Seeking Online Health-Related Information by German Seniors: A Qualitative Study

Simona Rodat [a] *

a. Adventus University, Faculty of Theology and Social Sciences, Cernica, Ilfov, Romania.

*Corresponding author:** Adventus University, Faculty of Theology and Social Sciences, Cernica, Ilfov, Romania. Postal code: 077035.

E-mail address: simona.rodat@uadventus.ro

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ABSTRACT

Background: The Internet has become one of the most common informative media for health-related issues. Regarding older people, more research is needed to collect in-depth data on the Internet use for health information. The present study aimed to provide an overview on health-related Internet use by seniors in Germany.

Methods: This descriptive-analytical qualitative study was conducted on 10 German seniors aged 65-83 years. In order to obtain the required information, in-depth semi-structured interviews were carried out between March-June 2017. The subjects were selected by snowball sampling technique. The transcribed interviews were analysed using qualitative content analysis.

Results: The findings of the study revealed that seniors' activity on the Internet includes a variety of medical interests. Most of the interviewees access specific medical websites directly, without using search engines. Although about half of the respondents seemed overloaded with the amount of online health information, most of them claimed to be able to evaluate its reliability.

Conclusion: For most of the interviewees the health-related information on the Internet provides a basis of knowledge. However, despite the fact that the seniors consider online information useful, most of them prefer to consult at least one doctor when it comes to make health-related decisions, still adhering to the physician-centred care model.

1. Introduction

1.1. General Considerations

During the past decade, the internet has become a large source of health-related information. However, it has been found that the quality and reliability of health information are of great importance. [1].

Given that the older adults respond differently to online communication than younger ones [2], they face several challenges in terms of searching health-related information and adapting to new technologies, since at least a minimum technological knowledge is required that some older people lack it. Moreover, specific search abilities and a process of selecting information from a vast amount of information are

needed, for which some seniors have neither the knowledge nor the patience [3-5].

Furthermore, in the practice of medical communication, the paternalistic model of patient-provider information is being replaced in the recent years by a model which implies informed patients, as well as enclosing the human values in the medical interaction and in the health-related decision-making process [6].

Adopting a participative role in healthcare has increased by actively seeking information, involving in the medical interaction, and providing rationale for the decisions made by seniors about their health. In this regard, older adults have their own adapting pace to this model, and that is why they represent a specific group in the study and practice of medical communication in the present displacement [2]. Elderly adults who grew up in a culture where the doctor made critical decisions, are now living in a "consumer centric" world, where people are expected to be informed participants in their own healthcare.

In the European Union, effective communication with elderly adults about new policies and ICT-based solutions is a key factor in turning the expenditures into secure investments [7]. Seniors use media differently than young people. They use the internet less often, perform fewer online activities, and have lower levels of digital literacies, including e-Health literacy [8, 9]. Moreover, elderly adults respond differently to online content and form characteristics of mediated communication and associate internet use with different benefits [10-14].

The current paper addresses the health-related internet use by seniors in Germany. The following questions were addressed in the present study:
1) What are the main characteristics of the internet use by German seniors regarding health information and decisions?
2) What types of health-related information (recommendations, advice, illnesses, treatments, physicians, and clinics) they search?
3) Which websites do seniors use for their health information needs?
4) To what extent do German seniors find these resources trustworthy and reliable?

1.2. The German Seniors and their Internet Usage

As in many other European countries, the population is aging at a rapid pace in Germany. According to the data and prospects of the world population [15], in 2015, 12,9% of the German population were children under 14 years, 59,5% were people aged between 15-59 years, and 27,6% were over 60 years. From these, 5,7% were seniors over 80 years. Over the next decades the proportion of young population is likely to decrease dramatically: as the forecast shows, in 2050 12,4% of German population will be children under 14 years and only 48,3% will be people between 15-59 years. The percentage of population over 60 years will increase to

39,3%, from which approximately 14,4% will be people over 80 years old [15].

German Federal Office of Statistics has reported that population in Germany has been growing older in the last decades [16]. At present, German population can be characterized as an aged population on a higher degree. While in 2015 approximately 28% of the German population was over 60 years old, this percentage is expected to rise to almost 40% by 2050. However, the proportion of the elderly people in the population of a country must be seen in relation to the lifespan of the population. Life expectancy at birth in Germany during 2015-2020 was 81, 1 [17]. Therefore, in analysing the statistical data regarding the population ageing we have to consider that the proportion of the seniors is indeed high in Germany, but here people live on average more than 81 years.

