



Assistive technology and active aging according to professionals working in community groups*

Tecnologia assistiva e envelhecimento ativo segundo profissionais atuantes em grupos de convivência

Tecnología asistiva y envejecimiento activo según los profesionales actuantes en grupos de convivencia

Eliane de Sousa Leite¹, Cláudia Jeane Lopes Pimenta², Milena Silva Costa², Francisca Bezerra de Oliveira¹, Maria Adelaide Silva Paredes Moreira², Antonia Oliveira Silva²

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¹ Universidade Federal de Campina Grande, Cajazeiras, PB, Brazil.

² Universidade Federal da Paraíba, João Pessoa, PB, Brazil.

ABSTRACT

Objective: To identify the knowledge of professionals about assistive technology and its importance in the elderly's life. **Method:** Exploratory descriptive qualitative study performed with professionals working in three community groups in the city of Cajazeiras (state of Paraíba/PB). Data were collected through an interview with semi-structured script and analyzed according to the Content Analysis Technique. **Results:** Participation of 45 professionals. Four categories were identified, namely: Knowledge about assistive technology; Professionals' lack of knowledge about available assistive technologies for implementation in work with the elderly; Use of assistive technology by the elderly; Impact on professional practices after implementation of assistive technology. **Conclusion:** Some of professionals have knowledge about assistive technology and others make a wrong interpretation by confusing it with working instruments. In spite of the positive impact of assistive technology on certain professionals' practice, there is need for training in order to provide a better use of assistive technologies by the elderly.

DESCRIPTORS

Aged; Self-Help Devices; Health Personnel; Professional Training; Geriatric Nursing.

Corresponding author:

Eliane de Sousa Leite
Rua Sérgio Moreira de Figueiredo,
S/N – Casas Populares
CEP 58900-000 – Cajazeiras, PB, Brazil
elianeleitesousa@yahoo.com.br

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INTRODUCTION

The Pan American Health Organization (PAHO) views active aging as a process of optimizing health opportunities, participation and security in order to improve quality of life as people age⁽¹⁾. The primary goal of active aging is to increase the expectancy of a healthy life with quality. The greatest challenge faced by health professionals in promoting active aging is preventing disabilities and avoiding the worsening of those previously established. Thus, these people can rediscover possibilities of living with the highest possible quality⁽²⁾.

Considering the specificities of the elderly with or without disabilities, the use of tools that provide functional abilities and promote an independent life with social inclusion is discussed in society nowadays. These tools are represented by the Assistive Technology (AT). In Brazil, AT was defined by the Technical Assistance Committee as an area of knowledge of interdisciplinary characteristic that includes resources, strategies, methodologies, practices and services with the objective of promoting the functionality and participation of disabled people by aiming for autonomy, quality life and social inclusion⁽³⁾.

AT directed to the promotion of active aging is a field on the rise, driven mainly by the social inclusion paradigm. It advocates the participation of elderly people with disabilities or reduced functionality in the various environments of society by covering all functions of human performance, from basic self-care tasks to the performance of professional activities⁽⁴⁾. AT services are organized and have the objective of developing practical actions that guarantee the desired functional results to the maximum by using the appropriate technology⁽³⁾.

In the Brazilian reality, elderly use more than one AT resource. This can be worrisome in case the elderly and their family do not receive proper professional guidance for the correct use of this technology, since the result can be abandonment of the instrument⁽⁴⁾. Community groups are one of the appropriate places for practitioners providing guidance for the correct use and acquisition of these resources. These groups are social inclusion spaces for the elderly because they promote their participation in various activities, and this is reflected in the process of aging, quality and valorization of life.

The reason for conducting this research is that AT and its processes of prescription, evaluation and concession are still in the structuring phase in Brazil. In addition, studies on the knowledge and practice of professionals working with the elderly in Brazilian reality are still scarce.

