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Elderly in Chile: a needs assessment approach for preventive health communication

Adultos mayores en Chile: descripción de sus necesidades en comunicación en salud preventiva

Idosos no Chile: descrevendo as suas necessidades de comunicação em saúde preventiva

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ABSTRACT
This paper shows the results of an analysis of the health communication needs of 181 autonomous Chileans over 60 years, aimed to design the prototype of a system of preventive health communication for these audiences and their support networks. In order to define communication objectives with preventive and educational health purposes, we applied a questionnaire regarding personal information, sociability indicators, media and technology use habits, subjective well-being and health self-perception. This questionnaire was also used to define the editorial view and the production of content in different formats, under the active ageing perspective. The research team is interdisciplinary: communications, public health and sociology.

Keywords: Elderly people, communication and health, use of media and technology, positive ageing.

RESUMEN
Este trabajo expone las necesidades en comunicación en salud de 181 chilenos autónomos, mayores de 60 años, para diseñar el prototipo de un sistema de comunicación en salud preventiva para estas audiencias y sus redes de apoyo. Se aplicó un cuestionario sobre variables personales, de sociabilidad, uso de medios y tecnologías, bienestar subjetivo y autopercepción de salud. Esto para definir los objetivos de comunicación, el medio (un sitio web multiplataforma), la línea editorial y los contenidos en diferentes formatos, desde la perspectiva del envejecimiento activo. El equipo de investigación es de carácter interdisciplinario: comunicación, salud pública y sociología del envejecimiento.

Palabras clave: *Personas mayores, comunicación en salud, uso de medios y tecnologías, envejecimiento positivo.*

RESUMO
Este trabalho apresenta as necessidades de comunicação de saúde de 181 chilenos autónomas com mais de 60 anos para projetar o protótipo de um sistema de comunicação em saúde preventiva para esses públicos e respectivas redes de apoio. Foi aplicado um questionário sobre variáveis pessoais, de sociabilidade, hábitos de uso de mídia e tecnologia, bem-estar subjetivo e autopercepção de saúde. O propósito foi definir os objetivos de comunicação, a mídia (um site multiplataforma), a linha editorial e a produção do conteúdo em diferentes formatos, sob a perspectiva do envelhecimento activo. A equipa de investigação é interdisciplinar: comunicações, saúde pública e sociologia.

Palavras-chave: Terceira idade, comunicação e saúde, uso de mídia e tecnologias, envelhecimento ativo.

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INTRODUCTION

In Chile, according to the National Service for the Elderly (SENAMA, by its Spanish acronym), there are 2.6 million people over 60 years, 15.6% of the population. In the country, life expectancy is of 82 years for women and 77 years for men (SENAMA, 2012), and by 2025 it is expected that the population over 60 years will be of 20%, which exceeds the percentage of population under 15 years (Campos, Herrera, Fernández & Valenzuela, 2014). In countries that have contexts of accelerated aging, one of the prioritized social and health issues it understanding the phenomenon of elderly dependency in different areas, not just diseases (Superintendencia de Salud de Chile, 2008). Despite of the above, the preventive and communication approach applied in the case of autonomous people over 60 and their support networks provided an space for health intervention little explored. Bermejo (2010, 2012) considers that these are "good socio-educational practices with seniors" (2010, p.38) in a framework of active aging: the author proposes to use communication as a tool to promote the physical, cognitive-emotional and socio-relational well-being of older adults, taking advantage of the information and communications technologies (ICTs).

Unlike the dependence model, active aging involves cross-contribution and inclusion of older people to society not only in the workplace (Eurobarometer, 2012). For the World Health Organization (OMS 2002), it is a political framework to be expressed in intersectorial action, public health policies, safety, participation and international cooperation to ensure the quality of life and adequate health of people in their old age. Therefore, the agency states that in all countries, particularly the less developed, taking measures for older people to remain active and healthy is not a luxury, but a necessity (WHO [World Health Organization], 2002). Charness and Boot (2009) highlight three trends with the potential to improve the quality of life for people over 60 years: increasing life expectancy, the ability to communicate over the Internet, and adoption, broader each time, of ICTs. Regarding the latter, Stager and Núñez (2015) show that while 90% of 18-year-old Chileans use the Internet, at 70 years, 90% does not.

Recognizing an opportunity for communication and preventive health education in an aging country like Chile, with people increasingly interconnected by different platforms, in this article we present the results of a survey based on administered questionnaire applied to a nonrandom sample of 181 autonomous men and women of 60 years or more to meet their communication needs in health. The study was conducted in the framework of the interdisciplinary research project "*Diseño de un sistema de comunicación en salud para adultos mayores y sus redes de apoyo*" (Designing of a communication system in health for older adults and their support networks), funded by the program Fondef Idea of the National Commission on Science and Technology (CONICYT). Researchers from the faculties of Communications, Medicine and Social Sciences (Sociology) from the Pontificia Universidad Católica de Chile participated of the study[8]. The main purpose was to develop and test a small-scale prototype of a system of communication on preventive health intended for people over 60 and their support networks, taking advantage of digital communication. This work shows the results of the first part of the investigation, in which we started by analyzing their needs (Witkin & Altschud, 1995) to determine the goals to be achieved in this area. From the perspective of active aging, the results were used to define the communication objectives in preventive health, decide the communication platform (we designed and tested the prototype on a small scale, with a group of participants of the survey), the editorial point of view and the production of educational content in different formats.

THEORETICAL FRAMEWORK

In the area where health and new technologies can converge and offer solutions of preventive communication , one of the main dimensions that facilitate or hinder health communication aimed at older people is to characterize, from their heterogeneity (Dogruel, 2010), as receivers. The National Innovation Council for Competitiveness of Chile notes that the aging population is one of the main "waves of change" to face in the short, medium and long term (CNIC, 2013, p. 115. Based on 2010 data from the United Nations,

the Council states that "while the general population will grow 57% by 2050, senior population will grow 182%" (ibid. p.114), pressuring the health and pensions systems, as well as cultural challenges to ensure their social participation, their access to training, teaching them experiences and exercise of their rights.

