role in the development of exceptional performers in sports has been questioned and an alternative explanation for the development of excellent performance continues to be sought.

According to Weinberg and Gould (2007), the mere thought of developing required physical skills to attain successful career in professional sports is not enough. Athletes need to be able to maintain their composure, be prepared to cope with distractions, and have a sound competitive plan (Gould, Dieffenbach, & Moffet, 2002). Mental and physical agility therefore, combine forces to enhance athletic performance. Jean (2010) notes that one of the most salient differences between more and less successful performances is the extent to which athletes adhere to their mental preparation plans and pre-competition routines and how well they have practised and internalized their coping strategies. An elite athlete is therefore a combination of talent, hard work and the right psychological profile. However, elite athletes have a higher intensity of facilitating positive emotions than less elite athletes (Robazza & Bortoli, 2003).

In sports, mental skills are psychological profiles/attributes that athletes use in order to optimise performance. They are therefore sport-related abilities and /or techniques that are interrelated and form a unique, composite and inseparable whole (Weinberg & Gould, 2007; Cox, 2007). Mental skills are acquired through training and the training programme continues as long as athletes participate in their chosen sport, and retention only occurs with continued practice (Jean, 2010). Top performance occurs when physical fitness, skill psychology and strategy are optimized (Yun, Kim & Lim, 2006). Research evidence continues to indicate the role of mental skills as determinants of elite performance. Orlick (2008) identified psychological “success factors” (high level of commitment, long and short term goals, imagery, focus, pre- and in-competition plans) that distinguished successful athletes from their less successful counterparts. Besides, Gould et al. (2002) found that successful Olympic athletes were more committed and focused, and engaged in more extensive mental preparation than less successful performers.

Complimentary research findings by Durand-Bush and Salmela (2002) with Olympic and World champions identified self-confidence and motivation as salient psychological characteristics of the elite athletes. In addition, the champions employed imagery and self-talk to prepare for competition and to remain focused during high-level performances. However, there are studies that have focused on individual psychological factors such as self-talk, confidence, motivation, attention, visualization and psychosomatic skills and their influence on performance (Gucciardi, Gordon & Dimmock, 2009; Rongian, 2007; Jones, Hanton & Connaughton, 2002). Conclusions drawn from studies on the use of mental skills (such as goal setting, imagery, relaxation, and self-talk) show the importance of such skills in sports psychology and add to the interest in the role of mental skills in aiding physical

performance (Vealey, 2007; Crust, 2007). Jean (2010) emphasizes that the goal of psychological interventions is to learn to consistently create the ideal mental climate that enables athletes to perform their best.

Van Den Heever, Grobbelaar and Potgieter (2007) note that the domain of sport competition is developing every day and athletes almost have the same physical abilities but have different mental skills and it is not possible to ignore the role of mental skills in achieving maximum performance. Mental skills training is the most effective way to improve sport performance and the world of sport has recognized that success in elite performance will depend on preparation involving the mind as well as the body (Kremer, Aidan, Graham & Cathy, 2012).

From the time of the Ancient Greeks, there is strong evidence to show that preparation for sporting competition has acknowledged the necessity for the mental dimension to relate with the physical domain. Indeed, the standard four-day procedure followed by Greek athletes in the build-up to their games (known as the *tetrad*) incorporated specific time set aside for psychological skills training, including concentration and relaxation (Kremer et al. 2012). Physical practice yields the best results when it is used in a complementary fashion with mental practice. In competitive sports, thought and movement are in constant relationship with each other (McPherson, 2000).

Sports activities take place in social settings whether in training with team-mates or competing in the presence of spectators. Due to these external stimuli such as audience booing, bad officiating calls and poor sportsmanship behaviour from the opponent, make athletes become so nervous that they perform badly and become more aggressive (Jean, 2010). Substantial research has examined the mental skills that

successful athletes use, often by comparing more and less successful athletes with the goal of learning why some individuals outperform others. Elite athletes engage in more extensive use of goal-setting, focusing, refocusing, competition planning and imagery than their non-elite counterparts (Durand-Bush, Salmela, & Green-Demers, 2001; Jean, 2010). As noted by Vealey (2007), the commonly used mental skills include: achievement drive, self-awareness, productive-thinking, performance skills, personal development skills and team skills. As postulated by Wesch, Law and Hall, (2007), there are basic mental skills such as relaxation, goal setting, imagery and self-talk and complex mental skills such as self-confidence, motivation, arousal and activation, concentration and attention control. Cox (2007) adds mental toughness which is having the natural or developed psychological edge that enables an athlete to cope better than his/her opponents with the many demands (competition, training and lifestyle) that sport places on a performer. This also includes a player's ability to consistently maintain confidence, determination and focus better than their opponent in all situations.

The three main categories of mental skills that are assessed using the Ottawa Mental Skills Assessment Tool (OMSAT) include foundation, psychomotor and cognitive skills (Jean, 2010). Foundation skills are the mental skills that form the 'foundation' for the rest of the psychological skills that an athlete needs (Hodge, 2007). They are the individual resources that are the basic foundation mental skills necessary to achieve success in sport. For example, there is no way an athlete can attend training sessions when they are not motivated. The foundation skills consist of goal setting, self-confidence and commitment. The components of psychomotor mental skills consist of fear control, relaxation, activation control and stress reaction. Once the foundation skills have been developed, performance skills need to be concentrated on.

These are the psychological skills that the athletes use during training and their actual competition (Weinberg et al., 2007). The cognitive mental skills include focusing attention, refocusing attention, imagery ability, mental practice ability and competition planning (Cox, 2007).

High ability athletes with more playing experience have superior mental skills. Elite athletes are players who have previously competed at the international level. Pre-elite athletes have playing experience at the regional level while non-elite athletes exposure and experience is limited to games played at the national level. Hodge (2007) concludes that psychological factors such as self-confidence, positive mental attitude, motivation to perform, activation control and plans prior to and during competition are key to peak performance of athletes. Mental skills and related aspects are antecedents of elite levels of participation in sport (Kitsantas & Zimmerman, 2002; Durand-Bush et al., 2002; Hassan & Saadi, 2014). Research findings from the study by Hassan et al. (2014) on psychological skills of elite and non-elite volleyball players show that high ability athletes with more playing experience significantly score higher on mental skills. Consequently, elite athletes (players who have participated in international competitions) possess superior mental skills as opposed to non-elite (players who have participated in national competitions) and pre-elite athletes (players who have participated in regional competitions). Thus difference in mental skills status between amateurs and professional athletes is clear.

Research findings have shown that male athletes have performed better than female athletes in some of the mental skills especially in terms of self-confidence (Shane, 2000). The findings indicate that male and female athletes are significantly different in task orientation, ego orientation and several factors related to the source of sport

confidence, such as skill perfection, demonstration of ability, physiological and psychological preparation. Research examining gender differences in sports in self-confidence is equivocal and is influenced by the sex typing of activities, performance feedback and conception of ability. According to Jamshaid and Muhammad (2011) in a study of 150 male and 150 female athletes aged 17 to 24 years who participated in a variety of sports like cricket, hockey, basketball, table tennis, badminton and athletics at university, regional or national level, the male players were found to have significant higher self confidence level than the female athletes. Contradictory results have found no gender differences in self-confidence (Cox & Whaley, 2004; Mustafa, 2017).

Elite athletes have higher levels of self-confidence than beginner and non-elite athletes (Kitsantas & Zimmerman, 2002). Male athletes have also reported significantly higher levels of goal setting, mental preparation and competitive strategies than female athletes (Koon & Chee, 2014). However, female athletes set more short-term and team goals as opposed to male athletes who set more outcome goals (Weinberg & Gould, 2007). Ankebe and Anita (2014) in a study that included one hundred and sixty-two Grade 8 learners (77 boys and 85 girls) assessment of sport psychological skills, results showed that male and female groups did not differ significantly or practically in any of the 7 subscales for sport psychological skills. Based on the above bipolar thoughts, it was necessary to establish the mental skills status of male and female athletes derived from volleyball and hockey in Kenyan national leagues.

Mental skill demands vary depending on the nature of the sport in question. Nonetheless, one common aspect amongst many team sports such as volleyball and

hockey are the mental skills that are more important during breaks in the execution of skills. According to Weinberg et al., (2007) individual sports require different mental skills as compared to team sports. However, team sports involving similar physical demands, play duration and play positions have similar mental skills requirement and therefore the coach should be able to identify these needs through observation and assessment of mental skills profiling.

In Kenya, volleyball is run by Kenya Volleyball Federation (KVF) which is an affiliate of the International Volleyball Federation (FIVB) (Kenya Volleyball Federation, 2005). As reported in Kenya Volleyball League Newsletter (2005), the performance of Kenya's male volleyball clubs has not been impressive especially at the continental club championships. The Kenya men volleyball team best finish is a bronze medal in All Africa Games in 2010. Conversely, Kenyan women volleyball clubs have performed relatively well as compared to their male counterparts in continental tournaments. This is supported by the fact that the Kenya women volleyball clubs have won several regional and continental trophies, raising questions about gender disparity in performance in the sport.

For a long time, Kenya's national male field hockey team maintained an unbroken record as Africa's hockey title-holders and was the continent's representative in the Olympic Games for many years except in the 1976 and 1980 Olympics when Kenya boycotted the games on political grounds (Bhushan, 1988). In 1956, Kenya was 10th overall with the subsequent Olympic participation being; 1960 (7th overall), 1964 (6th), 1968 (8th), 1972 (13th), 1984 (9th) and 1988 where the country was ranked 12th overall. On the African scene, the performance of the hockey national team has continued to deteriorate over the years. Kenya won in hockey during the 1987 All

Africa Games but over the years, the latest best finish was a bronze medal in 1999 for the male team. In 2013, the female hockey team was third with subsequent African Cup of Nations participation being; 2015(3rd) and 2017(4th). It is against this background of deteriorating and dismal performance of both the volleyball and field hockey teams that it was necessary to evaluate the mental skills status of the players who participate in the Kenya's national leagues of both volleyball and field hockey.

1.2 Problem Statement

As noted by the International Volleyball Federation (FIVB, 2004), women's volleyball remains the most successful team sport in Kenya. The frequent appearances made by the women's national team at the global stage have brought a lot of recognition to the country. However, contrary to this is the dismal performance of the male national team at international competitions.

According to Wang (2000), athletes across the globe are continuously striving for elite performance in their respective sports. However, at elite levels of participation, the margin of victory has been narrowing because the gap between athletes' physical abilities has been becoming less distinguishable. Given that performance in volleyball and hockey is driven by performance outcomes and that players capitalise on the mistakes of their opponents, the understanding of the mental skills status of these players was key. The other pertinent issues such as level of play, age, gender and type of sport needed to be addressed in order to understand their influence on mental skills status. Smith, Smoll, and Passer, (2002) developed the Athletic Coping Skills Inventory (ACSI) which emerged as one of the best measures of the factors deemed crucial for success in sport performance. The results indicated that psychological skills provide a more accurate predictor of performance than physical skills (Maleki et

al, 2014). The problem arising from this finding is that psychological-skills training and the important role they play in facilitating performance in volleyball and hockey games are greatly neglected. Without the necessary mental skills, players in endurance team sports such as hockey and volleyball continue to struggle to actualize their fullest playing potential. This is because volleyball and field hockey players need to identify negative talk, manage distractions, accept things that are outside their control and set goals to maintain motivation (Weinberg & Williams, 2006).

In Kenya, most national teams have represented the country at the global stage but their performance is dismal. However, the national teams draw their players from the clubs which are strengthened by the existence of well-established leagues whose impact has unfortunately not been felt at the global level. Volleyball and field hockey are both team and endurance sports. The playing format in both games depicts a similar structure with both sports being self-paced and externally paced. Additionally, the athlete's needs and sport demands in these two sports have many common grounds. According to Orlick (2008), the most important shared mental skills for these two sports are; commitment, goal setting, belief, mental readiness, distraction control, focus and positive images.

Currently in Kenya, most of the studies carried out address performance in sports focusing on demographic factors (Onywera, 2006; Bulinda, 2008), and technical and tactical issues (Njororai, 2000; Andanje, 2006) that affect performance. It is therefore not clear whether mental skills influence the performance of Kenyan athletes and the status of such mental skills. In order for Kenya's presence to be felt at the global volleyball and hockey arena, investigation that could give leads to the mental skills status of volleyball and hockey athletes was timely. The present study therefore,

sought to investigate the mental skills status of Kenya's national league club players in volleyball and field hockey across intervening variables namely; gender, type of sport and level of participation.

1.3 Purpose of the Study

The purpose of this study was to assess the mental skills status of volleyball and field hockey players at the national league clubs in Kenya.

1.4 Objectives of the Study

The objectives of this study were to:

- (i) Determine the foundation, psychomotor and cognitive mental skills status of volleyball and field hockey players in national league clubs in Kenya.
- (ii) Determine the differences in the mental skill status between volleyball and field hockey players.
- (iii) Establish the differences in the mental skill status of volleyball and field hockey players based on gender.
- (iv) Determine differences between mental skill status of non-elite, pre-elite and elite players.

1.5 Research Hypotheses

The following hypotheses guided the study:

Ho₁: There would be no significant difference in the following mental skills among volleyball and field hockey players.

- (i) Foundation
- (ii) Psychomotor
- (iii) Cognitive

Ho₂: There would be no significant difference in the mental skills status between volleyball and field hockey players.

Ho₃: There would be no significant difference in the following mental skill status of volleyball and field hockey national league club players in Kenya across gender.

(i) Foundation

(ii) Psychomotor

(iii) Cognitive

Ho₄: There would be no significant difference in the mental skills status between male and female players.

Ho₅: There would be no significant difference between the mental skills status of non-elite, pre-elite and elite Kenyan volleyball and field hockey players.

1.6 Significance of the Study

This study sheds light on participation of male and female players in volleyball and field hockey in the national league. These findings may help KVF and KHU to promote more female participation in clubs and in the different volleyball and field hockey leagues. The study has provided data on the mental skills status of volleyball and field hockey players of national league clubs in Kenya. This provides information upon which interventions in mental skills training could be designed and conducted especially in giving more attention to foundation mental skills. The findings may also encourage coaches and trainers to focus on both physical and mental dimensions in preparing their players.

The study has also expanded the knowledge base on the relationship between gender and mental skills. This may enable coaches and trainers to address gender differences in volleyball and field hockey in mental skills with a view of improving performance

with regards to the mental skills status of female players especially in anxiety control and relaxation.

This study has shed light on the relationship between athletes' mental skills status and level of participation. The findings on mental skill status and level of play can be used by coaches and team managers of hockey and volleyball national league clubs in Kenya to organize mental skills training and expose players to varied training and competition stages. This will go a long way in optimizing performance especially at the elite level of participation.

Further, the findings of this study have brought to the fore the strength of specific mental skills amongst volleyball and field hockey players. This may help coaches in volleyball and field hockey to focus on such specific foundational, psychomotor and cognitive mental skills which can assist in promoting performance of players in the Kenyan league and in international competitions. Furthermore, the findings from this study will enrich literature on mental skills in relation to sports performance that may serve as important reference material for future researchers. This will also help coaches, sport psychologists to prepare systematic programmes to develop mental skills, while paying attention to the individual differences as well as the specific physical, technical and psychological demands of volleyball and field hockey.

Additionally, the findings of this study may be of help to KVF and KHU in conducting MST in order to address the psychological needs of players. These sports federations can work in conjunction with the Ministry of Sports, Culture and Arts to expand the pool of trained coaches on mental skills.

This research may also be used by researchers keen in conducting further related research in mental skills of male and female athletes and also mental skills of elite and non-elite players of different sports.

1.7 Delimitations of the Study

This study was delimited to:

- (i) The use of the Ottawa Mental Skill Assessment Tool (OMSAT-3) as instrument for data collection (measuring foundation, psychomotor and cognitive mental skills).
- (ii) Players in the Kenyan national league for volleyball and field hockey teams.

1.8 Limitation of the Study

This study did not focus on all the cognitive mental skills involved in optimizing performance in sports competitions and more so on mental skills that are key to players in different playing positions. The study did not factor the psychological skill development, orientations and exposure of respondents to mental skills. However, the researcher did a debrief prior to respondents filling in the questionnaire that was aimed at helping respondents conceptualize the twelve mental skills that the questionnaire captured. The researcher did not have control over the concentration levels of respondents. This is because data collection was carried out at training venues when most players were preparing for practice sessions. However, the researcher with the help of the coaches impressed upon the respondents on the need to concentrate in order to give their honest responses. Owing to the paucity of comparative literature on mental skills status of different sport disciplines, especially in psychomotor and cognitive mental skills, the interpretation drawn from this study lacks a global comparison specifically on mental skills status of players in other sports

and therefore the results drawn from this study are only applicable to volleyball and hockey players.

1.9 Assumptions of the Study

This study was carried out based on the assumption that mental skills are influenced by gender, type of sport and level of participation. It was also assumed that the respondents were familiar with mental skills and responded to the research questionnaire honestly and accurately. Furthermore, it was assumed that the players' eagerness to engage in their training session did not significantly affect their responses on the questionnaire.

