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Factors influencing health service utilization among the elderly in Insein Township, Yangon Region

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Factors influencing health service utilization among the elderly in Insein Township, Yangon Region

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Abstract

Background: With the increasing needs of the aging population and the increasing prevalence of non-communicable diseases, assessment of the equity and accessibility of health care among the elderly has become important. **Methods:** A cross-sectional descriptive study was conducted from December 2018 to December 2019 among 225 elderly to describe the factors influencing health service utilization. Multistage sampling was applied, and structured questionnaire was used to interview the elderly. Chi-squared test and multiple logistic regression were performed in data analysis. **Results:** The average age of the respondents was 71.7 ± 8.17 years old, and 68.4% of the respondents utilized health services within a year. Although sex, health habit, and diagnosed chronic disease were associated with health service utilization in bivariate analysis, multiple logistic regression results reported that physical exercise [adjusted odd ratios (AOR) = 3.02, 95%CI: 1.07–8.53], financial support of family [AOR = 2.77, 95%CI: 1.00–7.69], perceived transportation cost [AOR = 0.08, 95%CI: 0.01–0.54], accessibility to health care personnel [AOR = 0.14, 95%CI: 0.04–0.50], and perceived health status [AOR = 0.03, 95%CI: 0.01–0.09] were predictors of health service utilization. **Conclusion:** This study highlighted the significant influence of perceived health status, financial support of family, perceived transportation cost, and accessibility to health care personnel referred to the possible indicators of health care inequality issues.

Keywords: accessibility, elderly, health services

Introduction

The aging population of the world is increasing because of declining birth and death rates and increasing life expectancy. The dynamic evolution is causing a significant shift in the global age, and elderly structure is projected to reach 1.4 billion by 2030 and almost 2.1 billion by 2050. Globally, the older population reached 962 million in 2017, more than twice of the number in 1980.¹ The enumerated older population in Myanmar was 4.5 million, representing 8.9% of the total population in 2014.²

The growth rate of chronic and degenerative diseases is a major epidemiologic trend,³ and the risk of chronic diseases increases with age because of physiological changes and multimorbidity.⁴ The mortality due to stroke, heart disease, diabetes, and kidney disease doubled during 1990–2010.⁵ With the rising concern to promote elderly health and healthy aging, an elderly health care project has been included in the National Health Plan (NHP) and incorporated into primary health care services since 1993.⁶

Apart from routine health center-based elderly care, the project included specialist outreach and clinic-based geriatric services, including a proper referral system,

rehabilitation services, nutritional counseling, health education, and vaccination, which were provided for ambulatory elderly weekly. A geriatric clinic had been run in Insein General Hospital, which was highly utilized by the elderly, and its sustainability was dependent on resource availability. Health policies targeting the older population, inadequate resources, and limited capacity have hindered the sustainability of such geriatric services.⁶

Estimated 68% of all recent deaths in Myanmar were caused by non-communicable diseases (NCDs),⁷ and the national strategic plan (2017–2021) addresses the importance of controlling the growth of NCD burden, targeting adults rather than the elderly.⁶ The Package of Essential NCD (PEN) project has been integrated into primary health care in the township to control the growth of NCD burden.⁸

The Ministry of Health and Sports (MoHS) is the major player in comprehensive health care and introduced the cost sharing system in 1993. Private out-of-pocket (OOP) payment became the main source of finance in health system financing.⁹ Although NHP (2017–2021) extended access to the basic Essential Package of Health Services, health insurance bill and health financing reforms are still in progress.¹⁰ Furthermore, health service utilization and costs for health care are increasing with the aging

population.¹¹ The majorities of those populations are economically inactive and depend on their families for material support.

The national research by HelpAge International in 2012 revealed that only one third of older people reported good or very good health and that poor health significantly increased with age. Nearly 90% of those aged 80 and above reported at least one difficulty in physical function. Although the majority of older people who were ill or injured received some treatment, over 3% of the respondents reported that they did not receive treatment even if they needed.¹²

Previous studies reported that the elderly visited medical personnel (68.0%), used diagnostic services (53.0%), utilized the emergency department (8.0%), were hospitalized within a year (12.5%), visited general practitioners (GPs) (83.5%), and consulted with specialists (9.1%).^{13,14} Factors that are associated with health service utilization and serve as predictors of health service utilization include chronic diseases, age, educational status, family or social support, travel time to the nearest health facility, family income, marital status, self-reported health problem, singularity and multiplicity of health problem, self-perceived health, activities of daily living (ADL), awareness on the service of health care facilities, and perception toward health seeking behavior.^{15–18}

According to Andersen, access to equitable health services is required in considering health care utilization.¹⁹ Above all, older people have the right to receive the highest attainable standard of health, accessing available health facilities, goods, and services without discrimination and in good quality.²⁰ Identification of factors influencing health service utilization could further highlight the needs as crucial in promoting elderly health care services and planning nursing practices to help the elderly maintain good health and functional independence.²¹ This study might have implications on future consideration of elderly health needs and promote their health in the family and community.

