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Implementation of a Remote Control Application for Elderly People in Brazil: Analysis of the Factors Involved in the use of a Technological Innovation related to Telecare

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ABSTRACT

Purpose: *The rapid ageing of the Brazilian population highlights the importance of new assistive technologies. The objective of this study was to analyse the positive and negative factors involved in the implementation of a Remote Care App for the elderly in Brazil.*

Method: *A qualitative method as been used, based on discussion groups involving 30 older Brazilian people who participated via a Telecare App.*

Results: *The results obtained highlight positive factors such as security, independence and personal tranquillity, and negative factors such as the privacy of the elderly, the social differences of Brazil, and the design and utility of the App.*

Conclusion: *Discourses on ageing at home using assistive technologies are cultural resources from which older people can make sense of their experience as users of Remote Care. It is also relevant information for the improvement of public policies aimed at caring for the elderly, by considering assistive technologies as factors for independent ageing.*

Key words: *assistive technology, Telecare, independence, elderly people*

INTRODUCTION

In societies of today there are two topics that call attention to ageing: one is the significant growth of the population of advanced years, and the other is the importance of assistive technologies for improving the independence of the elderly. These two issues have related concepts.

Accelerated demographic transformations in recent decades have caused Latin America to be in a period when the population is increasingly ageing (Giatti et

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al, 2003). In Brazil, the number of people over 60 years of age went from three million in 1960 to seven million in 1975, 14 million in 2002 and 20 million in 2010, with an estimated 32 million people reached in 2020 (Bezerra et al, 2012).

One of the challenges for the 21st century is to take care of the ageing population and provide new technologies that can help them maintain their independence and improve their quality of life.

Attention and care for the elderly today have positively been accepted as the model of “ageing in place” (Rowles, 1993). This model consists of the permanence of the elderly in their usual living environment, as much as possible (Pastalan, 2013). This new form of care for the elderly makes it necessary to design technologies related to Telecare, which help both the elderly and their families by providing greater security, independence and quality of life at home.

Different studies in Europe show that elderly people have a positive attitude about ageing at home and the use of different types of Telecare (Agrell et al, 2000). However, in countries like Brazil, there are very few studies on the meaning and knowledge among older people of ageing at home with Telecare.

Telecare is a social and / or healthcare service at home. The term Home Telecare was originally defined in the 1990s, as a home care system based on communication technologies, aimed at elderly people in need of help in an emergency situation (Valero et al, 2018).

Another more recent reference to Telecare service states: “Telecare is defined as an aid system inside and outside the home that covers the needs of those who may require constant timely attention and rapid assistance in emergencies 24 hours a day” (Akhlaghi & Asadi, 2002).

This definition focuses on the ability of the service to provide assistance, essentially social or medical, in any place and in any situation, regardless of the technologies used. The aforementioned definition of telecare highlights a distance social, medical and family care assistance using new technologies.

Today smartphones are used by people of different ages, highlighting that people over 60 have increased their ability to make use of both the device as well as the internet (Merrouche et al, 2016).

There are more and more applications for the elderly, with the aim of helping them in their day-to-day life, improving their independence, allowing them

to control their medication, their medical appointments, their efforts to orient themselves in places during periods of disorientation without having to depend on one another (Merrouche et al, 2016).

Currently the smartphone is a powerful tool offering Telecare applications that can be of importance for the wellbeing of the elderly population. These days many research studies are being carried out on Telecare applications which have the objective of alerting families in emergency situations in which elderly persons living alone could find themselves (Merrouche et al, 2016). The authors wished to find out how elderly people experience smartphone Telecare applications.

Objective

The objective of this study was to determine positive and negative factors experienced by elderly people in the use of a Remote Care Application: Me Cuido App (the application is still in its testing phase and is likely to be launched by January 2021 and will be available in the Android App store).

The experiences of elderly people with the use of the Me Cuido App can further contribute to the implementation of new assistance technologies related to Telecare in the Brazilian population.

METHOD

Study Design

A qualitative study design was used to present the understanding which elderly Brazilians have about ageing at home and using a Remote Care Application (App), while highlighting the positive and negative factors.

Discourse analysis and the identification of interpretative repertoires were used. The interpretive repertoire is a set of linguistic constructions which account for a specific point of view and is based on shared expressions in a social group. Its function is to make a discursive construction of models of reality, while making positions against different social phenomena (Wetherell & Potter, 1996).

Study Sample

In the discussion groups, 30 elderly people participated via a Remote Care Telecare App. The sample included people between 59 and 90 years of age,

who live alone in their homes in different cities of the Sao Paulo municipality. Although the intention was that the discussion groups were gender balanced, most of the participants were women.

Data Collection

The discussion groups were held at the home of one of the participants who collaborated in the study and the sessions lasted approximately one hour. For its realisation, there was a script and an explanatory video about Telecare and the Remote Care App; *a posteriori* there was a sequence of questions about the positive and negative factors of a Remote Care App for the Brazilian population.

The meetings were recorded and transcribed in their entirety.

Data Analysis

To identify the interpretative repertoires, the procedure recommended by Wetherell and Potter (1996) was performed. The researchers read the material that led to the first thematic coding. Thus, it was possible to focus the subsequent analysis on relevant fragments organised by positive and negative topics on the App. All segments of the corresponding subject were considered, even at the risk of including some issues which the analysts were not sure about.

