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Lecture Notes in Bioengineering
2020, Pages 248-256

Muscle Strength in Male Youth that Play Archery During Leisure Time Activity(Book Chapter)

Juliana, N., Abu, I.F., Roslan, N.A., Mohd Fahmi Teng, N.I., Hayati, A.R., Azmani, S.

^aUniversiti Sains Islam Malaysia, Nilai, Negeri Sembilan 71800, Malaysia

^bUniversiti Kuala Lumpur Institute of Medical Science Technology (UniKL MESTECH), Kajang, Selangor 43000, Malaysia

^cUniversiti Teknologi Mara (UiTM), Puncak Alam, Selangor 42300, Malaysia

Abstract

Archery involves repetitive isometric contraction of muscles, however, there is a paucity in scientific evidence that describes the muscle strength in those receiving archery training. This study aimed to determine the differences in maximum force in selected groups of muscles between healthy youth with regular archery training and those without any background of resistance training. A case-control study design was adopted to compare between youth with

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archery training as subjects (n = 40) and youth without any background of resistance training as control (n = 78). Both groups were matched based on age, race, education level, income, time spent for weekly physical activities, and body composition. Muscle strength was assessed via JTech Commander PowerTrack MMT and the forces were recorded in Pound-force (lbf). Subjects with archery training showed significantly ($p < 0.05$) higher mean of muscle strength's maximal force as compared to the control group in shoulder motions such as higher abduction strength (11%), adduction strength (15%), flexion and extension strength (19%). Elbow motion showed significantly higher extension strength by 17%. Similarly, higher lower body muscle strength was also found in subjects with archery training as compared to subjects in the control group in their hip motions for abduction (16%) and adduction (21%) and knee motion for extension (25%). Training in archery has a significant impact on muscle strength of both upper and lower body as shown in these youths. Therefore, serious attention should be given archery and be further promoted as a physical activity in the enhancement of health. © 2020, Springer Nature Singapore Pte Ltd.

SciVal Topic Prominence

Topic: Archery | Shooting | Guns (Armament)

Prominence percentile: 76.904 

Author keywords

Archery Isometric exercise Muscle strength

Funding details

Funding sponsor	Funding number	Acronym
Ministry of Higher Education, Malaysia	FRGS-FPSK-51415-50	MOHE
Universiti Sains Islam Malaysia	USIM/UKM/RCRP/FPSK/052002/71017	USIM

Funding text #1

We wish to acknowledge the participants in this study, archery clubs and the collaborating universities. We also acknowledge the technical help and support by the laboratory assistants and scientific officers involved. This work was supported by the Malaysian Ministry of Higher Education Grant, grant number: FRGS-FPSK-51415-50 and the Universiti Sains Islam Malaysia Grant, grant number: USIM/UKM/RCRP/FPSK/052002/71017.

Funding text #2

Acknowledgements. We wish to acknowledge the participants in this study, archery clubs and the collaborating universities. We also acknowledge the technical help and support by the laboratory assistants and scientific officers involved. This work was supported by the Malaysian Ministry of Higher Education Grant, grant number: FRGS-FPSK-51415-50 and the Universiti Sains Islam Malaysia Grant, grant number: USIM/UKM/RCRP/FPSK/052002/71017.

ISSN: 2195271X

Source Type: Book Series

Original language: English

DOI: 10.1007/978-981-15-3270-2_27

Document Type: Book Chapter

Publisher: Springer

 Juliana, N.; Universiti Sains Islam Malaysia, Nilai, Negeri Sembilan, Malaysia;

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