Journal of Information and Learning, (2024), 35(3), 25-37
Journal homepage: https://so04.tci-thaijo.org/index.php/jil

Research Article

Health Information Seeking Behaviors and Development Guidelines for Muslim Elderly People in Pattani Province

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Received April 11, 2024 ▮ Revised August 2, 2024 ▮ Accepted August 7, 2024 ▮ Published December 24, 2024

Abstract

The objectives of this research were 1) to study health information seeking behavior (HISB) among elderly Muslims in Pattani province with differing personal factors, and 2) to study the development guidelines for HISB among elderly Muslims. The sample groups consisted of elderly Muslims aged 60 and above, selected through multistage random sampling, with a total of 400 people. Eleven experts were also selected for the purpose of qualitative study. Data was collected through questionnaires and semi-structured interviews in both Thai and local Melay ldialect. Data obtained was analyzed using the simple descriptive statistics include, percentages, means, and analysis of variance (ANOVA). The research findings revealed that the overall health information seeking behavior among elderly Muslims in Pattani province was at a moderate level (M = 3.35, SD = 0.76). Elderly Muslims in Pattani province with differing personal factors showed that their health information seeking behavior did not significantly differ overall, but significant differences were found in specific aspects at a significance level of .05. Moreover, the development guidelines can be summarized into eight approaches 1) developing the skills of the elderly in accessing health information resources, 2) developing caregivers' knowledge and skills in seeking health information, 3) developing media and communication channels aligned with culture, language, and religious, 4) strengthening the academic health knowledge of public health volunteers, 5) develop health information seeking behavior among the people before they reach old age, 6) developing the roles of religious leaders and mosque committee by equipping them with health care knowledge and skills, 7) develop the community health charters, and 8) establishing mechanism to encourage lifelong learning through the involvement of all sectors.

Keywords: elderly people, Muslim, health information seeking behaviors, health literacy

Introduction

The rapid growth of digital technology has made it much easier and faster for people to access various information and news than ever before, especially through online social media, which has almost replaced other media in disseminating information. This has led to a transformation of content producers from experts to online social media users who can create and distribute content more freely (The digital tips, 2022). This has had an impact on information consumers who may lack the knowledge and skills to evaluate information, especially health information, where there has been increased interest since the COVID-19 pandemic. There is widespread sharing and dissemination of health information, primarily through online social media platforms such as Facebook, Line, Instagram, and YouTube. However, much of this health information contains a significant amount of misinformation or fake news, such as the false claim that marijuana can cure COVID-19 (K@pook!, 2020) or the advertising of fake or low-quality dietary supplements (Thailand Consumers Council, 2023), leading to both direct and indirect impacts on consumers, including financial losses, wasted time, and negative health consequences in other aspects. Especially the elderly, who face more health issues than other age groups, experience physical, mental, and social deterioration, such as chronic illness, feeling of decreased self-worth, and becoming a burden of children. Additionally, they often suffer from sickness and neglect (Nawsuwan & Suwanraj, 2019). Moreover, Silangirn (2017) found that 52.5% of the elderly have moderate health care behavior, one factor related to the self-care behavior of the elderly is their awareness of health information. Elderly individuals with higher levels of education or those who got educated are better able to access beneficial sources and understand various health information. They have a greater ability to choose appropriate diets, activities, or practices compared to those with no or lower levels of education. Additionally, those with higher education levels have better skills in seeking health information, the confidence to ask questions, and the ability to exchange self-care information with experts or healthcare providers. Communication and health information seeking skills are crucial for supporting the health care of elderly individuals with various diseases. Having relevant information about their conditions enables patients to better understand their illnesses and how to care for themselves (Rungnoei et al., 2020). According to findings research found that most Thai people lack media literacy skills and have very low health literacy compared to other types of knowledge

especially elderly people are often become victims of fake news and misleading advertisements regarding health care. In the year 2022, it was noted that 22% of the elderly acknowledged being victims of deception through media, up from 16% in 2021. Among the elderly who are open to media, they are more likely to be victims than those who are not. The most common deceptions involve being persuaded to purchase low-quality goods (46.14%) and to buy medicines and health care products (30.23%) (Duangphummes, 2023). Consequently, it appears that while Thais are interested in health care, they lack resilience in preventing fake news or misinformation. Furthermore, it has been found that the elderly have insufficient health knowledge, especially regarding understanding health information, health communication, accessing health information sources, and health services (Boonsatean & Reantip-payasakul, 2020).

