Research Paper ■

Assistive Technology and Its Role among the Elderly – a Survey

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Abstract. Health professionals are aware of the fact that people nowadays live longer and that the elderly have more need for using assistive technology (AT). Our study aimed to find out whether the members of a local pensioners association are informed about AT and if the use of AT has impact on their quality of life. A questionnaire was mailed to 160 randomly selected members of the association. The results showed that the use of AT and/or home adaptation improved quality of life of the majority of the participants. About half of the participants are only partly acquainted with the right to have AT prescribed, and the majority of the participants want to get more information about AT and home adaptation. This is a great opportunity for occupational therapists, who can inform and recommend appropriate solutions to the elderly to help them maintain independence in the home.

Vloga medicinsko tehničnih pripomočkov pri starostnikih – rezultati ankete

Izvleček. Zdravstveni delavci se zavedamo, da ljudje danes živijo dlje in da imajo starejši večje potrebe po uporabi medicinsko tehničnih pripomočkov (MTP). Namen raziskave je bil ugotoviti kolikšna je informiranost članov Društva upokojencev Bled glede MTP in ali uporaba MTP vpliva na njihovo kakovost življenja. Anketni vprašalnik smo poslali 160 naključno izbranim članom Društva upokojencev Bled. Rezultati kažejo, da je uporaba MTP in/ali arhitektonska prilagoditev večini sodelujočih izboljšala kakovost življenja. Skoraj polovica sodelujočih je le delno seznanjena s pravicami do predpisa MTP in velika večina si želi pridobiti več informacij o MTP in arhitektonskih prilagoditvah okolja. Pri tem lahko delovni terapevti s strokovnim znanjem starejšim nudimo pomembno pomoč in svetujemo pri izbiri ustreznih rešitev za ohranjanje samostojnosti.

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Introduction

We live in an ageing world – the share of the elderly people amongst us is increasing rapidly in most of the world, especially the more developed countries, including Slovenia. In the year 2010, people aged 65 years or more represented 16.5% of Slovenian population, and projections show that almost every third Slovenian resident in 2060 will be in that age group.[1]

Longer living age and the factors of the aging process influence health problems, which limit functioning of the elderly in everyday life and therefore negatively impact on their quality of life. According to the Institute of Public Health of Slovenia,[1] the most frequent chronic diseases in old age are high blood pressure, high cholesterol, angina pectoris and heart insufficiency, and also spinal cord injuries and diseases. Elderly people often suffer from fractures, which negatively impact on their independence, mobility and quality of life.[1] Consequently, they have larger needs regarding hospitalization and other health care services, and application of assistive technology is also more frequent.[2]

Assistive technology can be defined as "any item, piece of equipment, or product system whether acquired commercially off the shelf, modified or customized, that is used to increase, maintain, or improve functional capabilities of individuals with disabilities".[3] Other authors[4] described AT as "a broad range of devices, services, strategies, and practices that are conceived and applied to ameliorate the problems faced by individuals who have disabilities". In summary, assistive technology can include devices and solutions hich help to overcome functional limitations and prolongate independent living.[5] In Slovenia, provision of assistive technology is defined by the legislation, in particular by the Law on Health Care and Health Insurance and by the Rules of Compulsory Health Insurance.[6]

Older adults prefer to live their later years in their own homes, but the capacity to "age in place" is often threatened by environmental barriers. The removal of physical barriers has enhanced the individual's mobility and ability to carry out personal care and social activities.[7] Older adults are willing to accept home modifications,[8] and some form of modifications occurs in an estimated 38% of homes of older adults with disabilities.[9] Few studies, however, have systematically evaluated the effectiveness of home modifications in reducing excess disability or improving daily activity performance of older adults.[10]

For occupational therapists it is essential to identify environmental facilitators and barriers that have an impact on an individual's everyday functioning.[11] Occupational therapists' role is to work with environmental issues to facilitate the achievement of the clients' goals or to remove the barriers that thwart realisation of these goals.[12] The removal or modification of environmental barriers with usage of assistive technology enables elderly to maximise their occupational performance.[13] Findings of a study conducted by Wielandt et al[14] suggest that occupational therapists need to ensure that assistive technology and home modifications are recommended using a client-centred approach. The time of application and appropriateness of assistive technology prescribed by the occupational therapist or other health care professionals is also a very important factor. Appropriate assistive technology and home modification should be provided at the right time, considering the context, activity demands, and client factors (e.g. nature and prognosis of disease/disability).[15]

Assistive technology and home modifications could provide caregivers immediate relief, reduce stress and help them provide care more easily and safely.[16] Another study[17] found that assistive technology and home modifications can reduce home care costs for older adults and help delay institutional placement.

The aim of our study was to find out if the members of a local pensioners association are informed about assistive technology, and if the use of assistive technology has impact on their quality of life.

Methods

We obtained co-operation for this study from the Bled Association of Pensioners from northern Slovenia. The Association has 960 active members of different age. To recruit the participants for the study, stratified random sampling was used: within each of the four age groups (less than 64 years, from 65 to 74 years, from 75 to 84 years, and 85 years and more), 40 members were selected randomly for a total of 160 members. To each of them, a survey questionnaire on information about the assistive technology and its impact on user quality of life was sent by surface mail (including a return envelope).