1.10 Theoretical Framework

This study was based on a modified version of the Self-regulation model (Clearly & Zimmerman, 2001). Self-regulation is self-generated thoughts, feelings and behaviours that are planned and cyclically adapted based on performance feedback (Clearly et al, 2001). In sports, self-regulation is the extent to which athletes are metacognitively, motivationally and behaviourally proactive in their learning process. According to Jean (2010), self-regulation is the ability to control or redirect disruptive impulses and moods and the propensity to think before acting. Self-regulation is the process by which people manage their own behaviours that are directed towards specific goals. For instance, the athlete must develop a strategy that keeps him/her from slipping into a cycle of anxiety and self-doubt. Once the negative thought has been displaced, the athlete centres his/her attention internally (Nideffer & Sagal, 2006). Successful athletes exhibit superior regulation skills at each phase of the model (Cox, 2007). Self-efficacy may directly relate to variations in performance and

the development and employment of self-regulation skills (Feltz, Short, & Sullivan, 2007).

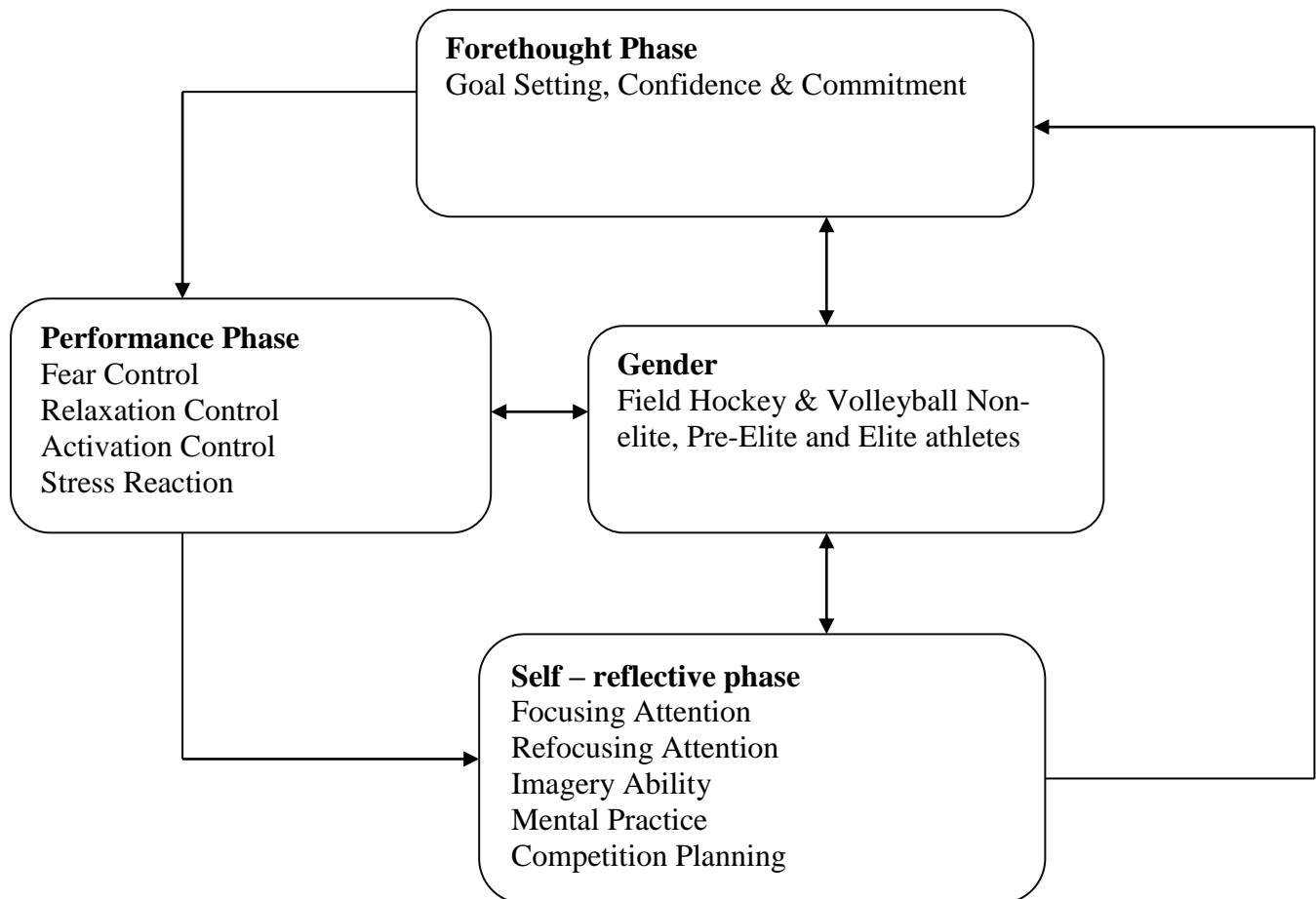
According to Clearly et al. (2001), the three phases of the self-regulation model include; forethought, performance and self-reflective phases. Forethought phase is where an athlete evaluates their progress in their sport such as hockey and volleyball, and they are open to all aspects of performance which involve goal setting, self-confidence and commitment. In this phase athletes (especially the ones who self regulate well) identify the task demands against their personal resources and do a matching between the two. Performance phase is the second phase that involves the use of focusing attention, refocusing attention, imagery, mental practice ability and competition planning by volleyball and field hockey athletes. Here is where athletes monitor their actions relative to their goal. This leads to the self-reflective phase where athlete evaluate the process employed against the outcomes achieved and it includes includes fear control, relaxation, activation control and stress reaction. Both volleyball and field hockey athletes need feedback as to where they stand and how they are progressing in relation to both individual and team goals and thus the execution of self-regulated change is a feedback loop with self-monitoring leading to self-evaluation, which in turn leads to self-consequation.

Several studies have been carried out on the mental skills of elite and non-elite athletes (Monna, Daniel, Scott, Brian & Malcolm, 2007; Toering, Elferink, Jordet & Visscher, 2009; Marije, Rianne, Jim, Yvonne & Chris, 2010; Rune & Rune, 2015; Samantha, Nicola, Lars, Craig, 2015; Moe, Mark, Michelle, Robin, Rose & Marie, 2017; Nicholas & Melissa, 2017). Elite athletes exhibit superior mental skills as compared to non-elite athletes (Nicholas et al., 2017). It is possible that many elite

athletes include mental skills training into their regular training regimen to better cope with performance demands and, ultimately, to enhance their performance during practice and during competitions.

Gender differences in mental skills have also been noted. Several studies have shown that the gender of the athletes has no influence on the mental skills scores (Mark, Toto & Didem, 2012; Ankebe & Anita, 2014, Fairouz, Nasr, Ebdelhakim, Karim, & Chohdi, 2013). However, other researchers show that male athletes possess superior mental skills than their female counterparts (Findlay & Bowker, 2009). Over the years, researchers have sought to answer the questions on status and use of mental skills by male and female athletes in different levels of sport participation. In the current study, an analysis of the mental skills status of volleyball and field hockey players in national league clubs in Kenya was carried out. All these three phases were dictated by independent variables of gender, type of sport and level of participation while the dependent included the foundation, performance and psychomotor mental skills. The three phases of self-regulation which represent the 12 mental skills are influenced by gender, type of sport and level of participation. This interrelationship of the above variables is shown in the self-regulation model in Figure 1.0 below.

SELF REGULATION MODEL



Adapted from Clearly and Zimmerman (2001)

Figure 1.1: Modified Version of the Self-Regulation Model

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter presents related literature on mental skills in competitive sports, related studies on gender and mental skills, mental skills and elite and non-elite athletes, mental skills in different sport disciplines and a summary of the reviewed literature.

2.2 Mental Skills in Competitive Sports

Vealey (2007) provides an analysis of the mental skills to be included in training programmes for athletes. These mental skills are divided into foundational skills (achievement drive, self-awareness, productive-thinking and self-confidence), performance mental skills (perceptual-cognitive skills, attention focus and energy management), personal development skills (identity achievement and interpersonal competence) and team skills (leadership, communication, cohesion and team confidence). However, the classification of mental skills by Orlick (2008) which is used in the Ottawa Mental skills Assessment (OMSAT-3) is in three categories; foundation, psychomotor and cognitive skills.

2.2.1 Foundation Mental Skills in Competitive Sports

These are the basic and necessary mental skills that athletes need to focus on and they require a certain level of proficiency in the foundation skills (Vealey, 2007). According to Orlick (2008), foundation mental skills consist of goal setting, self-confidence and commitment. Goal setting is a vital tool that can be used to enhance performance in sports. The contribution of an athlete towards achieving set goals (by the coach) as well as personal goals is important. As noted by Cox (2007), goal setting is about cognition, motivation and attaining a specific level of proficiency. It focuses on the mechanics of how one can set goals and how those goals can be

energizing and motivational. Additionally, Locke and Lathan (2005) contend that goal setting is appropriate and important for athletes, coaches and sport psychologists with the emphasis being on short-range goals like planning practices and psychological interventions. Given its diverse nature, goal setting is a complex aspect of sport performance. As advanced by Burton and Weiss (2008), task complexity and the failure to use appropriate goal implementation strategies has made it difficult to determine where and when goal setting works in sports. Jean (2007) advocates the setting of positive goals (behaviours to be exhibited) as opposed to negative goals (behaviours that should not be exhibited). As for Elston and Ginis (2004), goals are either self-set or/ and assigned. In sport, it is best to let athletes either set their own goals or participate in the goal setting process to improve goal efficiency (Gould, 2006). Weinberg, Burton, Yukelson, and Weigand (2000) add that there is a place for individual goals within a team sport, as long as the individual goals do not conflict with team goals. Goals should also be set with strategies to achieve them and should be based on an athlete's performance level as opposed to the outcome of winning and losing (Britton, 2009).

Burton et al. (2008) indicate that goal setting does influence performance in sport settings and there is need to set goals for daily practice which should focus on performance and non-performance outcomes. In addition, goals should be difficult (based on the desired outcome) but realistic, important and accepted by the athletes so that they will commit themselves to them (Locke & Latham, 2005). It is also equally important that an athlete understands the difference between setting goals and coming up with strategies to achieve specific goals. As postulated by Weinberg et al. (2007), any effective goal setting programme needs to entail multiple ways of achieving the desired outcome in order to have the best performance. Equally important is that the

athlete's entourage must understand the goals of the athlete and support the athlete towards the achievement of the same (Jean, 2007).

Dawson, Braw, and Widmeyer (2002) have shown that setting group goals involves an individual member's goal for self, an individual goal for the team, the group's goals and the group's goal for the individual member. It is therefore important that coaches integrate individual goals and team goals. As noted by Jean (2010), the common problems in goal setting include; setting too many goals too soon, failing to recognize individual differences, setting goals that are too general, failing to modify unrealistic goals and failure to create a supportive goal-setting atmosphere.

Jones and Connaughton (2002) opine is the natural or developed psychological edge that enables an athlete to cope better than their competitors with the demands of performance and to remain more determined, focused, confident and in control. As advanced by Britton (2009), self-confidence has to do with how athletes feel about, respond to and think about everything that happens to them in sport, and confident athletes cope better, make more productive causal attributions, set more challenging goals and are more motivated than less-confident athletes. Sources of athlete self-confidence include: performance success, training and preparation, positive feedback after performance success, modelling, leadership and social influences, positive self-talk, effective coach-athlete interaction, positive thinking and learned optimism (Hanton & Jones, 1999; Jean 2010). Prerequisites for gaining self-confidence include: understanding the interaction of thought and performance, cultivating an honest self-awareness, developing an optimistic explanatory style and embracing a psychology of excellence (Jean, 2010). Elite athletes manipulate their confidence

levels through the use of self-verbal persuasion techniques such as self-talk (Hardy, Hall, & Hardy (2004).

Commitment is ability of an athlete to remain focused on continuously improving their sport and becoming outstanding competitor while being determined to never give up in their sport. As advanced by Fox, Rejeski and Gauvin (2000) athletes are more likely to stay committed in their sport when their leader demonstrates personal interest in them and positively interacts with them during participation. Jean (2010) asserts that commitment is a behaviour that coaches expect from their athletes, and indeed, athletes need high commitment in order to achieve excellent performance and therefore for coaches to be successful, they need to demonstrate the greatest commitment to their players.

The three foundation mental skills (goal setting, self-confidence and commitment) form the basis and the ground for the development of other performance mental skills. These three mental skills are very important in optimizing performance in hockey and volleyball as well as other sporting activities and their development can therefore not be underestimated.

2.2.2 Psychomotor Mental Skills in Competitive Sports

Psychomotor mental skills comprise of stress reaction, fear control, relaxation and activation control (Cox, 2007). Stressful situations are very useful for most successful athletes; this is because stress makes them to have a positive approach to anxiety and worry (Gould & Maynard, 2009). By their nature, sport events are characterized by continuous changes in the person–environment relationship and these situational contexts induce pronounced stress, even in elite athletes (Holt & Dunn, 2004; Gould et al, 2009). When there is total assurance of being successful, the competition is

often taken for granted and the resulting under aroused state is maladaptive for effective performance (Jean, 2010). One of the begging questions is how athletes cope with on-going stress while experiencing changes in the person-environment relationship during practice and actual competition. Athletes have been noted to alternate between coping strategies depending on the phases of a competition (Gaudreau, Lapierre, & Blondin, 2001; Calmeiro, Tenenbaum, & Eccles, 2010). As advanced by Hatzigeorgiadis (2006), moment-to-moment use of coping strategies during competition is likely moderated by an evaluative process whereby athletes compare their current performance with their goals. Additionally, Calmeiro et al. (2010) provide evidence that appraisals and coping with stress during competitions is a function of performance difficulties experienced by the athlete.

On fear control, Conroy, Willow and Metzler (2002) note that it is the ability to have a stable disposition towards evaluative or threatening situations. Behaviour is strongly influenced by the consequences it produces (Sarafino, 2004). Athletes having high levels fear of failure not only perform more poorly in competition but also are at greater risk for injury, enjoy the sport experience less and are more likely to drop out (Smith et al. 2002). Conroy, Poczwadowski and Henschen (2001) have suggested that perceptions of failure are determined by how well athletes' needs such as autonomy, competence and relatedness are met rather than by the standard of performance. Conroy and Elliot, (2004), asserts that athletes who have learnt that failure is associated with aversive consequences experience apprehension and anxiety in evaluative game situations.

On the other hand, relaxation is the ability of an athlete to consciously and effectively decrease tension in the muscles during critical moments in a competition and to avoid

unnecessary tightening of the body during competition. Relaxation is used to decrease arousal. Relaxation and activation help an athlete to reach or control the level of arousal and decrease performance fluctuation (Jean, 2010). It is only through relaxation that one can reverse anxiety and tension. Both skills must be practised on a regular basis just like other sport skills (Cox, 2007). Furthermore, relaxation acts as a technique to rid the muscles off disorder tension which interfere with the body and mind performance. Athletes need to be able to consciously decrease the tension in their muscles, find it easy to relax quickly and effectively during critical moments in a competition. This can be achieved through the use of relaxation interventions such as techniques that focus on muscle-to-mind (breathing exercises and progressive relaxation) and those that work from mind to muscle (meditation, autogenic training and imagery).

Activation control is the ability of athletes to employ strategies and techniques to self-regulate arousal for practice and competition. This is because poor performance during competition is more frequently a consequence of over-activation than under activation (Jean, 2010). Understanding the dynamic and complex psychological process of activation is critical in understanding human behaviour, especially in sport (Roberts, 2001). Coaches need therefore to use anxiety control to influence their athlete's ability to maintain confidence and be optimally aroused and be in control even in high-pressure situations (Frey, 2007).

The mastery of psychomotor mental skills (stress reaction, fear control, relaxation and activation control) is very important in achieving elite performance in volleyball and hockey. This is because athletes in hockey and volleyball need to effectively handle uncomfortable practice and game situations, conquer fear and be able to decrease

tension during critical moments of play such as when the team is losing. Therefore, every athlete in hockey and volleyball needs to learn how to relax by regulating worry and anxiety in order to avoid detrimental effects on performance.

2.2.3 Cognitive Mental Skills in Competitive Sports

Cognitive skills are related to learning, perception, memory and thinking. They require some thinking and planning in order to improve sporting performance (Cox, 2007). Cognitive mental skills include: focusing attention, refocusing attention, imagery ability, mental practice ability and competition planning. Focusing attention is the ability of an athlete to be ready to react spontaneously to the situation with controlled intensity. Focus training teaches performers to gently hold their attention on a predetermined task (Jean, 2010). It entails mental composure despite the prevailing game situation. It implies ability to withdraw from other things so as to effectively deal with others. Liao and Masters (2002) report that it is possible that an impending stressful event can induce a process in which the demand of the event is compared to one's own response capabilities which requires a high level of self-focused attention.

Refocusing attention centres on the ability to perform in the present rather than in the past or future. A refocusing plan is geared towards helping athletes refocus away from unwanted external distractions or internal distractions such as worry, self-doubt and self-put-downs (Hodge, 2007). Mental imagery is the ability to simulate in the mind information that is not currently being perceived by the senses (Kremer et al., 2012). When individuals engage in vivid imagery, their brains interpret these images as identical to the actual stimulation and athletes use imagery in conjunction with practice, competition and rehabilitation as well as in situations that are outside the

practice and competition realms (Weinberg et al, 2007). Mental practice involves using imagery to perform a specific sport skill (Jean, 2010). Imaging a sport skill is similar to performing the skill, except that athletes experience the action in their mind only. Similarly, Omar-Fauzee, Daud, Abdullah and Rashid (2009) also note that imagery is used as the method whereby people feel themselves through their minds.

