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The Influence of Socio-demographic Factors Towards Health Information-Seeking Practices Among Older Adults: A Systematic Literature Review

(Pengaruh Faktor Sosio-demografi Terhadap Amalan Pencarian Maklumat Kesihatan di Kalangan Orang Tua: Kajian Literatur Sistematik)

Kamarazaman, Rahmanie & Ismail, Khauthar^{1*}

¹Anthropology and Sociology Section, School of Distance Education, Universiti Sains Malaysia, Penang, 11800, MALAYSIA

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Abstract: Both developed and developing countries are currently undergoing a notable demographic change referred to as the phenomenon of an ageing nation. This is marked by a consistent rise in the population of adults aged 60 and over. To foster the development of a population that is characterized by healthy older adults, it is crucial to prioritize the enhancement of the well-being of older adults. In this regard, obtaining reliable health information that effectively promotes the adoption of a healthy lifestyle is useful. However, disparities in health information-seeking practices among older adults lead to unequal access to high-quality health information. One of the contributing elements can be attributed to differences in socio-demographic factors. The participation of older adults in health information-seeking practices is likely to be influenced by numerous socio-economic factors. Therefore, the objective of this review study is to better understand the influence of socio-economic factors on the health information-seeking practices of older adults. This paper employs a systematic literature review to analyze prior research to gain a deeper understanding of the influence of socio-demographic factors on the patterns of health information-seeking practices among older adults. It was found that sociodemographic factors such as age, education level, gender and income affect how older adults practice health information-seeking.

Keywords: Ageing Nation, Health Information, Healthy Ageing, Malaysia, Older Adults, Sociodemographic Factors

Abstrak: Kedua-dua negara maju dan membangun kini sedang mengalami perubahan demografi yang ketara yang disebut sebagai fenomena negara yang semakin tua. Ini ditandai dengan peningkatan yang konsisten dalam populasi orang dewasa berumur 60 tahun ke atas. Untuk memupuk pembangunan populasi yang dicirikan oleh orang dewasa yang lebih tua yang sihat, adalah penting untuk mengutamakan peningkatan kesejahteraan orang dewasa yang lebih tua. Dalam hal ini, mendapatkan maklumat kesihatan yang boleh dipercayai yang menggalakkan penggunaan gaya hidup sihat adalah berguna. Walau bagaimanapun, perbezaan dalam amalan mencari maklumat kesihatan di kalangan orang dewasa yang lebih tua membawa kepada akses yang tidak sama rata kepada maklumat kesihatan berkualiti tinggi. Salah satu elemen penyumbang boleh dikaitkan dengan perbezaan dalam faktor sosio-demografi. Penyertaan orang dewasa yang lebih tua dalam amalan mencari maklumat kesihatan mungkin dipengaruhi oleh pelbagai faktor sosio-ekonomi. Oleh itu, objektif kajian tinjauan ini adalah untuk lebih memahami pengaruh faktor sosio-ekonomi terhadap amalan pencarian maklumat kesihatan warga emas. Kertas kerja ini menggunakan kajian literatur yang sistematik untuk menganalisis penyelidikan terdahulu untuk mendapatkan pemahaman yang lebih mendalam tentang pengaruh faktor sosio-demografi ke atas corak amalan mencari maklumat kesihatan di kalangan orang dewasa yang lebih tua. Didapati bahawa faktor sosiodemografi seperti umur, tahap pendidikan, jantina dan pendapatan mempengaruhi cara orang dewasa yang lebih tua mengamalkan pencarian maklumat kesihatan.

Kata Kunci: Negara Penuaan, Maklumat Kesihatan, Penuaan Sihat, Malaysia, Warga Emas, Faktor Sosiodemografi

^{*}Corresponding Author Email: khautharism@usm.my

1. Introduction

According to the World Health Organization (2022), the global ageing population is growing, with one in six people expected to live into their sixties or beyond by 2030. WHO added that this growth is driven by population ageing, which began in high-income countries like Japan but now affects low and middle-income countries. The average human longevity has experienced a rapid increase, leading to the expectation of significantly longer life expectancies compared to those of our ancestors a few generations ago. This positive trend can be attributed to notable advancements in medical interventions, improved sanitation practices, healthier lifestyles, and an ample food source (Brown, 2015).

However, in transitioning to becoming an ageing nation, older adults in developed and developing countries face five main issues: health, economy, social, psycho-spiritual, and environment (Bakeri, 2015). Given that the healthcare system around the world is not yet completely equipped to handle the demands of the ageing population, health issues affecting older adults require special attention. To ensure that older adults age well, public health professionals and society must combat ageist attitudes, prejudices, and promote healthy ageing (World Health Organization, 2022). The concept of healthy ageing refers to the proactive utilisation of opportunities to maintain and improve one's independence, cognitive and physical health, and overall life satisfaction during the ageing process (*Healthy Aging*, n.d.; Old & Scott, 2023). Healthy ageing involves promoting health by preventing disease and injury. According to Mafauzy (2000), the goal of healthy ageing can be facilitated through preventive measures, which involve acquiring comprehensive knowledge about one's state of health to lessen the onset of diseases proactively.