According to the European Statistical Office [18], over half of the German older people (65 years and over) use internet: 56% of them go online at least once a week. In 2015, it has been found that 79,5% of Germans used at least occasionally the internet: 100% of the young people aged between 14-19 years, 97,7% of 20-29 years old, 94,2% of 30-39 years old, 91,9% of 40-49 years old, 83,2% of 50-59 years old, and 50,4% of the people over 60 were internet users [19].

1.3. The Health System in Germany: An Overview

Germany has the oldest national social health insurance system worldwide [20] and is one of the most restriction-free and consumer-oriented healthcare systems in Europe [21]. The patients are allowed to seek almost any type of care they need wherever and whenever they want it. Since 2009, health insurance has been obligatory for all citizens and permanent residents in Germany [22]. The insurance is provided through a statutory health insurance system with 134 competing, non-profit, and nongovernmental health insurance funds called "sickness funds". In addition, a substitutive private health insurance coverage is available for citizens who can afford it.

Insurance coverage is universal for all the legal residents. Approximately 86% of the population receives the primary coverage through statutory health insurance, while 11% through substitutive private health insurance. The rest (e.g., soldiers, police officers) are covered by special programs. The undocumented immigrants receive coverage by social security in case of acute illness, pain, pregnancy, and childbirth [22]. Municipalities play a fundamental role in public health activities, owning about half of the hospital beds. About 33% of the hospital beds are non-profit private, while 17% are for-profit private. The federal government and the local governments have virtually no role in the direct delivery of health care; this is being delegated to the self-governing associations of the sickness funds and the provider associations [22].

1.4. Analytical Framework: An Outlining Literature Review

Comparing to other age segments, older people use IT less. This difference alongside the age axis is called the "grey divide" [4, 23] and is also expressed through a specific online behavior of the seniors. They have a cautious attitude towards the internet. Moreover, seniors are usually worried about the quality of online information and are aware of the possibility that the information may be erroneous [2].

At the same time, older adults face more difficulties than younger ones in using the internet. The main barriers they encounter include: a limited access to the internet due to old computers or poor internet connection, insufficient knowledge about new technologies and fewer technological skills, difficulties in using some parts of a computer due to illness (e.g., problems in using a computer mouse due to arthritis), difficulties in reading online information on the computer (e.g., due to age-specific vision problems), etc. [24]. Furthermore, elderly people find it frustrating and challenging to seek information online due to the large amount of information available [25]. Other studies also have highlighted the lack of knowledge about the internet as a barrier among seniors that can limit the internet use. However, some training programs have been proved to be helpful in order to overcome the barriers [27].

Regarding medical issues, the internet can be an important resource for seniors searching health-related information [2]. This is all the more so, as older adults are more likely than other age groups of population to be complex patients, with declining health related to aging and other preventable morbid conditions [28]. According to McMillan and Macias [2], seniors usually use the internet to become prepared when visiting the doctor or to fill in the gaps left by the physicians. In addition, they use the internet to look for general health information [8].

Several studies [29, 30] have shown that the older adults are more reticent when it comes to the accuracy of internet health information than younger adults. Thus, seniors feel more concerns about the reliability of the online health information [30]. For example, in a study by Tian and Robinson it was revealed that cancer patients over 65 years are more cautious than younger ones about online health information [29].

Seniors primarily tend to look for interpersonal information sources, such as general practitioners (GPs), family members, pharmacists, and friends [31]. Therefore, doctors remain the primary source of information regarding health issues [31]. Elderly patients rely mainly on their healthcare providers for information than non-elderly populations [28, 32], while many of them are reluctant to rely solely on the internet for health information. This attitude confirms the results of the previous studies [6, 33], which showed that older patients are more likely to let their physicians make decisions regarding their medication or treatment, and some of them even assume that some aspects of their life (e.g., health) are controlled by others (e.g., doctors) [34]. In this regard, Campbell and Nolfi [8] pointed out that elderly adults may be willing to use the internet as a source of general health information, but when it comes to make decisions about their health care, many of them seem to adhere to a physician-centered model of care.

2. Materials and Methods

This descriptive-analytical qualitative study was conducted in 2017 on ten German seniors aged between 65-83 years, who have been using the internet to look for health-related information.