Jean (2010) suggests that the best competition and pre-competition plans consist of procedures that ready the athlete physically and mentally for competition. It means monitoring and controlling emotions so that the energy and excitement for competing build slowly. According to Hodge (2007), competition planning includes aspects such as a regular set of things to do before and during a competition and having a plan that includes certain cue words that an athlete says to himself/herself during practice and competition. All these are helpful in maximizing performance outcomes in hockey and volleyball. For instance, a player in volleyball has to centre his/her attention in receiving a pass from a team mate or spike. A hockey player has to mentally rehearse a shot such as a penalty shot. They may picture in their mind what they want to feel and see themselves as they execute the shot. Given that different sport situations make different attentional demands on players, the development of cognitive mental skills in hockey and volleyball is imperative. A goal keeper's attention in hockey is very different from that of a striker. Thus, players in volleyball and hockey are continually shifting attention across different tasks and some positions of play require more attention than others.

2.3 Studies on Mental Skills and Gender in Competitive Sports

As opposed to studies where OMSAT-3 was used as the instrument for data collection, Cox (2007) use the Psychological Skills Inventory for Sports (PSIS) to

measure motivation, mental preparation, confidence, concentration, anxiety control and emphasis on team goals. Three hundred and fifty elite and non-elite campus students drawn from track and field, basketball, volleyball and swimming took part in the study. Results showed that there was a significant difference between male and female athletes in anxiety control where male swimmers reported a higher score. Male athletes also exhibited higher confidence scores than female in all the sports. However, there is need to cautiously interpret these scores based on the psychometric properties of the PSIS. The comparison of results drawn from team and individual sports also raises questions in terms of the different skills that are key in the specific sport disciplines.

Burton et al. (2008), using the Goal-Setting in Sport Questionnaire (male $n=77$, female $n=127$) discovers gender differences in goal setting. Results from the study indicate that female athletes set goals more frequently and perceive goal-setting as a more effective strategy in their development as athletes. Female athletes also set more short-term, competitive, team, conditioning and psychological skills development goals. They also report more written goals to help maintain motivation than their male counterparts. On the other hand, male athletes report outcome goals as being more important than performance goals. These results agree with those of Weinberg et al. (2007) who found out that males regard outcome goals as more important than performance goals. The assessment of only goal setting in these studies was a limitation as many other mental skills impact on goal setting efficacy.

Pierce and Edwards (2002) investigate the attentional style of intercollegiate athletes based on gender and type of sport in order to determine whether attentional style differs between elite male and female college athletes. The six attentional scales from

the Test of Attentional and Interpersonal Style (TAIS) were used to measure athletes' ability to control, shift, and focus attention. A sample size of 120 subjects (male $n = 60$; female $n = 60$) was used. Baseball players comprised of only male players while softball comprised of female players. Golf and track were the individual sports for both genders. The genders differed on the Overload External (OET) scale based on the type of sport. Male athletes scored significantly higher than female athletes for individual sports, while female athletes scored higher than male athletes team sports. The female athletes tended to reduce their attentional focus more than the male athletes. Moreover, male athletes depicted a broader internal focus (BIT) than female. In the current study, male athletes recorded higher mean scores than female athletes in the twelve mental skills. This could be attributed to the tendency of male athletes setting physical conditioning goals and motivation improvement goals more often than female the ones.

Shane (2000) studied self-confidence in sports amongst 620 college and high school athletes. The results reveal that the source of self-confidence for male and female differed significantly both for the high school and college athletes with a task-oriented environment being attributed as a source of self-confidence for the male athletes. According to Vealey (2001), gender, type of sport, personality characteristics, attitudes and values of athletes comprise the competitive orientation and self-esteem of an athlete. Other factors that could affect self-confidence are motivational climate, competitive level, goals and structural expectation of particular sport.

Tobar and Morgan (2002) evaluate gender, trait anxiety and mood state responses to overtraining among college swimmers (male $n = 218$, female $n = 140$). Subjects completed the State-Trait Anxiety Inventory (STAI) and a subset of subjects ($n = 222$)

also completed the Profile of Mood States (POMS). This was done across seven competitive seasons at seven different times where men consistently reported lower trait anxiety than women. An increase in training volume made tension and total mood scores on the POMS to increase significantly where during taper, total mood scores reverted to baseline but tension scores remained elevated. Women increased in tension during taper (the time they had reduced exercise intensity in the days just before a competition) but men remained stable. This shows that male college swimmers differ in trait anxiety and global mood scores to female swimmers. The different reaction to increase in training overload and its impact on the psychological states of participants in this study could not be quantified.

Lopez-Walle, Mahoney and Morales (2006) evaluated the psychological skills of representative teams of the University of Nuevo Leon, Mexico. Subjects were 265 athletes (average age =19.87 years; males $n=185$ and females $n=80$). Categories of performance were: elite athletes or those who had participated in international competitions, pre-elite athletes those who had competed in national competitions and non-elite athletes those who had competed in regional competitions. Subjects were assessed using the Psychological Skills Inventory for Sports (PSIS). Male scored higher on team emphasis while female scored higher in the skill of confidence. Why male scored higher on team emphasis could be because they were able to bond better than their female counterparts. The sample size for this study was highly skewed in favour of the male. This could have had an impact on the results.

Bulinda (2008) analysed demographic factors affecting goal orientation and satisfaction among Kenya volleyball league players. The subjects included 134 volleyball players (male $n=62$, female $n=72$) drawn from twelve Kenyan National

Volleyball League division one and two. This study revealed that female players were more task oriented than their male counterparts. Additionally, there were no significant differences between male and female players on task and ego orientation. The concept of gender disparity and mental/psychological skills and is very debatable in many related studies hence the need for this study.

Fairouz et al. (2013) compared 12 psychological skills of 152 martial sports athletes (95 Judokas, 15 Wrestlers, 12 Boxers and 30 Karate; male $n= 89$, female $n=63$). The Ottawa Mental Skills Assessment Tool Version 4 (OMSAT-4) was used. The questionnaire assessed three categories of mental skills; foundation, psycho-somatic and cognitive skills. The results revealed that the subjects used more foundation skills. A non-significant difference on the 12 mental skills of the OMSAT-4 according to gender was also recorded. This study focused on psychological skills in individual sports, the current study focused on mental skills using team sports.

Ankebe et al. (2014) examined gender differences in the sport psychological skills profile of adolescent sport participants using the ACSI-28 questionnaire with a sample of one hundred and sixty-two grade 8 learners (77 boys and 85 girls). The study revealed that male and female groups did not differ significantly or practically in any of the 7 subscales for sport psychological skills. The assumption from these findings could be that 13-year-old male and female exhibit the same sport psychological skills and can therefore be treated as a homogeneous group and be subjected to the same mental skills training. Very little research has considered the relationship between gender and various mental skills, which lend further support to the significance of the present study.

2.4 Studies on Mental Skills and Type of Sport

Masciana, Van Raalte, Brewer, Branton and Coughlin (2001) measured the effects of cognitive strategies on a dart-throwing task. The relationship between self-talk and performance was examined by analysing a total of 47 studies. The results indicated that self-talk was the most preferred cognitive strategy (compared to imagery, physical instruction drilling and participants' own strategy) and yielded the most significant performance improvements. However, divergent results about self-talk were found in this study. Negative self-talk did not impede performance and there was inconsistent evidence for the differential effects of instructional and motivational self-talk based on task characteristics. This study also suggested that mental strategies complements physical practice to improve performance.

Thelwell and Greenlees' (2001) study examined the efficacy of a mental skills package to both improve consistency and level of performance in semi-professional cricketers ($n=16$), and to investigate the influence of different performance measures on cricketing performance. Subjects were matched into experimental and control groups and cricketing performance was monitored subjectively and objectively across two seasons. Prior to the second season, the subjects in the experimental group were provided with an intervention package consisting of goal-setting, activation, regulation, self-talk, mental imagery and concentration. Results showed that cricketers in the experimental group experienced improved performance consistency and improved performance when using subjective scoring procedures, but only a performance improvement was recorded using objective measures. Subsequent single-case analysis applied to the data of four of the experimental participants also revealed support for the efficacy of the intervention. A mental skill package was seen to be beneficial since it enhanced performance consistency and actual levels of performance

using both objective and subjective scoring measures to improve the sensitivity of performance indicators.

Rogerson and Hrycaiko (2002) investigated five male junior hockey goaltenders (ages 16–18 years) with the purpose of examining the effectiveness of using relaxation in the form of centering and self-talk to produce improvements in goalkeeping. The results showed that mental skills' training was effective in producing improvements in goal-save percentage. This study did not address the specific sport, time available, existing mental skills and the commitment of the participants in the specific training. These could have had an impact on the results.

Masters (2002) evaluated self-focused attention, stress and the competitive anxiety among 21 university hockey players (M=10, F=11) in performance situations. The tool used was the Competitive State Anxiety Inventory-2 (CSAI-2) and the Private Self-Conscious (PSC) subscale of the Self-Consciousness Scale. The study examined the level of self-focused attention in situations with varying degrees of stress. The results of the study concluded that stress does induce self-focused attention.

Manzo, Ilhe-Helledy and Blake (2004) studied 21 university swimmers (female $n=14$, male $n=7$) to see if optimistic thinking improved swimming performance. The swimmers were given a workbook entitled "The Optimistic Swimmer," which is designed to teach youth swimmers how to think positively. The results were significant in finding that the swimmers who received the workbook increased their level of optimism as measured by pre- and post-tests. The small number of participants in the study could have been a limitation for generalization on the need to design a mental training programme.

Hardy et al. (2004) evaluated 291 athletes who had a mean age of 21.82 (M=151, F=140) to find out how they used self-talk and if it varied throughout the sporting calendar. Athletes who competed in a variety of individual and team sports were used. The subjects also represented a range of skill levels from recreational to international standards. One questionnaire assessed the type of self-talk used and the other assessed belief in self-talk. The findings indicated that 75% confirmed that the level of self-talk increased as the season progressed and that individual sport and skilled athletes used this technique more frequently than team sport and less skilled athletes. Results also indicated that belief in self-talk was not significantly correlated with performance; however, those who used positive self-talk performed significantly better than those who used negative/mixed self-talk. These results suggested that the type of self-talk used (that is, positive or negative) was more important than one's belief in self-talk.

Hassan, Enoka and Stuart (2009) assessed the mental skills training of university soccer players with an average of 10 years playing experience (male $n=$, 25-36 years). The purpose of the study was to identify the kind of mental skills needed most by the university soccer players. The findings revealed that imagery, goal setting, self-talk and relaxation were the most needed psychological skill training by the respondents. The results are in line with other studies which have emphasized that imagery could improve their performance (Omar- Fauzee, Daud, Abdullah & Rashid, 2009).

Eloff, Monyeki and Grobbelaar (2011) determined the possible positional differences in mental skill levels among 91 male field hockey players. The OMSAT-3 assessment tool and the results indicated that goalkeepers had the lowest scores for 7 out of the 12 tested mental skills; whereas midfielders outperformed the other positional groups in 6 out of the 12 tested mental skills. The study demonstrated the importance of

considering positional demands when developing and implementing mental skills training programmes for field hockey players. This shows that for team sports, some mental skills are more important than others depending on the position of play.

TaeHee and David (2016) conducted a case study of mental skills training for a Taekwondo Olympian. The purpose of the study was to identify the effect of systematic mental skills training (MST) for a taekwondo gold medallist. The Korean Test of Performance Strategies, Sport Attributional Style in Korean Athletes, and a few sessions of interviews were applied to investigate the effect of MST. The pre and post-test mean scores of both the Korean Test of Performance Strategies and Sport Attributional Style in Korean Athletes were compared. Excluding the 'activation' variable, all of the psychological skills, such as self-talk (4.25–5), emotional control (3.75–4.5), automaticity (3.75–4.25), goal setting (4.5–5), imagery (4.25–5), negative thinking (3.25–4.75), anxiety management (4.5–5) and physical and mental condition (4.5–5) improved. MST is believed to have helped the athlete succeed. The results of the study concur with those of Thomas and Fogarty (1997) on whether or not cognitive strategies are effective across additional sport domains in which golfers improved performance and reported a higher confidence after a mental skills package was implemented. Due to the nature of these studies, the results may not be generalized to team sports or even other individual sports but the results support the efficacy of mental skills training.

According to Yun, Kim and Lim, (2006) top performance occurs when a combination of factors such as physical fitness, skill, psychology and strategy are optimized. However, the weighting of these critical factors is dependent on the sport in question. For instance in soccer and squash, psychology, fitness and strategy are reported to be

the decisive factors that determine competitive success (Lim, 2007). The current study investigated the mental skill status of volleyball and hockey players in order to determine if there were differences in the 12 mental skills amongst the national league volleyball and hockey players in Kenya.

2.5 Mental Skills of Elite and Non-elite Athletes

The more sports-related skills are continuously practised, the measure of marked improvement declines significantly at higher levels of participation, compared to the initial acquisition stages thus, the higher the skills level, the more pivotal the role of mental aspects become (Jones, Hanton, & Connaughton, 2002). The implication of this is that mental skills should significantly improve as athletes transition from non-elite to elite levels. This is because improved performance for elite athletes responds to psychological intervention. As postulated by Durand-Bush et al. (2001) superior mental skills are a characteristic of the expert performer in sports and can form the difference between successful and less successful athletes. Studies have found that elite athletes are better able to concentrate, have more commitment and self-confidence and are more motivated to do well (Michael & Jim, 2010). Elite athletes also interpret their anxiety symptoms as more facilitative than non-elite athletes in competition, despite their similar anxiety intensity (Janelle, 2002). For the psychological skills that appear to control these responses, elite athletes engage in more extensive use of goal-setting, focusing, refocusing, competition planning and imagery than their non-elite counterparts (Durand-Bush et al., 2001).

Orlick (2008) assessed the mental readiness of 235 Canadian Olympic athletes through questionnaires and individual interviews. The results indicated that mental preparation stood out as that parameter that significantly differentiated the Olympic

athletes in terms of performance as compared to technical and physical preparation. This advances the notion that elite athletes in any sport portray superior mental skills. The current study sought to find out if the volleyball and hockey mental skills for non-elites, pre-elites and elite players significantly differ.

The OMSAT-3 mental skills questionnaire was used by Durand-Bush et al. (2001) in order to compare elite and non-elite Canadian athletes. Results emanating from this study indicated that elite athletes recorded better values (statistically significant) than non-elite athletes in focus, refocus, stress reaction, commitment and self-confidence. In contradicting findings in a study by Mohammad (2012), non-selected athletes were found better than selected athletes in dealing with refocus and stress. This study was conducted during the Asian games in Doha in 2008.

Kitsantas et al. (2002) compared self-regulatory processes among novice, non-expert, and expert volleyball players. Expert, non-expert, and novice female college volleyball players ($N = 30$) were evaluated on overhand serving skill at a practice session. Twelve psychological variables were assessed. Experts were superior to the other two groups in all measures: goal-setting, self-efficacy, planning, strategy use, self-monitoring, self-evaluation, attributions, adaptation, self-efficacy beliefs, perceived instrumentality, intrinsic interest and self-satisfaction.

Jones, Mace, Bray, MacRae, and Stockbridge, (2002) assessed the impact of motivational imagery on the emotional state and self-efficacy levels of novice climbers. Novice female climbers ($n = 33$) participated in four sessions of rock climbing techniques. The control group performed additional light exercise, while an experimental group participated in an additional scripted imagery training programme. Imagery comprised both motivational, general-mastery and motivational

general-arousal content. Pre- and post-training self-efficacy and perceived stress measures were obtained. Climbing performances were similar for the control and the experimental group. The imagery group reported significantly lower levels of stress and higher levels of self-efficacy for performing correct techniques. This study depicted that mental imagery focused on performance competence reduced stress and increased levels of self-efficacy for performing physical tasks in novice performers.

Steven (2003) evaluated the psychological characteristics of elite and non-elite level of gymnastics. This study used 195 gymnasts aged between 10 and 28 years and drawn from 17 gymnastic clubs. A significant difference was demonstrated between the elite gymnasts. Significant differences between elite gymnasts scores and the others were reported in Personal Coping Strategies (PCS), goal preparation, concentration and peaking under pressure, coping with adversity and confidence as well as achievement motivation. The results of this study agree with those of other related studies (Mohammad, 2012; Seyedeh & Rasoul, 2015).

Kruger (2010) used the Psychological Skill Inventory (PSI) and OMSAT-3 to compare successful and unsuccessful college hockey players. Results revealed that successful hockey players had better results in achievement motivation, fear control, self-confidence, stress reaction, imagery and mental practice. This could be attributed to the many years of exposure to practice and competition environments. The more a player is exposed to their game, the stronger they become psychologically.

Mohammad (2012) explored the effect of gender and competing level on selected mental skills in Iranian elite and non-elite male and female taekwondo athletes. In this study, 88 males and 54 female taekwondo athletes were selected (elite=60, non-elite=82). The OMSAT-3 was used as an assessment tool where foundational,

psychomotor and cognitive skills were assessed. Results from the study indicated a significant difference between males and females only in activation. Elite athletes significantly had better values than non-elite athletes in game planning, goal setting, activation, relaxation, self-confidence and commitment.

Mir, JafarBarghi, Amir, Leila, Shabnam, SalarAbbasi and Ali (2014) compared the mental skills of elite and non-elite boys' individual athletics in region 13 of Islamic Azad University. The sample size was 80 (elite $n=40$, non-elite $n=40$). A questionnaire (with 60 questions) based on the southern Australia sport institution evaluation centre where every ten questions measured one of the mental skills such as motivation, concentration, self-confidence, adjustment of energy level, mental picture-making process and target-based affair was used. Results from this study depicted that the elite group performed higher than the non-elite group in all the mental skills under study.

