

Digital inclusion and Internet use among older adults in Brazil: a cross-sectional study

Inclusão digital e o uso da internet pela pessoa idosa no Brasil: estudo transversal

Inclusión digital y uso de internet por el adulto mayor en Brasil: estudio transversal

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ABSTRACT

Objectives: To describe the profile of Brazilian older adults who use the Internet, the means of Internet access and the purpose of Internet use and to verify the existence of association between socio-demographic variables and variables related to Internet use. **Method:** Cross-sectional study with Brazilian older adults who used the social networks Facebook and WhatsApp. Descriptive, univariate, and bivariate analysis were conducted. **Results:** 384 older adults participated in the study, mostly women (52.08%), with a mean age of 64.6 years old and who used the Internet to address health concerns (65.36%). The main activities on the internet were reading, listening to music, playing games, watching videos and photos (37.30%). The main benefits pointed out were interaction (74.5%), learning (19.2%) and entertainment (19.25%). There were statistically significant differences between time spent online and the variables gender, age, and civil status. **Conclusion:** This study showed characteristics of older adults who use the Internet and revealed the possibility of using digital technologies to optimize health care for this population.

Descriptors: Aged; Internet; Health Promotion; Digital Inclusion; Social Media.

RESUMO

Objetivos: Descrever o perfil de pessoas idosas brasileiras que utilizam a internet, o meio de acesso e a finalidade desse uso, e verificar a existência de associação entre variáveis sociodemográficas e aquelas relacionadas ao uso da internet. **Método:** Estudo transversal com idosos brasileiros usuários das redes sociais Facebook e WhatsApp, analisados de modo descritivo, uni e bivariado. **Resultados:** Participaram 384 idosos, em maioria mulheres (52,08%), com idade média de 64,6 anos e que utilizavam a internet para sanar dúvidas de saúde (65,36%). Principais atividades na internet foram ler, ouvir música, jogar, ver vídeos e fotos (37,30%). Principais benefícios apontados são interação (74,5%), aprendizado (19,2%) e entretenimento (19,25%). Houve diferenças estatísticas entre tempo de permanência conectado e variáveis sexo, idade e estado civil. **Conclusão:** Este estudo mostrou características de idosos que utilizam a internet, algo que desperta para possibilidade do uso de tecnologias digitais na otimização dos cuidados em saúde nessa população.

Descritores: Idoso; Internet; Promoção da Saúde; Inclusão Digital; Mídias Sociais.

RESUMEN

Objetivos: Describir el perfil de adultos mayores brasileños que utilizan la Internet, los medios de acceso y el propósito de este uso, y comprobar si existen asociaciones entre las variables sociodemográficas y las relacionadas con el uso de la Internet. **Método:** Se trata de un estudio transversal entre usuarios brasileños de edad avanzada usuarios de las redes sociales Facebook y WhatsApp, analizado de forma descriptiva, univariante y bivariante. **Resultados:** Participaron 384 personas de edad avanzada, en su mayoría mujeres (52,08%), con edad media de 64,6 años que utilizaban Internet para resolver dudas sobre salud (65,36%). Las actividades practicadas en Internet eran leer, escuchar música, jugar, ver videos y fotos (37,30%). Los principales beneficios señalados son la interacción (74,5%), el aprendizaje (19,2%) y el entretenimiento (19,25%). Se encontraron diferencias estadísticas entre el tiempo que permanecían conectados y las variables sexo, edad y estado civil. **Conclusión:** Este estudio ha demostrado algunas características de adultos mayores que utilizan internet y plantea la posibilidad de utilizar las tecnologías digitales para mejorar los cuidados sanitarios de ese grupo etario.

Descriptorios: Adultos Mayores; Internet; Promoción de la Salud; Inclusión Digital; Redes Sociales.

