COMPARISON OF MUSCULAR ENDURANCE TRAINING PERIODISATION MODELS WITH EQUATED VOLUME AND INTENSITY IN ADOLESCENT HOCKEY PLAYERS AT BUKIT JALIL SPORTS SCHOOL

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COMPARISON OF MUSCULAR ENDURANCE TRAINING PERIODISATION MODELS WITH EQUATED VOLUME AND INTENSITY IN ADOLESCENT HOCKEY PLAYERS AT BUKIT JALIL SPORTS SCHOOL

By

SHANKARALINGAM A/L RAMALINGAM

Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfilment of the Requirements for the Degree of Master of Science

August 2011
Dedications

To my mother and father, S. Kulendyammal and P. Ramalingam;

To my Guruji;

To my sisters, brother and niece, Visukala, Usha, Sundralingam and Harshini

And

To the rest of my friends and family who have encouraged me along the way.
Abstract of thesis presented to the senate of Universiti Putra Malaysia in
glamour of the requirement for the degree of Master of Science

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PERIODISATION MODELS WITH EQUATED VOLUME AND
INTENSITY IN ADOLESCENT HOCKEY PLAYERS AT BUKIT JALIL
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Chairman : Kok Lian Yee, PhD
Faculty : Faculty of Educational Studies

The purpose of the present study was to determine if significant
differences exist between two different models; linear periodisation (LP)
and daily undulating periodisation (DUP), in eliciting superior gains in
muscular endurance for the back squat and bench press. Twenty (n=20)
adolescent athletes between 16 to 17 years old underwent a 12-wk
strength training programme. They were tested for the lower-body
muscular endurance (70% of estimated 1RM back squat) and upper-
body muscular endurance (70% of estimated 1RM bench press).
Following initial testing, participants were randomly assigned to one of
the two training groups with ten participants in each group. Participants
performed the programmed exercises twice a week throughout the training period with volume and intensity equated for both groups at the end of the experimental period. The LP group linearly changed intensity and volume over each 4-wk training phase while the DUP group changed intensity and volume daily. Muscular endurance for back squat (LP=51.11\%, DUP=61.60\%) and bench press (LP=55.83\%, DUP=48.48\%) increased significantly from pre- to post-test. However, there were no significant differences measured between groups. Therefore each of the two models proved effective in increasing back squat and bench press muscular endurance over the course of 12 weeks.
Abstrak tesis yang dikemukakan kepada senat Universiti Putra Malaysia sebagai memenuhi keperluan ijazah Master Sains

PERBANDINGAN LATIHAN DAYA TAHAN OTOT DENGAN MODEL PERIODISASI YANG DISAMAKAN ISIPADU DAN INTENSITI DI KALANGAN PEMAIN HOKI REMAJA DI SEKOLAH SUKAN BUKIT JALIL

Oleh

SHANKARALINGAM A/L RAMALINGAM

Ogos 2011

Pengerusi : Kok Lian Yee, PhD
Fakulti : Fakulti Pengajian Pendidikan

Tujuan kajian ini adalah untuk menentukan jika ada wujud perbezaan yang signifikan diantara dua model periodisasi; linear periodization (LP) dan undulating periodization (UP) dalam meningkatkan daya tahan otot bagi senaman back squat dan bench press. Dua puluh (n=20) atlet remaja diantara umur 16 ke 17 tahun telah menjalani latihan bebanan selama 12 minggu. Peserta kajian diuji untuk daya tahan otot bahagian bawah badan (70% daripada anggaran satu ulangan maksimum (1RM) bagi back squat dan daya tahan otot bahagian atas badan (70% daripada anggaran satu ulangan maksimum (1RM) bagi bench press). Selepas pra ujian, peserta kajian dibahagikan secara rawak kepada
salah satu kumpulan latihan dengan sepuluh peserta bagi setiap kumpulan. Peserta kajian menjalankan latihan yang telah dirancang dua kali seminggu dengan isipadu dan intensiti disamakan untuk kedua-dua kumpulan sepanjang tempoh eksperimen. Kumpulan LP menukar intensiti dan isipadu bagi setiap empat minggu fasa latihan manakala kumpulan UP menukar intensiti dan isipadu untuk setiap latihan. Daya tahan otot untuk back squat (LP=51.11%, UP=61.60%) dan bench press (LP=55.83%, UP=48.48%) meningkat secara signifikan dari pra ke pasca ujian. Namun, tidak ada perbezaan yang signifikan di antara kedua-dua kumpulan eksperimen yang terlibat. Dengan itu, kedua-dua model periodisasi terbukti efektif di dalam meningkatkan daya tahan otot bagi back squat dan bench press selama 12 minggu tempoh eksperimen.
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Finally, I would like to thank everybody who was important to the successful realization of this thesis, as well expressing my apology that I could not mention personally one by one.
I certify that a Thesis Examination Committee has met on 22 August 2011 to conduct the final examination of Shankaralingam AVL Ramalingam on his thesis entitled "Comparison of Muscular Endurance Training Periodisation Models with Equated Volume and Intensity in Adolescent Hockey Players at Bukit Jalil Sports School" in accordance with the Universities and University College Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U. (A) 106] 15 March 1998. The committee recommends that the student be awarded the Master of Science.

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DECLARATION

I declare that the thesis is my original work expect for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not currently, submitted for any other degree at Universiti Putra Malaysia or at any other institution.

__________________________
R. SHANKARALINGAM

Date: 22 August 2011
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