Seyedeh et al. (2015) compared sport imagery ability and its subscales among elite and non-elite athletes. The participants were aged 17-30, from whom 134 elite and 176 non-elite athletes were selected through convenience sampling. William and Cumming's Sport Imagery Ability Questionnaire was used to measure sport imagery. Results of an independent t-test showed that there was a significant difference between elite and non-elite athletes in terms of sport imagery ability. Elite athletes were found to be more skilled than non-elite athletes in skill, strategy and goal.

Noômen, Mohamed, Nasri, & Brahim, (2015) utilized OMSAT-3 developed by Durand-Bush et al. (2001) to assess the sensitivity, internal consistency and the factorial structure of an Arabic version of OMSAT-3 among 526 Tunisian athletes (aged between 16 and 19 years) drawn from 105 soccer players (males $n=62$, females

$n=43$), 82 basketball players (44 men and 38 women), 78 volleyball players (42 men and 36 women), 65 handball players (38 men and 27 women); 102 athletes (59 men and 43 women) and 94 Martial art sports athletes (48 men and 46 women). The participants were divided into elite ($n=240$) and non-elite ($n=286$) athletes according to their level of performance. OMSAT-3 evaluated 12 mental skills, classified in 3 categories; basic skills (goals setting, self-confidence and commitment); psychosomatic skills (stress reactions, fear control, relaxation and activation) and cognitive skills (concentration, control of the distractions, imagery, mental practice and planning of the competitions). The results showed robust psychometric properties for the Arabic version of the instrument: it was sensitive according to the level of practice (8/12 subscales could discriminate the elites and non-elites athletes). The current study was carried out using a similar tool.

2.6 Summary of Reviewed Literature

In most of the studies reviewed, the sample was drawn from elite and non-elite players in different games (Kruger, 2010; Mohammad, 2012). As demonstrated in the findings of these studies, elite (successful) athletes use mental skills to a greater extent than non-elite (non-successful) athletes (Toering, Elferink, Jordet & Visscher, 2009). Sports participation at competitive levels might be affected by gender (Hammereister & Burton, 2004). Reviewed studies also focused on the mental skills of athletes in different sport disciplines (Eloff et al., 2011). Additionally, most of the studies reviewed have only considered a single sport and one gender. However, there was a need to compare the mental skills of athletes across related team sports. Volleyball and field hockey game duration is almost the same, have similar playing positions, are endurance based and both are self and externally paced. Additionally both sports rely on mistakes of their opponent. Most of the studies reviewed on mental skills and level

of participation targeted only two levels; elite and non-elite. The current study included non-elite athletes in order to capture a wider array of playing experience. The current study also went a step further in comparing the mental skills of two sports. This is in an attempt to establish if players in hockey and volleyball possessed similar mental skills.

Currently, in the Kenyan context, hockey's popularity and performance in regional, continental and global events seems to be waning over the years. This is supported by the fact that Kenya's national male field hockey team maintained an unbroken record as the continent's champions and severally represented the continent in the Olympics between 1956 and 1988, except in the 1976 and 1980 Olympics in Montreal and Moscow when Kenya boycotted the games on political grounds (Bhushan, 1988). The closest Kenya came to global supremacy in hockey was in the 1988 summer Olympics with a third overall finish. Volleyball on the other hand seems to be gaining popularity based on the performance of the Kenyan national female team. The national male volleyball team has not been successful compared to their female counterparts. There are limited studies on the mental skills of these players at the club level especially in the Kenyan context. Owing to the disparity in terms of performance between the male volleyball team and the female volleyball team at the international stage, the current study sheds light on the different mental skills and their impact on athletes. The inclusion of three levels of participation in this study made the present study to be exhaustive. Limited literature on the mental skills and the influence of such factors such as gender, level of participation and the type of sport, the current study investigated the mental skills status of players in their respective national leagues in field hockey and volleyball in Kenya.

CHAPTER THREE: METHODOLOGY

3.1 Research Design

This study used a descriptive survey design. According to Salkind (2000), the survey method provides a broad picture of the subjects being studied and provides an easy way to generalize to a population. Miller (2004) and Babbie (2001) note that this method allows the researcher to predict the characteristics of a population from a sample and allows the researcher to collect a wide scope of information from a large population as well as providing a researcher's identical intention to all respondents. This made it possible for the researcher to examine relations such as gender, type of sport and level of participation that would have been difficult to isolate experimentally. The population involved in this study were players of volleyball and field hockey national league clubs in Kenya.

3.2 Measurement of Variables

The independent variables in this study included; gender (male and female), type of sport (hockey and volleyball) and level of participation (elite, pre-elite and non-elite). The dependent variables included the three categories of mental skills; foundation, psychomotor and cognitive mental skills. Mental skills status was measured on a 5-point Likert scale of the OMSAT-3 questionnaire.

3.3 Study Area

This study targeted players in Kenya's national field hockey and volleyball leagues. The data for this study was collected at the specific training sites for the selected teams in Nairobi and Kiambu Counties. This is because the randomly sampled teams were in these two counties.

3.4 Target Population

The target population for this study were players of clubs in the Kenyan national volleyball and field hockey leagues. The 2016 Kenya national volleyball league had 13 male and 9 female teams as reported by the Kenya Volleyball League Newsletter (2016). According to the Kenya Hockey Union League Newsletter (2016), there were 16 male and 9 female teams in the 2016 Kenyan national field hockey league (Appendix C). Most of the volleyball teams had an average of 14 players per team while hockey had 18 first team players. The target population therefore consisted of 22 volleyball teams (308 players; 182 male and 126 female) and 25 hockey teams (450 players; 288 male and 162 female). These translated to a total target population of 758 players (470 male and 288 female).

3.4.1 Inclusion Criteria

The study included a population of male and female volleyball and hockey players who had participated in the national (non-elite), regional (pre-elite) and international competitions (elite). Only male and female players who constituted the first team in their respective clubs were included in this study.

3.4.2 Exclusion Criteria

Team B players in their respective clubs were not included in this study. Substitutes in their respective teams were not included in this study. In addition, those already recruited but whose data did not contain the primary information (such as age, gender and level of play) and those who had not fully filled the questionnaire were excluded at the data analysis stage. Furthermore players who could not take part in the training sessions due to injuries were also not included.

3.5 Sample Size and Sampling Techniques

Participants for this study were drawn from the volleyball and hockey players who participated in the national leagues in the year 2016. Simple random sampling was used to select 50 % participants from the Kenyan national volleyball league and 50% from the Kenyan national hockey league. For a survey study, a sample of between 10%-25% is adequate (Nachmias & Nachmias, 2005). For this study, given the size of the target population, 50% of clubs playing in the Kenyan national leagues of volleyball and field hockey were selected using simple random sampling technique. A total of 7 male clubs and 5 female clubs (98 male and 70 female) for volleyball and 8 male clubs and 5 female clubs (144 male and 90 female) for hockey were therefore randomly sampled. Total sample size was therefore 402 respondents (242 male and 160 female). Out of the sample, 207 male (a response rate of 44%) and 123 female (a response rate of 38%) formed the final sample of this study. The total number of players who participated in the study was 330 (82%). This was due to availability of players in their respective first teams during data collection training sessions.

3.6 Research Instrument

The Ottawa Mental Skills Assessment Tool (questionnaire) was used as the instrument for data collection. This instrument was divided into two areas. Section A gathered data on demographic details while Section B gathered information on the mental skills status using the Ottawa Mental Skills Assessment Tool (OMSAT-3). The Ottawa Mental Skills Assessment Tool (Appendix B) was developed by Durand-Bush et al. (2001). Due to the breadth of mental skills to be assessed, the OMSAT-3 was deemed appropriate. It comprised of 48 items that measured 12 mental skill subscales; foundation mental skills included goal-setting, self-confidence and

commitment, psychomotor mental skills comprised of fear control, relaxation, activation control and stress reaction while cognitive mental skills included focusing, refocusing, imagery, mental practice and competition planning. The items in the OMSAT-3 questionnaire were answered on a 5-point Likert scale of strongly disagree, disagree, don't agree/don't disagree, agree and strongly agree and were scored from 1 to 5. The mean values were used for scoring in this study.

3.6.1 Validity and Reliability

According to Thompson, Nelson and Silverman, (2011) validity is the soundness or correctness of a test or instrument in measuring what it is designed to measure. Reliability on the other hand is the ability of a test to yield similar results when used by different administrators or in a repeated test under similar circumstances. The OMSAT was devised by Salmela and colleagues in 1992 to measure athlete's mental skills. Bota (1993) tested the first and second versions of the OMSAT and recommended that the instrument be further revised. Subsequently, a study was conducted by Durand-Bush et al. to create an enhanced version of the OMSAT and assess its psychometric properties. The OMSAT-3 has been assessed for its suitability in various studies with subjects drawn from a variety of sport disciplines (Durand-Bush et al., 2001, Eloff, et al., 2011). Results from these tests demonstrated an acceptable internal consistency, with a mean alpha score of .80. In terms of validity, the OMSAT-3 has been found to significantly discriminate between competitive and elite level athletes (Durand-Bush *et al.*, 2001). Reliability was examined during pre-testing by carrying out a test-retest with a two-week period between testing acceptability with coefficient of 0.89. This correlation was found to be satisfactorily for use in this study.

3.7 Recruitment and Training of Research Assistants

A total of ten undergraduate research assistants who were university students playing in the university teams of hockey or volleyball were selected and subjected to a half-day training facilitated by the researcher in Kenyatta University (Appendix D). The research assistants were trained so as to familiarize with them with the 12 mental skills captured in the OMSAT-3 questionnaire. During the training, the researcher expounded on each of the 12 mental skills and the assistants filled a copy of the questionnaire. The research assistants were also trained on administration of questionnaires, data management and professionalism. After the trained assistants demonstrated competency in data collection, duties and responsibilities were assigned.

3.8 Pre-testing of Research Instrument

The pre-test was used to assess logistics, length of time required for respondents to fill the questionnaire and to train research assistants on the procedures for this study. Pre-testing of the instrument that was used for data collection was conducted with players of one female and one male team in volleyball and field hockey national league who were not eventually included in the final study. The total number of players involved in the pre-testing of the research instrument were 64 (volleyball n=28, hockey n=36). During the pre-test, the test re-test method was used to determine the reliability of the instrument. OMSAT-3 questionnaire was administered to the 64 subjects and re-administered after 2 weeks to see if the results obtained from the two tests were positively correlated. A reliability index of 0.89 was obtained. After the pre-test, the researcher realized that there was need to explain the 12 mental skills in the OMSAT-3 to ensure that subjects understood and responded precisely.

3.9 Data Collection Techniques

Data collection took place between May to June 2017 at the training grounds of the selected clubs. The study targeted to collect data from 402 players and selected days for data collection depending on the scheduled training sessions and venues for different clubs. However, due to availability challenges on training days, only 330 respondents successfully filled the questionnaire. The primary researcher liaised with the coaches in charge of the randomly selected teams (for logistical concerns) to administer the OMSAT-3 in a group setting. The researcher/research assistants explained the study to the participants and sought their consent after which the questionnaire was administered. The researcher with the help of the research assistants supervised the filling and collection of the questionnaire. They also assisted in case any clarification was sought by the players. The filling of the questionnaire took an average of 20 minutes. Respondents were expected to select one alternative response from 1 to 5 to indicate their level of agreement with each of the statements. Only those who fully filled the consent form were recruited for the study.

3.10 Data Analyses and Presentation

Data coding, entry and cleaning were done using Statistical Package for Social Sciences (SPSS) version 20. Descriptive statistics of means, standard deviations and percentages were used to summarize the data in order to understand its distribution. Tables were used to present the results. The independent t-test which is an inferential statistical test that determines whether there is a statistically significant difference between means of two unrelated groups (Haslam, 2003) was used. This was after the data passed the normality assumption. The independent t-test was used to determine whether there was a statistically significant difference between the means of

volleyball and hockey players and between male and female players. According to Nachmias and Nachmias (2005), the one-way analysis of variance (ANOVA) is used to determine whether there are any significant differences between the means of three or more independent (unrelated) groups and determines whether any of those means are significantly different from each other. The one-way ANOVA was again used to assess if there existed any significant difference in mental skills status based on participants' level of participation (elite, pre-elite and non-elite) and post-hoc tests of Tukey's Honest Significant Difference to confirm whether differences occurred between the groups. An alpha level of .05 was used.

3.11 Logistical and Ethical Considerations

The approval of the research proposal and research authorization to conduct the study was given by the Kenyatta University Graduate School (Appendices E and F respectively). Ethical review of the study protocol was sought and approval granted by Kenyatta University Ethics Review Committee (Appendix G). Research authorization and permit to conduct the study in Nairobi and Kiambu counties was also sought and granted by National Commission for Science, Technology and Innovation of Kenya (Appendix H and I respectively). In order to protect intellectual property rights, citation of primary authors was adhered to. To promote ethical concerns, an informed consent from respondents was sought (Appendix A) and a debriefing done. Participants were given a chance to ask questions. It was also explained to the respondents that participation in this study was voluntary and that information obtained in this study was purely for academic purposes. Codes rather than actual names of respondents were used in coding the data in order to protect the confidentiality of respondents.

CHAPTER FOUR: RESULTS

4.1 Introduction

This study set out to analyse the mental skills status of volleyball and field hockey players in national league clubs in Kenya. This chapter presents findings of this study which includes data analysis and results. SPSS version 20 was used for data analysis and the data is presented using tables. Demographic information (gender, sport type, age and level of participation) and descriptive statistics preceded hypotheses testing.

4.2 Demographic Characteristics

This study involved participants from the Kenya's national leagues of volleyball and hockey. A total of 330 players of the national leagues of hockey and volleyball participated in this study as respondents. The study targeted to collect data from 402 participants however, the inclusion criteria was that only male and female players who constituted the first teams of their respective clubs and were present during the training sessions were to be recruited in this study. The variance between the expected (402 participants) and the actual number of respondents (330) was because a number of players playing for the first teams of their respective clubs were absent from training during the specific training days when data was collected. This represented 82% of the projected sample size. The age of the participants is presented in Table 4.1.

Table 4.1: Age Ranges of Participants

Age Category	Number	Percentage
Under 19	16	4.84
19-21 years	110	33.33
22-24 years	98	29.69
25 and over	106	32.12
Total	330	100

Table 4.1 shows that most of the respondents 110 (33.3%) were aged between 19 and 21 years, 106 (32.1%) were aged older than 25 years, 98 (29.6%) were aged between 22 and 24 years while 16 (4.8%) were under 19 years of age. The gender of the participants is presented in Table 4.2.

Table 4.2: Gender of Participants

Gender	Number	Percentage
Males	207	62.72
Females	123	37.28
Total	330	100

Table 4.2 shows that 207 (62.7%) of the participants were male while 123 (37.2%) were female. The level of participation of the players is presented in Table 4.3.

Table 4.3: Level of Participation

Level of Participation	Number	Percentage
Non-elite	62	18.78
Pre-elite	119	36.06
Elite	149	45.15
Total	330	100

Table 4.3 shows that 149 (45.15%) of the players were elite, 119 (36.06%) were pre-elite while 62 (18.78%) were non-elite athletes. Level of participation of players was closely related to years of play and exposure. Distribution of the participants by type of sport is presented in Table 4.4.

Table 4.4: Distribution of the Players by Type of Sport

Type of Sport	Number	Percentage
Volleyball	159	48.18
Hockey	171	51.82
Total	330	100

As shown in Table 4.4, field hockey had 171 (51.82%) participants while volleyball had 159 (48.18%) participants. For hockey, 8 male clubs (144 players) and 5 female clubs (90 players) were sampled. The hockey clubs had an average of 18 players for

the first team. For volleyball, 7 male clubs were sampled (98 players) and 5 female clubs were sampled (70 players). The volleyball clubs had an average of 14 players per team. However, only players who formed the first team and were present during the training sessions were used as respondents in this study. Due to these factors, the total sample size used was 330 participants. Statistics show that the male clubs participating in the national hockey and volleyball leagues were more than those of the female hence this justified the reason why more male respondents were recruited in the study.

4.3 Participant's Foundation Mental Skill Status

The foundation mental skills assessed in this study included goal setting, self-confidence and commitment. Responses on each of these mental skills were captured using four questions thus the foundation skills were assessed using 12 items. The means and standard deviations of the participants' responses to these mental skills are presented in Table 4.5.

Table 4.5: Means and Standard Deviations of Participants' Foundation Mental Skills (N=330)

Foundation Mental Skills	Mean	SD
I am committed to becoming an outstanding competitor	4.52	.60
I believe i have the capacity the personal capacity to achieve my goals	4.51	.64
My goals pushed me to work harder	4.39	.77
I am determined to never give up in my sport	4.35	.87
I believe I can succeed in my chosen activity in spite of any obstacle I encounter	4.33	.74
I set goals to improve daily aspects of my performance	4.26	.84
Am confident in most aspects of my performance	4.19	.85
I act confidently even in difficult sport situations	4.17	.79
I set daily training goals	4.12	.96
I set difficult but achievable goals	3.85	1.02
I am willing to sacrifice most other things to excel in my sports	3.83	1.06
I feel more committed to improve in sport than anything else in my life	3.47	1.24

Table 4.5 shows a descriptive analysis of foundation mental skills. Each of these mental skills was addressed by four items. It was necessary to analyse every item so as to gauge individual rating by the respondents. The first three items with the highest means and standard deviations were: commitment to becoming an outstanding competitor in their chosen sport ($4.52 \pm .60$), believe in personal capacity to achieve one's goals ($4.51 \pm .64$) and the player's goals that pushed them to work harder

(4.39±.77). The items that scored with the least means and standard deviations included; setting difficult but achievable goals (3.85±1.0), willingness to sacrifice most other things to excel in their chosen sport (3.83±1.0) and the feeling of being more committed to improve in sport than anything else in their life (3.47± 1.2). The composite means and standard deviations of the participants' foundation mental skills are presented in Table 4.6.