These situations show that health information seeking behavior is very important because it involves activities or behaviors related to information, connecting individuals to various information sources through dissemination channels. It encompasses the need for information, seeking information, and applying information as well as communication with others. These behaviors can manifest in face-to-face communication and receiving information from various media sources (Boonprakong et al., 2018). Information behavior reveals the steps involved in different activities such as the need for information, seeking information, exchanging information, and using information. It also helps to understand how people seek information, manage, provide, and use information in different contexts. Some individuals might abandon the process if the information need is not urgent or not important to their life at that moment (Chanlun, 2020). Health information seeking behaviors includes both active and passive approaches. The principle of HISB showed that individual behavior occurs from their needs to enhance or take care of healthier with 3 different goals: 1) who faces the health risk and need to seek information for solving health problems. 2) who need health information to support their medical decision and communicate with medical staff. And 3) who need to change his/her health behaviors for promoting healthy and preventing health problems (Lalazaryan & Zare-Farahbandi, 2014).

The elderly population in Pattani has been steadily increasing. In 2020, there were 88,994 elderly individuals, accounting for 12.26%, and in 2021, there were 90,654 elderly people, accounting for 12.43% (Office of Social Development and Human Security Pattani Province, 2022). This marks the first level of transitioning into an elderly society, with a full transition expected by the year 2573. Majority of populations in Pattani province are Muslims, 87.96%. However, the positive health behaviors among the elderly in Pattani province are only at 6.9%, the lowest compared to all provinces in the 12th health region. According to the study by Rakpanusit et al. (2020), elderly people in the southern border provinces generally have moderate health literacy, which is often insufficient for proper health care. Considering academic principles, health information seeking behaviors affected to health literacy (Jordan et al., 2010). Health information seeking is a method that aids individuals in searching for relevant health-related data, leading to improved health behavior changes and increased health literacy. Through research results, it has been found that most elderly people exhibit moderate level of health information seeking behaviors, with internet or online media being the lowest level utilized. (Jaemtim & Yuenyong, 2019; Boonchuay et al., 2020). As a result of the difficulty in using information and communication technology, and the overwhelming amount of information available on internet, it becomes challenging to evaluate and filter which information reliable and high quality (Chansirivat, 2012).

Therefore, health information seeking behavior for the elderly is crucial for supporting individuals find or search health information, enhancing their health behaviors and self-care (Trainattawan et al., 2020). It enables them to manage and protect themselves from various illnesses as stated by Lalazaryan and Zare-Farashbandi (2014), "One of the methods used to prevent disease is to provide patients with health information and encourage them to seek additional relevant health information... receiving accurate and sufficient health information ultimately leads to enhance health behaviors". This research is interested in studying health information seeking behavior of elderly Muslim in Pattani province by focusing on age, marriage status, gender, education level, occupation, income and exploring development guideline to enhance their behaviors and inform relevant agencies to design policy and drive the development of health information seeking behaviors of the elderly and all ages people in the close future.