INTRODUCTION

With the advance of technological innovations, the Internet has become an essential part of the daily life of almost all individuals. In Brazil, about two thirds of the population (69.8%) has an Internet connection⁽¹⁾. Similarly, as the number of older adults grows worldwide, the interest of this population in virtual spaces grows⁽²⁾. In the country, the proportion of older adults who access the Internet has increased from 24.7%, in 2016, to 31.1%, in 2017⁽¹⁾.

Yet, this increase is still not enough to remove older adults from the process of “digital exclusion”⁽³⁾. For many, the virtual environment represents a functional alternative to television or radio, and websites and social networks are attractive for their innovative character and fast access to information⁽⁴⁾.

Thus, the Internet is considered a space where older adults can enjoy information related to multiple interests, which involve knowledge, leisure, work, interaction/communication, and especially health benefits⁽⁵⁾. Therefore, the digital inclusion of older adults is seen as a way to increase their autonomy and quality of life. Despite the challenges faced by this population when using new technologies, a study reported that older adults are willing to adopt new technologies when their usefulness and usability outweigh feelings of inadequacy⁽⁶⁾. Situations like this can be seen when older adults are motivated by the interaction with grandchildren and relatives and feel encouraged to learn and adopt digital technologies.

Thereby, this study aims to identify the most common means of internet access used by Brazilian older adults and the purpose of Internet use, with the objective of supporting the development of health promotion strategies/interventions for this population through the use of digital technologies, as the use of these technologies for this purpose can be extremely broad. In this context, the study contributes to technological, social and gerontological sciences. In particular, we recognize the fundamental role of the nurse in health promotion for older adults, through health education actions within the Brazilian Unified Health System, and the need to use digital technologies to improve their clinical practice, demystifying the idea that older adults are not part of this reality. The combination of education and digital inclusion can support planning and implementation of qualified actions in health promotion⁽⁷⁾.

The results of this study may help understanding that the use of the Internet and social media brings several benefits to older adults, improving the quality of life of this population. It is understood that this tool can favor the communication process, foster interpersonal relationships, reduce social isolation, stimulate cognition and increase closeness to friends and relatives, even if there is physical distance. Thus, the study provides multi-professional knowledge, as it will describe how older adults use the Internet.

OBJECTIVE

Describe the profile of Brazilian older adults who use the Internet, the means of Internet access and the purpose of Internet use. In addition, it sought to verify the existence of an association between socio-demographic variables and variables related to Internet use.

METHODS

Ethical aspects

The research respected the ethical and legal recommendations of the Resolution of the National Health Council No. 466/12. The study was appreciated by the Research Ethics Committee of the State University of Vale do Acaraú.

Participants who were interested in collaborating in the research accessed the link published on Facebook and WhatsApp and received an online Informed Consent Form (TCLE). After reading the form, the participant had to choose between the options: “I accept to participate in the research” and “I do not accept to participate in the research”. When the older adult selected the option “I accept to participate in the research”, they were automatically sent to the data collection instrument; if they chose otherwise, the survey was concluded.

Design, setting and period

This is a quantitative cross-sectional study. The study was described according to the checklist Strengthening the Reporting of Observational Studies in Epidemiology (STROBE)⁽⁸⁾.

The research was carried out through the internet. Data was collected from September to December 2018.

Population and sample; inclusion and exclusion criteria

The selection of the older adults was carried out using the “snowball sampling” technique, in which the first participants indicate new participants, who also indicate others, and so on, until reaching the proposed goal⁽⁹⁾. Thus, already knowing about the existence of groups of older adults on Facebook, it was possible to reach the first participants through the identification of 13 groups: *Terceira idade*, *Terceira idade conectada*, *Longevidade saudável*, *Portal terceira idade*, *Núcleo de Apoio à Terceira Idade*, *Grupo da terceira idade*, *Renascer da terceira idade*, *Terceira idade melhor*, *Integrar terceira idade*, *Idosos mãos solidárias*, *Grupo de idosos zuquinha*, *Grupo de idosos de bem com a vida*, *Longevidade*.

