

KUH 3000

**COMPARATIVE ANALYSIS OF HIGH VOLUME AND SPORTS SPECIFIC
TRAINING ON VO₂PEAK AND LACTATE THRESHOLD OF KENYATTA
UNIVERSITY'S BLAKBLAD RUGBY PLAYERS**

**OKOTH ELVIS ONYANGO
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**THESIS SUBMITTED IN PARTIAL FULFILMENT OF THE
REQUIREMENTS FOR THE AWARD OF THE DEGREE OF MASTER OF
SCIENCE (EXERCISE AND SPORT SCIENCE), SCHOOL OF HEALTH
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Okoth, Elvis Onyango
*Comparative analysis of
high volume and sports*

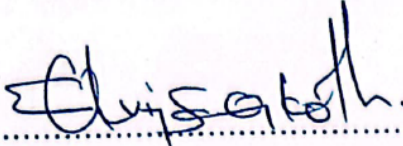
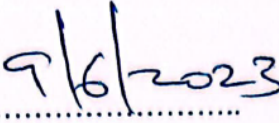


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DECLARATION

This thesis is my original work and has not been presented for a degree in any other university.


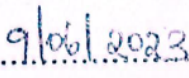
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Department of Physical Education, Exercise and Sport Science

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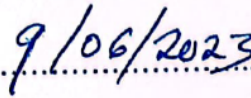
We confirm that the work reported in this thesis was carried out by the candidate under our supervision as university supervisors:

Signature..........Date..........

Jane Wanjiku Kamau (PhD)

Department of Physical Education, Exercise and Sport Science

Kenyatta University

Signature..........Date..........

Gitahi Theuri (PhD)

Department of Physical Education, Exercise and Sport Science

Kenyatta University

ABSTRACT

Rugby is a heavily physical, high impact sport that requires excellence in all physical fitness components. The study focused on peak maximal oxygen consumption and lactate threshold associated with cardiorespiratory endurance. The study was directed by the following objectives; analyse elite collegiate rugby 15s players VO_{2peak} and Lactate threshold by playing positions, determine the effect of High-Volume Training on VO_{2peak} and Lactate threshold of elite collegiate rugby 15s players following eight weeks of intervention, determine the effect of Sports Specific Training on VO_{2peak} and Lactate threshold of elite collegiate rugby 15s players following eight weeks of intervention and compare the effects of HVT and SST on elite collegiate rugby 15s players VO_{2peak} and Lactate threshold following eight weeks of intervention. The study used pre-test post-test experimental design. The target population was 48 Kenyatta University's, 15s rugby players. Thirty-one rugby players from Blakblad team were purposively selected based on the availability of the human performance lab within the college and their participation in the national rugby league. Stratified random sampling was used to distribute the rugby 15s players by their playing positions in the two intervention groups and the control group. The Bruce protocol test was used in the testing of VO_{2peak} and Lactate threshold pre and post intervention. The training intervention took 8 weeks. The study participants were segmented into three groups (SST group, HVT group and a Control group). Statistical package for social sciences (SPSS Version 22.0) by International Business Machines Corporation (IBM) was used for data management and analysis. Means, median and standard deviations (SD) were used to summarise data. The results indicated that the tallest participant was 186cm while the shortest was 163cm. The forward players were the tallest at $M = 180.0769$, $SD = 4.66300$ followed by Backs at $M = 171.3889$, $SD = 5.75110$. The forwards mean weight was 88.1538, $SD = 8.023454$ while the Backs had a mean weight of $M = 70.4444$, $SD = 8.78650$. An independent t-test was used to analyse the pre and post VO_{2peak} data. The t-test results indicated significant variances between the PR VO_{2peak} ($p \leq .024$) the PO VO_{2peak} ($p \leq .016$). On the contrary, t- test results did not record statistically significant difference between the PRLT ($p \geq .058$) and the POLT ($p \geq .211$). One way ANOVA, $p = .652$ showed no significant difference in mean VO_{2peak} among the interventions. However, one-way ANOVA $p = .000$ showed a significant difference in mean LT among the three intervention groups. Tukey post hoc results showed that the means for HVT intervention group ($M = 1.2200$, $SD = 0.43153$) and the SST intervention group ($M = .5400$, $SD = 0.69793$) differed significantly with higher mean EFFECT_LT than the control group ($M = 0$, $SD = 0$). The study concluded that HVT was more effective than SST in eliciting VO_{2peak} and LT changes in Blakblad rugby players during the eight weeks training period. The study recommended high volume cardio-based training to Rugby teams during off-season fitness development. The study further recommended setting up of locally standardised physical attributes and fitness selection criteria, the adoption of multifaceted conditioning programmes that not only work to improve player's physical fitness and recovery rates but also mimic sports/match specific activities consequently leading to the efficacy of the rugby training protocol. The study further recommended adoption of evaluation strategies to monitor coaching mechanisms to confirm that players are adequately conditioned for games.