Table 4.6: Foundation Mental Skills of Respondents

Foundation Mental Skill	N	Mean	Std. Deviation
Self-confidence	330	4.30	.48
Goal setting	330	4.16	.66
Commitment	330	4.04	.64

Table 4.6 shows the summarized means and standard deviations for foundation mental skills where self-confidence recorded the highest mean and standard deviation (4.30±.66), followed by goal setting (4.16±.66) and then commitment (4.03±.64). Respondents in this study believed in their ability to succeed in their chosen sport regardless of the challenges they faced. This explains why self-confidence had the highest mean and standard deviation. However, as much as the players were committed to becoming outstanding competitors, they were not willing to sacrifice their sport at the expense of other things which they deemed more important. Lack of commitment by respondents could be explained by the limited probability of turning professional and making a career as a sportsperson.

4.4 Participants Psychomotor Mental Skills

The psychomotor mental skills assessed in this study comprised of stress reaction, fear control, relaxation and activation control. Responses to each of these mental skills were captured using four items hence the psychomotor mental skills were assessed using a total of 16 items. The means and standard deviations arising from the responses on these mental skills are presented in Table 4.7.

Table 4.7: Means and Standard Deviations of Participants' Psychomotor Mental Skills (N=330)

Psychomotor Mental Skills	Mean	SD
I can easily activate myself up to an optimal level where my performance is at its best	4.15	.83
I can easily activate myself before a competition if I am down	4.10	.93
I can consciously decrease the tension in my muscles	3.49	1.04
I find it easy to relax	3.48	1.23
I can increase my energy level when am too relaxed in competition	3.42	1.32
I find it easy to relax quickly	3.33	1.21
I am afraid to lose	3.22	1.47
I can relax effectively during critical moments in a competition	3.18	1.24
I can increase my energy level when am tired in training	3.05	1.26
There are a number of things that are potentially dangerous and make me afraid	3.03	1.32
I find that big crowds make me nervous in competition	2.64	1.29
I find it hard to regain control after getting upset during a performance	2.62	1.26
I experience performance problems because I am too nervous	2.44	1.29
I find it hard to gain control of things to reduce my fears in training	2.42	1.18
My body tightens unnecessarily during competition	2.35	1.13
I find it difficult to train because of the fear involved in my sport	1.85	.96

Table 4.7 shows the individual means and standard deviations of psychomotor mental skills of the respondents. The first three items with the highest means and standard deviations were: ability to activate oneself to an optimal level where their performance was at its best ($4.15 \pm .83$), ability to easily activate oneself before a competition if they were down ($4.10 \pm .93$) and the ability to consciously decrease the tension in their muscles (3.49 ± 1.0). The items that with the least means and standard deviations included: finding it hard to gain control of things to reduce fears in training (2.42 ± 1.1), their body tightening unnecessarily in competition (2.35 ± 1.13) and finding it difficult to train because of the fear involved in their sport ($1.85 \pm .96$). The composite means and standard deviations of the participants' psychomotor mental skills are presented in Table 4.8.

Table 4.8: Means and Standard Deviations of Respondents Psychomotor Mental Skills

Psychomotor Mental Skills	N	Mean	Std. Deviation
Activation control	330	3.66	.76
Relaxation	330	3.35	.99
Fear control	330	2.61	.85
Stress reaction	330	2.49	.98

Table 4.8 shows the composite means and standard deviations for psychomotor mental skills where activation control recorded the highest mean ($3.66 \pm .76$), relaxation ($3.35 \pm .99$), fear control ($2.61 \pm .85$) and stress reaction ($2.49 \pm .98$). Respondents in this study recorded the highest mean because they were able to apply energizing techniques to increase energy levels in order to optimize performance. However, their stress reaction recorded the least mean due to nervousness experience

during game situations. This could be attributed to lack of adequate exposure and lack of sufficient skills on stress reaction in competitive settings.

4.5 Participants Cognitive Mental Skills

The cognitive mental skills assessed in this study comprised of focusing attention, refocusing attention, imagery, mental practice, and competition planning. Response from each of these mental skills was captured using four items and therefore the cognitive mental skills were assessed using 20 items. Descriptive statistics were then used to describe the means and standard deviations of these mental skills as shown in Table 4.9.

Table 4.9: Means and Standard Deviations of Participants Cognitive Mental Skills (N=330)

Cognitive Mental Skills	Mean	SD
I mentally practise my sport with maximum performance in mind	4.10	.84
My mental practice is planned	3.99	.91
I plan a regular set of things to think about before a competition	3.98	.98
I mentally practice for critical situations in competition	3.95	.99
I plan a regular set of things to do before a competition	3.90	.94
I mentally practise my sport on a daily basis	3.89	1.01
I have clear mental images	3.86	.96
I find it easy to change images in my mind	3.79	.96
I plan a regular set of things to do during a competition	3.79	1.02
I have a plan that includes certain cue words I say to myself during competition	3.77	1.08
I find it easy to create mental images	3.67	1.02
I can feel movements in my imagery	3.63	1.06
I dwell upon mistakes during training	3.19	1.37
I find it difficult to concentrate in certain training situations	2.42	1.24
I compete better in practice than i do in competition	2.29	1.28
I have difficulty finding effective strategies to remain focused throughout an entire competition	2.31	1.12
I find it hard to get an unexpected event off my mind during competition	2.35	1.14
I find it difficult to concentrate in certain training situations	2.42	1.24
I lose my focus during important competitions	1.99	1.14
I lose my focus during daily training	1.83	1.10

Table 4.9 shows the individual means and standard deviations of cognitive mental skills of the respondents. The first three items with the highest means and standard deviations were: ability to mentally practise one's sport with maximum performance in mind ($4.10 \pm .84$), being able to plan a regular set of things to think about before a competition ($3.98 \pm .98$) and ability to mentally practise for critical situations in competition ($3.95 \pm .99$). The items that with the least means and standard deviations were: ability to compete better in practise than in competition (2.29 ± 1.28), losing focus during important competitions (1.99 ± 1.14) and losing focus during training (1.83 ± 1.1). The composite means and standard deviations of the participants' cognitive mental skills are presented in Table 4.10 below.

Table 4.10: Cognitive Mental Skills of Respondents

Cognitive Mental Skills	N	Mean	Std. Deviation
Mental practice ability	330	4.00	.69
Competition planning	330	3.82	.89
Imagery ability	330	3.71	.88
Refocusing attention	330	2.53	.86
Focusing attention	330	2.08	.84

Results from Table 4.10 shows that mental practice ability had the highest mean and standard deviation ($4.00 \pm .69$) followed by competition planning ($3.82 \pm .89$), imagery ability ($3.71 \pm .88$), refocusing attention ($2.53 \pm .86$) and focusing attention ($2.53 \pm .86$). Respondents in this study scored higher in mental practice ability than in other cognitive mental skills because they were able to create a mental blueprint for better responses. Poor sense of control and inability to hold concentration can be blamed for the focusing attention and refocusing attention low scores.

4.6 Foundational, Psychomotor and Cognitive Mental Skills of Volleyball and Field Hockey Players

The mental skills were grouped in the three distinct categories. These included foundation (goal setting, self-confidence and commitment), psychomotor (stress reaction, fear control, relaxation and activation control) and cognitive (focusing attention, refocusing attention, imagery ability, mental practice ability and competition planning) mental skills. The means of volleyball and field hockey players were compared and the results are presented in Table 4.11.

Table 4.11: T-test Results on Foundation, Psychomotor and Cognitive Mental Skills of Volleyball and field Hockey Players

Mental skills Scores among Volleyball and Field Hockey Players							
	Volleyball		Hockey		T	Df.	t-test Score Sig. (2-tailed)
	Mean	Std. Deviation	Mean	Std. Deviation			
Foundation Mental Skills	4.42	.54	3.98	.48	7.85	328	.000
Psychomotor Mental Skills	2.91	.60	3.22	.53	-4.99	328	.000
Cognitive Mental Skills	3.20	.46	3.22	.52	-.387	328	.699

Results presented in Table 4.11 show that among the volleyball players, foundation mental skills had the highest mean and standard deviation ($4.42 \pm .54$), followed by cognitive ($3.20 \pm .46$) and then psychomotor mental skills ($2.91 \pm .46$). Hockey players had the highest mean and standard deviation in foundation ($3.98 \pm .48$), followed by cognitive ($3.22 \pm .52$) and psychomotor mental skills ($3.22 \pm .53$). An independent t-test analysis depicted that the mean differences between volleyball and field hockey players were significant in foundation mental skills ($t=7.85$, $df=2$, $p<.001$) and

psychomotor mental skills ($t=-4.99$, $df=2$, $p<.001$). The null hypothesis H_{01} (sections i and ii) that there would be no significant difference in foundation and psychomotor mental skills among volleyball and field hockey players was rejected. However, the mean differences were not significant in cognitive mental skills ($t=-.387$, $df=2$, $p=.699$). H_{01} (section iii) that there would be no significant difference in cognitive mental skills among volleyball and field hockey players was accepted.

4.7 Mental Skills Status of Volleyball and Field Hockey Players

The means for the 12 mental skills were analysed for both the volleyball and field hockey players. Also, the means for foundation, psychomotor and cognitive mental skills for volleyball and hockey were analysed using an independent t test. The results are presented in Table 4.12.

Table 4.12: T-test Results on Mental Skills Status of Volleyball and Field Hockey Players

Mental Skills	Type of Sport		t-test Scores		
	Volleyball	Hockey	T	Df.	Sig. (2-tailed)
N	159	171	.888	328	.038
Mean	3.46	3.41			
Std. Deviation	.51	.50			

The mean for the volleyball participants' mental skills was higher ($3.46 \pm .51$) than that of the hockey participants ($3.41 \pm .50$). An independent t- test revealed that the mean difference of mental skills between volleyball and hockey players was statistically significant ($t=0.9$, $df=328$, $p=.038$) with volleyball having a higher mean than hockey. The null hypothesis (H_{02}) that stated that there would be no significant difference in the mental skills status of volleyball and field hockey players was therefore rejected.

4.8 Mental Skills Status of Volleyball and Hockey Players by Gender

To address null hypothesis three (H_{03}), this study assessed the foundation, psychomotor and cognitive mental skills status of volleyball and hockey players in the national league clubs in Kenya. The respondents answered 48 items in a 5 point Likert scale which was used in the study.

4.8.1 Foundation Mental Skills Status of Male and Female Volleyball and Field Hockey Players

This study analysed the means and standard deviations of foundation mental skills status of males and females in volleyball and field hockey. The foundation mental skills were categorized as goal setting, self-confidence and commitment. The results are presented in Table 4.11.

Table 4.13: T-test Results of Foundation Mental Skill Status of Male and Female Volleyball and Field Hockey Players

Foundational Mental Skills							
	Gender	N	Mean	SD	T	Df	P
Goal setting	Male	207	4.18	.61	-.94	328	.35
	Female	123	4.11	.74			
Self-confidence	Male	207	4.32	.47	-.74	328	.46
	Female	123	4.28	.49			
Commitment	Male	207	4.04	.63	-.012	328	.98
	Female	123	4.04	.65			

Results from Table 4.13 show that male athletes had higher means and standard deviations than females athletes for goal setting ($4.18 \pm .61$, $4.11 \pm .74$) and self-confidence ($4.32 \pm .47$, $4.28 \pm .49$) respectively. An independent t-test revealed that goal setting and self-confidence for volleyball and hockey male and female respondents' did not significantly differ ($t = -.94$, $df = 328$, $p = .35$; $t = -.74$, $df = 328$,

$p=.46$). Male and female respondents' mean commitment score was the same ($4.04\pm.63$; $4.04\pm.65$). The hypotheses that stated that there would be no significant difference in foundation mental skill status of volleyball and field hockey national league club players in Kenya based on gender was not rejected.

4.8.2 Psychomotor Mental Skills Status of Male and Female Volleyball and Field Hockey Players

The means and standard deviations of stress reaction, fear control, relaxation and activation control were analysed to ascertain if there were any differences between male and female volleyball and field hockey players and the results are presented in Table 4.14.

Table 4.14: T-test Results of Psychomotor Mental Skills Status of Male and Female Volleyball and Field Hockey Players

	Gender	N	Mean	SD	T	Df	P
Fear Control	Male	207	2.63	.87	-.64	328	.52
	Female	123	2.57	.81			
Relaxation	Male	207	3.52	.90	-4.21	328	.00
	Female	123	3.06	1.06			
Activation Control	Male	207	3.73	.76	-1.89	328	.06
	Female	123	3.56	.75			
Stress Reaction	Male	207	2.54	.99	-1.41	328	.16
	Female	123	2.39	.95			

The Table 4.14 shows that male athletes had higher means and standard deviations than female athletes for fear control ($2.63\pm.87$, $2.57\pm.81$), relaxation ($3.52\pm.90$, 3.06 ± 1.06), activation control ($3.73\pm.76$, $3.56\pm.75$) and stress reaction ($2.54\pm.99$, $2.39\pm.95$). An independent t-test revealed that fear control ($t=-.64$, $df=328$, $p=.52$),

activation control ($t=-1.89$, $df=328$, $p=.06$) and stress reaction ($t=-1.41$, $df=328$, $p=.16$) for volleyball and hockey male and female respondents did not significantly differ. However, male and female respondent's relaxation mean score was significantly different ($t=-.4.21$, $df=328$, $p=.00$). The hypotheses that stated that there would be no significant difference in psychomotor mental skill status of volleyball and field hockey national league club players in Kenya across gender was rejected.

4.8.3 Cognitive Mental Skills Status of Male and Female Players

The status of five cognitive mental skills of male and female volleyball and hockey players were compared in this study. These mental skills included; focusing attention, refocusing attention, imagery ability, mental practice and competition planning. The results are presented in Table 4.15.

Table 4.15: T-test Results of Cognitive Mental Skills Status of Male and Female Players

	Gender	N	Mean	SD	T	Df	P
Focusing attention	Male	207	2.13	.83	-1.43	328	.16
	Female	123	1.99	.86			
Refocusing attention	Male	207	2.58	.86	-1.45	328	.15
	Female	123	2.44	.84			
Imagery ability	Male	207	3.74	.79	-.88	328	.38
	Female	123	3.65	1.01			
Mental practice	Male	207	4.03	.67	-.93	328	.36
	Female	123	3.95	.72			
Competition planning	Male	207	3.85	.82	-.79	328	.43
	Female	123	3.77	.99			

Results from Table 4.15 shows that mean male focusing attention score ($2.13 \pm .83$) was higher than the mean female focusing attention score ($1.99 \pm .86$). The mean male

refocusing attention score ($2.58 \pm .86$) was higher than the mean female refocusing attention score ($2.44 \pm .84$). Mean male imagery ability score ($3.74 \pm .79$) was higher than female imagery ability score ($3.65 \pm .1.01$). The male players had a higher mean ($4.03 \pm .67$) for mental practice than their female counterparts ($3.95 \pm .72$). Competition planning male mean score ($3.85 \pm .82$) was also higher than the mean female competition score ($3.77 \pm .99$). An independent t-test revealed that focusing attention ($t = -1.43$, $df = 328$, $p = .16$), refocusing attention ($t = -1.45$, $df = 328$, $p = .15$), imagery ability ($t = -.88$, $df = 328$, $p = .38$), mental practice ($t = -.93$, $df = 328$, $p = .36$) and competition planning ($t = -.79$, $df = 328$, $p = .43$) for volleyball and hockey male and female respondents did not significantly differ. The hypotheses that stated that there would be no significant difference in cognitive mental skill status of volleyball and field hockey national league club players in Kenya across gender was not rejected.

4.9: Gender and Mental Skill Status of Players

The mental skill status of players was compared in order to ascertain whether any significant differences existed between the means of the 12 mental skills for males and females. The results are presented in Table 4.16

Table 4.16: T-test Results of Gender and Mental Skill Status of Volleyball and Field Hockey Players

Mental Skills and Gender				Independent t-test		
	Gender	Mean	Std. Deviation	T	Df	Sig. (2-tailed)
Mental Skills	Male	3.51	.51	-4.4	328	.000
	Female	3.31	.46			

Results from Table 4.16 shows that male athletes had a higher mean and standard deviation ($3.51 \pm .51$) than female athletes ($3.31 \pm .46$). An independent t-test ($t = -4.4$, $df = 328$, $p < .001$) indicated that there were significant differences in mental skills based on gender. Male players were found to have a significantly higher mean

difference as compared to the female players. The null hypothesis (H_{04}) was rejected as there was statistically significant difference between the means of the male and female participants ($p < .05$). These results indicated that gender did affect significantly the respondents' mental skills status.

4.10: Mental Skill Status and Level of Participation.

To address hypothesis five (H_{05}), the study participants were categorized in three participation levels (non-elite, pre-elite and elite). This was in order to establish whether differences in mental skills status existed based on their level of participation. The assumption was that the more a player is exposed to different and away competition environments, their mental skills status improves. The results are presented in Table 4.17 below.

