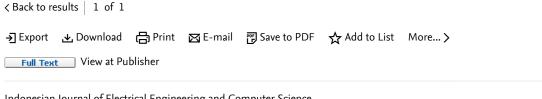
Scopus

Document details



Indonesian Journal of Electrical Engineering and Computer Science Volume 14, Issue 2, May 2019, Pages 608-617

Investigation of lower limb's muscles activity during performance of salat between two age groups (Article) (Open Access)

Abdul Malik, N. 🖂, Wahid, Z., Zulkipili, A.F., Ibrahim, S.N., Gunawan, T.S., Khan, S. 🙇 Department of Electrical and Computer Engineering, International Islamic University Malaysia, Malaysia

Abstract View references (19)

Muscles play an important role in the movement of limbs. They undergo contraction to straighten or to bend a joint for the limbs to move. There are many factors that can affect muscle activity. Age could be one of the possible factors affecting muscle activity . The purpose of this study was to investigate the lower limb 's muscles activity during performance of salat between two age groups . The lower limb 's muscles investigated were Gastrocnemius (GAS), Biceps Femoris (BF), Tibialis Anterior (TA) and Rectus Femoris (RF). The postures involve are standing, bowing, prostrating and sitting. The electromyography (EMG) signals of the muscles were measured using the technique of surface EMG (sEMG). The signals were acquired by using Delsys Bagnoli™ Desktop sEMG system and EMGworks®. Ten healthy subjects from two age groups were recruited in this study. The first group consists of five males aged between 20 to 29 while the second group consists of five males aged above 40. The raw EMG signals acquired were analyzed and the EMG envelopes were developed using MATLAB. The averaged RMS values of EMG for each muscle were also calculated. Analysis of variance (ANOVA) of the EMGs was obtained by using F-test. Further investigation of the variance was performed by using Tukey comparison. From the results, the most active muscle during the performance of salat is BF while the less active muscle is GAS for both age groups. The statistical result show that there is no difference in the muscle activity pattern between the two age groups but there is significant difference among the muscles investigated. © 2019 Institute of Advanced Engineering and Science. All rights reserved.

SciVal Topic Prominence ①

Topic: Islam | Muscle | C lines

Prominence percentile: 66.887



Author keywords

 Age groups
 (Electromyography (EMG))
 Lower limb
 Muscle activity
 (Postures)
 (Salat)

Funding details

Funding sponsor Funding number Acronym

Ministry of Higher Education, Malaysia FRGS16-067-0566 MOHE

Funding text

The authors would like to acknowledge the Ministry of Higher Education Malaysia (MOHE) for funding this research project through Fundamentals Research Grant Scheme (FRGS) [Ref.:FRGS16-067-0566].

Metrics ②

O Citations in Scopus

O Field-Weighted
Citation Impact



PlumX Metrics

Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

Cited by 0 documents

Inform me when this document is cited in Scopus:

Set citation alert >

Set citation feed >

Related documents

Salat (Muslim prayer) as a therapeutic exercise

Osama, M., Malik, R.J. (2019) Journal of the Pakistan Medical Association

Muscle activity estimation through surface EMG analysis during salat

Khanam, F., Islam, S., Rahman, M.A. (2015) 2nd International Conference on Electrical Engineering and Information and Communication Technology, iCEEICT 2015

EMG Activity of Leg Muscles with Knee Pain during Islamic Prayer (Salat)

Rabbi, M.F., Wahidah Arshad, N., Ghazali, K.H. (2019) Proceedings - 2019 IEEE 15th International Colloquium on Signal Processing and its Applications, CSPA 2019

View all related documents based on references

ISSN: 25024752 Source Type: Journal
Original language: English

DOI: 10.11591/ijeecs.v14.i2.pp608-617

Document Type: Article

Publisher: Institute of Advanced Engineering and Science

Find more related documents in Scopus based on:

Authors > Keywords >

References (19)					,	View in search results format >
☐ Al	I Export	🖶 Print	⊠ E-mail	ም Save to PDF	Create bibliograp	hy
<u> </u>	□ 1 Reza, M.F., Urakami, Y., Mano, Y.					
	Evaluation of a new physical exercise taken from salat (prayer) as a short-duration and frequent physical activity in the rehabilitation of geriatric and disabled patients					
	(2002) Annals of Saudi Medicine, 22 (3-4), pp. 177-180. Cited 28 times. http://www.annsaudimed.net/index.php/past doi: 10.5144/0256-4947.2002.177					
	View at Publisher					
_ 2	Doufesh, H., Ibrahim, F., Ismail, N.A., Wan Ahmad, W.A.					
	Assessment of heart rates and blood pressure in different Salat positions					
	(2013) Journal of Physical Therapy Science, 25 (2), pp. 211-214. Cited 4 times. https://www.jstage.jst.go.jp/article/jpts/25/2/25_JPTS-2012-323/_pdf doi: 10.1589/jpts.25.211					
	View at Publis	her				
□ 3	B AlAbdulwahab, S.S., Kachanathu, S.J., Oluseye, K.					
	Physical activity associated with prayer regimes improves standing dynamic balance of healthy people (Open Access)					
	(2013) <i>Journal of Physical Therapy Science</i> , 25 (12), pp. 1565-1568. Cited 7 times. https://www.jstage.jst.go.jp/article/jpts/25/12/25_jpts-2013-179/_pdf doi: 10.1589/jpts.25.1565					
	View at Publis	ner				
_ 4	Safee, M.K., Abas, W.W., Osman, N.A., Ibrahim, F. Electromyographic Activity of the Medial Gastrocnemius and Lateral Gastrocnemius Muscle during Salat's and Specific Exercise (2013) <i>Lateral</i> , 57, p. 86. Jun 27					
5	,			emoris and biceps	femoris muscles d	uring prostration and squat
						Journal of Medical, Health, 863. Cited 2 times.
<u> </u>	Ibrahim, F., Ah	mad, S.A.				
	Assessment of upper body muscle activity during salat and stretching exercise: A pilot study					
	(2012) Proceedings - IEEE-EMBS International Conference on Biomedical and Health Informatics: Global Grand Challenge of Health Informatics, BHI 2012, art. no. 6211603, pp. 412-415. Cited 5 times. ISBN: 978-145772177-9 doi: 10.1109/BHI.2012.6211603					
	View at Publisher					