Effective health information-seeking practices are essential for promoting healthy ageing. It involves searching for and receiving communications that aid in lowering uncertainty about one's health condition and forming a social and individual (cognitive) perception of health (Cotten & Gupta, 2004). Health information-seeking is essential for older adults to obtain health information and then use the information to promote healthy lifestyles (Pattath, 2021). Additionally, by giving older adults a sense of control over their health, information searching can help them speak with their doctors about their problems more effectively (Pattath, 2021). Therefore, it is imperative to understand the patterns of older adults' health information-seeking practices.

Previous research has primarily concentrated on the overall tendency of older adults to actively seek health-related information, such as Jia et al. (2021), Abd Manaf et al. (2021), Eriksson-Backa et al. (2018), and Kivits (2009). While there are systematic review studies covering the health information-seeking practices of older adults, the reviews mainly focus on the general practices and do not focus on the influence of socio-economic factors on older adults' practises of seeking health information (Shi et al., 2023; Anagaw & Guadie, 2023; Luo et al., 2022; Waterworth & Honey, 2018).

Hence, the objective of this review paper is to understand the influence of socio-demographic factors on older adults' health information-seeking practices using a systematic literature review approach. By systematically reviewing previous studies, this paper seeks to narrow the gap about the influence of socio-demographic factors on older adults' practices of seeking health information. This knowledge can facilitate healthcare professionals in establishing improved communication with older patients from different backgrounds. Furthermore, this understanding can assist healthcare professionals in successfully disseminating information to older adults.

This review paper employed a systematic literature review because it has several advantages. According to Peričić and Tanveer (2019), systematic reviews concisely summarise current information, identify research gaps, highlight methodological issues, and determine which questions can be answered with certainty using available data. They are valuable for novice writers, helping them enhance their expertise, generate fresh ideas, and integrate preexisting literature. They also help in advancing the field's future work.

2. Methodology

This study adopted a systematic literature review approach to thoroughly investigate the impact of socio-economic factors on the health information-seeking practices of older adults. This method allowed for a comprehensive analysis of existing literature, providing insights into how various socio-economic variables shaped the way older adults seek health information.

A systematic literature review is a rigorous approach to conducting a comprehensive search of literature across several database platforms pertaining to a specific subject matter, intending to avoid missing any relevant materials, hence ensuring a balanced approach (Nightingale, 2009). Besides its other benefits, a systematic literature review serves to minimize bias throughout the process of looking for relevant information (Nightingale, 2009). Furthermore, Peričić and Tanveer (2019) state that systematic reviews serve the purpose of briefly summarizing existing material, identifying areas of study that require more investigation, shedding light on methodological concerns, and ascertaining the questions that can be definitively addressed based on the currently available data. This method has four stages that will be briefly described below.

2.1 Stage 1: Selection of Journals and Databases

The first stage was to select databases with materials related to health information-seeking and older adults. The databases used are Scopus, Google Scholar and Science Direct, which have hundreds of collective journals and scholarly articles regarding this research topic.

2.2 Stage 2: Keyword Search

Once the databases were selected, relevant keywords were identified for this study. These keywords were used to locate scholarly articles within the selected databases. Good keywords can help make the searching process easier and quicker. The process to identify relevant keywords is as follows: keywords based on the research question, used by past researchers in their scholarly articles, and suggested keywords by the database. The authors also employed an online thesaurus to enhance these keywords by incorporating synonyms.

String keywords were used when searching for scholarly articles in the databases. To form string keywords, phrase searching, Boolean Operator and Field Code Function are used. This formation of string keywords is used in Scopus, Google Scholar, and Science Direct. Not only that, but citation tracking was also used to get the necessary article. Refer to Table 1 for examples of relevant keywords used in this study.

Keyword set A: Older adults	Keyword Set B: health information- seeking	Timespan	Target fields	Notes
Ageing people, older people, the elderly	Health information, health-information- seeking, health literacy	2012-2023	Title, Abstract, Keyword, Full Text	The inclusion of partial keyword matches was permitted for the Title, Abstract, and Keywords. The "match" function facilitated a comprehensive search of the entire text.

Table 1: Search Configuration

2.3 Stage 3: Articles Filtered: Acceptance and Rejection

The Stage 2 search yielded a cumulative total of 431 articles. The result was subsequently improved through the acceptance and rejection criteria outlined in the following manner.