Objectives

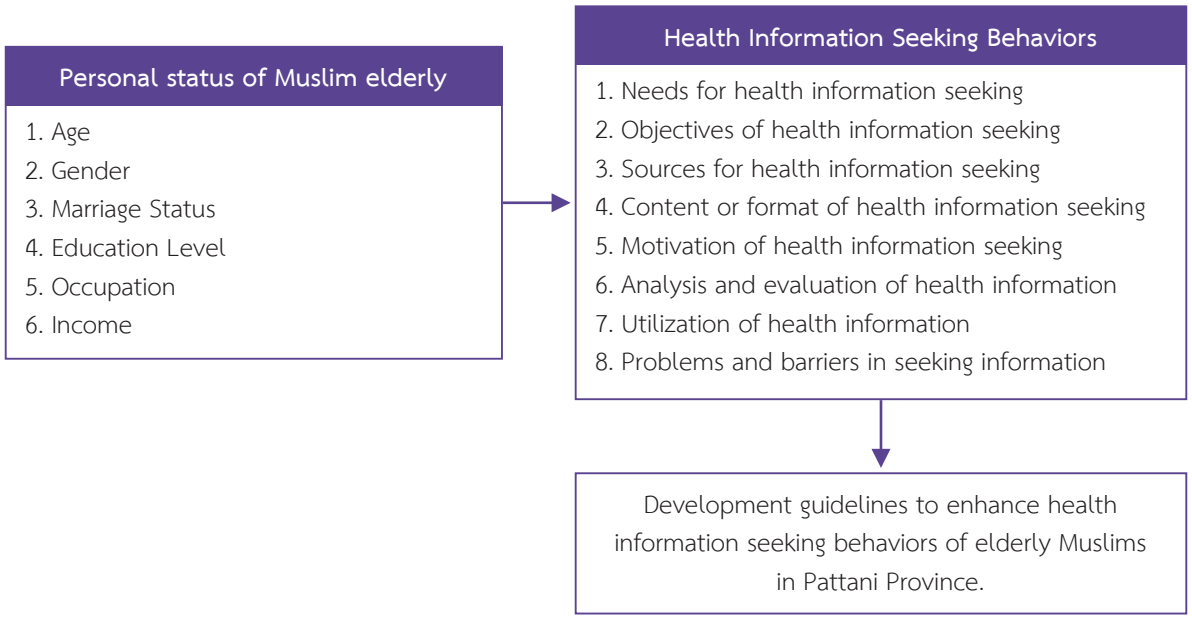
1. To study the health information behaviors of elderly Muslims in Pattani province.

2. To study development guidelines for health information seeking behaviors among elderly Muslims in Pattani province.

Conceptual Framework

This research is a study on health information seeking behavior, which involves the behaviors or actions of individuals in different ways to obtain the health information they need, such as healthcare information, health promotion activities, health risks, and illness conditions. The behaviors or actions in an individual's health information seeking cover the contexts of 1) health maintenance situations, 2) involvement and engagement in medical decision-making, and 3) behavior change and preventive behaviors. For the components of health information seeking behavior, various elements can be used as guidelines to develop a questionnaire on health information seeking behavior for the elderly in this study. These components include needs, stimuli or motivations, purposes or goals of information seeking, types of health information that align with the needs, search tools, channels or sources for accessing information, evaluation of information, and the application of information. (Freimuth & Stein, 1989; Lambert & Loiselle, 2007; Longo, 2005; Wongsate, 2013). Eight components adapted from the these academic elements have been applied for this research: 1) needs for health information seeking, 2) objectives of health information seeking, 3) sources of health information seeking, 4) content or format of health information seeking, 5) motivation of health information seeking, 6) analysis and evaluation of health information, 7) utilization of health information, and 8) problems and barriers in seeking information, as illustrated in Figure 1.

Figure 1
Conceptual Framework



Research Methodology

This research employs a survey-based approach, gathering both quantitative and qualitative data. Quantitative data collection about health information-seeking behaviors and health literacy of elderly Muslims aged 60 and above in Pattani province. Qualitative data collection aims to identify guidelines for developing health information seeking behaviors through interviews with 11 experts.

Research Samples and Sampling

The populations comprised elderly Muslims in Pattani province aged 60 and above, approximately 90,654 people (data for year 2021). Following the criterion of at least 10 participants per parameter (Hair et al., 2010), the sample size was initially set at 340. However, to protect data loss and incompleteness, the sample size was increased by 20%, total samples were 408 people with multi-stage sampling technique but yielding a dataset of 400 responses. Additionally, an expertise group for gathering data about guidelines to develop health information-seeking behaviors of elderly Muslims were 11 experts in health behavior development, Islamic studies, education, and medical personnel from the provincial public health office, selected based on their relevant expertise and contributions to the field.

Research Process

The research process was divided into two phases as follow:

Phase 1: To study the health information seeking behaviors of elderly Muslims in Pattani province. This phase aim to examine the level of health information-seeking behaviors of elderly Muslims, compare their health information seeking behaviors based on individual factors, and investigate the relationship between health literacy and health information-seeking behaviors among elderly Muslims.

Phase 2: To study development guidelines for health information seeking behaviors of elderly Muslims in Pattani province. The results of research were used to discuss in focus-group with 11 experts, then analyzed and summarized key issues that can apply both policy and practical interventions.