From a series of re-readings, patterns of discursive variability and their internal consistency were identified. The identification of these patterns eventually led to the delimitation of a set of interpretative repertoires on the object of interest of the study.

Ethics Approval

The investigation was carried out with the authorisation and signature of the informed consent form by all the participants. This form was approved by the Ethics and Research Committee of Brazil.

RESULTS and DISCUSSION

The results showed that elderly people in Brazil have different ways of understanding ageing at home with Telecare technologies. In this sense, different repertoires have been identified on the positive and negative factors for the implementation of a Remote Care App for elderly people living alone in Brazil.

Positive Factors

Security

A Telecare App is a preventive home assistance service, immediate and permanent, for the care of the elderly who live alone. Several researchers say that this type of assistive technology improves the safety of the elderly by facilitating direct contact with their families and / or caregivers (Lyles et al, 2011). The following fragment reveals this factor. Two users spoke to one of their relatives about a situation they had experienced:

“The other day I went to the doctor and when I left the office I did not remember how to return to my house, I was scared! It had never happened to me. The secretary told me to call my family, but it was so blocked that I couldn’t even dial the cell phone ... Now I think that with that application, they could have helped me quickly and without attracting attention in the office”(User 1).

“My daughter lives in another city ... every day she has to call me to remind me that I have to take my medication ... I think that if I used that application, I could have more security in taking the medication and so my daughter would not have to be aware from me ... that she is always at work ... that application would give more peace of mind to me and my daughter”(User 2).

Independence

Independence is something that most people value when they are old. Often related to active or positive ageing, it is considered by some authors as: “independent is who does what one wants, who is able to endow with their own law” (Correa et al, 2013). This factor was highlighted by the majority of users. Two users talked about how important their independence at home was for them, and what could be improved with the use of the App:

“Having a caretaker all day at home, the point that bothers her presence arrives (laughs) ... However, if we have a virtual company, I think it would improve daily independence without having to bother and pay other people ...”(User 3).

“The use of this application would give more independence and privacy in my daily activities ... and I would not think that I am a girl again ... all I have to do is take my cell phone with me ...”(User 4).

Peace of Mind for the Family

When thinking about the care of the elderly, one of the points taken into account is the tranquillity of family members. While studying Telecare, words like tranquillity, fear, sadness, loneliness, and affection continually appear. A conceptual universe is established that revolves around emotions and affectivity (Tirado et al, 2011). A user revealed that her family, living in another city, need to be calm while she lives alone at home:

“My children who live in other cities are afraid that I live alone in my house ... they don’t understand that I want to live alone ... It’s my house ... I think that with the use of that application, they could be calmer ... in case something happens with me” (User 5).

Negative Factors

Privacy of the Elderly Person

According to the Inter-American Convention on the protection of the human rights of the elderly, elderly people have the right to privacy and intimacy and not to be subject to arbitrary or illegal interference in their private life, family, home or household, or any other field in which they operate, as well as in their correspondence or any other type of communication. The elderly person has the right not to be subject to aggressions against his dignity, honour and reputation, and to privacy in acts of hygiene or in the activities he develops, regardless of the area in which he operates (OEA, 2017). One user expressed the opinion that the use of the App would impinge on his privacy:

“What I do not like is that I will feel controlled all day, even if I do not have someone by my side ... I will feel that I have no privacy ... Why does my family have to know that I leave home and my location at all times” (User 6).

Social Differences in Brazil

Social differences due to the concentration of income, low wages and unemployment are factors that increase social inequality in Brazil. The social division of health, education and safety is a characteristic of this developing country. This situation means that the Brazilian population does not have the same opportunities in terms of new technologies (Brito, 2008). Several users highlighted the great social disparity that exists in Brazil and how that can have an impact on the use of a Remote Care App for the elderly. Two users pointed out the problem related to this factor:

"Not all people in Brazil have cell phones ... much less internet ... in our country there is a very large social difference ... not all people can benefit from this new technology ..." (User 6).

"It will be a technology destined for a certain Brazilian social class..." (User 7).

App Design and Usability

The technological inclusion of the older population presents a challenge in today's society. Technologies become an opportunity for the elderly to remain integrated in society independently. One of the essential factors in the use of technologies by older people is the design they present. The effects induced by the processing of the device interface type, intervene in the use of technology. The literature shows the so-called superiority effect of the drawings, which highlights the importance of images in long-term mental storage, observing the great capacity to remember drawings presented in short periods of time (Mort et al, 2015). Two users highlighted the problem of using the App related to this factor:

"If it is easy to use, it will be more used...." (User 8).

"Many applications have very small images ... I want to press one button and end up pressing the other ... and the colours are often difficult to identify ..." (User 9).

CONCLUSION

Discourses on ageing at home using assistive technologies are cultural resources from which elderly people can make sense of their experience as users of Remote Care. It is also relevant information for the improvement of public policies aimed at caring for the elderly, by considering assistive technologies as factors for independent ageing.

In order to deepen the meaning that Remote Care for the elderly can have, as well as to better understand its impact on Brazilian society, further studies are required. Future studies have to address the effective practices through which a Remote Care device is introduced into the daily life of the elderly in Brazil, and examine its effects on the quality of life of those who age at home.

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