Therefore, knowing the potential of AT for promoting active aging is a path to be pursued by professionals working with elderly groups by seeking quality of life, social insertion and better health conditions. Faced with such a reality, the following questions arise: What is professionals' knowledge about assistive technology? What is the importance of using assistive technology in the life of elderly people from the perspective of professionals working in community groups? Based on the above, the

aim of this study was to identify professionals' knowledge about assistive technology and its importance in the life of the elderly.

METHOD

This is an exploratory descriptive qualitative study. It was conducted in three community groups for the elderly located in a city in the northeastern hinterland (Cajazeiras/Paraíba). These centers are supported by the trade industry of the state of Paraíba, State Government and the Universidade Federal de Campina Grande.

The population included 54 professionals working in the aforementioned community groups. Some were employees of the institution to which the groups belonged, and others were volunteers (teachers of Higher Education Institutions that conducted activities of university extension). Since nine professionals refused to participate in the study, the sample comprised 45 professionals: 11 nurses, three physicians, five dentists, five physical educators, four physiotherapists, nine educators, four nursing technicians, two music technicians and two computer science technicians. This was a convenience sample and the inclusion criteria were to be working at the time of data collection and to be developing activities in community groups for at least 6 months.

For performance of data collection, a visit was accomplished to all social groups at alternating times (morning and afternoon) in order to maintain contact with the coordinators and present the study objectives. After obtaining authorization from the ethics committee and community groups coordinators, data were collected from February to December 2014 through a semi-structured interview conducted in the groups' location at times previously scheduled with professionals. Interviews were recorded with use of an MP3 device, after the subjects' permission. The Categorical Thematic Content Analysis Technique⁽⁵⁾ was used as a theoretical reference for the analysis of speeches.

The study was developed based on the recommendations of Resolution 466/12 of the National Health Council. The project was approved by the Research Ethics Committee under protocol n. 652.809/14. Speeches in the text were identified with the letters 'Suj.' followed by an Arabic numeral corresponding to the order in which they occurred (Suj. 1, Suj. 2 .and so on, until Suj. 45) to ensure participants' anonymity. All participants were informed about the study and signed the Informed Consent form.

RESULTS

Throughout the analysis of speeches, four Thematic Categories and their respective Registration Units emerged: Knowledge about assistive technology; Professionals' lack of knowledge about available assistive technologies for implementation in work with the elderly; Use of assistive technology by the elderly; and Impact on professional practices after implementation of assistive technology, as presented in Chart 1.

Chart 1 –Thematic Categories and Registration Units – Cajazeiras, PB, Brazil, 2016.

Thematic Categories	Registration Units	F
I. Knowledge about assistive technology	Influence on the elderly's health and quality of life	32
	AT resources and services	19
	Development and modernization	13
	Social inclusion	6
	Information technology	2
II. Professionals' lack of knowledge about available assistive technologies for implementation in work with the elderly	Labor instruments	21
	Health education	20
	Teaching resources	5
III. Use of assistive technology by the elderly	Main reasons for abandonment of AT	29
	Importance of the service for use of AT	22
	Difficulties in acquiring AT	10
	Family support	7
	Correct use of AT	2
IV. Impact on professional practices after implementation of assistive technology	Facilitation in the development of professional practices	44
	Search for qualification	11
	Diversity of resources	11

Legend: F: frequency of occurrence.

CATEGORY I – KNOWLEDGE ABOUT ASSISTIVE TECHNOLOGY

Professionals associated AT to its Influence on the elderly's health and quality of life, AT resources and services, Development and modernization, Social inclusion and Information technology:

(...) serve to increase the functionality and quality of life of the elderly (...) (suj.30).

(...) is formed by a vast number of resources (suj.14).

(...) are linked to technological development and help professionals and people with disabilities or the elderly (suj.28).

It helps with the social inclusion in the community and the family itself (suj.1).

(...) is related to information technology and offers a multitude of resources that can help in aspects of work, information, leisure and health by bringing benefits for its users (suj.15).