In Chile, there is a comprehensive policy of positive aging, based on the National Service for the Elderly of the Ministry of Social Development (SENAMA, 2012). In force until 2025, it proposes to protect the functional health of older people, enhancing their integration into the various areas of society and increasing their levels of subjective well-being. These objectives are directly related to the possibility of living the aging and old age as a process in which new development possibilities and autonomy fit. However, communication and health communication are not considered intervening variables in its effective implementation. There is also a lack of consideration of how older adults, from the paradigm of active aging, may have a specific and active role in accessing the media and technologies, as well as in continuing their education to enhance their social participation, their health and their levels of communication (Forttes & Massad, 2009, Huenchan & Rodríguez-Piñero, 2010).

COMMUNICATION AND HEALTH FOR OLDER ADULTS: THE POSSIBILITIES OF THE INTERNET

Acknowledging the existing inequalities in Latin America in the field of health, Fernández and Oviedo (2010) suggest the most active incorporation of ICTs in that sector, while many other authors propose going beyond the first digital divide, characterized by access to technology (González-Oñate, Fanjul-Pryró & Cabezuelo-Lorenzo, 2015). In this sense, Llorente-Barroso, Viñarás-Abad and Sánchez-Valle (2015) focus on the opportunities offered by the Internet to the elderly, grouped into four categories: information, communication, transactional and administrative, and leisure and entertainment. In addition, they point out that for active aging digital literacy programs are necessary, aimed at providing skills for this audience, which is also known as e-inclusion (Abad-Alcalá, 2014). Studies have shown that participation in such programs increases the use of ICTs into the homes of the elderly and the consequent access to the information available on the network (Casado Muñoz, Lezcano & Rodríguez-Conde, 2015). Thus, the Internet becomes a dynamic source of content of interest to the elderly, where health issues such as illness, medical doctors, hospitals and healthy diets are recurring consultation themes (Llorente-Barroso et al., 2015). Indeed, this is related to active aging, a condition defined by WHO as a "process of optimizing opportunities for health, participation and security in order to improve the quality of life as people age" (OMS, 2002, p. 79). It is not only about being physically active, but also about a more comprehensive vision that incorporates mental and social aspects, and people frail, disabled or in need of assistance. The term "active" refers "to continuing participation in social, economic, cultural, spiritual and civic affairs, not just the ability to be physically active or to participate in the labor force" (ibid.).

Promoting healthy lifestyles involves understanding health not only as the absence of disease, but as a state of physical and mental well-being (García-López Piqueras, Rivero, Ramos & Oblotas, 2008). This paradigm is relevant because other models such as the positivist aging proposed by Rowe and Kahn (1987), often used in gerontology and public health, are not necessarily according to the reality of the elderly, assuming as an adverse factor the existence of pathologies and chronic conditions. Clarke and Nieuwenhuijsen (2009) argue that aggregate or ecological variables –such as collective well-being and the environmental quality, represented by income, economic well-being, goods, services, barriers or facilitators of environments, the neighborhood, the transportation, lighting, noise, security, and access to safe food– relate to health needs, but have been less studied than the variables of individual type Those variables have been conferred with greater relative importance due to the overly medicalized approach used in the definition of needs. This knowledge gap provides an opportunity to estimate the specific variables that assess the influence of healthy seniors as a contributing factor to preventive family capital, social networks and community.

According to Morlachetti, Guzmán and Cuevas (2007), there is a significant lack of awareness of the social and political actors on aging, whose negative image is a difficulty to convey messages to the audience, especially decision makers, parliamentarians and the

public. "If people over 65 years have not a different place in society than the one we recognize today, we will hardly be able to cope with the challenges of an increasingly aging population" (p.9). Other authors advocate using media strategies to advocate for economic, social and cultural rights, and the participation of older adults, particularly with regard to counteract their stereotypical negative cultural image (Casapié , Balbontín, Porras & Mateo, 2011; CNTV, 2005, 2010; Medina & Zorrilla, 2011; Kotter-Gruhn & Hess, 2012; De Andrés & Maestro, 2013). Stimulation through communication processes and cognitive functions is considered an important aspect of the health and quality of life of the elderly (Martín, Aguado, Díaz & Lorience, 2000; González, García & Mata, 2012), as well as promoting contact through the use of computers (Dickinson & Hill, 2007). In this sense, Biobillier and Oprea (2009) and Alonso (2011) discuss the psychosocial challenges related to the use of new technologies by older adults. There is evidence of the impact of entertainment for behavioral and social change, an aspect in which the BBC is a leader in innovation (Klein, 2012), and there are proposals of models for changing health behaviors, such as Schwarzer's HAPA (2008).

BENEFITS OF A PREVENTIVE HEALTH COMMUNICATION FOR ACTIVE AGING

Contreras (2008) stresses the need to connect older people with each other and with others, which means considering their communication habits in a media environment increasingly prone to interactivity and digital communication (Pavón, 2000 Pavón & Ruiz, 2000; Cabrera, 2010). While Chile is the country with the second highest Internet penetration in Latin America (IAB Chile, 2012), in 2011 only 12% of the adult population had Internet access (CASEN [National Socioeconomic Survey], 2013). On average, on 2013 men accessed the Internet more than women did (15% and 10%, respectively). In terms of age, 21% of the population between 60 and 64 were Internet users, 13% between 65 and 69 years, 9% between 70 and 74 years, 7% between 75 and 79 and only 4% among those 80 or older. At this point, it is important to note that older people are heterogeneous groups. The survey of life quality of Chilean elderly –that takes aspects of the 2nd National Health Survey (Minsal, UC & UAH [Ministry of Health, P. Universidad Católica de Chile, Universidad Alberto Hurtado], 2011), representing 86% of the population (Campos et al., 2014)– included for the first time a chapter on the use of media and technology. In it, a correlation between socioeconomic status, education level and access to media and technology is evident. The latter are most used by those under 74 years with greater educational level, associated to a higher socioeconomic status. This group, especially those with higher education, is also the one that accesses to greater leisure and hobby activities. Bustamante, Alcayaga, Campos, Urrutia and Lange (2008) stress, from a chronic approach, that "health institutions should start by promoting productive interactions between health professionals, through the exercise of universal communicational precautions to ensure that the messages delivered are understood, improve the communication skills of health services providers, develop platforms of communication technologies and implement models to promote communication as useful for the user" (quoting Paasche-Orlow, Schillinger, Greene & Wagner, 2006).