The sample was calculated based on the sample size for a prevalence study design with an infinite population. The parameters were a prevalence of at least 50% (p) of older adults who use the internet to search for health benefits, level of confidence ($Z_{1-\alpha/2}$) of 95% and maximum absolute error (d) of 0.05. Thus, using the formula (, the sample size was 385 older adults.

Thus, 384 older adults freely participated in the study. Participants met the following inclusion criteria: people aged 60 or over, of both genders, Brazilian, who used the internet through the social networks Facebook and WhatsApp, regardless of frequency of use. Two older adults were excluded for not answering the entire instrument or giving disconnected responses.

The reasons for using these social networks as part of the inclusion criteria for the research participants were: they are free for the user and widely used by the entire population, regardless of the age group; their tools have potential to enhance knowledge and/or learning of certain subjects; the user does not need expertise in creating the space or any training to start activities; and they enable moments of interaction, regardless of the time and space in which individuals are⁽¹⁰⁾.

Study protocol

The questionnaire was developed on the Google Forms platform and made available through a link. It included questions related to socio-demographic data (gender, age, place of residence, civil status, level of education and occupation) and to the use of the internet (means of access, time of access, purposes and perceived benefits).

The questionnaire was linked to the account of the main author to ensure the security of the information. The questionnaire was completed from September to December 2018. Data was collected through an online questionnaire made available through a link in the feed of the aforementioned Facebook groups, when allowed by the administrator of each group, or individually on Messenger, or even on WhatsApp, when the contact information of the older adult was available. It should be noted that no data was extracted from these social media.

Analysis of results and statistics

Data were compiled on Excel, statistically analyzed with the support of the software R for Windows version 3.6.2 and synthesized in tables. The descriptive analysis of the data included the calculation of absolute and relative frequencies. The association between categorical variables and socio-demographic data was analyzed using the Chi-square test for independence or Fisher's exact probability test, according to the expected frequencies of each category. The prevalence ratios and respective 95% confidence intervals were used to measure the magnitude of the relationship between these categorical variables. In all inferential calculations, the level of significance was set at 0.05.

The association between the quantitative variable of age and the qualitative variables was verified with the Mann-Whitney test. This is an alternative to the T-test for two independent samples, when the data does not follow a normal distribution. In this study, normality was verified using the Lilliefors test.

RESULTS

A total of 384 Brazilian older adults who used Facebook and/or WhatsApp participated in the research. The socio-demographic data of the participants are shown in Table 1.

The socio-demographic data of the sample reveals that the female gender was slightly predominant (52.08%), the mean age was 64.60 years, most participants were married (72.99%), almost half had completed high school (48.44%) and 67.61% were retired. In addition, almost half of the sample lived in the Southeast and Northeast regions (23.44% and 23.18%, respectively).

Table 2 shows results regarding the devices most used by older adults to access the internet, the activities carried out in the virtual environment and the use of internet to obtain information about health care.

There was no statistically significant association between socio-demographic variables and activities carried out on the internet.

Table 3 shows the association between benefits of Internet use, time spent online, daily internet access and the gender variable.

Among the benefits of using the internet pointed out by the participants are interaction, learning and entertainment (74.5%,

19.02%, 19.02% respectively). The variables that showed a statistically significant difference according to gender were: updating ($p = 0.03$), entertainment ($p = 0.02$), learning ($p = 0.007$) and time spent online ($p = 0.008$). It was found that not considering updating as a benefit was 33% more prevalent among female participants (PR=0.77–95% CI: 0.62- 0.95). The benefits of entertainment and learning were more frequent among male participants, with 65% and 45%, respectively (PR=1.65–95% CI: 1.05- 2.59; PR=1.45–95% CI: 1.09- 1.94). In addition, spending more than 2 hours on the Internet was 36% more frequent among women (PR = 1.36–95% CI: 1.08-1.72).