CATEGORY II – TYPES OF AVAILABLE ASSISTIVE TECHNOLOGIES FOR IMPLEMENTATION IN WORK WITH THE ELDERLY

Regarding the types of AT, professionals affirmed that its implementation in work with the elderly was developed through Labor Instruments, Health Education and Teaching Resources. On the other hand, some participants presented Lack of knowledge about AT, as expressed in the following excerpts:

(...) what I use most are hula hoops, sticks, weights, elastics, walking with obstacles, mats, among others (...) (suj.3).

(...) I work with health education and guidance when making use of any medication (...) (suj.2).

(...) I use several teaching resources in the classroom, sound, construction paper, textbooks, modelling clay (suj.14).

It is the exams, medicines and treatments that help people with some limitation or disability (suj.39).

CATEGORY III – USE OF ASSISTIVE TECHNOLOGY BY THE ELDERLY

Regarding the use of AT by the elderly, professionals mentioned the Main reasons for abandonment, the Importance of the service for use, Difficulties in acquiring, the need for Family support and the Correct use:

(...) there are various reasons for the elderly's abandonment, low schooling, visual problems and the embarrassment of using something different (suj.43).

(...) it will depend on the type of technology he will use, because if it is a very sophisticated AT, he'll need help from professionals and his family members (suj.9).

(...) in our reality, the use of this technology is still restricted to some elderly people, since many don't know it and others have no conditions to acquire it (suj.16).

(...) the family has to take responsibility for making the elderly use this technology (suj.41).

(...) these ATs have to be used correctly in order to help the elderly overcome their limitations (...) (suj.29).

CATEGORY IV – IMPACT ON PROFESSIONAL PRACTICES AFTER IMPLEMENTATION OF ASSISTIVE TECHNOLOGY

In this category, are discussed the changes after implementation of the AT, namely the Facilitation in the development of professional practices, Search for qualification and Diversity of resources:

(...) ATs have become fundamental to our work and are relevant for a satisfactory result of activities (suj.26).

(...) *what changed was professionals' need to qualify themselves too, and learn to work in this perspective of improving care by using AT resources* (suj.21).

(...) *in addition to the existing ATs, nurses can use creativity and create a multitude of objects that serve the elderly with limitations* (suj.21).

DISCUSSION

CATEGORY I – KNOWLEDGE ABOUT ASSISTIVE TECHNOLOGY

The Registration Unit *Influence on the elderly's health and quality of life* had the highest frequency, with 32 citations. By observing professional practices, they noticed that the use of AT in a correct and continuous way promotes the recovery of lost or diminished skills and functions resultant of the aging process. Therefore, from benefits provided by this technology, the elderly person will enjoy a more active aging with participation in the family and community.

A researcher of the theme in Brazil⁽⁶⁾ affirms that ATs are all resources and services that contribute to provide or extend functional skills for disabled or elderly people. Thus, they promote independent living and social inclusion with the aim of recovering health by offering a better quality of life.

In the Registration Unit *Assistive technology resources and services*, participants reported a significant number of possibilities for these resources, which are simple and low-cost services that can and should be developed and made available to the elderly according to specific individual needs.

“Resources are any and all item, equipment or part thereof, mass-produced or customized products or systems used for increasing, maintaining or improving the functional capabilities of disabled persons”⁽⁷⁾. Services translate into the assistance provided to the disabled or elderly person in which the professional selects, develops and guides the use of a particular AT resource⁽⁸⁾. Services are provided professionally to the disabled person and the elderly in order to select, obtain or use an AT instrument, such as evaluations, experimentation and training of new equipment⁽⁶⁾.

In the present study, the AT service is the most used among all roles developed by professionals in community groups. All elderlies who need to use some of these resources are directed to buy the equipment and use it later, whether it is a simple resource like glasses, or more sophisticated, like a hearing amplifier. In this sense, AT resources and services offered by professionals to the elderly are characterized as a primordial tool for maintaining autonomy, hence they favor active aging.

The *Development and Modernization* Registration Unit emphasizes that AT is a result of technological advances, especially in relation to the most sophisticated resources. These are developed by professionals from several areas and have the primary function of promoting greater autonomy of users, such as electronic systems that allow people with locomotion limitations to remotely control electronic devices⁽⁹⁾.