Literacy in health, i.e. the ability of people to obtain, process and understand basic information and services that they need to make health decisions, becomes a major barrier to the management of self-care (Bustamante et al., 2008, p. 97). This puts in the center the strategic use of communication systems designed to develop skills in older adults to process, understand and interpret the information obtained through communication, conceptualizing the scope of a health situation and communicate with health professionals (ibid).

Motivation is considered crucial to generate changes in health and to overcome social isolation and loneliness, both growing problems among middle-aged people and the elderly (Vera, 2007; Steptoe, Shankar, Demakakos, & Wardle, 2013). This includes the ability to enjoy the use of the computer, learn to benefit from the information of online health programs and increase social connections with family and friends. Nimrod (2011) points out that fun is a necessary content in technological initiatives aimed at this segment. Indeed, Shepherd and Aagard (2011) see ICTs as tools that reduce loneliness and allow collaboration, by forming online learning communities, since the use of environments

and social support networks is not always positively related to health promotion in the case of older adults (Dickinson & Hill, 2007). Generational relationships between grandparents and grandchildren also explain the adoption of new technologies and encourage health communication (Fusaro, 2007; González & De la Fuente, 2008; Sánchez & Díaz, 2012). In addition, devices can help creating links of solidarity between generations (Sánchez & Díaz, 2012). In fact, one of the facilitators of the use of ICTs is the experience of living with people who uses them, so it is important to stimulate learning use through interaction with other generations, family or work (Encuentra, Fernández & Gómez Zúñiga, 2013). ICT learning experiences are also reported in senior centers (Acute & Pascual, 2008; Sharp & Fombona, 2012; Bermejo, 2012) and there are studies on the influence of social networks in older women (Fernández-Campomanes & Fueyo-Gutiérrez, 2014).

Despite the above, the offer of communication devices can generate anxiety, fear and distance from technologies (Selwin, 2004; Heart & Kalderon, 2011), since older adults have to adapt to the design of the interfaces and not the other way around (Hashizume, Yamanaka & Kurosu, 2011, Ilyas, 2012; Fischer, David, Crotty, Dierks & Safran, 2014). Hawthorn (2007) highlights the importance of knowing the characteristics of this population to design and planning the resources and strategies of ICT innovation for this segment. Kemper and Lacal (2004) note that when designing and creating content the decline of sensory, cognitive and physical skills (audition, memory, information rescue, lethargy and loss of fine motor skills) should be considered. In addition, it is suggested to avoid a high volume of cognitive load by excess of interactivity with the information devices (Hawthorn, 2007). Sinden and Wister (2008) note different challenges to communicate about health to older adults: considering the heterogeneous, digital barrier, with economic and educational bias, and its correlation with the health level; adapting the content and language to the sociocultural characteristics of the target population, family and community; designing inclusively, according to the limitations of older adults to use technologies; building confidence, accuracy, credibility, and ensuring the privacy of information. Mitzner et al. (2010) suggest educating about the benefits of the technologies that have not yet been adopted and eliminate anxiety, alphabetizing older adults to access information on health, promoting sound decision making by literacy in health (Bustamante et al, 2008) and creating specific media literacy (Gómez & Phillippi, 2013;. Gutiérrez, Tirado & Hernando, 2013; Santibáñez & Latorre, 2013) from social inclusion (Contreras, Marfil & Ortega, 2014). This applies to continuous learning for older people (Agudo & Pascual, 2008; Gutiérrez et al, 2013.). In the same vein, Tirado, Hernando, García, Santibáñez and Marín (2012) developed a test to evaluate specifically these skills.

Appropriation of smartphones for active participation of older people is highlighted as crucial by different authors (Fernández-Ardevol & Arroyo, 2012; Fernández-Ardevol & Ivan, 2013), as the use of social networks to allow communication (Burnett, Schindelar & Weaver, 2012). Wagner, Hassanein and Hedad (2010) state that, in this case, studies on the use of computers should be multidisciplinary by definition and that learning these technologies should be measured with adapted scales for this audience. The importance of knowing the needs of users for communication in health has been emphasized both in the field of health (Wright, Williams & Wilkinson, 1998) and by participatory methodologies to increase the effectiveness of health initiatives that, instead, usually employ technologies from diffusionists models, of mere transmission of information or from health marketing (Díaz & Uranga, 2011). Assessments on experiences of ICTs in health in older adults, such as Duckki, Helal, Anton, de Deugd and Smith (2012) recommend persuading and motivating their participation in self-care activities, using communication systems that allow connection to a social network, because they value their insertion into communities where they can receive or exchange data related to the maintenance and recovery of health. They also suggest taking the behavioral model of Fogg (2009) to empower and produce an effective behavioral change through the use of ICTs in health (specifically computer programs, websites or applications), who proposed that three factors must be present at the same time to trigger a behavior: motivation, skill and trigger. Programs or interventions that aim to identify and promote these factors and their subdomains most

likely will achieve a behavioral change (Jimison et al., 2008). All these aspects are relevant to relate with the information provided by the group of elderly evaluated in this communication.