Ethical Considerations

Ethical clearance was obtained from the Ethics Committee for Humanities, Social Sciences and Education, Prince of Songkla University, Pattani Campus. (ethics approval number: psu.pn.2-026/65)

Research Instrument

The research instrument was a Likert scale questionnaire with 5 levels, available in both Thai and Malayu dialect languages. It consisted of three parts: Part 1 contained of participants' general information, part 2 was a questionnaire on health information-seeking behaviors with 60 items, and part 3 was an assessment of health literacy with 20 items. The tool was evaluated by 7 experts in health research, information technology, measurement and evaluation, and Malayu dialect language. The evaluation results by these experts revealed that the questionnaire had excellent quality, with an average score of 4.57, and it was further tested for reliability, yielding a confidence coefficient of 0.89.

Data Collection

The dataset was collected by these following steps:

1. Translated questionnaire into Malayu dialect language to facilitate reading and answering for elderly Muslims who can read books. And it was provided as a guideline for research assistants to gather data.

2. Trained research assistants the method to gather data and informed the confidential standards according to research ethics.

3. Prepared a cooperation request letter for gathering data and seeking permission from the community's leaders.

4. Gathered data with 400 elderly people in Pattani by explaining details such as research objectives, questionnaire-answering procedures, confidentiality standards, and the right to withdraw from data provision, and guidelines for giving consent.

5. Conducted qualitative data about strategic guidance on developing health-Information seeking behaviors by focus group techniques with 11 experts in health behavior development, information behavior of elderly people, Islamic studies, and medical professionals from Pattani Provincial Health Office.

Data Analysis

Data were gathered and analyzed by using descriptive statistics including calculating statistical values such as mean, standard deviation, percentage, and conducting Analysis of Variance (ANOVA) to examine variability.

Findings

The results of this study found that the sample group consisted of elderly Muslims aged 60 years and above, totally 400 participants. Most of them were females, 55%, age range was predominantly between 60-69 years, 52.50%, their majority were in martial relationship, 56.80%, had attained primary education level, 52.80%, and 63.80% weare not engaged in any occupation, with 41.30% having no income. The primary source of income for most participants was from elderly living allowance, 94.25%. Regarding language proficiency, most participants could not use Thai language; could not speak, 57.50%, could not read, 56.00%, and could not hear 41.50%. Additionally, 43.50% had high blood pressure. All research findings were presented according to research objectives as follow:

1. The findings of studying the level of health information seeking behavior among elderly Muslims with differing personal factors, as shown in the table 1-8.

This objective presents the research findings on the levels of health information seeking behaviors among elderly Muslim in Pattani province with 7 different personal factors. It is shown as table and figure 1-8.

Table 1
Level of Health Information Seeking Behaviors among Elderly Muslims in Pattani Province

Health Information Seeking Behaviors	*M*	*SD*	Level of Behavior
Needs for Health Information Seeking	3.54	1.29	High level
Objectives of Health Information Seeking	4.10	1.19	High level
Sources for Health Information Seeking	1.52	0.92	Low level
Content or Format of Health Information Seeking	3.89	1.22	High level
Motivation of Health Information Seeking	3.48	1.22	Moderate level
Analysis and Evaluation of Health Information	2.98	1.34	Moderate level
Utilization of Health Information	3.35	1.33	Moderate level
Problems and Barriers of Health Information Seeking	3.97	1.28	High level
Total	3.35	0.76	Moderate level

From Table 1, it is found that the overall level of health information seeking behavior was at a moderate level (M = 3.35, SD = 0.76). when considering each aspect, it shows that elderly Muslims has the highest average score of health information seeking behavior in terms of the objective of health information seeking (M = 4.10, SD = 1.19), follows by the aspect of problems and barriers in health information seeking (M = 3.97, SD = 1.28), the content desired for health information seeking (M = 3.89, SD = 1.22), and the need for health information seeking (M = 3.54, SD = 1.29) respectively. Meanwhile, the aspect of information source used for health information seeking has the lowest average score (M = 1.52, SD = 0.92), and the aspect of analysis and evaluation of health information (M = 2.98, SD = 1.34). These results indicated that elderly Muslims in Pattani Province had objectives and desired to seek health information, but they face up to problems and barriers in health information seeking. The sources of information used for seeking health information, and analysis and evaluation of health information has remained obstacles and significant problems for elderly Muslims in Pattani Province.