Table 1 - Socio-demographic profile of Brazilian older adults using social networks, Sobral, Ceará, Brazil, 2019

Variables	n	%
1. Gender		
Male	184	47.92
Female	200	52.08
2. Age (years)		
60 ---- 63 years	142	36.80
63 ---- 66 years	92	23.89
66 ---- 69 years	94	24.35
69 ---- 72 years	25	6.49
72 ---- 75 years	20	5.19
75 ---- 78 years	4	1.03
78 ---- 81 years	1	0.25
81 ---- 84 years	2	0.51
3. Region		
Central-west	70	18.23
Northeast	89	23.18
North	55	14.32
Southeast	90	23.44
South	80	20.83
4. Level of education		
Illiterate	2	0.51
Elementary School	15	3.88
High School	187	48.44
University Education	168	43.64
Postgraduate Studies	12	3.11
5. Occupation		
Working	123	31.86
Retired	261	67.61
6. Civil Status		
Married	280	73
Divorced	26	6.70
Single	68	17.70
Widowed	10	2.6

Table 2 - Variables related to the devices used in daily life, the activities carried out and the use of the internet to answer questions about health care, Sobral, Ceará, Brazil, 2019

Variables	n	%
1. Devices used in daily life		
Cellphone	359	93.48
Notebook	10	2.60
Computer	8	2.08
Tablet	7	1.84
2. Activities carried out on the Internet		
Read, listen to music, watch videos and photos, play games	144	37.30
Talk to people	77	19.94
Meet new people and/or seek a romantic relationship	56	14.50
Research and study	43	11.13
Access social networks	40	10.36
Shopping and financial transactions	17	4.40
Working	7	1.81
3. Answer health care questions		
Yes	251	65.36

Table 4 refers to the associations between the region of residence of the older adult and the main means of obtaining information, the most prevalent levels of education, daily internet access and time spent online.

There were statistically significant differences between the regions of Brazil and the factors: main means of obtaining information, television and internet ($p=0.014$); the most prevalent levels of education, high school and university ($p=0.001$); daily Internet access ($p=0.001$); and time spent online ($p=0.001$). The media most used by the older adults were the television and the internet ($n=380$). Radio, newspapers, and printed books were also cited.

The television was the preferred source of information among older adults in the Southeast and Center-west, and the Internet was preferred among older adults in the North, Northeast and South. This fact stands out when comparing the level of education, since most older adults in the North and Northeast regions have a secondary level of education. Regarding internet access, almost all older adults in the Northeast and South regions accessed the internet every day, compared to around 85% in the Southeast and Center-west regions, and only 63.63% in the North region. In addition, most older adults in the North region did not access the internet for more than two hours a day (16.4%). The Center-west region presented a similar

Table 3 - Benefits, time spent online and daily internet access for Brazilian older adults by gender. Sobral, Ceará, Brazil, 2019

	Female		Male		p value*	PR**	95% CI
	n	%	n	%			
1. Benefits of using the Internet							
Updating							
Yes	41	20.5	56	30.43	0.03	0.77	0.62- 0.95
No	159	79.5	128	69.56			
Autonomy and independence							
Yes	16	8	7	3.80	0.13	-	-
No	184	92	177	96.19			
Interaction							
Yes	140	70	137	74.45	0.39	-	-
No	60	30	47	25.54			
Entertainment							
Yes	32	16	35	19.02	0.02	1.65	1.05- 2.59
No	168	84	149	80.97			
Learning							
Yes	63	31.5	35	19.02	0.007	1.45	1.09- 1.94
No	137	68.5	149	80.97			
None							
Yes	12	6	20	10.86	0.12	-	-
No	188	94	164	89.13			
2. Time spent online							
More than 2 hours	89	44.5	57	30.97	0.008	1.36	1.08-1.72
Up to 2 hours	111	55.5	127	69.02			
3. Daily Internet access							
Yes	178	89	157	85.32	0.36	-	-
No	22	11	27	14.67			
4. Internet access more than once a day							
Yes	181	90.5	166	90.21	1.00	-	-
No	19	9.5	18	9.978			

Note: *Pearson's Chi-square test; **Prevalence ratio.