The scholarly articles obtained from Stage 2 were subjected to the filtering procedure. The criteria for acceptance and rejection are as follows:

- a) Inclusion: The scholarly articles must be published in international publications, using the English language, and published from 2012 until early 2023. The articles focused on health information-seeking practices among older adults. Following the concept of "research field maturity" highlighted by Kraus et al. (2020), this evaluation has restricted the screening procedure to encompass solely those publications published within the timeframe of 2012 to early 2023. The selection of this chronology was based on the adequacy of the number of published papers to conduct a comprehensive review.
- b) Exclusion: The scholarly articles that were written not in English and published before 2012.

After filtering the articles based on inclusion and exclusion criteria, the selection process also followed the eligibility procedure. The eligibility procedure involved the removal of duplicate articles as well as those that did not fit the purpose of this review paper. This was achieved by manually monitoring the retrieved articles to ensure that all the remaining articles adhered to the specified criteria. The procedure mentioned above was executed by perusing the titles and abstracts of the academic articles. There was a total of 26 articles that remained.

2.4 Stage 4: Analysis

The research questions presented in the introduction guided the current systematic review analysis. Thematic analysis was used to analyze the 26 articles. Maguire and Delahunt (2017) outline that the thematic analysis process involves familiarizing oneself with the transcript, generating coding to organize data, identifying repeated themes, reviewing themes to ensure they align with research objectives, defining the theme to capture its essence, and finally, writing up the themes in a journal or report. The analysis process was facilitated through the use of Atlas TI software.

3. Results

As mentioned above, the selection process managed to obtain 26 articles. The thematic analysis yielded the identification of four main themes, namely age, education, gender, and income. Upon conducting a deeper analysis of the themes, it has been determined that there are 11 separate sub-themes. Refer to Table 2.

Out of the 26 articles, four were systematic review articles, 12 were published in developing countries such as Myanmar, Iran, Turkey, China, Malaysia, Africa, Indonesia, and Egypt, and 10 articles were published in developed countries such as Germany, America, Japan, Estonia, Israel, and Finland. Among this collection of 26 articles, there is a distribution of publication dates as follows: one article was published in 2012, one in 2014, one in 2015, one in 2016, one in 2017, four in 2018, one in 2019, six in 2020, six in 2021, three in 2022, and one in 2023. The age range of the older adults examined in the previous studies was from 40 to 91 years old.

Table 2: The Main Themes and Subthemes

Authors	Age Education level					Gender			Income		
	Physical & cognitive impairment	Understanding health information	Misinformation	Information overload	Alternative medicine	Using internet for information searching	Role as primary caretaker	Gender equality	Healthy ageing	Buying smart devices	Employment status
Moe et al. (2012)		/									
Mahmoodi et al. (2021)	/						/				
Vogt et al. (2018)	/									/	
Yağar (2021)		/									
Konca et al. (2022)							/			/	/
Aponte & Nokes (2017)											
(Magsamen-Conrad et al. (2019)							/				
Chen (2020)	/			/							
Sun et al. (2020)	/	,						/			
Matas & Bronstein (2018)	,	/									
Abd-Rahim et al. (2021)	/	/									
Yunus et al. (2020)	/										
Abd Manaf et al. (2021)	/										
Shi et al. (2023)	/										
Harling et al. (2020)	/	,									
Bahtiar et al. (2021)		/									
Awad et al., 2018)		/					,				
Altizer et al. (2014)					,		/				
Walker et al. (2017)	,				/						
Paimre (2019)	/								,		
Eriksson-Backa et al. (2018)						,			/		
Waterworth & Honey (2018)				,	,	/					
Adu-Gyamfi & Asante (2022)				/	/					,	
Luo et al. (2022)					/	,				/	
Anagaw & Guadie (2023)						/				/	
Pattath (2021)						/					

3.1 Age

Based on previous literature, socio-demographic factors such as age can influence the patterns of health information-seeking among older adults. Depending on their age, people have different patterns of seeking out health information because their cognitive and physical capacities deteriorate as they age, making information-searching challenging for older adults (Shi et al., 2023; Yunus et al., 2020; Vogt et al., 2018). While social networks are one of the sources of health information, physical and cognitive impairments experienced by older adults hinder them from engaging in society and receiving health information. The observation is supported by a study conducted by Harling et al. (2020), which reveals that older adults aged 40 years old and older in South Africa who experience cognitive impairments exhibit reduced core social networks and diminished familial communication. In another study by Sun et al. (2020), older adults in China, mainly those aged 60 years or older, experience difficulties in participating actively in society because of physical constraints, such as age-related deterioration in vision and auditory abilities. As a result, they encountered obstacles in accessing social networks to get health-related information. The same finding was found in a study by Mahmoodi et al. (2021) in Iran, where older adults around the age of 60 to 91 years old experience challenges adhering to prescribed follow-up instructions from healthcare professionals and encounter difficulties in making informed health decisions due to physical and cognitive impairments.