2.1. Design and Participants

The main objective of the research was to investigate how older people use the internet for the health-related information in Germany. In order to obtain the required data, the method of in-depth semi-structured interview was used [35, 36].

Considering the aim of the study a qualitative analysis was considered to be the most appropriate method.

The interviewees were chosen using "purposeful sampling" [37], which emphasises sampling for information-rich cases. The snowball sampling technique and personal contacts were used to identify potential subjects [38]. Face-to-face interviews lasted between 45-60 minutes.

The sample interviewed in the study consisted of 10 German seniors in Bielefeld and Lingen (six men and four women), aged 65≥ years who used the internet not only to obtain daily information and to "socialise" with their friends, but also to search for health-related information. Regarding the purpose of the study, the latter was a precondition to be selected as an interviewee.

This study aimed to gain in-depth and detailed data on how German older people use the internet for health-related information. Therefore, the findings are not to be generalized, and the sample is not a representative one. Sociodemographic characteristics of the sample population are presented in Table 1.

2.2. Data Collection

In this study, the required information was obtained through in-depth semi-structured face-to-face interviews who followed a guide of interview containing 30 questions related to health-related internet use. The interviews were in the form of open discussions. Further explanations and questions were possible [35]. The interviews took place between March-June 2017 and were conducted in German. They were recorded, transcribed, and subsequently translated in English.

2.3. Data Analysis

Qualitative content analysis was used to analyse the transcripts [39, 40] along the themes that were operationalized in the form of questions in the interview guide.

Table 1: Sociodemographic characteristics of the sample population

Sociodemographic characteristics of the study sample		
Gender	Male (6 persons)	Female (4 persons)
Age	65-70 71-75 (2 persons) 76-80 (2 persons) 81≥	65-70 71-75 76-80 81≥
Education	*Ausbildung* (i.e., specific vocational education in Germany) (4 persons) University (2 persons)	*Ausbildung* (3 persons) *Abitur* (i.e., High-School Certificate/ Diploma in Germany)
Occupation before retirement	*Beamte* (i.e., state's civil servant – employee in state's administration with a special status in Germany) Manager/ Administrative director of a hospital Technician Engineer (2 persons) Technician/ IT-Specialist	*Beamte* Accountant Office worker Saleswoman/ for a while housewife, worker in a factory
Residence	Bielefeld, North Rhine-Westphalia (2 persons) Lingen, Lower Saxony (4 persons)	Bielefeld, North Rhine-Westphalia (2 persons) Lingen, Lower Saxony (2 persons)

The qualitative content analysis was used to operate the theoretical categorization, codification, contextualization, decodification of significance, conceptualization, discovery of regularities, explanations and causal connections, verification of the conclusions, and preservation of theoretical coherence [40]. In terms of ethical considerations, informed consent of the participants was obtained. The study was not financed from external sources and was made on a voluntary basis by the author of this paper.

3. Results and Discussion

According to the findings of the current research, the German seniors search for health-related online information either as a result of a general concern, or when they have a medical problem. Three of the respondents declared, as the first quoted interviewee below, that they have a broad interest in being aware of medical issues, while seven respondents (as the next two examples cited) seek such information and advice only when they face an illness or a medical condition. During this paper, various quotes from the interviews are given. In order to keep the anonymity of the research subjects, they are mentioned in the form R1 (for respondent 1), R 2 (for respondent 2) ... R10 (for respondent 10).

R9: Although I have a good health status, I'm interested in medical information. I usually read scientific articles and websites. […] I like to be up to date with developments in medicine.

R4: I read online all kind of information, but when it comes to medical issues, I do not look for unrelated information; I need to have a cause for my search. For example, if people in my family or myself have certain symptoms of an illness or

something, I research for related information to that specific issue.

R3: I am researching what I specifically need. I did this sometimes for treatments, for example regarding specific sports injuries treatments, but there has to be a reason for doing so, surfing without reason I do not do.

As the present study reveals, seniors use the internet for different health-related purposes including collecting information about specific health condition, the meaning of symptoms, treatments and effects of treatments, information about doctors, hospitals and clinics, as well as obtaining information about nutrition, particular diets, and a healthy lifestyle.

R1: I usually read on the internet about nutrition, sports, healthy lifestyle. I had several small medical issues and these I researched, but very rare. […] If I had a more serious problem, I would most certainly do that, but since I do not have, thank God, at the moment, I don't. [...] If I would have a serious disease, I would most certainly look for a specialist regarding this, that's for sure.