METHODOLOGY

The aim of the study was to test the concept to develop a prototype of web communication system that develops preventive health habits in the elderly by using ICTs. To make decisions about the design of the small-scale prototype, we designed a questionnaire that would determine the communication needs in preventive health of older autonomous adults, through case studies (N=181), and know their relationship with media and digital technologies, so the system would be adequate We considered elderly people those aged 60 or more, according to the provisions of the United Nations (OMS, 2002) and the gerontological glossary of the National Service for the Elderly. We opted for autonomous seniors, that is to say, functionally health people, that according to the definition provided by the Pan American Health Organization (PAHO), contained in the glossary of SENAMA[9], are "able to deal with change in old age with an adequate level of adaptability and personal satisfaction". This first step was to gather base selected information on health, communication habits and the use of media and ICTs by this type of user. To do this, during the prototype phase we decided to know the reality of people of medium-high socioeconomic level, with greater access to digital communication. In the future, we will expand the case studies to other social settings , whether marked by the digital divide and an increased need for digital inclusion (Stager & Núñez, 2015), by lower health literacy (Bustamante et al., 2008) or by socioeconomic and educational conditions with fewer resources. Thus, we used the survey to determine their main sociodemographic characteristics, their usage habits of media and technologies, indicators of subjective well-being, their health and sociability. For this purposes, we established three sampling criteria:

1. Age: over 60 years: according with current Chilean law, a person is defined as elderly when it is over 60 years (SENAMA, n/d).
2. Autonomous: able to meet their basic needs without assistance from third parties.
3. Residents in the capital city and Internet users: experimental control samples.

We recruited a nonrandom sample from respondents among students enrolled in courses and workshops offered to elderly people in the same university of the research team. The questionnaire was administered,face to face, by trained pollsters at the Institute of Sociology of the Pontificia Universidad Católica de Chile, with an average duration of 45 minutes, in two stages: between April and May 2015 and in July the same year. The final sample corresponds to 181 cases, of which 24.9% (45 cases) correspond to the named sample 1, 54.7% to sample 2 (99 cases) and 20.4% to sample 3 (37 cases), selected in turn as follows:

- Sample 1: participants contacted between November and December 2014, during the courses of the elderly program, who agreed to a later interview (45 cases);
- Sample 2: participants selected by the snowball method. Their contact information was obtained through respondents of sample 1 or pollsters who conducted the data collection (99 cases);
- Sample 3: complementary sample, comprising respondents selected by contacts of the investigators or interviewed in a city center for the elderly (37 cases).

The survey allowed establishing key indicators to be measured at the baseline and ending of the experiment, in which some of the participants who answered the questionnaire were invited to use the communications prototype for three months. Similarly, the data provided the basis for the decisions regarding the prototype design, and to determine its editorial line. After the application of the questionnaire, we proceeded to the random assignment of subjects to two experimental branches and one control group. This report presents the descriptive results (baseline) for each of the questions and indicators contained in the questionnaire for the participants in the experiment.

RESULTS

Regarding the sociodemographic characteristics of the sample (N=181), the average age was 68.9 years (33.7% men and 65.7% women). As for the educational level, 63.7% of seniors have complete or incomplete college education, 15.6% has career technical education, 20.1% had secondary education and just one person (0.7%) only had primary education. Most have some health insurance system coverage (97.2%), mostly from the private system (Isapre) (53.3%), although a significant percentage (37.8%) belongs to the National Health Fund (Fonasa), the public health system.

MARITAL STATUS AND FAMILY RELATIONS

Most respondents are currently in a relationship (57.4%), distributed as follows: 55% are married or cohabiting (2.8%), 16.3% are widowed with no partner, 17.7 % are separated, annulled or divorced and 8.5%, single. Most respondents have live (94.3%) children. Approximately 50% have one or two children. The average age of the younger children is 34.5 years, with a minimum of 16 and maximum of 60 years. A majority also declares to have living grandchildren (70.6%), with an average of 4.01, whose ages range between 0 and 40 years, with an average of 7.21 years for younger grandchildren and 16.21 years for the older. Of those respondents who have grandchildren, 24.3% takes care of one of them at some point, not on a permanent or regular basis. Only 44.7% takes care of their grandchildren more than once a week.

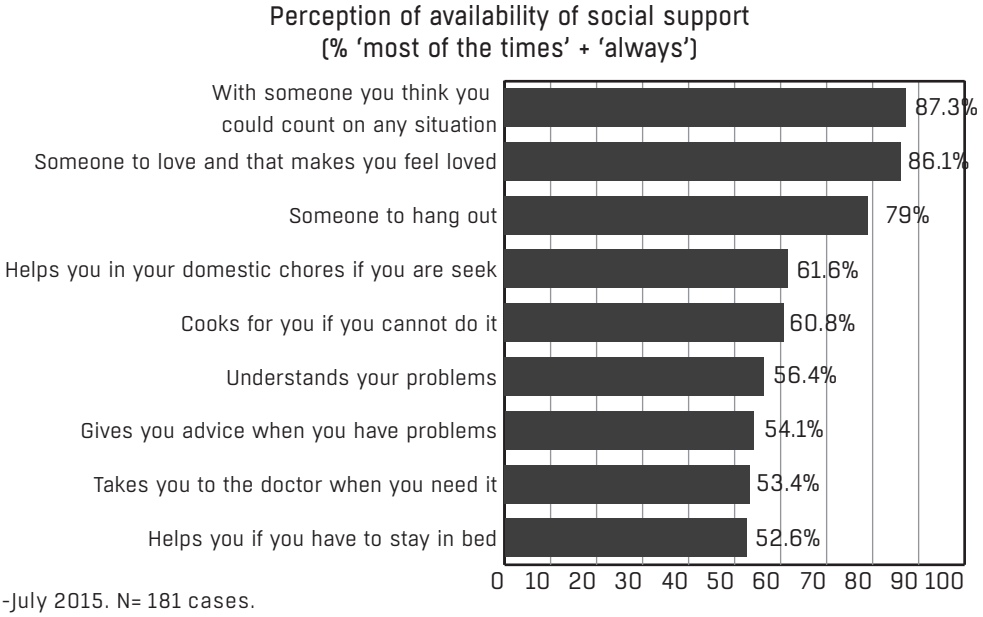
HOUSEHOLD STRUCTURE AND EMPLOYMENT STATUS

A 25% of respondents live alone. Those who live are with someone are mostly the household's main provider or their partner (88.5%), in households with an average of 3.01 members. Generally, they live with their partner, alone (25.6%) or with children (16.9%). There is a variety of living arrangements, although none of them has a considerable frequency (22.6%). A majority of the sample has worked in some point of their life (97.8%) and a high percentage (50.3%) was working, with an average of 4.36 days and 31.09 hours a week.