In developing countries like Brazil, these resources are still restricted given the high cost of acquisition. Greater investments by the public power are required both for

research development and to facilitate acquisition by the elderly as the Brazilian Health System (Portuguese acronym: SUS – *Sistema Único de Saúde*) works with a fixed rate of AT resources granted to people with some type of disability⁽¹⁰⁾.

Based on the *Social Inclusion* Registration Unit, it was identified that the use of AT by the elderly includes a range of possibilities of human performance. From basic self-care tasks such as mobility, communication, home maintenance, food preparation, occupational tasks, among others, to leisure and work activities. As for the elderly, obtaining autonomy is certainly one of the paths to active aging and perfect social integration. It is a premise of the relationship of any intervention (simple or complex) with rehabilitation and social inclusion⁽¹¹⁾. Hence the belief that working for the elderly's social inclusion means seeking the conquest and practice of citizenship, and AT is an important instrument for this purpose.

Regarding the *Information technology* Registration Unit, elderly have a great interest in this type of tool, especially computer science and the internet, as a means of obtaining health knowledge, besides being a form of leisure and interaction with family and friends. New information technologies have increasingly become an important tool of culture in contemporary society. Their use by the elderly represents a concrete means of inclusion and interaction with the world by making them active and influential in their medium⁽¹²⁾. Thus, the diffusion of new technologies has required continuous learning from the elderly, thereby promoting an autonomous interaction with technological apparatuses.

CATEGORY II – PROFESSIONALS' LACK OF KNOWLEDGE ABOUT AVAILABLE ASSISTIVE TECHNOLOGIES FOR IMPLEMENTATION IN WORK WITH THE ELDERLY

The lack of knowledge about AT of some interviewees became evident, and this is a serious fact. When professionals do not know the AT, they are not able to provide an adequate service to the population who would benefit from their guidelines. In Brazil, the consolidation of a public policy of encouragement of teaching, research and extension, development and production of AT is difficult. This fact contributes strongly to professionals and society not knowing the potential of this technology for the autonomy of the elderly and disabled people, and its real contribution to active aging with less dependence and greater social insertion⁽¹³⁾.

The first Registration Unit, *Labor instruments*, reveals that a significant number of professionals confuse labor-specific instruments of each profession with AT resources. However, such resources serve users' purpose and not that of professionals. This means AT is a device to be used by disabled people and/or the elderly in order to overcome disabilities that prevent them from performing daily functions. For example, the lower limb prosthesis is intended for those with a limb malformation or who had amputated the limb and need it for locomotion. The hearing aid helps people with hearing loss who will be able to communicate more efficiently by using the device. Vehicles with pedals adapted to the steering wheel for driving with hands-only allow that disabled people move autonomously⁽⁶⁾.

The analysis of the *Health Education* Registration Unit demonstrates that although this is a widely used strategy by professionals with significant results for achieving active aging, it is not characterized as AT. Thus, it shows the confusion made by professionals between health education and AT, and reveals the need for training on the subject at a specialized service in order that AT can be recognized and differentiated from other technologies.

Regarding the Registration Unit *Teaching resources* in the educational area, AT has become a bridge to open a new horizon in the learning and development processes of disabled students or the elderly, in literacy courses or even in universities open to the third age. Corroborating, “the application of AT in education goes beyond simply helping students to ‘do’ intended tasks. In it, we find ways of students ‘being’ and acting constructively in their development process”⁽⁶⁾.

Thus, AT contributes to the pedagogical practice of education professionals. It is extremely important that teachers have knowledge on how to apply this resource in classes with the objective of offering a better quality of teaching to students⁽¹⁴⁾.

CATEGORY III – USE OF ASSISTIVE TECHNOLOGY BY THE ELDERLY

In the analysis of the first Registration Unit, participants expressed the *Reasons for abandonment of assistive technology*. The most cited were the lack of understanding and knowledge about AT, low schooling, visual problems, the embarrassment of using an instrument different from those present in their routine and accessibility of the environment.