The cognitive capacity of older adults declines, hence potentially impacting their information processing capabilities. For instance, according to Abd-Rahim et al. (2021), in Malaysia, older adults aged 60 years and older exhibit an overall slower information processing speed and a diminished working memory capacity, which refers to their ability to process numerous pieces of information simultaneously. Reduced cognitive functioning can pose challenges for older adults in comprehending the health information provided to them. A study conducted by Chen (2020) in a remote region of Taiwan revealed that older adults aged 65 years and older encounter challenges in comprehending drug administration protocols due to their limited knowledge of the written content on medicine bags. Consequently, they often rely on their children or the pharmacist employed at the hospital to provide clarification on these processes. The same issues also affect older adults aged 65 to 77 years old in developed countries like Germany and Estonia, where age-related problems prevent them from accessing online health information and compel them to rely on children for support (Paimre, 2019; Vogt et al., 2018).

Moreover, when their cognitive capacities deteriorate, older adults feel less motivated to actively seek out health-related knowledge. In a recent study conducted by Abd Manaf et al. (2021) on healthcare usage in Malaysia among participants between the ages of 60 to 75 years old, findings indicated that older participants exhibited knowledge of the sources of health information. However, compared to their younger counterparts, they had a lesser tendency to employ such information for the purpose of health management.

3.2 Education Level

Health information-seeking can also be influenced by education level. Older adults with higher education levels are afforded enhanced possibilities to access and interpret health-related information (Mahmoodi et al., 2021). Moreover, older adults with higher levels of education are inclined towards critical thinking, thereby fostering their inclination to actively pursue health-related information and empowering them with the ability to exert direct influence over their health (Abd-Rahim et al., 2021). However, comprehending health-related information can present challenges for older adults with low education backgrounds, as it typically entails complex and confusing information (Bahtiar et al., 2021; Awad et al., 2018; Moe et al., 2012). Therefore, older adults may encounter difficulties in comprehending the specificities related to their prescription medications or the health information accessible on the Internet, including those residing in countries with advanced technology like Israel and America (Chen, 2020; Matas & Bronstein, 2018; Aponte & Nokes, 2017). Furthermore, it is worth noting that older adults who possess a lower degree of education are more likely to be susceptible to falling victim to misinformation (Adu-Gyamfi & Asante, 2022). The same theme was also found in a study by Yağar (2021), which stated that older adults with limited education levels exhibit heightened fear about emerging diseases, such as COVID-19, primarily stemming from their limited comprehension of health-related information.

Older adults with limited educational backgrounds exhibit a greater inclination to place their belief in alternative medicine as opposed to modern healthcare practices. The present study by Chen (2020) found that older adults, despite knowing that traditional Chinese medicines cannot be combined with Western medicine, still adjust their dosage and use of these remedies due to their lack of health knowledge. Another study conducted by Adu-Gyamfi and Asante (2022) in Ghana presents intriguing findings regarding the healthcare preferences of older adults. It was observed that a subset of this demographic continues to rely on traditional healing methods for treating ailments, while others exhibit greater trust in modern healthcare systems.

Next, those with higher levels of education are more open to using the Internet to look up health-related information (Luo et al., 2022; Waterworth & Honey, 2018). There is a positive correlation between higher levels of education among older adults and their preferences for using the Internet to search for information. Anagaw and Guadie (2023) claim that possessing digital literacy skills, encompassing the abilities to comprehend, utilize, administer, and evaluate online information, confers advantages while seeking health-related information on the Internet. However, the majority of older

adults perceive the task of seeking health-related information on the internet as daunting because of information overload. Walker et al. (2017) found that a significant number of older adults in America express a need for basic health-related information that does not require seeking the guidance of a medical practitioner. Therefore, they turn to the internet as a means of accessing such information. Nevertheless, they experienced a sense of being overwhelmed by the vast amount of information obtained through Internet searches, ultimately leading them to seek guidance from medical professionals. According to Pattath (2021), even when older adults utilize reputable sources such as government-endorsed official websites, they still experience information overload.

3.3 Gender

Previous studies revealed that women have a higher propensity to actively pursue health-related information, which can be attributed to their predominant role in assuming primary caregiving responsibilities within familial contexts (Magsamen-Conrad et al., 2019). Mahmoodi et al. (2021) conducted a study to examine the health literacy of older persons, specifically highlighting the experiences of women residing in Iran. The study revealed that these women predominantly prioritized their traditional responsibilities, such as tending to sick family members and attending to the needs of children. The same practice can also be observed in developed countries. According to Altizer et al. (2014), evidence suggests that older women in America engage in an active process of obtaining health information. This practice can be attributed to their role as caretakers, as they not only seek health information for their own benefit but also the well-being of others.