Table 4.17: One-way ANOVA Results of Level of play and Mental Skill Status of Volleyball and Field Hockey Players

Level of Participation	N	Mean	Std. Deviation	ANOVA		
				df	F	Sig.
Elite	149	3.48	.52	2	1.69	.19
Pre-elite	119	3.38	.51			
Non-elite	62	3.38	.50			
Total	330	3.43	.51			

As shown in Table 4.17, elite athletes had the highest mean and standard deviation score ($3.43 \pm .51$) while the mean score for non-elite and pre-elite athletes was the same ($3.38 \pm .52$, $3.38 \pm .51$). However, results from One way ANOVA ($F=1.69$, $df=2$, $p=.19$) indicated that there were no significant difference in means of the three categories of players regardless of their level of exposure and participation. This suggested that the mental skills of hockey and volleyball players in the national leagues in Kenya could not be differentiated by their level of participation. The null

hypothesis (H₀) was not rejected as there was statistically no significant difference between the means of the non-elite, pre-elite and elite participants ($p < .05$). These results indicated that level of participation did not affect significantly the respondents' mental skills status.

CHAPTER FIVE: DISCUSSION

5.1 Demographic Details of Study Participants

5.1.1 Gender of the Players

In spite of the increased participation of female athletes in sport, women are still faced with gender equity issues in sports governance, athletic media representation and perception in sports and their participation rate in sports is much lower than that of male athletes (Thibault, Guillaume, Betherlot, Helou, Schaal, Quinquis & Toussaint, 2010). From the findings of this study, majority of the players were male (62.7%) compared to the female players (37.2%). More male teams than female teams formed the sample population for this study. The explanation as to why more male players were sampled for this study as opposed to female players was the existence of more male clubs (13) than female clubs (9) participating in the national volleyball league in Kenya. The scenario was the same for hockey where more male clubs (16) took part in the national hockey league than female clubs (9). Research evidence continues to show that participation in sport is dominated by male players due to existence of a higher male interest in sports and the ability of men to prioritize sports more than women (Humpreys & Ruseski, 2007; Breuer, Hallmann & Wicker, 2011; Jose, Policarpo & David, 2014). Gender differences in competitive sport continue to be evident. In many societies, girls and women enjoy much less free time than boys and men (Chick, 2010; Whiteside & Hardin, 2011). Females' lesser participation in sports largely reflects their higher prioritizing of other activities (George, 2010; Apostolou, 2014).

Females are less interested and report less desire to participate and excel in sports than males (Evans, Schweingruber, & Stevenson, 2002; Jacobs, Lanza, Osgood, Eccles, & Wigfield, 2002). According to Thibault et al., (2010), there are more male athletes in sports as compared to female athletes and the gender disparity in terms of participation in sport performance has been stable for a long time. Men are more likely to adopt behaviours at increased risk such as sports, whereas a higher percentage of women engage in preventive actions (such as exercise for fitness) linked to health and longevity. Another explanation could be the higher interest of media in male sport, and the greater rewards offered.

5.1.2 Age of Players

This study found out that 4.8% of the respondents were aged under 19 years. The ability to leap from high school to a national league enables athletes to take an early advantage of their talents. However, it is necessary to shield young players from physical injury and let them mature emotionally and receive education before competitively participating in the national league. The knowledge of the age at which athletes achieve elite performance was key in providing information that could help in long-term development of training and competition programmes and even resource allocation.

Peak performance age in volleyball is between 22 to 26 years of age (Gualdi-Russio & Zaccagni 2001). A study by Jose, Policarpo and David (2014) found out that the average age of volleyball players at professional level was above 25 years. The present study findings are similar to this study where 106 (32.1%) of the participants were aged over 25 years. Older athletes are more experienced and this helps them to instinctively know how to deal with different situations during practice and

competitions. According to Maday (2000), players who are older than 25 years have a lot of valuable input in terms of experience and exposure. García-de-Alcaraz, Ortega and Palao (2015) analysed male volleyball players' technical-tactical performance profile of the spike at various age groups (under 14, under 16 and under 19) and found an increase in the speed of the game by means of fast attacks by players who were 17 to 19 years of age. This shows that older athletes have more experience which contributes to higher efficacy. In the current study 32.1% of the players were aged over 25 years representing more exposed and experienced players.

Chen (2010) observes that the peak performance in hockey is between the ages of 27 and 32 years. In the selection of elite players for baseball, age-performance relationship is based on the comparison over time for a given player rather than comparing across players (Albert, 2002). Most volleyball and hockey players in the national league clubs in Kenya commence their participation in lower divisions while still in high school and then proceed to play in national league at the university level. This explained the higher percentage of participants (62%) in this study being between 19 and 24 years. Players under 19 years barely make it to play at the national club levels because most of them are still in high school and have not been scouted to play at the club level. In the national hockey league, 11 out of the 16 teams were drawn from university teams representing 68.7% of the total teams playing in the league. This showed that Kenyan Universities are grave stakeholders in the development of field hockey in Kenya.

5.1.3 Level of Participation of the Players

As shown in Table 4.3, majority (45.2%) of the respondents were elite volleyball and hockey players. This was a key finding in this study because the respondents in this

study were playing in the national league of their respective sport. By the time these players are recruited to play in the first team of their clubs, they must have shown exceptional skills that justify their inclusion in their respective first teams. Playing at club level is technical and requires skill and potential. Success in volleyball and hockey requires a variety of factors ranging from physical, psychological and technical. Therefore to compete at the national level as was the case for the current study's respondents; one had to demonstrate tactical abilities in addition to physical performance skills. In the current study, the largest percentage of respondents had playing exposure at international competitions (elite) compared to those who had regional (pre-elite) and national exposure (non-elite). Elite players are mature and contribute a lot to their respective team based on their experience and exposure. Playing experience and exposure has also been shown to better ground players both technically and tactically. By the time most players are recruited to play at the national league level in volleyball and hockey in Kenya, most of them have had international exposure while playing at lower levels such as regional, inter-schools and the East Africa University Games. Besides, most of these clubs participate in continental and world club championships.

5.1.4 Type of Sport

Findings indicated that 51.8% of the participants were drawn from hockey compared to 48.2% who were drawn from volleyball (Table 4.4). This was the case because hockey teams were comprised of more players per team as compared to volleyball teams. Additionally, there were more hockey teams (16 for males and 9 for females) that participated in the national league compared to volleyball which had 13 male teams and 9 female teams. The play format in field hockey is different from volleyball. There are more field hockey teams playing in the national league as

opposed to the national volleyball league which is dominated by teams from the disciplined forces.

5.2 Mental Skills

Mental skills status were analysed under three categories; foundation, psychomotor and cognitive.

5.2.1 Foundation Mental Skills

Foundation mental skills form the base upon which other mental skills are built on. They are the most fundamental and determine the development of other mental skills. The findings of this study revealed that subjects used more foundation skills as compared to psychomotor and cognitive mental skills. Foundation mental skills seem easier to master compared to psychomotor and cognitive mental skills which are performance based and require athletes' use during training and actual competition. These findings are similar to those of Fairouz et al. (2013) where respondents were reported to use more foundation skills. According to Jean (2010), foundation skills represent those qualities that are basic and necessary psychological skills and a certain level of proficiency in these skills must be achieved before other mental skills are learned. As shown in Table 4.6, self-confidence had the highest mean followed by goal setting and commitment. Volleyball and hockey players in the study expressed a state of assurance and self believe as their highest ranked foundation mental skill. Self-confidence plays a significant psychological role in volleyball and hockey as it helps players to remain more determined, focused and in control. Studies have shown that self-confidence is a very key mental skill and leads to enabling feelings and good performance (McPherson, 2000). Commitment recorded the lowest mean score in this study. Commitment to one's sport is a dynamic and a psychological state that is

bound to vary over time, seasons and over the course of the athletes' careers and the level of commitment influences behaviour in form of choice, persistence and effort (Lavon, 2013). Very few players have turned professional in volleyball and hockey in Kenya. Furthermore, as career path of a player in volleyball and hockey in Kenya is not very lucrative and some of the players are students while others are involved in other occupations. This may explain why the commitment of volleyball and hockey players was the least amongst the foundation mental skills in this study.

5.2.2 Psychomotor Mental Skills

This study assessed the psychomotor mental skills of volleyball and hockey players. Results (Table 4.8) revealed that activation control had the highest mean score followed by relaxation, fear control and stress reaction. The volleyball and field hockey players who took part in the study showed a higher ability to apply energizing techniques (activation control) to increase energy levels so as to achieve an optimal performance level. The psychological demands of hockey and volleyball like in most team sports require players to continuously activate their energy levels to meet physical, technical and tactical needs of the game. According to Jean (2010), a very high level of activation is desirable for optimal performance in gross motor skills. However, the optimal level of activation control to maximize performance in volleyball or hockey can also be attributed to individual differences such as prior game experience and the amount of practice an athlete has had. This information is very important to volleyball and hockey coaches, trainers and athletes as well. Volleyball and field hockey players can increase their activation through learning effective breathing skills, using energizing imagery, formulating energizing verbal cues, transferring energy and using distraction. Stress reaction recorded the lowest mean score (Table 4.8) amongst volleyball and hockey players in this study. This can

be attributed to psychosocial dynamics (factors related to uncomfortable and unfamiliar playing situations such as crowd booing, unsportmanship behaviour and excessive aggression from opponents) within the national volleyball and hockey leagues in Kenya. Tabei, Fletcher, and Goodger (2012) had explored the relationship between organizational stressors and athlete burnout in collegiate soccer players and found that organizational stressors linked to burnout were training and competition load, training and competition environment, travel arrangements, nutritional issues, risk of injury, leadership style, lack of social support, career and performance development, inadequate communication channels, and role overload. Sources of stress in sports may be attributed to personality of the athlete, history of stressors and coping resources available to the athlete. If the athlete's judgment, the situational game demands exceed the personal resources needed to address the situation, the athlete's stress reaction will be significant (Cox, 2007). Other stressors in sport are associated primarily and directly with the organization within which a player is operating (Fletcher, Hanton, & Mellalieu, 2006). Negative emotions, undesirable behaviours, dissatisfaction, overtraining, poor psychological health, low well-being, burnout and underperformance are also sources of stress for athletes (Fletcher, Hanton, & Wagstaff, 2012; Tabei, et al., 2012). The relatively low level of stress reaction status reported in this study could be attributed to competitive stress anxiety, low intrinsic motivation and daily life stress of volleyball and hockey players. All these coupled with decrement with regard to an athlete's levels of proficiency tend to undermine an athlete's ability to effectively address stress reaction and associated physiological consequences that may lead to vulnerability (Raedeke, Lunney, & Venables, 2002).

5.2.3 Cognitive Mental Skills

Findings revealed that mental practice ability had the highest recorded mean amongst volleyball and hockey players while focusing attention had the lowest mean score (Table 4.10). Mental practice ability has been shown to enhance performance in volleyball serving and field hockey by allowing athletes to refine their sport skills without having to physically engage in the activity (Jean, 2010). Because it is impossible to physically practice all the time, it may be that those athletes committed enough to engage in mental practice in situations when they are resting, traveling, or injured are those ones who excel above those who limit their training to physical forms of deliberate practice only (Jennifer, Bradley, Nikola & Robert, 2006). In this study, respondents' thinking ability about how to perform a skill in either volleyball or hockey was higher than other cognitive mental skills as mental practice ability was used to 'psych up', calm down, or focus on relevant aspects in the game of volleyball or hockey. Focusing attention was relatively low in this study and this could be attributed to the inability of the respondents in this study to hold concentration during training and competition situations and being unable to get off one's mind unexpected events. Focusing attention has a significant influence on motor skill performance and learning (Wulf, Zachry, Granados, & Dufek, 2007). The benefit of focusing attention has been demonstrated in a variety of motor skills, including basketball (Zachry, Wulf, Mercer, & Bezodis, 2005), jumping (Wulf et al., 2007) and leg cycling (Totsika & Wulf, 2003). The requisites for focusing attention include skill level, situation at hand, individual differences and arousal level (Cox, 2007).

5.3 Foundation, Psychomotor and Cognitive Mental Skills of Volleyball and Field Hockey Players

This study aimed to examine if there would be differences in mental skills status among volleyball and field hockey players in foundation, psychomotor and cognitive mental skills. Findings revealed that there were significant differences in foundation and psychomotor mental skills of volleyball and field hockey players. However, the mean differences in cognitive mental skills were not significant (Table 4.11). Many sport psychology practitioners consider the development of foundation skills such as confidence as core because they must be stabilized before the other categories of mental skills are developed (Mamassis & Doganis, 2004; Beaumont, Maynard, & Butt, 2015). The finding that volleyball players had a significantly higher mean score for foundation mental skills than their field hockey counterparts is not surprising. This is because Kenyan volleyball players are older and may have a longer playing experience than their hockey counterparts. Volleyball is more popular and lucrative than field hockey in Kenya going by the number of volleyball players who are plying their trade in Europe. This explains why volleyball players in this study reported better goal setting, self-confidence and commitment due to the promising nature of the sport in Kenya. These findings concur with those of Ayumba (1996) that the dismal performance by the Kenya national field hockey team can be blamed on lack of overseas exposure and inferior game plan among other factors. Given that the national team recruits players from the national league clubs, this might be the reason why Kenyan volleyball has performed considerably better than hockey at the global stage. Additionally, field hockey's global presence after the 1988 Seoul Olympics has been waning. However, hockey players had a significant higher mean score than volleyball players in psychomotor mental skills. These findings may suggest that field

hockey being more of a contact sport as compared to volleyball helped hockey players in this study to develop fear control, relaxation, activation control and stress reaction more than volleyball players. These findings concur with those of Robert, Joanne and Briana (2009) assertions that mental toughness, achievement motivation, fear control and stress reaction were among the key variables found in successful hockey players. Despite the lack of significant difference in cognitive mental skills, hockey players recorded a higher value than volleyball players. There is no preceding research that has compared the cognitive mental skills of volleyball and hockey players and this limits results comparison. However, it can be postulated that both volleyball and field hockey players require planning and thinking during practice and performance in order to improve performance in sports. Findings of this study suggest that focusing attention, refocusing attention, imagery ability, mental practice ability and competition planning status for both volleyball and hockey players in this study were similar.

5.4 Gender and Mental Skills

Male and female mental skills for volleyball and field hockey are discussed under foundation, psychomotor and cognitive mental skills.

5.4.1 Gender and Foundation Mental Skills of Volleyball and Field Hockey Players

Male players recorded a higher goal-setting mean score than the female participants (Table 4.13). However, gender did not significantly influence goal setting and self-confidence. Male players' higher score for goal setting as compared to female players can be attributed to male players setting more outcome goals than female players. These findings concur with other earlier studies where male players are more result

oriented (Polson, 2013, Koon & Chee, 2014). Male players set different type of goals as compared to female players due to their physical performance orientation. Male players set physical conditioning goals, performance improvement goals, goals to improve satisfaction, and motivation improvement goals more often than female players. Female players perceive more internal barriers to achieving goals than male players (Weinberg et al., 2000). This could have been the reason why male players had a higher goal setting score than female players in the present study.

Male players also recorded higher levels of self-confidence score than the female players. However, gender did not significantly influence self-confidence. Lack of self-confidence in sports by female athletes as compared to male athletes is a concern because self-confidence has an effect on the development of other mental skills. The importance of belief in oneself is very important in sports and can be developed through time and training (Jones, Hanton, & Connaughton, 2002). These findings concur with earlier findings that female athletes tend to demonstrate less confidence than male athletes especially when the task is competitive (Jamshaid & Muhammad, 2011; Fairouz et al., 2013). Nonetheless, the findings by Lopez-Walle, Mahoney and Morales (2006) amongst male and female university teams reported that female players scored higher in self-confidence than male players. These varied findings require more gender studies on self-confidence amongst male and female athletes.

Both male and female players recorded a similar score for commitment. Commitment in sports is greatly influenced by personal investment, involvement opportunities, attractive alternatives, social support and social constraints. The present results are inconsistent with those of a previous study where male players reported significantly ($p < .05$) higher commitment values than female players (Jennifer et al., 2012). Other

previous studies have shown no significant differences in the commitment of male and female players which can be attributed to similar participation motivation (Weiss et al., 2002, Wilson et al., 2004). These findings concur with the present study findings where no significant differences were found between male and female players commitment score.

5.4.2 Gender and Psychomotor Mental Skills of Volleyball and Field Hockey Players

Lack of proper fear control in sports has been associated with a prevalence of negative psychological and physical effects such as anxiety, depression and eating disorders (Conroy, 2001; Sagar, Lavalee & Spray, 2007). It appears that being afraid to lose, potentially dangerous aspects in one's chosen sport, safety concerns during practice and competition as well as an athlete's inability to gain control in order to reduce fear is a predominant concern among athletes. Previous studies had reported that the fear of experiencing shame and embarrassment upon failure was the highest fear among athletes (Sagar & Stoeber, 2009; Sagar et al., 2010). As noted by Weinberg and Gould (2007) symptoms of anxiety and inability to initiate relaxation hinders performance by increasing fatigue and downgrading motor coordination. Athletes who have trained their relaxation skills can employ them in anxiety management, in activating themselves and relieving localized muscle tensions while facilitating the recovery process.

The findings of the present study revealed that there were no significant differences in fear control, activation control and stress reaction among the male and female volleyball and hockey players (Table 4.14). However, male players recorded higher mean scores in all the four psychomotor mental skills due to their ability to utilize

performance skills during training and actual competition better than the female athletes. The low mental skills status reported in this study could be attributed to lack of adequate awareness by the respondents on how to maximize psychomotor mental skills. Findings also indicated that there was a significant difference in relaxation mean score between the male and female volleyball and hockey players (Table 4.14) in favour of male athletes. The higher significant male relaxation score could be attributed to male players' ability to learning different relaxation techniques and psyching-up skills to reduce or increase their level of arousal efficiently as compared to their female counterparts.