Other known factors that prevent older people from adopting these technologies are associated with natural declines in physical, spatial, and cognitive abilities related to memory, concentration, reasoning, and processing speed, as well as the lack of acceptance and reluctance to learn to use new technologies⁽¹⁵⁾. Given these aspects, before prescribing these resources, professionals must evaluate all specificities that directly and indirectly influence the adoption of new technologies by the elderly.

Regarding the Registry Unit *Importance of the service for use of assistive technology*, the offer of a service activity by professionals to disabled people or the elderly in order to select, obtain or use a certain equipment of AT is essential for benefits to all involved in this process⁽¹⁶⁾. An important characteristic of the AT service is that it must be aimed at users’ training, so they become informed and competent consumers, i.e., so users and their family members are able to participate actively in the whole process⁽⁶⁾. Since this is an area of multidisciplinary action, several professionals of different backgrounds incorporate their knowledge by performing interdisciplinary and comprehensive care to the elderly.

Reflecting on the Registration Unit *Difficulties in acquiring assistive technology*, professionals reported they perceive obstacles that prevent the elderly from acquiring a certain AT. Mostly, these obstacles result from economic factors, since this is a high cost technology, in addition to the lack of technical knowledge from part of professionals and the reduced quantity of products provided by the SUS⁽¹⁷⁾.

In the *Family support* Registration Unit, professionals affirmed that the participation of a family member is fundamental to prevent abandonment of the AT. Furthermore, their participation together with the professional team is essential in order to guarantee the functional use of this resource. When family members participate actively in the process of selecting the AT, they will become aware of the possibilities and limitations of the technologies being explored⁽¹⁸⁾. In addition, this participation will allow greater autonomy for users, but it will only be achieved if all are effectively involved in the learning and use of AT during its implementation period⁽⁶⁾.

In the Registration Unit *Correct use of assistive technology*, its use in a correct way was emphasized in order to help the elderly overcome their limitations, and thereby become independent, increase their autonomy and, consequently experience an active aging. Furthermore, professionals mentioned the incorrect use of AT by many elderly, which is justified by the lack of guidance received, because many individuals start to use by recommendation of a friend or relative without prescription from a trained professional, hence the technology may become inadequate to these elderly’s needs.

This fact occurs more frequently with mass-produced ATs for commercial distribution, such as crutches, walkers, wheelchairs and bath chairs. Often, mass-produced ATs need to be customized in order to suit the individual characteristics and needs of each user⁽¹⁸⁾. Therefore, the evident need for prescription, monitoring, guidance and evaluation of these resources by a professional in the area for the elderly’s benefit.

CATEGORY IV – IMPACT ON PROFESSIONAL PRACTICES AFTER IMPLEMENTATION OF ASSISTIVE TECHNOLOGY

With regard to the Registration Unit *Facilitation in the development of professional practices*, through AT instruments, professionals had subsidies for performing diversified activities with the elderly. This has facilitated the development of guidelines thus these instruments became fundamental for reaching a satisfactory result with the planned activities.

ATs can replace some hours of care provided by professionals or home caregivers. Its use has proven to decrease dependence, improve the elderly’s socialization, and it also increased their tranquility and safety for performing functional tasks⁽¹⁹⁾. The correct use of AT by the elderly can help to promote active aging without dependence. This becomes evident in studies conducted to demonstrate that a systematized intervention of ATs improves the elderly person’s performance of activities and decreases the care provided by minimizing the work overload⁽²⁰⁻²¹⁾.

The Registration Unit *Search for qualification* was mentioned as a necessity arising along with the development of AT. With modernization, professionals feel the need to be updated in order to follow the technological development and improve assistance by using AT resources. The greater complexity and quantity of AT equipment has exposed the need for a specific training of professionals to work in this area, which demands the improvement of in-service training programs, workshops, conferences, short courses in universities or rehabilitation centers, distance learning courses and in undergraduate courses^(18,22).