Additionally, it is plausible that women possess elevated levels of health literacy as a result of their adherence to sanitary principles, compliance with medical recommendations, and traditional responsibilities in tending to ill family members and children. Adherence to traditional gender norms provides women with greater opportunities to participate with the healthcare system, fostering the acquisition of health-related knowledge and ultimately resulting in higher levels of health literacy compared to males (Altizer et al., 2014). Moreover, women possess a strong inclination towards acquiring health knowledge, as they perceive it as a valuable asset that can enhance their overall well-being and facilitate a more effective ageing process (Eriksson-Backa et al., 2018; Altizer et al., 2014).

A different study conducted in China by Sun et al. (2020) posited that women have a superior comprehension of health relative to men, despite the latter often demonstrating higher cognitive abilities. The observed phenomenon can be attributed to the steady rise in educational attainment among Chinese women, which can be attributed to the implementation of gender equality rules. Additionally, there has been some improvement in their economic standing. Moreover, Sun et al. added that women's improved communication abilities contribute to greater access to health-related information within their familial networks, thereby leading to a heightened comprehension of health-related knowledge. Furthermore, women exhibit better protective behaviour.

Moreover, it was found that women exhibited a higher tendency to take advantage of the Internet as a means to seek out health-related information in comparison to men. Konca et al. (2022) assert that Turkish women engage in Internet searches due to their heightened vigilance on matters about their health. Additionally, women also utilize the internet to seek health-related information for their significant others. According to a study conducted by Mitsutake et al. (2023), it has been observed that younger married women in Japan exhibit a greater tendency to engage in effective health information-seeking practice, possess a higher level of health literacy, and rely on online platforms to acquire health-related information for the well-being of their families.

3.4 Income

Previous studies have indicated that the financial situation of older adults can have an impact on their health information-seeking practices. Vogt et al. (2018) suggest that in Germany, older adults who possess limited financial resources exhibit a diminished level of consciousness regarding matters pertaining to their overall well-being. Konca et al. (2022) posited that there exists a positive correlation between income level and the tendency to engage in seeking health information among older adults in Turkey. In addition to this, Konca et al. (2022) and Luo et al. (2022) highlight that older adults with higher income levels exhibit an inclination to seek health-related information using online platforms. The availability of income improves individuals' ability to access online health information. Individuals who have more financial means have the ability to easily take advantage of many sources of information, such as social media platforms, television networks, and the Internet (Anagaw & Guadie, 2023).

A further noteworthy discovery relates to the impact of employment positions on the inclination of older adults to engage in health information seeking. According to Mahmoodi et al. (2021), there is a notable disparity in the amount of free time available for health information seeking between retirees and working older adults in Iran. Furthermore, unemployed older adults who lack the financial means to obtain health insurance exhibit heightened concern for their health and engage in proactive early prevention measures, recognizing the potential inability to cover medical expenses (Konca et al., 2022).

4. Discussion

This systematic review of the literature explores the significance of socio-demographic factors on the patterns of health information-seeking practices among older adults. The findings showed that older adults with physical and cognitive impairments have trouble understanding complex health information, are demotivated to look for it, and have trouble accessing health information through social networks or healthcare professionals. Furthermore, highly educated older adults are more likely to look up health information online and are willing to use it when needed. When compared to modern medical care, older adults with low levels of education are more likely to believe in alternative medicine and fall victim to false information. Compared to older males, older women show greater interest in looking up health-related information. Compared to older adults with lower incomes, those with higher incomes are more active in their search for health information. Additionally, older adults who are retired or unemployed are more likely to seek health-related information because they have more free time to do so. They also take better care of their health to prevent having to pay for medical expenses.

While it is not emphasized in the result, being digitally literate is important for older adults as we live in the digital age. The advancement of information and communication technology has led to a greater need for individuals to manage their own health-related information. Individuals are now expected to actively participate and take responsibility for their own well-being (Zhao & Basnyat, 2022). Thus, there is a plethora of medical information readily accessible on digital platforms to the public. Nevertheless, a considerable proportion of older adults encounter difficulties in obtaining health information through digital platforms as a result of their restricted competence in utilizing digital technologies. Older adults, particularly those from the Baby Boomer and X generations, are often referred to as digital immigrants because they lack experience and proficiency with digital technology, having not been exposed to it during their formative years (Brown, 2011). This results in a decreased motivation to gain new digital skills and experience challenges in using advanced technologies, leading to a decline in their enthusiasm for practising online research on health. (Pourrazavi et al., 2021; Yunus et al., 2020).