Table 2
Health Information Seeking Behaviors of Elderly Muslim in Pattani Among age Factors

Health Information Seeking Behaviors	Source of variation	*SS*	*df*	*MS*	*F*	*p*	Meaning
Sources for Health Information Seeking	Between group	25.379	2	12.689	16.011	<.001*	Different
	Within group	314.641	397	.793			
	Total	340.020	399				
Analysis and Evaluation of Health Information	Between group	13.166	2	6.583	3.712	.025*	Different
	Within group	704.045	397	1.773			
	Total	717.211	399				
Problems and Barriers of Health Information Seeking	Between group	24.493	2	12.247	7.786	<.001*	Different
	Within group	624.415	397	1.573			
	Total	648.908	399				

Table 2
(continued)

Health Information Seeking Behaviors	Source of variation	*SS*	*df*	*MS*	*F*	*p*	Meaning
Total	Between group	2.668	2	1.334	2.334	.099	Non different
	Within group	226.839	397	0.571			
	Total	229.507	399				

*Statistically significant at the .05 level

From Table 2, it is found that overall, elderly Muslims in Pattani province with different ages exhibit no significant difference in their health information seeking behaviors ($F = 2.334$, $p = 0.099$). However, upon considering each aspect, it is found that the elderly Muslims among different ages are statistically significant differences at the .05 level in sources of health information seeking ($F = 16.011$, $p < .001$), analysis and evaluation of health information ($F = 3.712$, $p = 0.025$), and problems and barriers ($F = 7.786$, $p < .001$) aspect.

Table 3
Health Information Seeking Behaviors of Elderly Muslims in Pattani Province Among Marriage Status Factors

Health Information Seeking Behaviors	Source of variation	*SS*	*df*	*MS*	*F*	*p*	Meaning
Sources for Health Information Seeking	Between group	22.415	4	5.604	6.969	<.001*	different
	Within group	317.605	395	0.804			
	Total	340.020	399				
Problems and Barriers of Health Information Seeking	Between group	31.738	4	7.934	5.078	<.001*	different
	Within group	617.170	395	1.562			
	Total	648.908	399				
Total	Between group	0.713	4	0.178	0.308	.873	
	Within group	228.794	395	0.579			
	Total	229.507	399				

*Statistically significant at the .05 level

From Table 3, it is found that, overall elderly Muslims in Pattani province with different martial statuses exhibit no significant difference in their health information seeking behaviors ($F = 0.308$, $p = 0.873$). However, upon considering specific aspects, it is found that elderly Muslims in Pattani with different martial statuses has statistically significant differences at the .05 level in sources for health information seeking ($F = 6.969$, $p < .001$) and aspects of problems and barriers in health information seeking ($F = 5.078$, $p = .001$).

Table 4

Health Information Seeking Behaviors of Elderly Muslim in Pattani, Among Education Level Factors

Health Information Seeking Behaviors	Source of variation	*SS*	*df*	*MS*	*F*	*p*	Meaning
Sources for Health Information Seeking	Between group	91.909	5	18.382	29.191	<.001*	Different
	Within group	248.110	394	0.630			
	Total	340.020	399				
Analysis and Evaluation of Health Information	Between group	25.051	5	5.010	2.852	.015*	Different
	Within group	692.160	394	1.757			
	Total	717.211	399				
Problems and Barriers of Health Information Seeking	Between group	112.766	5	22.553	16.574	<.001*	Different
	Within group	536.143	394	1.361			
	Total	648.908	399				
Total	Between group	3.724	5	0.745	1.300	.263	Non different
	Within group	225.783	394	0.573			
	Total	229.507	399				

*Statistically significant at the .05 level

From Table 4, it is found that, elderly Muslims in Pattani province with differing level of education, there is no significant difference in health information seeking behaviors overall (F = 1.300, p = 0.263). However, when considering specific aspects, it is found that elderly Muslims in Pattani province with differing levels of Education has statistically significant differences at the .05 level in the sources of information seeking (F = 29.191, p < .001), analysis and evaluation of health information (F = 2.852, p = 0.015), and problems and barriers of health information seeking behavior (F = 16.574, p < .001) respectively.