PERCEPTION OF THE ELDERLY ABOUT THEIR SOCIABILITY

The descriptive analysis of the first of the thematic modules (sociability) was measured according to the perceived availability of social support, the recurrence to social networks composed of people, their diversity and

Figure 1. Perception of availability of social support



April-July 2015. N= 181 cases.

Source: Survey Fondef Idea – Communication system in healthcare for the elderly and their support networks.

the activities performed. As shown in figure 1, respondents report having someone if they need social support. In general, emotional support has a higher perceived availability in the close social network, which may be because the sample is composed of independent people.

As for the *extension of social networks by level or circle of closeness*, respondents report having on average 7.06 close people, with a minimum of 0 and a maximum of 12. In addition, they claim to have, on average, 6.08 friends, with a minimum of 0 and a maximum of 26. We should note that the size of the circles decreases with decreasing proximity. Therefore, more people are mentioned in the first circle than in the second and the third.

Most members of social networks are women (58.1%) and their average age is 50.48 years. Women often have a primarily female network (61% of members). In the case of men, the networks tend to be more equitable, with about 48.6% of men between the members of their network. The average age of members of social networks is greater for older respondents. For 63 years or less, the average age of their close people is 46.56 years, rising to 50.87 years for respondents between 64 and 70 years and to 53.81 years for those over 71 years old. Respondents who report having close people in their social network allude to their nuclear family (children: 88.4% and partner: 53.6%), friends or neighbors (60.2%) and grandchildren (25.4% of the cases). It is noteworthy that not all respondents who mentioned a couple considers this person in their close people, either in the first, second or third circle. Other relatives, such as parents (11.6%), parents in-law (2.2%) or brother/sister in-law (12.7%) are also mentioned. There is also a relatively high percentage (30.4%) of people who mentions ties not present in the pre-coded categories: nephews, cousins, former partners and coworkers. Members of the nuclear family, besides being two of the most prevalent within the network links are located mainly in the circle of closest people. On the other hand, links belonging to the extended family, as parents, parents in-law, siblings and brother/sister in-law, are located mainly in the second circle, while caregivers and friends or neighbors are mainly in the third circle.

For the research team it was important to know not only the social networks, but also the frequency of communication with the near people and the way used to it (see table 1). Of the consulted media (phone call, text message, email or personal contact), only email has a minor contact frequency for all levels of closeness considered. However, text messaging (WhatsApp, chat, etc.), does not have a very high frequency of use among respondents, although most have access to a phone with Internet (59.1%). Therefore, there would be a preference by respondents toward using more traditional contact means –telephone calls and personal contact–, the first being the most common for the three circles within the network. It is observed that the frequency of contact is strongly associated with the level of closeness that the respondent has with members of its network: members of the first circle are those with whom they have more frequent contact (more than once a week) in all types of means, while in the third circle there is infrequent contact (less than once a week) for all the contact means considered.

As discussed in the theoretical framework, sociability, an indirect indicator of life quality and healthy habits, can also be measured in terms of the *execution of activities, its frequency and diversity.*

We consulted participants about the following activities: see a doctor or attend healthcare services; going to the cinema, exhibitions, theaters and concerts; participate in any organization or club, participate in activities or religious ceremonies; run errands, visit relatives or invite them home; attend courses, workshops, seminars; practicing a hobby; meet with friends; listen to the radio; do physical exercise; make purchases; use Internet on a tablet, phone or computer; leave the house and watch TV. There is great diversity in terms of the frequency of performing these activities, which may partly explain because certain activities, such as those cultural, are not usually performed on a daily basis, opposed to leaving the house or watching TV. A high percentage of respondents declared not performing (at least once a week) activities that include interaction with others, as meeting with relatives who do not live with them (44.7%), participate in organizations (68.8%) or religious activities (60.1%). A low percentage of respondents do not perform individual recreational activities on a weekly basis, such as watching television (1.1%) or reading (7.3%). In addition, a high percentage of respondents used the Internet on a phone, tablet or computer every day (69.4%), which gives interesting

Table 1. Frequency of contact according to means of communication and closeness circle (%)

		Circle 1	Circle 2	Circle 3
Phone call	Everyday	42.6	12.9	6.5
	Several times a week	31.4	21.9	20.3
	About once a week	13.5	27	28.4
	Less than once a week	5.7	29.9	31
	Never	6.8	8.3	13.8
	Total	100	100	100
		N: 542	N: 411	N: 232
SMS messages	Everyday	25.9	10.6	3.9
	Several times a week	16.1	13.3	15.2
	About once a week	8.1	7.1	7
	Less than once a week	6.7	12.8	14.8
	Never	43.3	56.3	59.1
	Total	100	100	100
		N: 541	N: 407	N: 230
Email	Everyday	3.7	1.2	2.6
	Several times a week	11.7	6.6	7.7
	About once a week	14.7	8.8	11.6
	Less than once a week	18.4	16.6	20.6
	Never	51.5	66.7	57.5
	Total	100	100	100
		N: 538	N: 409	N: 233
In-person	Everyday	39.5	17.3	9.5
	Several times a week	16	10.9	15.5
	About once a week	25.4	30.7	22
	Less than once a week	15.6	34.8	39.7
	Never	3.5	6.3	13.4
	Total	100	100	100
		N: 539	N: 411	N: 232

April-July 2015. N = 181 cases.

Source: Survey Fondef Idea – Communication system in healthcare for the elderly and their support networks.

clues to the selection of the communication support to develop a communication system for preventive health for this audience-user.