Sources of stress for athletes differ from one athlete to another. However, the main stress sources for athletes include selection issues, finances, training environment, nutrition, injury, leadership issues, goals and expectations, training requirements and coach leadership (Woodman & Hardy, 2001; Rintaugu, Litaba, Muema & Monyeke, 2014). Arising from these findings, it can be concluded that male players were able to cope with these stressors better than the female players (Anshel, Sutarso & Jubenville, 2009). Contradictory findings by Melinda, Katrien and Greet (2012) assert that very little difference in perceived-stress and emotional-distress existed in women and men who participated in different sport-types, suggesting that 'one-activity-fits-all recommendations'. Male players were found to have a higher activation control score as compared to females in this study. These findings support the study by Nathanael (2017) and Amorose and Horn (2000) where male athletes were found to have higher motivation through competition scores than female athletes. This could be explained by the perception that male athletes might be socialized through cultural and societal norms to participate in sport to achieve success and demonstrate superiority over

opponents and this might fuel their inner desire for dominance, and motivate them to achieve a higher level of performance.

5.4.3 Gender and Cognitive Mental Skills of Volleyball and Field Hockey Players

The ability to focus directly affects the psychological elements required to excel in any performance, such as mental readiness and distraction control and athletes must learn to sustain their best focus in the face of distractions and refocus quickly whenever that focus is lost (Orlick, 2008). Anxiety produces adverse effects on attention patterns of players such as distraction and reduced working memory capacity which makes athletes to shift their focus of attention from relevant information related to the task at hand to the characteristic worries of the state of anxiety (Lundqvist, 2006). This can hinder a player's performance by increasing fatigue and downgrading motor coordination (Weinberg et al. 2007). The focusing attention and refocusing attention of male and female volleyball and hockey players did not significantly differ in this study. Male players recorded higher means than female players in focusing attention and refocusing attention. This showed that male players in this study were able to hold and maintain concentration more than their female counterparts. These results concur with those of Rafael and Brittany (2013) where male athletes were found to focus more on task-relevant thoughts than females. Arising from these findings, it can be concluded that the male players were not easily distracted and were better able to consciously control movements that had already become automatic as compared to the female players.

While cognitive activities can never replace physical practice, there is compelling evidence demonstrating the integral role that mental practice and imagery play in expert performance with athletes who use imagery more frequently find it more

effective and easier to do (Sanna, 2006). As opined by Vestberg, Gustafson, Maurex, Ingvar and Petrovic (2012) physical activities are known to have different effects on mental rotation according to the athlete's length of practice regardless of gender. In the current study, no significant differences were found between the mental practice and imagery of male and female players. These findings confirmed previous study results by Sanna (2006) who found no significant gender differences on imagery use (frequency, deliberation, relevance, concentration, and enjoyment) within deliberate practice framework using the Sport Imagery Questionnaire (SIQ). These results concur with the results of Weinberg, Joanne and Knight (2003) where male players exhibited greater use of imagery than women on all the four scales of the SIQ. Reza, Amir, Firozeh and Venables (2011) while comparing the mental imagination skill of male and female athletes of individual and team athletic fields found that males had higher extrinsic imagination than females.

Male and female players vary with respect to the level and intensity of their involvement in sports. In the present study, female players scored lower than male players on imagery and mental practice may be because they did not find winning so important so as to engage in mental practice and imagery. Male athletes value winning more than anything else as compared to female athletes. Previous research has demonstrated that mental rotation tasks evoke right hemisphere dominance in men but no differences between the hemispheres in women (Vogel, Bowers, & Vogel, 2003; Rilea, Hugdahl, Thomsen, & Erlsand, 2006). The early life play experiences of boys also provide more familiarity with constructing figures out of blocks or cubes, and this familiarity or comfort promotes the use of holistic strategies that facilitate task performance (Alexander & Evardone, 2008). The current study results replicate those of Hamdi and Fabrice (2014) that men exhibit better spatial abilities than

women. This can be attributed to the use of more efficient strategies by men during mental imagery tasks than women. Obviously, there is need for additional research on gender differences in mental practice and imagery use to ascertain the reasons behind these differences and in turn help coaches and technical staff on how to increase mental practice and imagery use among volleyball and hockey female players.

Findings of the present study revealed that there were no significant difference between volleyball and field hockey male and female players on competition planning. Research on competition planning and especially on self-talk has shown that it has a positive effect on acquiring and mastering sport skills and improving performance in various sports such as tennis (Cutton & Landin, 2007) and soccer (Johnson, Hrycaiko, Johnson, & Halas, 2004). Findings of this study showed that male players planned regular set of things to do, say or think before and during competitions more than female players. Male players are more confident in their abilities and attitudes toward competition than women with male players being more eager to compete as opposed to female players who appear to shy away from competitions and are less likely to participate in sports to win compared to male players (Muriel & Lise, 2011). Male players are more likely than women to use high-stakes physical aggression whereas women's aggression more frequently involves indirect or relational tactics, such as gossiping (Campbell, 2002; Benenson, 2013). The non-significant difference in favour of male players in the competition planning scores could be attributed to participants' competitive experience and competitive setting plans based primarily on motivational cues. There is a possibility that self-control techniques, such as self-talk might have helped male players to regulate covert thoughts, feelings, and actions to attain their competition goals in order to meet the demands of changing competition environment more than their female counterparts.

Based on the findings of the present study, male and female athletes differ in their competition planning mainly due to male players' attitudes towards competition with the differential response to competitive pressure influencing the decision to enter competitions as well as performance in the competition in favour of male athletes.

5.5 Gender and Mental Skill Status of Volleyball and Field Hockey Players

Several studies in sports have explored mental skills across gender (Tobar & Morgan, 2002; Fairouz et al., 2013; Ankebe et al., 2014). In most of these studies, male athletes rate higher than female athletes in mental skills. Male athletes are more likely than female athletes to endorse competition and winning as motives for participating in sports, whereas goal orientation is endorsed similarly by females and males or even more by females (Findlay & Bowker, 2009; Jamshidi et al., 2011). Male players are more likely than women to endorse the competition against others as a reason to participate in sports (Apostolou, 2014; Deaner, Lowen, et al., 2015). Male athletes report greater ego-orientation than female athletes (Nien & Duda, 2008). Additionally, male athletes are more likely than women to report taking risks (Ružic & Tudor, 2011; Thomson & Carlson, 2015). This is attributed to male athletes' desire to compete and win more than females.

As shown in Table 4.16, there was significant difference in the mental skills status across gender. The composite mean for all the twelve mental skills showed that the male players mean score was higher than the female players' mean. These findings are consistent with previous findings that showed male players recording significant higher scores for mental skills than female players (Tobar & Morgan, 2002, Nina, 2014). An explanation to these could be that the male players were more task oriented than the female players. However, there are also studies that show that male and

female players do not significantly differ in mental skills status (Ankebe et al., 2014; Fairouz et al., 2013; Ali et al., 2011). The reason why male and female players do not significantly differ in mental skills is that they both exhibit the same psychological skills. Based on the divergent findings, no conclusive findings on mental skills and gender have been obtained. This might be due to the different mental skills that different researchers compare across gender, protocols used and cultural differences.

5.6 Mental Skill Status and Level of Participation

The use of psychological skills has distinguished between athletes who consistently win international titles from those who only do so once (Abbott & Collins, 2004). Previous findings have shown that elite athletes differ significantly with non-elite athletes in various mental skills such as self-talk (Hardy et al., 2004), commitment and self-confidence (Michael & Jim, 2010), focusing, refocusing and competition planning (Durand-Bush et al, 2001), stress reaction (Janelle, 2002), imagery (Monna, Daniel, Scott, Brian, & Malcolm, 2007). Self-regulation determines the extent to which athletes are meta-cognitively, motivationally, and behaviourally proactive participants in their own learning process (Zimmerman, 2006). Kitsantas et al., (2002) assessed self-regulation in the practice context comparing the self-regulation processes of expert, non-expert, and novice volleyball players as they practised the volleyball serve. The manner in which experts (elite players) plan daily practice routines was shown to have greater structure than the strategies used by non-experts or novices. Elite players were also shown to employ more self-regulatory strategies and self-evaluation more than both non-elite and novice players.

The findings of the present study revealed that there was no significant difference in mental skill status of elite, pre-elite and non-elite volleyball and hockey players of the

national league clubs in Kenya. Elite volleyball and field hockey players had the highest mean score while the mean score for pre-elite and non-elite participants was similar (Table 4.17). The findings are inconsistent with previous research conducted with other sports that have found that players, who are more skilled, irrespective of age, report the greatest use of psychological skills (Steven, 2003). One of the possible explanations to this could be the lack of emphasis on MST for volleyball and field hockey players.

According to Toering et al. (2009), elite and non-elite players judge their self-regulation skills differently and if players self-regulate more, they take more responsibility for their own learning. The findings of the study indicated that volleyball and hockey players were not able to choose appropriate regulatory strategies when they noticed a lack of skills necessary to attain a goal and this explains the reported lack of significant mental skill differences. According to Baker and Co'te' (2003), the variable that most consistently distinguishes the most successful athletes from their less successful counterparts is hours of training. The determination to succeed in one's chosen sport seems to make the difference between those who transition to become professional players and those who do not.

Previous studies have extended evidence that elite athletes possess significantly better mental skills than non-elite athletes (Durand-Bush et al., 2001; Kruger, 2010; Mohammad et al., 2012). Hassan et al. (2014) compared psychological skills of elite and non-elite volleyball players and found that elite volleyball players (those playing for premier league) compared with non-elite (those playing for youth clubs) recorded higher scores at all levels of mental skills. All these findings contrast with the current study where no significant differences were realized. The lack of significant

differences in the current study despite the level of participation may be attributed to lack of mental skills training for the national volleyball and field hockey players. However, Halldorsson, Helgason and Thorlindson (2012) results on attitudes, commitment and motivation among Icelandic elite athletes concur with the present study where no significant difference was found between elite and non-elite athletes mental skills. The results by Halldorsson et al. (2012) lack an objective comparison to the current study as only attitudes, commitment and motivation were considered unlike the current study where twelve mental skills status were analysed. Bulinda (2008) found no significant difference between more experienced and less experienced players on goal orientation among Kenya volleyball league players. These results further lend credibility to the current study findings where no significant difference existed regardless of the level of play and players' exposure. The non-significant differences that were found in this study between male and female elite, pre-elite and non-elite volleyball and field hockey players suggest the need for more mental skills research to validate the current study finding.

CHAPTER SIX: SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

6.1 Summary of the Findings

This study sought to analyse of the mental skills status of volleyball and field hockey players in national league clubs in Kenya and was based on the self-regulation conceptual framework that explained the interrelatedness of forethought, performance and self-reflective phases. The study also analysed the mental skill status of respondents in relation to gender, type of sport and level of participation. The OMSAT-3 was used to assess the status of 12 mental skills which were categorised into foundation (goal setting, self-confidence and commitment), psychomotor (stress reaction, fear control, relaxation and activation control) and cognitive mental skills (focusing attention, refocusing attention, imagery ability, mental practice and competition planning). Data was analysed using descriptive statistics, independent t-test and one way ANOVA.

A total of 330 volleyball and field hockey players in national league clubs in Kenya took part in the study. The results that were analysed using percentages indicated that there were more male participants (62.7%) than females (37.3%). Players who were between 19 and 21 years were 110 (33.3%) while those aged over 25 years were 106 (32.1%). Players aged between 22 and 24 years were 98 (26.6%) while those under 19 years were 16 (4.8%). Field hockey had 171(51.8%) players while volleyball had 159 (48.2%) players. The elite players were 149 (45.2%), pre-elite 119 (36.1%), while the non-elite were 62 (18.7) respondents.

Foundation mental skills status recorded the highest values compared to psychomotor and cognitive mental skills. These were the most developed and they formed the groundwork for other mental skills. Self-confidence had the highest mean score

followed by goal setting and then commitment. For psychomotor mental skills status, decreased activation control recorded the highest mean followed by relaxation, fear control and stress reaction. For cognitive mental skills status, mental practice ability had the highest mean followed by competition planning. Imagery ability came in third while refocusing attention and focusing attention had the lowest mean values respectively.

6.2.1 Foundation, Psychomotor, and Cognitive Mental Skills among Volleyball and Field Hockey players.

There were significant mean differences ($p < .05$) in foundation and psychomotor mental skills status of volleyball and field hockey players. However, there was no significant difference ($p > .05$) between hockey and volleyball players' cognitive mental skills status. Volleyball players were found to exhibit superior foundation skills than hockey players. However, hockey players had higher mean values for psychomotor and cognitive mental skills. There was significant difference ($p < .05$) between volleyball and hockey players when composite means for the twelve mental skills were compared.

6.2.2 Foundation, Psychomotor and Cognitive Mental Skills of Male and Female Players

Male players recorded a higher goal setting and self-confidence scores than female players. However, these gender differences on goal setting and self-confidence were not statistically significant ($p > .05$). Gender differences were only statistically significant on commitment where male players exhibited better scores. Additionally, there were no significant difference between male and female volleyball and field hockey players in fear control, activation control and stress reaction. Male players

recorded higher mean scores than female players in all the four psychomotor mental skills of fear control, relaxation control, activation control and stress reaction. Unlike the other three psychomotor mental skills, findings indicated that there was a significant difference between male and female volleyball and hockey players in relaxation control. The study findings also revealed that male players recorded higher scores for focusing attention, refocusing attention, mental practice, imagery and competition planning. However, these gender differences on cognitive mental skills were not statistically significant.

6.2.3 Gender and Mental Skill Status of Players

Male players recorded higher mean scores than female players in the twelve mental skills. Consequently, there was significant differences ($p < .05$) between male and female volleyball and field hockey players' mental skills.

6.2.4 Mental Skill Status of Non-elite, Pre-elite and Elite Players

There was no significant difference ($p < .05$) between non-elite, pre-elite and elite volleyball and field hockey players on mental skills status. Elite players who were exposed to international competitions had the higher score on mental skills status compared to the pre-elite and the non-elite players. However, these levels of participation differences on mental skills were not statistically significant.

6.3 Conclusions

More male clubs participated in the Kenya national club league of volleyball and field hockey than females. This explains the higher percentage of male players especially in field hockey teams. Most of the players were aged between 19 and 21 years and over 25 years. The study also concluded that there were more elite players playing in the national league for both field hockey and volleyball. This is mainly because most

of the first team players for volleyball and field hockey playing at the national league in Kenya have players who have played international competitions.

- The conclusions drawn on foundation, psychomotor and cognitive mental skills among Kenya volleyball and field hockey players were that foundation mental skills are the basic skills that form the basis for other mental skills and volleyball players had a better grounding in these mental skills that gave support to the development of secondary mental skills compared to field hockey players. Volleyball players had stabilised their foundation mental skills better than hockey players. This study concluded that possession of stronger foundation mental skills might be the reason for the superior performance at the global stage especially for the Kenyan national volleyball women team. Their stronger foundation mental skills status gives further credence to their global presence when compared to that of field hockey players. Additionally, volleyball and field hockey players cannot be distinguished based on cognitive mental skills.
- Findings from this study showed that male players had higher mean values in foundation, psychomotor and cognitive mental skills than their female counterparts in field hockey and volleyball. It is only in commitment where both male and female players' score was similar. Conclusions drawn from these findings are that male players in this study were stronger in goal setting, self-confidence, fear control, relaxation control, activation control, stress reaction, focusing attention, refocusing attention, imagery, mental practice ability, and competition planning. Additionally, gender is likely to influence psychomotor mental skills status.

- Conclusions on mental skill status and level of participation among Kenya volleyball and field hockey players were that mental skill status did not differ based on level of competition and exposure. Although elite players had higher mean values for mental skills, this was not statistically significant. This study concluded that there could be other factors that were responsible for the relative success of the female volleyball team at international matches. Such other factors could be physical, technical or tactical prowess. Additionally mental skills training may not be emphasised when training the volleyball and field hockey players.

6.4 Recommendations

Based on the conclusions of this study, the following recommendations were made:

6.4.1 Recommendations for Practice

- Given that more male teams take part in the volleyball and field hockey national league in Kenya, there is need to encourage more female participation at all levels (primary, secondary and tertiary institutions). KHU and KVF should be at the forefront to champion for the recruitment and inclusion of more female teams in order to bridge the participation gap that currently exists. This is a collective responsibility of trainers, coaches, and the management of volleyball and field hockey in terms of scouting, encouraging and providing opportunities for increased female participation. More so attention could be given to expanding the league so that there are more non-elite and pre-elite players. The ‘feeder system’ that ensures younger players are continuously being recruited in to lower playing divisions of volleyball and hockey will grow the non-elite and pre-elite base which will in turn

impact on increased participation by upcoming volleyball and field hockey players.

- Based on the importance of foundation mental skills, it is imperative that attention is given by the coaches/trainers to prioritise equipping volleyball and field hockey players through offering mental skills training that is geared towards enhancing goal setting, self-confidence and commitment. Once these foundation skills are stabilised, this will ultimately impact on the development of psychomotor and cognitive mental skills of volleyball and field hockey players in Kenya.
- Results on male players higher scores compared to female volleyball and hockey players provide a rationale on the need to incorporate mental skills training alongside physical, technical and tactical training. This will aid in bridging the mental skills status that exists across gender. Additionally, mental skill training programmes should be geared towards developing individual and team mental skills that are key in field hockey and volleyball.