Table 4 - Association between the main means of obtaining information, most prevalent levels of education, daily internet access and time spent online and the region of residence of the older adult, Sobral, Ceará, Brazil, 2019

	North	Northeast	Southeast	Center-west	South	Total	p value
	n	n	n	n	n		
Means of obtaining information							
Television	24	32	50	41	31	178	0.014*
Internet	31	55	38	29	49	202	
Total	55	87	88	70	80	380	
Level of education							
High School	50	59	23	30	25	187	<0.001*
University education	5	17	58	38	50	168	
Total	55	76	81	68	75	355	
Daily Internet access							
Yes	35	81	78	62	79	335	<0.001**
No	20	8	12	8	1	49	
Total	55	89	90	70	80	384	
Time spent online							
Up to 2 hours	46	48	51	52	41	238	<0.001**
More than 2 hours	9	41	39	18	39	146	
Total	55	89	90	70	80	384	

Note: *Pearson's Chi-square test; **Fisher's exact test.

result, as only 25.7% of the older adults would stay online for more than two hours. In other regions of the country, 40% or more of the older adults stayed online for more than two hours.

In addition, bivariate analysis between the predictor variable occupation and some outcome variables showed statistically significant association between the variables daily Internet access ($p=0.002$) and answering health questions on the internet ($p=0.01$), which were respectively 34% (PR = 1.34; 95% CI: 1.18- 1.53) and 21% (PR= 1.21; 95% CI:1.06- 1.38) more frequent among older adults who worked. Similarly, there was a statistically significant association ($p=0.01$) between the variable civil status and the time spent online. Accessing the Internet more than once a day was 30% more frequent among older adults who did not have a partner (PR= 1.30– 95% CI: 1.15- 1.46).

In addition, statistically significant differences were also identified between age and daily internet access, time spent online and the following benefits: autonomy, independence, and interaction. Older adults who used the internet daily (average rank 64 vs. 66; $p=0.01$) and for more than 2 hours (average posts 62 vs. 65; $p=0.004$) were the youngest. Similarly, autonomy and independence were more often seen as a benefit by the young-old (average rank 61 vs. 64, $p<0.001$). In contrast, interaction was most often pointed out as a benefit by the older participants (average rank 65 vs. 62, $p<0.001$).

DISCUSSION

This study describes the use of the internet among Brazilian older adults, especially those who use the social networks Facebook and WhatsApp via cell phones, given that there is a greater number of older adults who use the internet by other means. Because of the success and adherence to these social networks, an unprecedented scale of social relationships diffuses across this vastly interconnected system, affecting public behavior and knowledge construction⁽¹¹⁾. It is understood that both men and women use these technological tools in their daily lives, so there was practically no difference between the number of women and men in this investigation, although studies demonstrate that they use these tools with different purposes⁽¹²⁻¹³⁾.

The use of cell phones as the main means of internet access by older adults can be explained by the advantages of portable devices, as they can be used anywhere, are easy to use, are less complex than other interfaces and do not require any wires. In addition, the financial cost of this technology is lower compared to other devices and it provides the convenience of accessing the internet in your own home.⁽¹⁴⁾

In relation to the regions of Brazil where the older adults lived, it was observed that there were statistically significant differences regarding the sources of information, level of education and internet access, and the minority of participants were in the North and Center-West regions. The difference in the number of older adults who use the internet by region may be directly related to social and educational conditions or, still, to population density.

According to the Continuous National Household Sample Survey⁽¹⁵⁾, the Southeast region had the highest percentage (81.1%) of households with internet access, followed by the South (76.7%) and Northeast (64%) regions. Despite this rate and the fact that most older adults in the Southeast have a higher education level,

the television is their preferred source of information according to the results of this study.