Table 5

Health Information Seeking Behaviors of Elderly Muslim in Pattani, Among Occupation Factors

Health Information Seeking Behaviors	Source of variation	*SS*	*df*	*MS*	*F*	*p*	Meaning
Sources for Health Information Seeking	Between group	81.890	6	13.648	20.779	<.001*	Different
	Within group	258.130	393	0.657			
	Total	340.020	399				
Analysis and Evaluation of Health Information	Between group	46.380	6	7.730	4.529	<.001*	Different
	Within group	670.831	393	1.707			
	Total	717.211	399				
Utilization of Health Information	Between group	24.558	6	4.093	2.369	.029*	Different
	Within group	678.912	393	1.728			
	Total	703.470	399				

Table 5
(continued)

Health Information Seeking Behaviors	Source of variation	*SS*	*df*	*MS*	*F*	*p*	Meaning
Problems and Barriers of Health Information Seeking	Between group	78.387	6	13.065	8.999	<.001*	Different
	Within group	570.521	393	1.452			
	Total	648.908	399				
Total	Between group	6.802	6	1.134	2.001	.065	Non different
	Within group	222.705	393	0.567			
	Total	229.507	399				

*Statistically significant at the .05 level

From Table 5, it is found that among elderly Muslims in Pattani province with differing occupations, there is no significant difference in health information seeking behavior overall ($F = 2.001, p = 0.065$). However, when considering specific aspects, it is found that elderly Muslim in Pattani with differing income levels exhibited statistically significant differences at the .05 level in sources of health information seeking ($F = 20.779, p < .001$), analysis and evaluation of health information ($F = 4.529, p < .001$), utilization of health information ($F = 2.369, p = 0.029$), and problems and barriers in seeking health information ($F = 8.999, p < .001$) respectively.

Table 6
Health Information Seeking Behaviors of Elderly Muslim in Pattani, Among Income Factors

Health Information Seeking Behaviors	Source of variation	*SS*	*df*	*MS*	*F*	*p*	Meaning
Needs for Health Information Seeking	Between group	7.071	6	1.178	0.700	.649	Non different
	Within group	661.256	393	1.683			
	Total	668.326	399				
Objectives of Health Information Seeking	Between group	5.740	6	0.957	0.673	.672	Non different
	Within group	558.817	393	1.422			
	Total	564.556	399				
Sources for Health Information Seeking	Between group	81.890	6	13.648	20.779	<.001*	Different
	Within group	258.130	393	0.657			
	Total	340.020	399				
Content or Format of Health Information Seeking	Between group	8.762	6	1.460	0.988	.433	Non different
	Within group	580.738	393	1.478			
	Total	389.500	399				

Table 6
(continued)

Health Information Seeking Behaviors	Source of variation	*SS*	*df*	*MS*	*F*	*p*	Meaning
Motivation of Health Information Seeking	Between group	18.078	6	3.013	2.059	.057	Non different
	Within group	575.052	393	1.463			
	Total	593.130	399				
Analysis and Evaluation of Health Information	Between group	46.380	6	7.730	4.529	<.001*	Different
	Within group	670.831	393	1.707			
	Total	717.211	399				
Utilization of Health Information	Between group	24.558	6	4.093	2.369	.029*	Different
	Within group	678.912	393	1.728			
	Total	703.470	399				
Problems and Barriers of Health Information Seeking	Between group	78.387	6	13.065	8.999	<.001*	Different
	Within group	570.521	393	1.452			
	Total	648.908	399				
Total	Between group	6.802	6	1.134	2.001	.065	Non different
	Within group	222.705	393	0.567			
	Total	229.507	399				

*Statistically significant at the .05 level

From Table 6, it is found that among elderly Muslims in Pattani province with differing income levels, there is no significant difference in overall health information seeking behavior (F = 2.001, p = 0.065). However, when considering specific aspects, it is found that elderly Muslims in Pattani province with differing income levels exhibited statistically significant differences at the .05 level in aspects of sources of health information seeking (F = 20.779, p < .001), analysis and evaluation of health information (F = 4.529, p < .001), utilization of health information (F = 2.369, p = 0.029), and problems and barriers in health information seeking (F = 8.999, p < .001).

