Willingness to Attend Home Based Exercises Supervised Over the Internet

Karolina Krawczak[1,2,4], Dominika Cabaj[1,2,4], Anna Kostrubała[1,2,4], Teresa Piechna[1], Anna Chorzewska[1], Bożena Glinkowska[3], W. Glinkowski[2,4]
[1]Student's Scientific Club "TeleZdrowie", at the Department of Sport and Physical Education, Medical University of Warsaw,
[2]Chair and Department of Orthopaedics and Traumatology of Locomotor System, Center of Excellence "TeleOrto", w.glinkowski@teleorto.pl Medical University of Warsaw, 02-005 Lindleya 4, Warsaw, Poland
[3]Department of Sport and Physical Education, Medical University of Warsaw, Poland
[4]Polish Telemedicine Society, Warsaw, Poland

Abstract: **Little is known about willingness to use telerehabilitation among real patients suffering musculoskeletal disorders. The objective of our study was to investigate these attitudes. The study was conducted on 284 patients averagely aged 54,83 years of age. The patients in the study group suffered rheumatoid arthritis patients (R.A.), low back pain patients (L.B.P.) and hip osteoarthritis patients (HOA). Telerehabilitation oriented questionnaires were used. The willingness to participate the telerehabilitation services was higher than 50% in all groups. The willingness to participate telerehabilitation was significantly highest among patients suffering low back pain (LBP). Considering obtained results we assume the positive influence of internet access and computer skills on willingness to participate telerehabilitation despite previously described low access to personal computer and/or Internet of older patients.**

Introduction

The development of IT services raises an interest of all telemedicine services including telerehabilitation. Telerehabilitation and remotely supervised home based exercises similarly provide rehabilitation services at a distance using IT technology. That facilitates the therapy for people who cannot travel to a hospital or an outpatient clinic due to various reasons (i.e. disability, weather). This method is considered as suitable for patients suffering chronic diseases, requiring long-lasting and complex rehabilitation process. However, little is known about willingness to use telerehabilitation among real patients suffering musculoskeletal disorders. The objective of

our study was to assess the attitudes of patients suffering musculoskeletal related diseases towards internet based home rehabilitation services.

Material and Methods

The study was conducted on 284 patients. The average age for the whole study group was 54,83 years of age in a range from 22 to 84. The study group was subdivided in 3 groups accordingly to the main pathology of patients. The chronic musculoskeletal disorders group was represented by rheumatoid arthritis patients (R.A.), low back pain patients (L.B.P.) and hip osteoarthritis patients (HOA). We have used telerehabilitation oriented questionnaires. One hundred and two patients suffered R.A.; one hundred patients suffered low back pain (LBP) and eighty two the Hip Osteoarthritis patients. The average age of R.A. was 56,058 years (range 22-77), 49,08 years; (range 26-78), for L.B.P. patients and 60,38 years (range 26-78) for patients with hip osteoarthritis. Questions asked in the questionnaire concerned computer skills, the attitude towards telerehabilitation services, and social and educational patient's status.

Results

A questionnaire regarding attitudes toward home rehabilitation services was administered to patients (284/284 returned a completed questionnaire). The willingness to participate the telerehabilitation services was higher than 50% in all groups (63% R.A., 52 % in low back pain patients and 54% among hip O.A.). Working respondents with higher level of education influenced positively the level of interest in the telerehabilitation. In contrary, the willingness to use telerehabilitation was the lowest among jobless people whose level of education was elementary only. Elderly people declared interest for participating telerehabilitation conditionally if third person could support their effort for participation. Moreover research respondents suggested certain set of IT technologies mostly suitable for telerehabilitation like the Internet, TV or a mobile phone. E mail in three groups chi square test for independence (Chi-square=2,002; DF=2; Significance level - P = 0,3676; Contingency coefficient - 0,0837) presented no differences among groups. Computer skills were declared significantly more frequently by LBP patients than patients from other groups (Chi-square =30,322; DF=2, Significance level - $P < 0,0001$; Contingency coefficient - 0,311). Similarly the Internet access at home was declared more frequently by LBP patients (Chi-square=8,353; DF=2; Significance level - P = 0,015; Contingency coefficient - 0,169). The willingness to participate telerehabilitation was significantly highest among patients

suffering low back pain (LBP) (Chi-square=51,651; DF=2; Significance level - $P < 0,0001$; Contingency coefficient - 0,392).

Discussion

A little is known about patient's attitudes towards telemedicine services and even less is known about attitudes towards telerehabilitation. Indirect estimations can be drawn only based on the recent literature search.

Seto et al. [1] found that patients and clinicians want to use mobile phone-based remote monitoring and believe that they would be able to use the technology. Acceptance by citizens seems to be crucial for the future success of an electronic health record (EHR) in Germany and Austria [2] the positive attitude towards the EHR was confirmed by the study. In a rural area of northern Finland, the attitudes were more positive than negative, ranging from negative to enthusiastically positive [3]. The study has shown the diversity of attitudes occurred in relation to time, situation, profession, and health centre and telehealth application. Ten different types of telehealth adopters were recognized: enthusiastic user, positive user, critical user, hesitant user, positive participant, hesitant participant, critical participant, neutral participant, negative participant and positive non-participant. Göransson et al. [4] surveyed health care professional's about the attitudes towards technology involving support from artificial intelligence (AI), robots and humanoids. The respondents were overall negative using AI and robot technology related to caring activities. However, all groups were positive in using robots in service tasks, monitoring/alarms, telemedicine communication. The results of the study should be seen from the perspective of user population. Own study shown that older generation as a group of high rate of chronic diseases and disabilities has low access to information technologies. Less than 20% of people older than 60 years of age have an access to personal computer and/or Internet. Only one fourth of pensioned population has an access to a computer, roughly 20% shows an access to the internet, and only 12% use email [5]. Andreassen et al. [6] investigated patterns of health-related Internet use, its consequences, and citizens' expectations about their doctors' provision of e-health services in Norway, Denmark, Germany, Greece, Poland, Portugal and Latvia. They found that 71 % of the Internet users had used the Internet for health purposes. In their study women were the most active health users among those who were online. One in four of the respondents used the Internet to prepare for or follow up doctors' appointments. The users of Internet health services differ from the general population when it comes to health and demographic variables. The most

common way to use the Internet in health matters is to read information, second comes using the net to decide whether to see a doctor and to prepare for and follow up on doctors' appointments. Hence, health-related use of the Internet does affect patients' use of other health services, but it would appear to supplement rather than to replace other health services.

Conclusions

Our results confirmed relatively high willingness to participate the telerehabilitation services among adult patients representing 50 and older population. Considering obtained results we assume the positive influence of internet access and computer skills on willingness to participate telerehabilitation despite previously described low access to personal computer and/or Internet of older patients.

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