R8: I am looking for all kinds of medical information, like medicaments, specific doctors, specific treatment, information about clinics, explanations of some symptoms and their meaning and so on.

R5: I looked on the internet for a urologist, I went to him once, he was competent, but too far from home, 15 kilometres, so later I found another one here, in the neighbourhood, where I can ride my bike or even walk.

However, one of the interviewees declared that he doesn't find the internet trustworthy and reliable as a health resource. In other words, he goes online just in the case of finding a doctor or looking for a medical term or expression.

R2: I usually do not research health information on the internet, because for me the internet is not the media for doing that. I am sometimes looking for specific medical expressions, terms or denotations, because I want to know the meaning, so if I hear an expression, I research this. [...] Many years ago, I looked on the internet for a dentist, I wanted a second opinion, he was good, but we don't attend there anymore, because it is 30 km away, and in the meantime, we found a good one here. [...] For medical advice or treatments, or information regarding drugs, I do not use the internet. For me the internet is too anonymous for this type of information and offers too much and heterogeneous information, so I really don't want to know.

The results of the study indicated that some interviewees (as the first two cited below) use Google as search engine for medical information, while more than half of the respondents (the next three quotations) use other search engines or access directly specific medical websites or databases to obtain health-related information.

R7: I use mostly Google, because it is easy and quick, and then I click on the first two or three result websites and that is it. In general, if the information on these websites seems logical to me, then I am satisfied and end the session.

R10: When I want to search for something, I go to Google,

because it is the easiest way. Usually, many websites appear in the search results, from them I select one or two that seems the most reliable, medical websites usually, I access them and read what interests me.

R2: I do not use Google for searching any type of information, including the health-related one, absolutely not, I do not want Google to know what I am searching. I use another search engine, ixQuick, they are a Dutch search engine and do not track. I am also frequently using the Tor browser for anonymity.

R9: I usually read scientific articles from The Lancet, Spektrum, or other scientific medical magazines or websites. [...] On the internet I am only reading, I read a lot of articles, but I don't watch medical videos. I watch though sometimes television medical programs.

R8: When I need some information related to health from the internet, I am searching in medical databases, or I am looking on health portals and using specific medical online resources. I do not use search engines, since I know where to search, and for this I am using websites like net-doktor.de.

Furthermore, half of the respondents appeared to be overwhelmed with the amount and the content of online health information. Some of the seniors believed that too much information sometimes creates confusion. One of respondents expressed that the information on the internet is too general and anonymous. Another participant commented that online information is often primarily related to serious or rare diseases which can cause fears and panic. Therefore, the immediate reaction (emotional, and not so rational) is to interrupt the search on the internet.

R7: [If the information on one accessed website seems logical to me], I don't go on other websites, since the amount of information on the internet confuses.

R2: The internet is too anonymous for this type of information [medical advice or treatments] and offers too much and heterogeneous information, so I really don't want to know.

R6: If you know how to deal with all the information, it is helpful, but if you then think about, that you could have the same symptoms or issues [of serious illnesses], they can become onerous, since you imagine all kinds of diseases.

This is probably the reason why most of the subjects of this research prefer to look for online information only in specialized (medical) websites and/or only when they need a particular information. However, even the content of the scientific and medical websites can be sometimes confusing and contradictory, as expressed by one of the respondents. According to him (see the quote below), the internet should not be blamed for this, since the doctors themselves do not always agree with each other, they often give different diagnoses of the same symptoms, and the results of tests and studies are sometimes interpreted differently by different physicians.

R1: The medical information [on the internet] is understandable, no problem for me, the problem is, they are very often contradictory, once they say this, other time they say the opposite. And I am speaking here not only about

medical websites, but also about the doctors themselves. Nowadays everyone being a physician has some immediate results and publish them, that is usually not verified, and then I read the opposite the next time. Let's take for example butter and eggs, who contribute to the cholesterol supposedly, and now it is all regarded as nonsense, you can eat as much as you want, and this is always like that.

According to the findings of the present study, for most of the interviewed seniors the information found on the internet seems to provide a basis of knowledge. As the senior quoted above, they appreciate that the health-related information on the internet is understandable, as well as readable, useful and mostly reliable. However, it should be pointed out that none of the respondents looked for medical information on blogs or forums (i.e., experiences of other patients, opinions of unspecialized people, etc.); instead, most of them visit specialized medical websites when seeking such information. Moreover, none of the respondents recounted visiting websites specialized in alternative, naturopathic or homeopathic medicine.