USE OF MEDIA AND TECHNOLOGY

An important variable when designing the prototype of the communications system in health prevention is access to information through different media and their topics of interest. Television is the favorite of the seniors surveyed to learn about news (48.2%) and sports (56.9%), probably because of the wide coverage of these two topics, compared to shows or culture (31.4%), and health and well-being (18.1%), where respondents declare preferring newspapers or magazines and Internet, respectively (see table 2).

It is noteworthy that the Internet is a media used by a significant percentage of the sample to learn about news (16.5%) and shows and culture (23.3%), evidencing an interest in using this media for informational purposes, particularly in the case of information on

Table 2. Communication media preferred to learn about things (%)

	News	Sports	Shows or culture	Health and well-being
Newspapers or magazines	22.4	14.6	37.8	22.3
Radio	12.4	4.9	3.5	1.8
Television	48.2	56.9	31.4	18.1
Internet	16.5	6.9	23.3	44.6
Other or none	0.6	16.7	4.1	13.2
Total	100%	100%	100%	100%

April-July 2015. N= 181 cases.

Source: Survey Fondef Idea – Communication system in healthcare for the elderly and their support networks.

health and well-being (44.6%). To the question of whether, in general, they have heard or seen news or information concerning health in all media, 83.9% said yes on television, 72.9% in newspapers or magazines and 36.7% on the radio. A 61.1% has accessed this information over the Internet (figure 4).

In line with the above, when they need information about health issues, 46.7% of respondents generally looks it on the Internet, followed by an equally high percentage of those who ask a doctor or health professional (35, 3%) and one minor percentage who consult relatives, friends or acquaintances (14.4%).

INTERNET ACCESS AND USE

Respondents report having devices (98.3%) for Internet use, and access to Internet connection at home (93.7%) and mobile phone (59.1%). Only 3.9% said they never use email or Internet, while 91.7% access personally (either alone or with the help of another person) and 4.4% has another person who conducts activities on the Internet for them. The majority of respondents have access to devices such as computers at home (desktop or portable) and smartphones. Other devices, such as tablets or computers outside the home, are lesser used (32.4% and 31.4%, respectively), but with a higher frequency rate.

The most frequent uses of the Internet are *formal*, such as the use of email (83.9%), reading news (69.5%), consult health information (56.1%), communicate via chat (55 , 2%), online errands (52%), use social networks (44.8%), watching TV, movies or series (40.9%), review test results (38.4%), book an appointment with the doctor (36.6%) and others (27.9%). In the latter case, respondents look for information on various issues different from health, with more recreational purposes like playing or listening to music. Despite this, only 10.8% of respondents considered very reliable health content on the Internet, with the general perception that they are "somewhat trustworthy" (57.4%), although this may be strongly associated with the type of source consulted.

RESULTS FOR SUBJECTIVE WELL-BEING

In this section we describe the components of subjective well-being, including the Geriatric Depression Scale (GDS-5) used in the field of health and sociology of aging, perceived social isolation, the perception of self-efficacy and perception about the future. Respondents have high levels of subjective well-being, with only 7.7% categorized as people with depression according to the criteria of the GDS-5 scale. This may be due to the high percentage of people who prefer to stay at home, although this would not necessarily be associated with depressive symptoms. 93.3% of respondents reported feeling satisfied with their lives, and only 10.1% are frequently bored or feel worthless often (5.6%). Only 34.5% say they prefer to stay at home instead of going out and doing new things. Similarly, a very low percentage (2.2%) states that they often feel helpless (2.2%).

Regarding the self-efficacy scale, respondents generally expressed low levels of social isolation, except for the item "lack of company": nearly a third of the sample (27.8%) reported feeling that way sometimes,

though it may be because they expected more social contact than they already have more than a due to lack of it. In the remaining items of the scale, respondents show a high degree of self-efficacy, probably explained by their high levels of autonomy. At "always or almost always", 82.5% says they are sure they can perform a difficult task, 76.1% they can succeed in any task proposed, 77.7% believe it will be able to successfully overcome many of the challenges proposed, and 71.5% say that when things are difficult, they can perform very well. 91.1% said that if they strive, they can get what they want, always or almost always.

The main concerns of respondents regarding the future was related with the loss both of a close person (34.7%) and autonomy (31.7%), followed by a smaller percentage (19.6%) in fear of being assaulted on the street or a house break-in (16.8%). There is a low level of concern with issues such as insufficient income (14.4%) or serious illnesses (16.7%), which is probably associated with the high levels of income and health of the participants surveyed in the sample.

RESULTS ON SELF-PERCEPTION AND SELF-EVALUATION OF HEALTH

Consistent with the results obtained in other dimensions, we can see that the sample shows a positive self-assessment of their health status. Most (51.1%) consider to have, compared with a person of similar age and sex, very good (35.6%) or excellent health (15.6%), 38.3% consider it is good and 10.6%, regular. Respondents generally do not report any health problems in the last three months, except for joint discomfort (53.3%) and sleep disturbances (41.1%). 19.6% have depression or mood disorders, dental problems (17.9%), falls (16.7%), memory problems (15.6%), urinary incontinence or difficulty urinating (14%), osteoporosis (13.5%), health problems from poor diet (11.7%), sexuality problems (7%) and minor burns (3.9%). Regarding the use of medication, the average is 3.01 different medications a day per respondent, with a minimum of 0 and a maximum of 12.

CONCERNS AND INTEREST IN HEALTH TOPICS

Health issues of concern to respondents are related to mental and cognitive well-being (18%), specifically the interest in maintaining independence, prevention and management of memory problems, and information about Alzheimer's disease. They also highlight issues about maintaining healthy habits (14.2%), such as physical exercising and compliance with nutrition advice to prevent obesity. 16.1% of respondents reported feeling sufficiently informed about their health status, either by their professional experience in this area or the absence of diseases that concern them. They also are interested in topics regarding joints pain (11.8%), diabetes, high cholesterol level and blood hypertension (11.3%), and also administrative issues in the field of health (7.3%).