Table 7
Health Information Seeking Behaviors of Elderly Muslim in Pattani, Among Gender Factors

Health Information Seeking Behaviors	Male		Female	
	M	*SD*	*M*	*SD*
Needs for Health Information Seeking	3.59	1.26	3.50	1.32
Objectives of Health Information Seeking	4.15	1.14	4.06	1.23
Sources for Health Information Seeking	1.63	0.97	1.43	0.88
Content or Format of Health Information Seeking	3.88	1.24	3.90	1.20
Motivation of Health Information Seeking	3.50	1.23	3.46	1.21

Table 7
(continued)

Health Information Seeking Behaviors	Male		Female	
	M	*SD*	*M*	*SD*
Analysis and Evaluation of Health Information	3.10	1.32	2.87	1.35
Utilization of Health Information	3.46	1.32	3.27	1.33
Problems and Barriers of Health Information Seeking	3.90	1.31	4.04	1.24
Total	3.40	0.76	3.31	0.76
Level of behavior	Moderate		Moderate	

From Table 7, it is found that among elderly Muslims in Pattani province with differing genders, there is no significant difference in health information seeking behavior, with a moderate level. Males have an average behavior level of 3.40, while females have an average behavior level of 3.31, respectively.

2. The study results on guidelines for developing health information seeking-behavior among elderly Muslims in Pattani province.

The findings of qualitative research with focus group discussion among 11 experts, found that 8 useful development guidelines to enhance Muslim elderly's health information seeking behaviors are as follows:

1) develop the elderly's skills for accessing health information sources because of health information sources are disseminated in healthcare facilities, by medical personnel, and through radio, television, print media, and online platforms, moreover, the research finding shows that sources for health information seeking are at a low level. Therefore, it is essential to develop information seeking skills, questioning, and conversation with medical personnel, as well as in using technology to access health information from reliable sources.

2) develop caregivers' knowledge and skills in seeking health information especially, access health information resources, use technology to track and seek health information, conversation with medical personnel, analyze and evaluate information to prevent the misuse of incorrect health information among the elderly, recognizing fake news, and understanding health media.

3) develop media and communication channels that align with culture, language, and religion. Most elderly Muslims in Pattani Province cannot listen, speak, read, or write in Thai, creating a barrier to accessing health information disseminated in various media types. Therefore, developing media content must follow principles that use the language elderly people use in their daily lives, making it easy to understand. The health content should be straightforward, immediately actionable, and not complicated.

4) strengthen the academic health knowledge of public health volunteers by developing digital technology skills for seeking health information beneficial to the local population, and enhancing health communication skills to explain health information in a way that is easy for the public to understand, it will be possible to provide advice and address basic issues before referring individuals to doctors for further diagnosis and treatment.

5) develop health information seeking behavior among the people before they reach old age, to prepare their health literacy and the ability to select accurate and appropriate health information. These can be used to maintain health and prevent diseases or premature health deterioration before reaching old age.

6) promote the roles of religious leaders and mosque committee by equipping them health care knowledge and skills, integrating Islamic principles into health care information which can promote the correct and safe utilization health information of the public in accordance with both health and religious principles.

7) develop the community health charters align with religious principles, lifestyles, and local culture for enabling the community to take care of one another, provide mutual support in health matters, and be guided by public health agencies and educational institutions.

8) establish mechanism to encourage lifelong learning through the involvement of all sectors with the process of 3 parts stimulation; (1) information users,

(2) service providers, (3) health information which must be produced in accordance with the local context.

Discussion and Conclusion

The research finding from this study indicate that most of elderly Muslims, regardless of gender, age, occupation, socioeconomic status, and background, exhibit health information seeking behaviors at a moderate level overall. Similarly, in a study by Silagirn (2017), it was found that 52.5 percent of elderly people had moderate health care behaviors. One of the factors related to self-care behavior among the elderly is their perception of health information. When elderly people have higher levels of education or access to various health information sources, they are more likely to make informed choices regarding diet, activities, or appropriate self-care methods compared to those with lower levels of education or limited access to information.

Upon further study, it is found that elderly Muslims exhibit a high level of health information seeking behavior in aspect of the needs for health information seeking, objectives of health information seeking, and motivation of health information seeking. Most of information sought is for disease treatment, prevention, and alleviation of the severity of their own illness, according to the study by Boonchuay et al. (2020), which found that the elderly in Songkhla province primarily seek health information with the utmost intention of disease prevention. They seek information regarding various diseases commonly affecting the elderly, such as heart disease, bone disease, hypertension, cancer, kidney disease, arthritis, Alzheimer's, and diabetes.