6.4.2 Recommendations for Policy

- This study recommends that coaches of the national volleyball and field hockey clubs undergo mental skills training. KVF and KHU should take a leading role in such training in order to address the psychological needs of players. These coaches will therefore be able to conduct psychological skills training and develop psychological interventions to enhance performance in volleyball and field hockey. These sports federations could work together with the Ministry of Sports, Culture and Arts in expanding the pool of coaches equipped in mental skills training by offering training opportunities through

scholarships in order to strengthen the mental skills of volleyball and field hockey players. Additionally, regular training and in-service programmes on MST for volleyball and field hockey coaches, trainers and team managers should be encouraged. This will equip the technical bench to help volleyball and field hockey players and ultimately provide mental skills training and reinforce optimal psychological states. Also there is need to include MST as part of the physical education curriculum.

- Given that the ideal time for initiating mental skills training is when individuals are beginning to participate in volleyball or field hockey, games teachers in primary and secondary schools should be trained on mental skills so that they can transfer the same to the players at those levels players to ensure the establishment of foundation mental skills that are geared towards facilitating future achievement of athletes' potential.

6.4.3 Recommendation for Further Study

The following recommendations are made for future studies

- (a) Future studies on the effectiveness of mental skills training (MST) in enhancing performance in different sports; both individual (such as athletics and racket games) and team sports (such as ball games) in Kenya.
- (b) More studies should focus on comparing the mental skills of elite and non-elite athletes in different sports.
- (c) Studies should also focus on analysing the mental skills of male and female players in same sport.
- (d) Studies to analyse mental skills of athletes at other levels of competition such as primary, secondary, colleges and university level.

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APPENDICES

APPENDIX A: RESPONDENTS CONSENT FORM

My name is Vincent Muasya. I am PhD student from Kenyatta University. I am conducting a study on 'the mental skills status of the volleyball and field hockey league players of national league clubs in Kenya'. The information will be used by the Ministry of Sports, Culture and the Arts to improve performance in training and competitions in field hockey and volleyball for the Kenyan league teams.

Procedures to be Followed

Participation in this study will require that you fill the questionnaire by ticking the most appropriate answer that represents you. You have the right to refuse participation in this study.

Please remember the participation in this study is voluntary. You may ask questions related to the study at any time.

Discomforts and Risks

Some of the questions you will be asked may subject you to psychological discomfort. If this happens, you may request for more time to respond to the specific questions or refuse to answer these questions if you so choose.

Benefits

If you participate in this study you will help us to know the mental skills status of volleyball and field hockey players in the national league. You will also benefit from learning about the mental skills that are key to optimizing performance in your sport.

Confidentiality

Every effort will be made to ensure confidentiality of any identifying information that is obtained in connection with this study. Identity of the participants will be kept strictly confidential, and at the end of the study any information that could reveal the identity of the participant will be destroyed. No information revealing the identity of the participant will be included in the final report.

Contact Information

If you have any questions you may contact Dr. Andanje Mwisukha on 0722 936 588, Dr. Elijah Rintaugu on 0727 649 790 or Dr. Christine Wasanga on 0721 355 108 or the Kenyatta University Ethical Review Committee Secretariat on chairman.kuerc@ku.ac.ke, secretary.kuerc@ku.ac.ke, ercku2008@gmail.com

Participant's Statement

The above information regarding my participation in the study is clear to me. I have been given a chance to ask questions and my questions have been answered to my satisfaction. My participation in this study is entirely voluntary. I understand that my records will be kept private and that I can leave the study at any time. I also understand that there is no payment for participating in this study.

Name of Participant.....

Signature or Thumbprint

Date

APPENDIX B: OMSAT-3 PROTOCOL SHEET

SECTION I: DEMOGRAPHIC INFORMATION

Gender..... Sport: Volleyball () Hockey ()
 Age: Under 18 () 19-21years () 22-24years () Over 25 years ()
 Level of Participation: Elite () Pre-elite () Non-elite ()

SECTION 2: MENTAL SKILLS

This section will gather information on the mental skills status of respondents. Please circle a number from 1 to 5 to indicate your level of agreement with each of the statements. There are no right or wrong answers, so please give an immediate and honest response. Please answer all the questions. Think of the most recent performance in your sport, whether in training or competition, while responding to the items.

		Strongly Disagree	Disagree	Don't Agree/ Don't Disagree	Agree	Strongly Agree
1	I set daily training goals.	1	2	3	4	5
2	I set difficult but achievable goals.	1	2	3	4	5
3	I set goals to improve daily aspects of my performance.	1	2	3	4	5
4	My goals pushed me to work harder.	1	2	3	4	5
5	I believe I can succeed in my chosen activity in spite of any obstacles I encounter.	1	2	3	4	5

6	I act confidently even in difficult sport situations.	1	2	3	4	5
7	I am confident in most aspects of my performance.	1	2	3	4	5
8	I believe I have the personal capacity to achieve my goals.	1	2	3	4	5
9	I am committed to becoming an outstanding competitor.	1	2	3	4	5
10	I am willing to sacrifice most other things to excel in my sports.	1	2	3	4	5
11	I feel more committed to improve in my sport than to anything else in my life.	1	2	3	4	5
12	I am determined to never give up in my sport.	1	2	3	4	5
13	I am afraid to lose.	1	2	3	4	5
14	There are a number of things in my sport that are potentially dangerous and make me afraid.	1	2	3	4	5
15	I find it hard to gain control of things to reduce my fears in training.	1	2	3	4	5
16	I find it difficult to train because of the fear involved in my sport.	1	2	3	4	5
17	I find it easy to relax.	1	2	3	4	5
18	I find it easy to relax quickly.	1	2	3	4	5
19	I can relax effectively during critical moments in a competition.	1	2	3	4	5
20	I can consciously decrease the tension in my muscles.	1	2	3	4	5

21	I can increase my energy level when I am too relaxed in competition.	1	2	3	4	5
22	I can increase my energy level when I am tired while training.	1	2	3	4	5
23	I can easily activate myself up to an optimal level where my performance is at its best.	1	2	3	4	5
24	I can easily activate myself before a competition if I am down.	1	2	3	4	5
25	I find that big crowds make me nervous during competition.	1	2	3	4	5
26	I find it hard to regain control after getting upset during a performance.	1	2	3	4	5
27	I experience performance problems because I am too nervous.	1	2	3	4	5
28	My body tightens unnecessarily during competition.	1	2	3	4	5
29	I lose my focus during important competitions.	1	2	3	4	5
30	I lose my focus during daily training.	1	2	3	4	5
31	I compete better in practice than I do in competition.	1	2	3	4	5
32	I have difficulty finding effective strategies to remain focused throughout an entire competition.	1	2	3	4	5
33	I find it hard to get an unexpected event off my mind during competition.	1	2	3	4	5

34	I find it difficult to concentrate in certain training situations.	1	2	3	4	5
35	I dwell upon mistakes during training.	1	2	3	4	5
36	Mistakes often lead to make other mistakes when I compete.	1	2	3	4	5
37	I find it easy to create mental images.	1	2	3	4	5
38	I can feel movements in my imagery.	1	2	3	4	5
39	I have clear mental images.	1	2	3	4	5
40	I find it easy to change images in my mind.	1	2	3	4	5
41	I mentally practice my sport with maximum performance in mind.	1	2	3	4	5
42	I mentally practice for critical situations in competition.	1	2	3	4	5
43	My mental practice is planned.	1	2	3	4	5
44	I mentally practice my sport on a daily basis.	1	2	3	4	5
45	I plan a regular set of things to do before a competition.	1	2	3	4	5
46	I plan a regular set of things to do during a competition.	1	2	3	4	5
47	I have a plan that includes certain cue words I say to myself in competition.	1	2	3	4	5
48	I plan a regular set of things to think about before a competition.	1	2	3	4	5

Appendix C: Volleyball and Hockey Kenya League Teams

No	Volleyball Teams		Field Hockey Teams	
	Men	Women	Men	Women
1	Co-op Bank	KCB	Park road Tigers	Telkom Orange
2	KPA	MKU (Eld)	Parklands	USIU
3	Finlays	MKU (THK)	Multimedia	Sliders
4	AP Kenya	Ulinzi	JKUAT	Vikings
5	GSU	Nairobi Water	MKU	Strathmore Scorpions
6	Oserian	Oserian	Thika Rovers	Mombasa Sports
7	Prisons KAK	Talent Academy	Kabarak Uni	Multimedia Uni
8	Ulinzi	Prisons	KU	KU
9	Kenya Airways	Kenya Pipeline	UoN	MKU
10	Prisons Kenya		Technical Uni	
11	Forest Rangers		Kimathi Uni	
12	Prisons NBI		Karate Axion	
13	Nairobi Water		Daystar Uni	
14			NYS	
15			USIU – A	
16			Nairobi Simba	

APPENDIX D: TRAINING SCHEDULE FOR RESEARCH ASSISTANTS

ACTIVITY	TIME	REMARKS
1. Arrival and Registration	9.00-9.10am	Ok
2. Familiarizing with the OMSAT-3 Questionnaire	9.10-9.30am	Ok
3. Filling the Questionnaire	9.30-9.50am	Ok
4. Questionnaire Administration Protocol	9.50-10.00am	Ok
5. Data Management	10.00-10.20am	Ok
7. Research Assistants' Professional Ethics/Code of Conduct	10.20-10.40am	Ok
8. Tea Break	10.40-11.00am	Ok
8. Closing	11.00-11.10am	Ok

**APPENDIX E: APPROVAL OF RESEARCH PROPOSAL BY KENYATTA
UNIVERSITY GRADUATE SCHOOL**



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: kubps@yahoo.com
dean-graduate@ku.ac.ke
Website: www.ku.ac.ke

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 810901 Ext. 57530

Internal Memo

FROM: Dean, Graduate School

DATE: 1st April, 2015

TO: Mr. Vincent Muasya
C/o Recreation Management, & Exer. Science Dept.
KENYATTA UNIVERSITY

REF: H87/25835/13

SUBJECT: APPROVAL OF RESEARCH PROPOSAL

We acknowledge the receipt of your revised Research Proposal as per recommendations raised by the Graduate School Board of 11th February, 2015 entitled "Analysis of the Mental Skills Status of Volleyball and Field Hockey Players in National League Clubs in Kenya".

You may now proceed with your Data collection, subject to clearance with the Permanent Secretary, Ministry of Higher Education, Science and Technology.

As you embark on your data collection, please note that you will be required to submit to Graduate School completed supervision Tracking Forms per semester. The form has been developed to replace the progress Report Forms. The Supervision Tracking Forms are available at the University's Website under Graduate School webpage downloads.

By copy of this letter, the Registrar (Academic) is hereby requested to grant you substantive registration for your Ph.D. studies.

Thank you.


JOHN M. ODONGI
FOR: DEAN, GRADUATE SCHOOL

c.c. Chairman, Recreation Management, & Exercise Science Dept.

Supervisors:

1. Dr. Andaje Mwisukha
C/o Recreation Management, & Exercise Science
KENYATTA UNIVERSITY
2. Dr. Elijah Rintaugu
C/o Recreation Management, & Exercise Science
KENYATTA UNIVERSITY
3. Dr. Christine Wasanga
C/o Psychology Dept.
KENYATTA UNIVERSITY

JMO/cao

Committed to Creativity, Excellence & Self-Reliance

**APPENDIX F: RESEARCH AUTHORIZATION LETTER BY KENYATTA
UNIVERSITY GRADUATE SCHOOL**



KENYATTA UNIVERSITY
GRADUATE SCHOOL

E-mail: dean-graduate@ku.ac.ke

Website: www.ku.ac.ke

OUR REF: H87/25835/13

The Principal Secretary,
Higher Education, Science & Technology,
P.O. Box 30040,
NAIROBI

Dear Sir/Madam,

P.O. Box 43844, 00100
NAIROBI, KENYA
Tel. 8710901 Ext. 57530

Date: 1st April, 2015

RE: RESEARCH AUTHORIZATION FOR MR. VINCENT MUASYA REG. NO. H87/25835/13

I write to introduce Mr. **Muasya** who is a Postgraduate Student of this University. He is registered for Ph.D. Degree programme in the Department of Recreation Management & Exercise Science in the School of Applied Human Sciences.

Mr. Muasya intends to conduct research for a proposal entitled, "Analysis of the Mental Skills Status of Volleyball and Field Hockey Players in National League Clubs in Kenya".

Any assistance given will be highly appreciated.

Yours faithfully,


MRS. LUCY N. MBAABU
FOR: DEAN, GRADUATE SCHOOL

LNM/cao

**APPENDIX G: ETHICS REVIEW APPROVAL LETTER FOR THE STUDY
BY KENYATTA UNIVERSITY ETHICS REVIEW COMMITTEE**



**KENYATTA UNIVERSITY
ETHICS REVIEW COMMITTEE
Moi Library 1st Floor, Office No. 25**

Fax: 8711242/8711575
Email: chairman.kuerc@ku.ac.ke
secretary.kuerc@ku.ac.ke
secretariat.kuerc@ku.ac.ke
Website: www.ku.ac.ke

**P. O. Box 43844,
Nairobi, 00100**

Tel: 8710901/12

Our Ref: KU/ERC/APPROVAL/VOL.1 (21)

Date: 16th March, 2017

**VINCENT MUASYA
Kenyatta University
P.O. Box 43844
NAIROBI**

Dear Vincent,

APPLICATION PKU/578/1666 “Analysis of the Mental Skills Status of Volleyball and Field Hockey Players in National League Clubs in Kenya”

1. IDENTIFICATION OF PROTOCOL

The application before the committee is with a research topic “Analysis of the Mental Skills Status of Volleyball and Field Hockey Players in National League Clubs in Kenya” Received on September 2016 and re-reviewed on 23rd February 2017.

2. APPLICANT

Vincent Muasya

3. SITE

Kenya

4. DECISION

The committee has considered the research protocol in accordance with the Kenyatta University Research Policy (section 7.2.1.3) and the Kenyatta University Ethics Review Committee Guidelines **AND APPROVED** that the research may proceed for a period of **ONE year from 16th of March, 2017.**

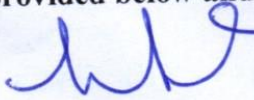
5. ADVICE/CONDITIONS

- i. Progress reports are submitted to the KU-ERC every six months and a full report is submitted at the end of the study.

- ii. Serious and unexpected adverse events related to the conduct of the study are reported to this committee immediately they occur.
- iii. Notify the Kenyatta University Ethics Committee of any amendments to the protocol.
- iv. Submit an electronic copy of the protocol to KUERC.

When replying, kindly quote the application number above.

If you accept the decision reached and advice and conditions given please sign in the space provided below and return to KU-ERC a copy of the letter.



DR. TITUS KAHIGA
CHAIRMAN ETHICS REVIEW COMMITTEE

I Vincent Muasya.....accept the advice given and will fulfill the conditions therein.

Signature.....Maol..... Dated this day of 23rd March..... 2017.

cc.

DVC-Research Innovation and Outreach

**APPENDIX H: RESEARCH AUTHORIZATION LETTER FOR THE STUDY
BY NATIONAL COUNCIL FOR SCIENCE AND
TECHNOLOGY AND INNOVATION**



**NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION**

Telephone: +254-20-2213471,
2241349, 3310571, 2219420
Fax: +254-20-318245, 318249
Email: dg@nacosti.go.ke
Website: www.nacosti.go.ke
When replying, please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref No. **NACOSTI/P/17/57421/16903**

Date: **5th May, 2017**

Vincent Michael Muasya
Kenyatta University
P.O. Box 43844-00100
NAIROBI.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on "*Analysis of the mental skills status of volleyball and field hockey players in National League Clubs in Kenya*," I am pleased to inform you that you have been authorized to undertake research in **Nairobi and Kiambu Counties** for the period ending **5th May, 2018**.

You are advised to report to **the County Commissioners and the County Directors of Education Nairobi and Kiambu Counties** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

**GODFREY P. KALERWA MSc., MBA, MKIM
FOR: DIRECTOR-GENERAL/CEO**

Copy to:


The County Commissioner
Nairobi County.

**COUNTY COMMISSIONER
NAIROBI COUNTY
P. O. Box 30124-00100, NBI
TEL: 341666**

The County Director of Education
Nairobi County.

APPENDIX I: RESEARCH PERMIT FOR THE STUDY BY NATIONAL COUNCIL FOR SCIENCE AND TECHNOLOGY

THIS IS TO CERTIFY THAT: Permit No : **NACOSTI/P/17/57421/16903**
MR. VINCENT MICHAEL MUASYA Date Of Issue : **5th May,2017**
of KENYATTA UNIVERSITY, 43844-100 Fee Received : **Ksh 2000**
nairobi, has been permitted to conduct
research in Kiambu, Nairobi Counties
on the topic: ANALYSIS OF THE MENTAL
SKILLS STATUS OF VOLLEYBALL AND
FIELD HOCKEY PLAYERS IN NATIONAL
LEAGUE CLUBS IN KENYA
for the period ending:
5th May,2018





Helen Ngunjiri
Director General
National Commission for Science, Technology & Innovation

Mwalimu
Applicant's Signature

CONDITIONS

- 1. You must report to the County Commissioner and the County Education Officer of the area before embarking on your research. Failure to do that may lead to the cancellation of your permit.**
- 2. Government Officer will not be interviewed without prior appointment.**
- 3. No questionnaire will be used unless it has been approved.**
- 4. Excavation, filming and collection of biological specimens are subject to further permission from the relevant Government Ministries.**
- 5. You are required to submit at least two(2) hard copies and one (1) soft copy of your final report.**
- 6. The Government of Kenya reserves the right to modify the conditions of this permit including its cancellation without notice**



REPUBLIC OF KENYA

NACOSTI
National Commission for Science, Technology and Innovation
RESEARCH CLEARANCE PERMIT
 Serial No. **A*13961**
CONDITIONS: see back page