The questionnaire was designed for the purpose of this study by the first two authors (JO, ZP). It was divided in two parts. The first part included participant's demographic characteristics and medical diagnoses. The second part consisted of 10 questions. Six of those were closed-response questions (multiple choices), and two were 5-points Likert-type scales. Using the latter, the participants assessed how well they are informed about their right to provision of assistive technology and in to what extent does the use of assistive technology and home modification impact their quality of life. The last two questions were open-ended so that the participants could write down which assistive technology or home modification they use.

Results

We received and analysed 50 filled-in questionnaires, yielding a 31% response rate. Twenty-seven respondents were women and 23 men, which corresponds to the gender ratio in the entire Association. The mean age was 73 years, range 51-100 years, which is also close to the sampled population, where the 65-74 years and 75-84 years age groups are by far the largest. Educational level was relatively high, because nearly one fifth of the respondents had a college or university degree (Figure 1).

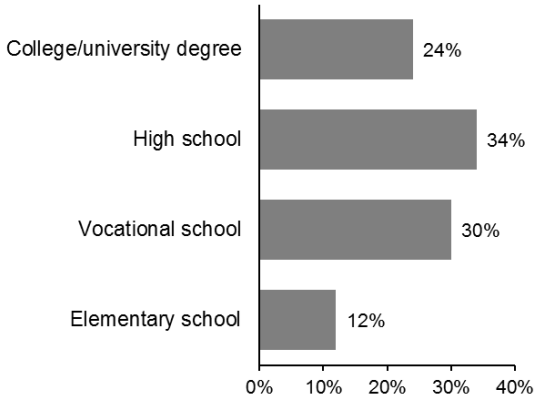

Figure 1 Educational level of the participants (N=50).

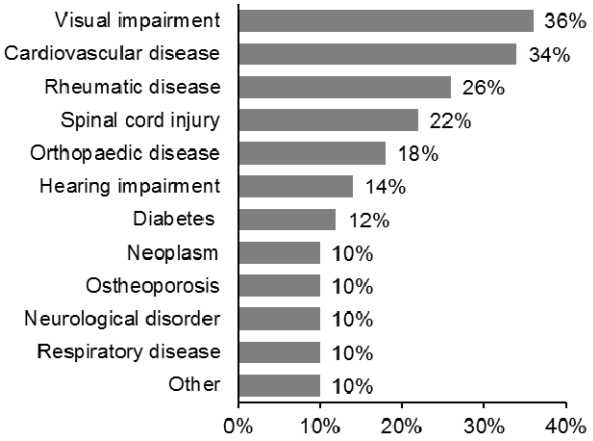

Figure 2 Medical diagnoses of the participants (N=50).

The participants had various medical diagnoses (Figure 2). The most frequent diagnoses were visual impairment (36%), cardiovascular disease (34%), rheumatic disease (26%) and spinal cord injury (22%), followed by orthopaedic disease (18%), hearing impairment (14%) and diabetes (12%). On average, each participant had two medical diagnoses.

Almost half of the participants stated that they (46%) were only partly informed about the right to provision with assistive technology; being not informed (18%), a little informed (18%) or mostly informed (14%) were about equally frequent answers, whereas only 4% of the participants answered that they were are thoroughly informed about the right of provision (Figure 3).

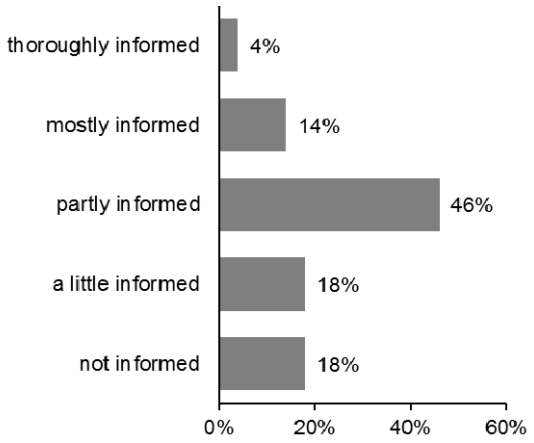

Figure 3 Responses to the question "How are you informed about the right to provision with assistive technology?" (N=50%).

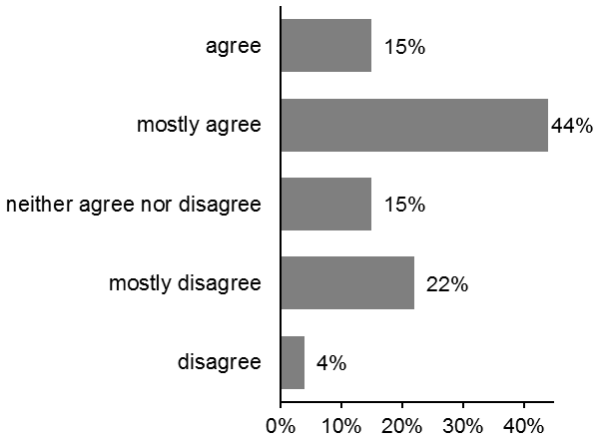

Figure 4 Agreement with the statement "Use of assistive technology and home modification improved quality of my life" (N=50%).