Older adults with significant educational backgrounds possess advanced digital literacy skills and exhibit a greater willingness to utilise the internet to access health-related information. This is because older adults who possess an excellent educational background are more inclined to secure employment in professional fields that necessitate regular utilization of advanced digital technology and the internet. Muhammad and Ruslan (2016) found that older adults who have worked in professional careers are more likely to possess computer literacy skills. This is attributed to their use of digital devices, such as computers, and their familiarity with internet usage. In contrast, non-professional older adults are less likely to have these skills. Muhammad and Ruslan (2016) further stated that older adults employed in professional environments are more inclined to possess personal smart devices and internet connections at their residences. Furthermore, possessing a lucrative occupation empowers older adults to acquire the financial means necessary to procure digital devices, which can facilitate their search for health-related information. In essence, older adults with greater financial resources possess the capacity to readily exploit numerous information outlets, including social media platforms and search engines (Anagaw & Guadie, 2023).

Irrespective of older adults' level of education, the process of accessing health information online can seem overwhelming due to an excessive amount of information. Although several older adults demonstrate a desire to independently seek online health information, the feeling of being overwhelmed throughout the search process compels them to depend on healthcare specialists (Walker et al., 2017).

The results indicate that older adults with cognitive impairments and limited educational backgrounds face challenges in comprehending complex medical information, in contrast to those with higher educational backgrounds. This is because older adults with higher levels of education are more likely to possess greater cognitive abilities. This is supported by a study conducted by Amin et al. (2023) that found older adults in America with a tertiary education exhibit superior cognitive ability and memory compared to individuals who completed secondary education. Another study by Lövdén et al. (2020) also suggests that educational attainment positively impacts cognitive function, with cognitive abilities linked to longer educational durations. Lövdén et al. added that the relationship between education and cognitive abilities is evident throughout adulthood and across all education levels, including tertiary education.

5. Conclusion

In conclusion, this study has provided insightful revelations into the complex interplay between socio-economic factors and health information-seeking behaviours among older adults. It reveals that older adults with physical and cognitive impairments struggle with understanding complex health information, leading to a lack of motivation to seek it, and difficulty accessing it through social networks or healthcare professionals. Highly educated older adults are more likely to search for health information online and use it when needed. Low-educated older adults are more likely to believe in alternative medicine and fall victim to false information. Older women show greater interest in health-related information due to their traditional roles as caretakers. Higher-income older adults are more active in their search for health information. Retired or unemployed older adults are more likely to seek health-related information due to their free time and better health care. Consequently, the review has revealed various research gaps. Further research is required to comprehend how older adults, who are considered digital immigrants and possess limited digital proficiency, can

effectively and autonomously seek health-related information. In addition, there appears to be a shortage of studies on the topic of accessing health information during a disease outbreak like COVID-19.

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Conflict of Interest

The authors declare no conflicts of interest.

