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Tribology in phantom pain in upper limb amputees

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The purpose of this research is to study phantom pain feeling in upper limb amputees using the prosthesis. It is believed recent prostheses can be substituted for the lost function. 44 subjects were studied. All of them were men and acquired amputees. The youngest was 8 and the eldest was 50 years old. 11 subjects were the bilateral amputee and 33subjects were the unilateral amputee. Data was collected via the PEQ standard questionnaire. An analysis was done by Spss software. The statistical method was linear regression model. In descriptive statistics table, minimum, maximum, mean and standard deviation of quantitative questions were studied one by one. To study the relation between phantom pain and other variables, the regression model was used. To omit colinearity among independent variables, a stepwise model was used. (R2 =66.4) It was found there was a direct relation between a)feeling pain in shoulder area and phantom pain (p-value=0.014), b) stump perspiration and phantom pain (p-value= 0.00), c) easy donning /doffing of the prosthesis and phantom pain (p-value=0.007), d) comfortable using of the prosthesis in sitting position and phantom pain (p-value=0.00). There was reverse relation between e) using prosthesis to don / doff clothes and phantom pain (p-value=0.00), f) stump contact with the inner wall of the socket and phantom pain (p-value= 0.00) Appropriately, 1) weight reduction of the prosthesis is required, 2) prosthesis can be more beneficial for amputees with long stump 3) humidity affects the efficiency of the electrodes, 4) suspension system has to support the function of the prosthesis, 5) prosthesis should not be exposed to the external waves, 6) adequate pulse of the amputated muscle should be received with the electrodes.

Biography

I am a faculty of orthotics and prosthetics. My experience in the area of research, teaching in University, clinical experiments and measuring is more than 20 years. I have done research in the area of plantar fascia qualities and its connection with the ankle and foot structure and function in living individual. (My PhD) I have experience of working with Ultrasound machine. I have presented my papers internationally since 2004. Some of my papers have been published, also. I have written five books in the area of orthotics and prosthetics in Persian. I have been chief guest editor in the American Journal of Medical Sciences and Medicine (Special Issue) up to March 01; 2015 and guest editor in the American Journal of Sports Science and Medicine (Special Issue) up to April 10, 2018.

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