However, the findings show that health information seeking behaviors in aspect of the sources of health information seeking is at a low level. Most of them obtain health information through inquiries with medical personnel or public health volunteers because of the relatively impoverished status of elderly Muslims, who often do not engage in employment and lack regular income, relying on living allowance from government and occasionally from their son/daughter. They often lack digital technology equipment, radios, or televisions (in rural areas). Consequently, they are unable to access health information from various sources. Moreover, most of elderly Muslims speak Malayu dialect but cannot read, write, and speak Thai language, which is barriers to access some media formats of health information, such as online platforms, printed media, or academic documents which published in Thai language. This result is significant challenges in health information seeking because communication skills and ability to seek health information are crucial factors in supporting the health care of elderly people with various diseases. The more they get health information, the more they understand and take care of themselves properly (Rungnoei et al., 2020).

Moreover, the findings show that their health information seeking behaviors in aspect of problems and barriers of health information seeking behaviors is at a high level. Especially, the sources of health information seeking are limited, the motivation for health information seeking, and the analysis and evaluation of health information are at a moderate level. This aligns with findings of scholars, who have found that factors influencing the health information seeking behavior of the elderly include fundamental cultural, linguistic, gender, and health literacy factors. Minority or ethnic groups in countries often face more difficulties in accessing health information compared to the majority population (Lorence et al., 2006; Gholami et al., 2014; Ponce et al., 2006).

The guidelines for developing health information seeking behaviors among elderly Muslims consist of 8 guidelines, which align with the advancements in digital technology and global societal communication, leading to health information seeking behaviors becoming a global trend that continues to increase with technological advancements (Jia et al., 2021). These guidelines can enhance the elderly people to receive beneficial and accurate health information leading to self-care and prevention of health risks both physically and mentally. Moreover, it helps reduce healthcare costs and decrease the burden of elderly care, because health information literacy is crucial for enhancing health care planning and self-care capabilities. Accessing information sources will help individuals develop themselves into knowledgeable individuals in health information and enable them to utilize information for maximum benefit to their health status (Saekwung, 2022). Moreover, it also helps the elderly gain health knowledge, which serves as an indicator of intellectual and social skills that determine motivation and ability of individuals to access, understand, and utilize health information to continuously promote and maintain their health (Nutbeam, 1998). Therefore, the development of health information seeking behaviors among the elderly must involve not only the elderly themselves but also their caregivers, healthcare service providers, media producers, and health information providers, as well as community members who need to collaborate to create mechanisms that drive health-related activities along with the cultural,

linguistic, and religious needs of the elderly and people in that area. This makes them receive beneficial and accurate health information that leads to self-care, protection from health risks, both physical and mental. It helps reduce healthcare costs and the burden of the elderly care.

Recommendations

Recommendations for implementing research findings

1. Relevant agencies should utilize these research findings in designing policy and curricula to promote health information seeking behaviors among the elderly and all ages people. This will help them with the necessary skills and knowledge to effectively care for themselves, stay informed about health information, and maintain good health.

2. The elderly caregivers, both family members and community members, should collaborate to strengthen the provision of accurate information to the elderly. They can achieve this by providing accurate news and information tailored to the diverse linguistic, educational, and cultural backgrounds of the elderly, or by sourcing appropriate health information for different elderly individuals.

Recommendation for future research

For future research endeavors, it is advisable to pursue the development of the elderly in tandem with research on various interesting topics as follows:

1. Conduct studies on the development of learning media and health information sources tailored to the cultural, religious, and linguistic diversity of the elderly population.

2. Investigate the roles of community leaders or religious leaders in promoting health information seeking behaviors and health literacy among the elderly in communities.

3. Explore research on the development of mechanisms for collaboration among relevant organizations to foster continuous learning and lifelong health information seeking behaviors and health literacy among the elderly.

4. Provide the sources of health information seeking for all ages to access easily by creating media and channels to deliver health information align with their culture, languages, and religion.

Acknowledgements

This research received funding support from the Research Fund of Prince of Songkla University, Pattani Campus and received good support and facilitation for gathering data from community leaders in Pattani Province. This fruitful collaboration contributed to the success of this research. Thank you and give an honor for all support.

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