References

- Abd Manaf, N. H., Omar, A., & Juhdi, N. (2021). Healthcare utilisation among elderly in Malaysia: The mediating role of health literacy. *The Medical journal of Malaysia*, 76(2), 218-222.
- Abd-Rahim, S. N. H., Mohamed-Yassin, M. S., Abdul-Razak, S., Isa, M. R., & Baharudin, N. (2021). The prevalence of limited health literacy and its associated factors among elderly patients attending an urban academic primary care clinic in Malaysia. *International journal of environmental research and public health*, 18(17), 9044. https://doi.org/10.3390/ijerph18179044.
- Adu-Gyamfi, S., & Asante, E. A. (2022). Sources of Information About COVID-19 Among Older Adults in Ghana, 2019-2021. *Journal of Social, Behavioral, and Health Sciences*, 16(1). https://doi.org/10.5590/jsbhs.2022.16.1.01.
- Altizer, K. P., Grzywacz, J. G., Quandt, S. A., Bell, R., & Arcury, T. A. (2014). A Qualitative Analysis of How Elders Seek and Disseminate Health Information. *Gerontology and Geriatrics Education*, 35(4), 337–353. https://doi.org/10.1080/02701960.2013.844693.
- Amin, V., Behrman, J. R., Fletcher, J. M., Flores, C. A., Flores-Lagunes, A., & Kohler, H.-P. (2023). *Does Schooling Improve Cognitive Abilities at Older Ages: Causal Evidence from Nonparametric Bounds*. https://repository.upenn.edu/psc_publications/92.
- Anagaw, T. F., & Guadie, H. A. (2023). Coronavirus disease 2019 information-seeking behavior globally: a systematic review. *SAGE Open Medicine*, 11, 20503121231153510. https://doi.org/10.1177/20503121231153510.
- Aponte, J., & Nokes, K. M. (2017). Electronic health literacy of older Hispanics with diabetes. *Health Promotion International*, 32(3), 482–489. https://doi.org/10.1093/heapro/day112.
- Awad, S. A., Ibrahim, H. D., Hassanen, R. H., & Abd-Elaziz, S. A. (2018). Health Literacy Program about Health Risk Behaviors among the Elderly in Geriatric Clubs at Assist City, Egypt. *IOSR Journal of Nursing and Health Science*, 7(3), 59–67. https://doi.org/10.9790/1959-0703065967.
- Bahtiar, B., Wiwi Saputri, Rostika Salenda Paseleng, Muh Akbar, & Restu Abady. (2021). Assessing Health Literacy of Elderly with Chronic Diseases during the COVID-19 Pandemic in Makassar City, Sulawesi Selatan, Indonesia. *Jurnal Keperawatan Dan Kesehatan*, 9(1), 113. https://doi.org/10.20527/dk.v9i1.9325.
- Bakeri, S. H. M. (2020). Malaysia 2030: Cabaran Negara Tua. Terengganu: Terengganu Strategic & Intergriti Institute (TSIS).
- Brown, G. C. (2015). Living too long. EMBO Reports, 16(2), 137-141. https://doi.org/10.15252/embr.201439518.
- Brown, T. (2011). Are you a digital native or a digital immigrant? Being client centred in the digital era. *Official Journal of The College of Occupational Therapists*, 7(4).
- Chen, S. Y. ching. (2020). Self-Care and Medical Treatment-Seeking Behaviors of Older Adults in Rural Areas of Taiwan: Coping with Low Literacy. *International Quarterly of Community Health Education*, 41(1), 69–75. https://doi.org/10.1177/0272684X20908846.
- Cotten, S. R., & Gupta, S. S. (2004). Characteristics of online and offline health information seekers and factors that discriminate between them. *Social Science and Medicine*, 59(9), 1795–1806. https://doi.org/10.1016/j.socscimed.2004.02.020.
- Eriksson-Backa, K., Enwald, H., Hirvonen, N., & Huvila, I. (2018). Health information seeking, beliefs about abilities, and health behaviour among Finnish seniors. *Journal of Librarianship and Information Science*, *50*(3), 284–295. https://doi.org/10.1177/0961000618769971.
- Harling, G., Kobayashi, L. C., Farrell, M. T., Wagner, R. G., Tollman, S., & Berkman, L. (2020). Social contact, social support, and cognitive health in a population-based study of middle-aged and older men and women in rural South Africa. *Social Science and Medicine*, 260, 1–10. https://doi.org/10.1016/j.socscimed.2020.113167.

- Healthy Aging. (n.d.). Pan American Health Organization. Retrieved October 28, 2023, from https://www.paho.org/en/healthy-aging.
- Jia, X., Pang, Y., & Liu, L. S. (2021). Online health information seeking behavior: A systematic review. *Healthcare*, 9(12), 1–15.
- Kivits, J. (2009). Everyday health and the internet: A mediated health perspective on health information seeking. *Sociology of Health and Illness*, 31(5), 673–687. https://doi.org/10.1111/j.1467-9566.2008.01153.x.
- Konca, M., Demirci, Ş., Çakmak, C., & Uğurluoğlu, Ö. (2022). Exploring the socio-economic determinants of health information-seeking behaviour on the Internet in Turkey. *Information Research*, 27. https://doi.org/10.47989/irpaper930.
- Kraus, S., Breier, M., & Dasí-Rodríguez, S. (2020). The art of crafting a systematic literature review in entrepreneurship research. *International Entrepreneurship and Management Journal*, 16(3), 1023–1042. https://doi.org/10.1007/s11365-020-00635-4.
- Lövdén, M., Fratiglioni, L., Glymour, M. M., Lindenberger, U., & Tucker-Drob, E. M. (2020). Education and Cognitive Functioning Across the Life Span. *Psychological Science in the Public Interest*, 21(1), 6–41. https://doi.org/10.1177/1529100620920576.
- Luo, A., Qin, L., Yuan, Y., Yang, Z., Liu, F., Huang, P., & Xie, W. (2022). The Effect of Online Health Information Seeking on Physician-Patient Relationships: Systematic Review. *Journal of Medical Internet Research*, 24(2).
- Mafauzy. (2000). The Problems and Challenges of the Aging Population. *Malaysian Journal of Medical Sciences*, 7(1), 7–9.
- Magsamen-Conrad, K., Dillon, J. M., Billotte Verhoff, C., & Faulkner, S. L. (2019). Online Health-Information Seeking Among Older Populations: Family Influences and the Role of the Medical Professional. *Health Communication*, 34(8), 859–871.
- Maguire, M., & Delahunt, B. (2017). Doing a Thematic Analysis: A Practical, Step-by-Step Guide for Learning and Teaching Scholars. *All Ireland Journal of Higher Education*, 3, 3351–3365.
- Mahmoodi, R., Hassanzadeh, A., & Rahimi, M. (2021). Health literacy and its dimensions in elderly people in Farsan city, Iran. *Journal of Education and Health Promotion*, 10(1). https://doi.org/10.4103/jehp.jehp 149 21.
- Matas, H., & Bronstein, J. (2018). A qualitative inquiry of old people's health literacy in situations of health uncertainty. *Health Information and Libraries Journal*, *35*(4), 319–330. https://doi.org/10.1111/hir.12234.
- Mitsutake, S., Takahashi, Y., Otsuki, A., Umezawa, J., Yaguchi-Saito, A., Saito, J., Fujimori, M., & Shimazu, T. (2023). Chronic Diseases and Sociodemographic Characteristics Associated with Online Health Information Seeking and Using Social Networking Sites: Nationally Representative Cross-sectional Survey in Japan. *Journal of Medical Internet Research*, 25, 1–19. https://doi.org/https://doi.org/10.2196/44741.
- Moe, S., Tha, K., Naing, D. K. S., & Htike, M. M. T. (2012). Health seeking behaviour of elderly in Myanmar. *International Journal of Collaborative Research on Internal Medicine & Public Health*, 4(8), 1538.
- Muhammad, M., & Ruslan, M. F. (2016). ICT Usage of Professional and Non-Professional Elderly in Workforce Article Information. In *International Academic Research Journal of Business and Technology* (Vol. 2, Issue 2).
- Nightingale, A. (2009). A guide to systematic literature reviews. *Surgery*, 27(9), 381–384. https://doi.org/10.1016/j.mpsur.2009.07.005.
- Old, J., & Scott, A. (2023). Healthy ageing trends in England between 2002 to 2018: Improving but slowing and unequal. *Journal of the Economics of Ageing*, 26. https://doi.org/10.1016/j.jeoa.2023.100470.
- Paimre, M. (2019). Do elderly people enjoy the fruits of Estonia's e-health system? *Proceedings of the 5th International Conference on Information and Communication Technologies for Ageing Well and E-Health*, 230–237.
- Pattath, P. (2021). A qualitative study of health information-seeking behavior on the Internet among information technology professionals. *Journal of Education and Health Promotion*, 10(1).
- Peričić, T. P., & Tanveer, S. (2019). Why systematic reviews matter. Elsevier. https://beta.elsevier.com/connect/why-systematic-reviews-matter?trial=true.
- Pourrazavi, S., Hashemiparast, M., Bazargan-Hejazi, S., Ullah, S., & Allahverdipour, H. (2021). Why Older People Seek Health Information Online: A Qualitative Study. *Advances in Gerontology*, 11(3), 290.