In an open question about issues relating to their rights in health or practical or administrative aspects for their well-being, 35.1% mentioned the health insurance system. 28.8% of respondents feel informed about their rights in health, while 16.6% mentioned having interest in the health benefits, and 5% refers to timely and quality care. On the health insurance system, there is a need for full information on the Isapre plans (private system) and comparing these to ensure an optimal choice and use of their coverage and benefits. There is also a marked concern for benefit programs such as GES (Widenation Program of selected Explicit Guarantees in Health) and Fonasa attentions. As for the interest about informing on health benefits, emphasis is on access to less cost care, their rights as patients, the operation of complementary health insurance, and ways to obtain medicines at lower cost than in pharmacies.

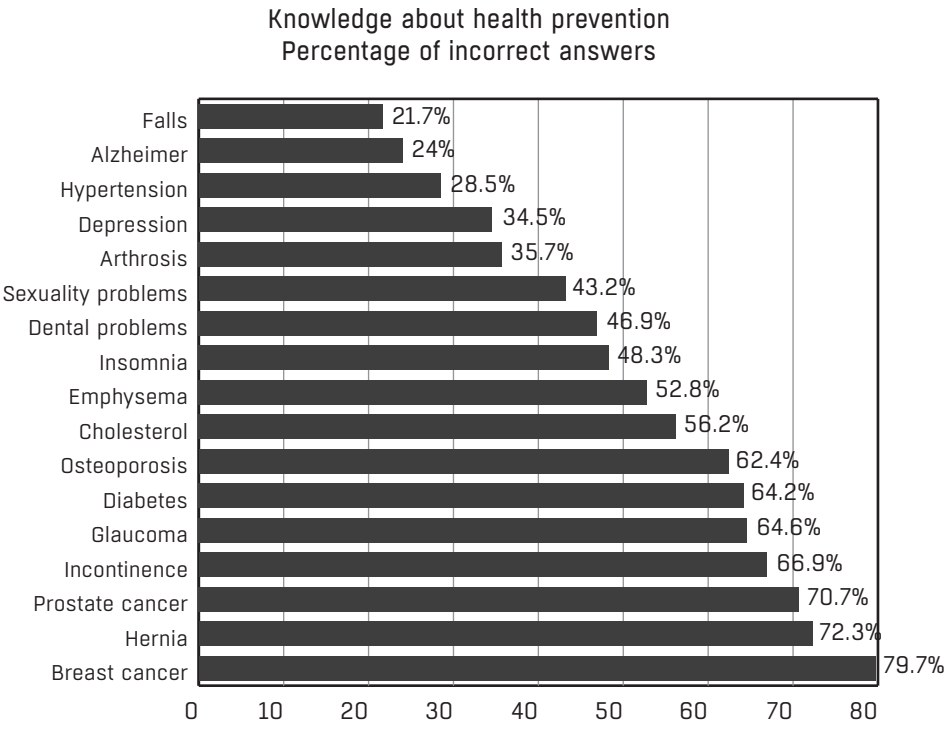
HEALTH KNOWLEDGE

Respondents expressed low or intermediate levels of effective health knowledge. Faced with questions about prevention in health situations, there are high percentages of incorrect or missmatched answers, as shown in figure 2. This is not significantly correlated with self-reported knowledge about the same health situations mentioned.

HEALTHY HABITS

Respondents answered questions about their eating habits and daily or weekly frequency of consumption of different types of food. Products such as milk, cheese and yogurt, are consumed daily by 74.3%,

Figure 2. Effective knowledge on health prevention



April-July 2015. N = 181 cases

Source: Survey Fondef Idea – Communication system in healthcare for the elderly and their support networks.

and 86% reported consuming at least two servings a day of vegetables and fruits, legumes of some sort are consumed once a week (73.7%). As for the food, they eat three times a week, 93.3% mention meat and eggs and 86%, bread, rice or pasta.

During the last month, respondents mostly declare maintaining a balanced weekly diet and a high intake of liquids, with 44.1% of respondents who drink six or more cups a day, and only 8.9% stating drink less than three cups daily. 84.9% of the sample declared not being a current smoker.

Regarding the delivery and be receptors of health helping in the last three months, a minority of respondents have received care from another person for health problems (17.2%), which is considerably higher when asked if they have had to provide care to another person for the same reasons (32.6%). A high percentage (70.2%) of respondents has given health advice or recommendations to another person during the same period.

HEALTH RIGHTS

Knowledge of respondents regarding their health rights is generally mid-level, with only 29.6% who rate it as high. Notably, 53.9% have some benefits card or discounts card for being elderly. Moreover, 79.2% of respondents say that when they have a question on health rights issues they have someone to ask. A 77.8% stated to easily find information on topics that interest them. They declare that health staff answers their questions clearly (60.7%) and only 9.3% had difficulty to inform themselves or make inquiries on issues of affectivity and sexuality. A lower percentage of respondents (6.3%) say they have struggled to learn how to prevent diseases and 5.9% of respondents said that the information given by the doctor is unclear.

DISCUSSION

The application of the survey allowed setting up a broad spectrum of health communication needs from a sample of autonomous seniors. This, in turn, provided a basic input on the process of decision-making for the design and subsequent testing, during three months, of a small-scale prototype of a health communication system, whose users were recruited from the participants in the sample who answered the initial characterization questionnaire. The decisions reflected in the design of the communications system, its editorial line, types and formats of contents, and the media to be used in the platform –a website called Bienestando.cl– derive from the data obtained in this exploration of the audiences and users.

One objective of the research was to determine the platform for communication with older adults under the framework of active aging, adapting ICTs to promote communication recognized as useful for the elderly user (Paasche-Orlow et al., 2006). In the case of the sample of healthy older adults surveyed the initial gap in access to digital technologies (Contreras, 2008) would be relatively overcome. Thus, from the ratio of the most frequent activities performed by respondents, Internet was chose as the platform for the prototype, as 69.4% said they access the network through a smartphone, tablet or computer every day. Although television is the favorite media to learn about the news, the main interest of older adults to use the Internet is searching for health information. In fact, 44.6% of the sample prefers Internet as a means to learn about health and wellness, doubling the percentage of its nearest competitor, newspapers or magazines (22.3%) and far outpacing television (18.1%). Therefore, we chose to generate stories, informative capsules or short testimonials (4-5 minutes), available in different sections of the platform.