Further questions revealed that 24% of the participants had home modifications (either removal or modification of environmental barriers), and that half of the participants (50%) used one or more assistive technologies. The most frequent assistive technologies were eyeglasses, hearing aids, blood glucose metres, crutches, wheelchairs, nursing beds, shower seats, toilet seats and incontinence aids. The majority of the participants (56%) had received that assistive technology by referral from physician; many (37%) had bought it, others received it from relatives or friends. The assistive technology was recommended by a general practitioner, a consultant physician, a nurse or by relatives.

Agreements with the statement that the "Use of assistive technology and home modification improved quality of my life" is depicted in Figure 4. The last question offered an opportunity to the participants to express their need for additional information about assistive technology and home modification, and the majority of the participants (64%) answered that they wish to get more information.

Discussion

We conducted a mail survey of a local pensioners association. Although the response rate was relatively low (31%), the gender and age structure of the respondents corresponded to the parent population.

The survey responses showed that the acquaintance with the right to have assistive technology prescribed was low because only 18% of participants answered that they were informed about that right, and more than one third of the participants were not informed or just a little informed. This is a reason for concern because underuse of assistive technology and home modification can impact on less independent and safety living in participants' homes. There are several reasons for such low acquaintance rate: occupational therapists are not employed in the health care system on the primary level; general practitioners, who are first in contact with the patient who enquires about prescription of assistive technology, do not have adequate knowledge; and the suppliers of assistive technology do not invest much in its promotion.

Half of the participants reported on using assistive technology, which should be viewed in the light of their health problems (which, in turn, are reflected by their medical diagnoses). In agreement with the most frequent diagnosis being visual impairment, the majority of participants used eyeglasses.

Similarly, many participants have hearing impairment and therefore used a hearing aid. In summary, based on the medical diagnosis or self-reported health problems health professionals can anticipate which assistive technology or home modification a user will need. However, assistive technology and home modification should be recommended and prescribed using a client-centred approach at the right time and considering the users' factors and roles, and characteristic of the home environment.

Home modifications were implemented by a relatively small proportion of the participants (one fourth). Most of the modifications were smaller/easier, such as removing barriers between rooms, fitting grasp rails, and installing a shower instead of a bathtub. The reasons for such decisions should be researched in more detail, but an unquestionable reason is that home modifications are expensive and are not funded by insurance companies.

Assistive technology was mostly recommended by to the user by a general practitioner or a consultant physician, a nurse or by relatives. One of the possible answers was also occupational therapist, but it was not choosen by any of the participants. One reason for this is that – as already noted – occupational therapists are not employed in primary health care in Slovenia. Furthermore, occupational therapy as a profession is still little known in Slovenia. However, it should also be recognised that the prevalent assistive technologies were specific to medical specialties (eyeglasses, hearing aids, blood glucose metres).

More than a half of participants agreed with the statement that the usage of assistive technology and home modification improved their quality of life. This is very important for health professionals who work in the field of assistive technology and should stimulate them to do further research.

Because the majority of the participants expressed a wish/need for additional information about assistive technology and home modifications, four months after the survey the authors held a workshop for all the interested members of the Bled Association of Pensioners. The purpose of the workshop was to inform and to acquaint the participants with their rights and the process of prescribing assistive technology. During the workshop, different fields of assistive technology (e.g., mobility, daily activities, communication) and home modifications were presented in detail. The members who attended the workshop also posed questions about information-communication technology, mainly on usage of mobile phones, computers and alarms in home environment (e.g., smoke detectors, flood detectors, SOS call). The workshop was also an opportunity for promotion of occupational therapy profession and services.

Our study had notable limitations, which calls for caution when interpreting the results. The results may have limited generalizability due to the small sample size as a consequence of the relatively low response rate which. Furthermore, participation was voluntary and normally people who had experienced a positive outcome in connection with the subject matter are more likely to volunteer than those who had not seen any benefit.[18]

Despite the limitations, the results of the survey contribute some new findings to the limited body of occupational therapy evidence that supports the use of assistive technologies and home modifications. The survey improved the current lack of evaluation to some extent, and set the scene for further studies which could influence the political initiatives towards assistive technology development in Slovenia. Such initiatives present a key opportunity for occupational therapists, who can inform and recommend appropriate solutions to the elderly to help them maintain independence in their home.

Conclusion

Assistive technology can make life easier for persons of all ages who may need help carrying out

their daily activities through home modification and adaptation. Health professionals must be aware that persons with disability nowadays live longer, therefore assistive technology and home modification should be provided earlier in the aging process in order to slow down the progress of decline.

Our survey of a local pensioners association in Slovenia showed that the participants did not have enough information about their right of provision of assistive technology and that the majority of wanted additional information. Occupational therapists and other health care professionals are encouraged to suggest and recommend the use of appropriate assistive technology and home modifications to the elderly, their family members and caregivers.

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