

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

Mohammad Fazle Rabbi, Nurul Wahidah Binti Arshad
Faculty of Electrical and Electronics Engineering
Universiti Malaysia Pahang
Pekan-26600, Malaysia
fzrabbi@gmail.com

Kamarul Hawari Ghazali, Tasriva Sikandar
Faculty of Electrical and Electronics Engineering
Universiti Malaysia Pahang
Pekan-26600, Malaysia

Abstract:

Knee pain often disrupts the performance of Islamic prayer (*Salat*). Development of rehabilitation tool for Muslim population with knee pain has become an increasing demand. Electromyographic (EMG) activity of knee muscles may be an assessment tool of such rehabilitation technology. In this study we investigate EMG activity of four leg muscles associated with knee for both healthy and subjects having knee complications. The muscles are from hamstring (biceps femoris long, semitendinosus) and thigh (vastus medialis, rectus femoris) region which influences standing and knee flexion during *Salat*. We considered five time-domain features of the EMG signal for comparison between healthy and subjects with knee pain. Our results suggest that, overall all four muscles are affected due to the knee pain and thus show abnormal activity in standing and knee flexion. It has also been found that, hamstring muscles were more affected than thigh muscles while performing knee flexion

Keywords: —Electromyography, EMG, knee pain, *Salat*