- Shi, Y., Ma, D., Zhang, J., & Chen, B. (2023). In the digital age: a systematic literature review of the e-health literacy and influencing factors among Chinese older adults. *Journal of Public Health*, 31, 679–687.
- Sun, Z., Yang, B., Zhang, R., & Cheng, X. (2020). Influencing factors of understanding covid-19 risks and coping behaviors among the elderly population. *International Journal of Environmental Research and Public Health*, 17(16), 1–16. https://doi.org/https://doi.org/https://doi.org/10.3390%2Fijerph17165889.
- Vogt, D., Schaeffer, D., Messer, M., Berens, E. M., & Hurrelmann, K. (2018). Health literacy in old age: Results of a German cross-sectional study. *Health Promotion International*, 33(5), 739–747. https://doi.org/10.1093/heapro/dax012.
- Walker, J., Crotty, B. H., O'Brien, J., Dierks, M. M., Lipsitz, L., & Safran, C. (2017). Addressing the Challenges of Aging: How Elders and Their Care Partners Seek Information. *Gerontologist*, 57(5), 955–962. https://doi.org/10.1093/geront/gnw060.
- Waterworth, S., & Honey, M. (2018). On-line health seeking activity of older adults: an integrative review of the literature. *Geriatric Nursing*, 39(3), 310–317. https://doi.org/10.1016/j.gerinurse.2017.10.016.
- World Health Organization. (2022). *Ageing and health*. https://www.who.int/news-room/fact-sheets/detail/ageing-and-health. https://www.who.int/news-room/fact-sheets/detail/ageing-and-health.
- Yağar, F. (2021). Fear of COVID-19 and Its Association with Health Literacy in Elderly Patients. *Journal of Patient Experience*, 8, 1–6. https://doi.org/https://doi.org/https://doi.org/10.1177%2F23743735211056506.
- Yunus, R. M., Saman, M. S., Zubillah, A., Juni, K. B., Gaairibi, A. S., Yahaya, A. N., ... & Philip, J. N. (2020). Health literacy among urban Malaysian elders: A descriptive study. *ASM Science Journal*, 13(5), 7-12.
- Zhao, X., & Basnyat, I. (2022). Online information and support seeking during COVID-19 lockdown in Wuhan: implications for health promotion. *Health Promotion International*, 37(3), 1–11.