As for the *Diversity of resources* Registration Unit, participants stated they use several AT instruments in their work practices with the elderly, which are mostly considered simple, since some are developed by the family themselves and others are acquired in factories hence not requiring great technological apparatus for their construction. Thus, understanding AT resources as broader and more comprehensive than their own concept is fundamental because they are in the lives of all people, whether as a simple cane or a complex computerized system, they adapt to the needs and specificities of each individual⁽²³⁾.

CONCLUSION

A significant part of interviewees is ignorant about AT, while other professionals confuse it with work instruments used in daily practice, health education and teaching resources. Despite the positive impact of using AT observed in the practice of investigated professionals, there is a need for constant professional qualification for those working

with the elderly given the diversity of technological resources developed daily.

According to statements of professionals, there was a significant influence of the use of AT in the health, quality of life and social inclusion of the elderly, in spite of the difficulties for acquiring the technology. In addition, it was identified a relationship between the elderly's lack of knowledge about this technology with their low schooling, visual problems and embarrassment of using such an instrument. Hence the evident need for the offer of service activities by professionals for guidance on the correct use of AT and its acquisition.

This study also highlighted the importance of the family component as a fundamental part of the process, and their participation is essential together with the professional team in order to guarantee the functional use of ATs by the elderly. Thus, ATs should be understood as an aid for promoting the expansion of a deficient functional ability or for achievement of the desired function that is prevented by the circumstance of disability or by aging.

RESUMO

Objetivo: Identificar o conhecimento de profissionais sobre a tecnologia assistiva e a sua importância na vida do idoso. **Método:** Estudo exploratório descritivo com abordagem qualitativa, realizado com profissionais atuantes em três grupos de convivência de Cajazeiras/PB. Os dados foram coletados por meio de entrevista com roteiro semiestruturado e analisados segundo a Técnica de Análise de Conteúdo. **Resultados:** Participaram 45 profissionais. Foram identificadas quatro categorias: Conhecimentos acerca da tecnologia assistiva; Desconhecimento dos profissionais sobre as tecnologias assistivas disponíveis para implementação no trabalho com o idoso; Utilização da tecnologia assistiva pelo idoso; Impacto nas práticas profissionais após a implementação da tecnologia assistiva. **Conclusão:** Parte dos profissionais tem conhecimento sobre a tecnologia assistiva e outros a interpreta de maneira errônea, confundindo-a com instrumentos de trabalho. Embora tenha sido observado impacto positivo da tecnologia assistiva na prática de determinados profissionais, percebe-se a necessidade de capacitação, a fim de proporcionar um melhor uso das tecnologias assistivas pelos idosos.

DESCRITORES

Idoso; Equipamentos de Autoajuda; Pessoal de Saúde; Capacitação Profissional; Enfermagem Geriátrica.

RESUMEN

Objetivo: Identificar el conocimiento de los profesionales acerca de la tecnología asistiva y su importancia en la vida de la persona mayor. **Método:** Estudio exploratorio descriptivo con abordaje cualitativo, llevado a cabo con profesionales actuantes en tres grupos de convivencia de Cajazeiras/PB. Se recogieron los datos mediante entrevista con guión semiestruturado, los que se analizaron según la Técnica de Análisis de Contenido. **Resultados:** Participaron 45 profesionales. Fueron identificadas cuatro categorías: Conocimientos acerca de la tecnología asistiva; Desconocimiento de los profesionales sobre las tecnologías asistivas disponibles para implantación en el trabajo con la persona mayor; Utilización de la tecnología asistiva por la persona mayor; Impacto en las prácticas profesionales después de la implantación de la tecnología asistiva. **Conclusión:** Parte de los profesionales tiene conocimiento acerca de la tecnología asistiva y otros la interpretan de modo equivocado, confundiéndola con instrumentos de trabajo. Aunque se haya observado impacto positivo de la tecnología asistiva en la práctica de determinados profesionales, se nota la necesidad de capacitación, a fin de proporcionar un mejor empleo de las tecnologías asistivas por las personas mayores.

DESCRIPTORES

Anciano; Dispositivos de Autoayuda; Personal de Salud; Capacitación Profesional; Enfermería Geriátrica.

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