The research results were consistent with the discussion in the theoretical framework: older adults use the Internet because of their interest in health information. This, coupled with low use of email, supports the decision to prioritize the web as a platform for communication in preventive health. Moreover, the web allows different screens and communication alternatives (videos, texts to read or print, telephone contact, sending health queries to the medical team of Bienestando) to put at the service of preventive health communication, but also to maintain their support networks. This can also impact, as discussed in the theoretical framework, on positive, active and healthy aging.

According to the results, we can observe that the model of Rowe and Kahn (1987) notoriously tends to underestimate the proportion of older adults who identify themselves as healthy. This suggests the desirability of introducing alternative approaches and instruments in assessing the needs of this group (Strawbridge & Wallhagen, 2002). Indeed, older respondents are active, connected, use the Internet for different purposes, their social networks with people are active and they practice the specific search for health information on the Internet or in other media. In line with Clarke and Nieuwenhuijsen (2009), the communication practices of the healthy elderly participants are, from an ecological perspective proposed by the authors, variable, and their health needs are as relevant as their individual medical needs, in this case, improving their preventive knowledge on health. Hence, in Bienestando –whose name also reflects this systemic view on the health and quality of life to which it points (well; *bien*, being: *estando*)– we decided to create the contents from the influence of the elderly as a contributing factor to the preventive capital of family, social networks and community. Also, returning to Duckki et al. (2012), it was decided to make a community of Bienestando users. Therefore, each user participates through a registration, and can discuss the material produced in different media, make health consultations, submit testimonies or resort to the activities section or weekly panoramas, among others.

However, the team could assess how, despite the positive self-perception of health and the high percentages of subjective well being and self-efficacy reported by the participants, there is little effective preventive knowledge on health, which nourished, precisely, the editorial work, which opted for a weekly theme around which contents were developed.

Similarly, the results on the concerns of respondents constitute a baseline on which to define the editorial views of the content and formats of communication, which meets one of the aspects of active aging to favor transversal inclusion and contribution of older

adults (Eurobarometer, 2012). The fact that nearly a third of the sample feels that occasionally they lack company contrasts with the low levels of social isolation reported. This suggests we should not necessarily stay only with the first impression derived from a group of older adults connected to the Internet. Another noteworthy thing is that the major concerns reported are not directly related to health, but rather with their well-being: loss of someone close and loss of autonomy, both items with percentages above 30%. These data show some of the topics that should be addressed in a communication in preventive health, insofar as they affect the process of active aging –although they do not necessarily translate immediately into health outcomes requiring medical treatment– and the narrative to be used in the formats chosen for the web. In this regard, we decided to use a structure of news for much of the material, as it is the most used by the elderly, as noted in the results of this first phase of research. There were also permanent sections on social rights and health, access to technology or digital applications, specialized production of information from interviews, explanations of experts in the field, and a broad space to share testimonies and activities for the elderly. In addition, we created a section of panoramas to promote the expansion and deepening of personal social networks as well as recreation and leisure time. This pointed towards another of the goals of active aging highlighted by the WHO (2002, p. 79): optimizing opportunities for health, participation and security to improve the quality of life.

The analysis of results allow to determine the guiding objectives for the small-scale prototype and their content as follows: a) strengthen self-care behaviors in autonomous older adults and their support networks; b) promoting access of seniors to wellness information useful for their daily lives and c) motivate them through the use of the website to actively take preventive actions in health, and to expand their social networks. As noted, the team (consisting of communicators specialized in strategic communication and communication and education for social change, medical specialists in public health and family medicne and sociologists dedicated to the phenomenon of aging), decided to create a website for interactive (bidirectional) communication based on the high use of this media by respondents, to find information about health but also to promote contact and the sense of community among older adults through social networks and consultation of videos produced especially for the site. We also considered the existence of barriers to the adoption of technologies in this population group (González-Oñate et al., 2015) and of facilitators, in which motivation (Steptoe et al., 2013), fun (Nimrod, 2011) or intergenerational communication, particularly with grandchildren, are key allies (Fusaro, 2007).

The prototype design was based on the principles of inclusive design for the user group, considering relevant aspects at that age such as motor skills, sight and rhythms of audiovisual narrative, following the guidelines of ICTs adoption to avoid cognitive overload. The base sections of the website (Bienestando.cl) are news, community, rights, an interactive zone and activities, mainly structured in a news format that can be commented, along with testimonials or preventive education capsules in audiovisual format. In addition, we left a section for questions to health professionals which were answered by them. We also decided to design an instrument that asked participants about their knowledge on various health topics. In a second stage, a group of respondents was invited to be users of the Bienestando communications system, for which they had a personalized access. The results of the use of the prototype are part of publications currently in preparation.

Active aging acted as a cornerstone of this experience and as such sought that the decisions and actions were guided by issues such as the formation of digital abilities or e-inclusion of the elderly (Abad, 2014) optimizing the understanding of health messages for the adoption of preventive attitudes in the elderly (Paasche-Orlow et al., 2006). We hope that what we described in this document may motivate the generation of new research initiatives in the area and encourage collaborative spaces between multidisciplinary teams and end users.

FOOTNOTES

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8. CONICYT, II Contest of Applied Science of the Idea Program of Fondef. "*Diseño de un sistema de comunicación en salud para adultos mayores y sus redes de apoyo*" (Design of a communication system in healthcare for older adults and their support networks) (Fondef CA13i10210; 2014-2015). Responsible Director: Sergio Godoy, PhD, PUC Chile (Communications, PUC). Alternate Director: Dr. Gabriel Bastías (Medicine, PUC). Responsible researchers: Gonzalo Valdivia, Marcelo Andia (Medicine, PUC), Rayén Condeza, Francisco Fernández, Mar de Fontcuberta, Myrna Gálvez and Cristián Calderón (Communications, PUC), Soledad Herrera (Sociology, PUC).

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