It is worth mentioning that 85% of the sample was composed of older people under 68 years of age, who are considered young-old⁽¹⁶⁾. In this context, it was found that older adults who used the internet every day and for more than 2 hours were younger than the others and pointed to autonomy and independence as benefits of the internet more often. Researchers report that the young-old have the ability to be more active in society, with preserved functional capacity and with an interest in expanding their possibilities in the human, social and educational fields, with the goal of learning⁽¹⁷⁾.

In the sample of young-old adults in this study, it was found that about 32% of the participants were still working, and that those participants accessed the internet and answered their health doubts more frequently than those who were retired. This can possibly be explained by the fact that they use these technologies in work activities and/or were already familiar with digital tools⁽¹⁸⁾.

However, the internet is rarely used for work purposes among older adults, as the primary motivations for using social networks usually involve social bonding, bridging, curiosity and responding to family members requests⁽¹⁹⁾. In addition, a study revealed that older adults use Information and Communication Technologies (ICTs) to find information and because of the need and desire to communicate with others and to be entertained⁽²⁰⁾. This result was confirmed in this study, as the main activities of the older adults on the internet were reading, listening to music, playing games, watching videos and photos; talking to people; meeting new people and/or seeking a romantic relationship; research and study; and accessing social networks.

The use of ICTs for teaching and learning purposes is still a challenge for older adults. In this sense, a recent study investigated how this population view its own digital skills, the barriers experienced and the social and institutional support system that help gaining digital literacy, and found that older adults do not have digital literacy and support systems are limited⁽²¹⁾. The barriers faced may be linked to the level of education, although it has been found that this is not necessarily a limitation. In this study, it was found that the level of education did not prevent older adults from enjoying the internet, since two participants were illiterate and 15 had only elementary education, which demonstrates the importance of motivation for human beings.

With the finding that 65% of the participants used the internet to solve health concerns and considering the importance of health promotion through ICTs, four important aspects of an ICT for older adults can be pointed out: usefulness of learning (responding to the personal and social needs of older adults), cooperation and collaboration (focusing on teamwork, support, cohesion and interaction to achieve more proactive learning), promoting social inclusion and autonomy (being protagonists in their own learning)⁽¹⁴⁾. These points converge to the benefits most cited by the participants in this study: interaction, pointed out by 75% of the sample and more often by those who were older, followed by learning and updating, pointed out by a quarter of the sample.

As for the benefits listed, interaction was the most prevalent and entertainment, learning and updating were associated with

gender, with the first two being most pointed out by women. In addition, women usually spend more time online according to this study. The difference observed may be related to individual characteristics, such as motivations for use, personality, self-esteem and time of use. Social networks are recreational and public and thus are associated with a greater inclination towards social activity and relationships and a tendency to find, interact with and share information with other users⁽²⁴⁻²⁵⁾.

Almost all older adults in this study accessed the internet every day, and more than once a day. This frequency of access was 30% more frequent among older adults who had no partner. In this sense, the study identified that the use of digital technologies enables older adults to seek relationships, resulting in a reduction in feelings of loneliness and abandonment and becoming a tool in the search for companionship. In this context, emotional involvement is understood as the most relevant feeling mentioned by the elderly⁽²⁶⁾.

However, it is necessary to recognize that, with increase of internet use for this purpose, older adults become vulnerable to digital abuse in romantic relationships, a phenomenon internationally known by the term Cyber Dating Abuse⁽²⁷⁾. This phenomenon includes threats, insults, humiliations or jealous behavior, partner controlling behavior (such as requiring passwords from cell phones or e-mail accounts), sharing photos or videos of a partner without their permission, pressuring a partner to send sexually explicit photos or videos or to engage in sexual acts against their will through the internet or cell phone⁽²⁷⁻²⁹⁾. Scholars claim that, on one hand, digital abuse emerges from violence between intimate partners, and, on the other, it is closely related to the development of communication technologies and their insertion in the social environment⁽³⁰⁾.