R10: Yes, I think this information [on the internet] is useful, as certain diagnoses should be possible with this, because you can find a huge amount of information, all kinds of advice, and among them sometimes something is correct. [And how do you know which of them are correct? – question of the interviewer] Well, if they appear to be logical and plausible, then yes, I consider them correct; but certainly not all are so.

As in the example quoted above, the older people acknowledge that not all the information from the huge amount of information available on the internet is reliable, while most of them consider that they are able to evaluate the reliability of health-related information through several ways including personal experience, the ability to distinguish credible information from untrustworthy one, and by checking the impressum and the publisher of the websites. Moreover, a detailed analysis of the interviews indicates that the seniors are not really overwhelmed by the huge amount of information on the internet and diverse online content given that most of them feel confident in their own ability to discern the reliability of the information.

R5: Most things [from the internet] I can understand, and mostly I am looking for an overview of the issue, I do not want to become a doctor, so I just want the basic information. [...] Such information can prove to be helpful, if you know how to deal with it. [And how do you evaluate the information? – question of the interviewer] I know that this may sound bad, but it is the experience of my life.

R8: The reliability highly depends on the website or the resource of information itself. In general, I trust the resources I use for medical information, since my resources are carefully selected. I consider a medical resource trustful, if the information given seems plausible to me based on my medical education (I worked long time ago for some years as an emergency medical assistant). If I learn of new medical

resources, I evaluate them using the same criteria: experience and background.

R2: In order to regard something as reliable or trustful, I check the impressum and who is the publisher of this information, I always do this. Without an impressum I leave the website immediately, if someone does not give publisher's information, I consider a liar from the beginning.

Although the seniors interviewed consider that the health-related information on the internet is useful, some of them, as one quoted above, thinking that even some diagnoses could be possible based of this information, when it comes to make informed decisions about health care, or to follow a specific treatment, the most of them prefer to consult at least one doctor, still adhering to the physician-centred care model.

R4: The information on the internet gives me an idea about certain medical conditions, about what certain symptoms might mean, about what effects some drugs have. However, even though I sometimes got an idea of what the disease might be, I never treated myself, I went to the doctor, who confirmed or not my suspicion, formed by reading information on the internet. Then the doctor knew better which drug was more effective, which dose was better for me, how long I had to be treated and so on.

Therefore, according to the present study, the internet provides a variety of useful health-related information for older adults regarding their health. However, when it comes to making health-related decisions, such as the most appropriate medical interventions, or effective treatments and medications, the majority of German seniors prefer to consult a doctor first, especially in the case of important choices regarding their own medical condition.

4. Conclusion

The evidence from this study points towards the idea that German seniors use the internet as a starting point for general information related to health. Older people search for different health information such as symptoms of a disease, medical terms, nutrition, special advice or treatments, information about a healthy lifestyle, physicians, clinics, and hospitals. They prefer to visit scientific or specialized medical websites and databases and tend to verify the publisher of the online information. Due to high frequency of visiting such websites and databases, most of the seniors mainly show confidence in the reliability of the information and in their ability to recognise the authenticity and trustworthiness of online medical information and health advice.

However, when it comes to make informed decisions about health care, older adults adhere to the physician-centred care model. Although some of the interviewees believe that certain diagnoses may be possible based on information on the internet, none of them followed any medication or treatment only based on online information and/or advice. Prescribing medicaments and recommending

treatments is considered to be exclusively in the area of doctors' expertise. Therefore, the results of this qualitative study confirm the findings of the study of Breemhaar and his colleagues, according to which elderly patients are more likely to let their physicians make decisions regarding their treatment [33].

Although most seniors acknowledge that there is an enormous amount of heterogeneous information on the internet, they seem not to suffer from information overload for two reasons. First, many of them look for target information on some certain specialized websites and databases. Second, seniors select information that they find trustworthy and authentic.

In this way, they neither feel overwhelmed by the large amount of information nor confused with contradictory information and different advice on various websites.

Authors' Contributions

S.R. designed the study, conducted the interviews, collected the data, performed the qualitative content analysis, interpreted the results, drafted the manuscript. The Author read and approved the final manuscript.

Conflicts of Interest

The Author declares that there is no conflict of interest.

Acknowledgements

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