Therefore, it is important that health professionals are attentive to the sexual dimension of the older adults' life, especially in the digital age, when this population expanded their possibilities of satisfying sexual needs and desires. However, understanding how older adults think and feel about their sexuality is necessary not only to understand the aging process and sexuality, but to identify and develop strategies that minimize the effects of senescence on sexuality, contributing to a positive and healthy experience. This depends on professional follow-up free of prejudice, taboo and, above all, of criticism⁽³¹⁻³²⁾.

The use of the internet among older adults has been a major concern in the search for a more inclusive society, with the objective of solving the demands related to aging process and the various changes in digital and communication technologies⁽³³⁻³⁵⁾. Therefore, the Internet can favor social inclusion among older adults, as it can provide more effective communication between family and friends and increase the possibilities of updating, learning, interaction, and others.

The internet can insert older adults in the contemporary social world, bringing new perspectives for social interactions. The relevance of accessing, using and learning about technological resources in the context of aging can be highlighted. One of the goals of healthy aging is to continue learning to adapt to the changes of the aging process and to acquire skills to remain active and productive. In this sense, it is believed that the Internet use among older adults can favor this objective⁽³⁶⁾.

Study limitations

The cross-sectional design of the study can be considered a limitation, as it does not allow for causal inference. However, the national coverage and the target audience minimized this effect. In addition, the inclusion criterion of older adults who used two social networks and the difficulty to get in closed Facebook groups were characterized as limitations.

Therefore, new studies with mixed approaches should be carried out to get a deep understanding of the universe of internet use among older adults, including data such as shared information, most accessed links and social and health repercussions after using the internet. In addition, it is necessary to develop studies that can clarify the verified associations and contribute to the discussion of the theme in nursing, since nurses must provide care to older adults considering all human needs, including the use of technologies as a means of providing health.

Contributions to the nursing area

In the health area, especially in nursing, the existing technologies must be combined to promote health. Nurses have a significant role in the assistance to older adults, as they are the closest to this population. Thus, the use of the internet by nurses and older adults can enable a more effective assistance, since it contributes to faster and more dynamic monitoring and guidance⁽³⁴⁾.

Therefore, nurses need to understand technologies and Internet use to offer multiple perspectives on the expansion of information for this population, favoring and enabling interaction and collective construction of knowledge. In addition, these professionals need to provide opportunities for improving the quality of life of this population, so that social and health repercussions can be provided to older adults in an appropriate and safe way.

From this perspective, based on the findings of this study, health professionals are able to provide assistance, develop prevention and health promotion actions and create public policies to include older adults in society through the use of the powerful tool of the internet as support in health.

The use of data from this research can support the improvement of health professionals in digital and information technologies and communication, providing countless possibilities of using this tool as a means of reaching older adults. In this sense, the internet can influence health behaviors and become an efficient tool for health promotion in the targeted population.

CONCLUSION

This study showed the main characteristics of Brazilian older adults who use the internet, more specifically through the social networks Facebook and WhatsApp, making it possible to recognize the possibilities of health care strategies in the virtual space. Brazilian older adults who use the internet through these social media had a mean age of 64.60 years, were predominantly married, retired, with secondary level of education and from the Southeast, Northeast or South regions. They used the Internet predominantly via cell phone and to perform activities such as reading, listening to music, watching videos and photos, playing

games, talking and meeting new people and/or seeking a romantic relationship. It was noticed that health information is a potential focus of interest for these older adults when they browse the internet and social media, since 65% of the participants said they used the internet to answer questions about health care. There was a statistically significant difference between the different Brazilian regions and the variables related to the sources of information, level of education, daily internet access and time spent online. The bivariate analysis between occupation and

the variables daily internet access and solving health concerns on the internet showed a statistically significant association. Similarly, the association between civil status and frequency of internet access revealed that accessing the Internet more than once a day is a behavior 30% more frequent among older adults without a partner.

In addition, there were also statistically significant differences between age and daily internet access, time spent online and the following benefits: autonomy, independence, and interaction.

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