Methods

A cross-sectional study was conducted to describe the factors influencing health service utilization among the elderly in Insein Township, Yangon Region from October 2018 to October 2019. Ethical approval was obtained from the Ethics and Research Committee, University of Nursing, Yangon. Specific objectives of the study were to determine the predisposing factors, the enabling factors, and the need factors influencing health service utilization among the elderly. A total of 225 elderly were included in this study. Multistage sampling was used to recruit the elderly in 45 households, each from 5 out of 21 quarters in the Township. The

instrument was based on three health determinants: predisposing characteristics, enabling factors, and need-based characteristics as depicted in Anderson's model of health care utilization.²²

Thirty structured questionnaires in four main parts were included in the instrument: 10 items of socio-demographic factors as predisposing factors; 8 items regarding resources availability to access health facility in terms of cost and awareness on services as enabling factors; 3 items regarding individual health status and Katz ADL items as need factors; 9 items regarding health service utilization within a year, including health screening, acute care (clinical visit for minor ailment), hospitalization, and follow-up care as well as reasons for utilization, utilized health facility, and health care resource persons. The item-level content validity index (I-CVI) ranged from 0.6 to 1 while the scale-level content validity index (S-CVI) of the questionnaire was 0.84 and higher. Reliability was checked. Cronbach's alpha coefficient of awareness on services was 0.71, and Katz ADL was 0.95. Elderly who met the criteria, including age 60 years and older, able to read and write, having no physical and mental illness, and have intact memory, were interviewed door-to-door for data collection.

Data obtained from the participants were analyzed using SPSS version 20. Categorical data were presented by percentage. Mean, standard deviation (SD), and median were identified for continuous variables, such as age and awareness on the services of health care facilities. Correct responses on awareness on the services of health care facilities were scored "1" and "don't know," and incorrect responses were scored "0." Total scores of awareness on services of each respondent were categorized as "Below median" (low level of awareness) and "the median and above" (high level of awareness). Katz ADL scores of respondents were also categorized into "dependent" (below 6) and "independent" (6).²³

For further analysis, some variables were recoded to indicate dichotomies and trichotomies. Bivariate analysis was conducted to examine the association between dependent and independent variables. Multiple logistic regression was performed to identify the independent effects of each variable on the dependent variables by adjusting covariates. The odds ratio with its *p* and confidence interval was identified in each logistic regression analysis. Statistical significance was considered at *p* < 0.05.

Results

Predisposing factors. As shown in Table 1, 225 of the elderly in this study were 60–100 years old with a mean age of 71.7 ± 8.17 . The age of the respondents ranged from 60 to 100 years, and half of the respondents were

71 years and above. In this study, more elderly (44.4%) were 60–69 years old and 63.6% were female. More than half of the respondents (58.2%) were married and whose partner is still alive. Only a few elderly attained college/degree (8.9%) and high school level of basic education (27.1%). Many elderly lived in an extended family (68.9%) and have five and more family members (55.6%), and only a small percentage (3.1%) lived alone. Many elderly were unemployed (55.1%) and had no income at all (52.9%). Some elderly were pensioner (32%), still working (12.9%), and had personal income less than 50,000 Kyats per month (9.3%). Some respondents had habits of smoking, alcohol drinking, and betel chewing, whereas a high percentage of the respondents had never performed physical exercise.

Table 1. Predisposing factors among the elderly (N = 225)

Variables	Numbe of respondents	Percentage (%)
Age		
60–69	100	44.4
70–79	84	37.4
≥80	41	18.2
Sex		
Male	82	36.4
Female	143	63.6
Marital Status		
Single	7	3.1
Married	131	58.2
Divorced/Widowed	87	38.7
Education Status		
Monastic education	30	13.3
Primary school	56	24.9
Middle school	58	25.8
High school	61	27.1
College/Degree	20	8.9
Income per month (Kyats)		
Nil	119	52.9
<50,000	21	9.3
50,000–100,000	41	18.2
>100,000	44	19.6
Type of family		
Nuclear	63	28.0
Extended	155	68.9
Single	7	3.1
Habit		
Smoking		
Yes	32	14.2
No	193	85.8
Alcohol drinking		
Yes	4	1.8
No	221	98.2
Betel chewing		
Yes	69	30.7
No	156	69.3
Physical exercise		
>5 times/week	75	33.3
3–5 times/week	50	22.3
Never	100	44.4

Enabling factors. As described in Table 2, over half of the respondents (57.3%) had no financial support of family, and some (30.7%) did not have enough money to utilize health services. Most of the respondents (68.4%) took less than 15 minutes to reach the nearest health care facility, and 86.2% of those perceived that the distance was near. Almost all of the respondents (99.6%) had access to transportation to reach the nearest health care facility. Half of the respondents (55.1%) can arrive at a health facility with no cost, whereas a few respondents (2.2%) perceived transportation as expensive. Only a few respondents (16.9%) had access to health care personnel, whereas most of the respondents (83.1%) did not have access to health care personnel. Moreover, the scores of awareness on the services of health care facilities ranged from 0 to 9. The mean score was 6.02 ± 2.3 . Over half of the respondents (51.1%) had a high level of awareness, and the remaining (48.9%) had a low level of awareness.

Need factors. Table 3 presents the need factors among the elderly. Most of the elderly (63.6%) had been diagnosed with chronic diseases. The most common disease was hypertension (79%), followed by heart disease (27.3%), diabetes (21%), and arthritis (11.2%). Although the respondents (26.7%) reported a “good” health status, some respondents perceived the health status as “poor” (32%) and “fair” (41.3%). Regarding ADL, a few respondents (5.3%) were dependent, and the majority of the respondents (94.7%) were independent.

Table 2. Enabling factors among the elderly (N = 225)

Enabling factors	Number of respondents	Percentage (%)
Financial support of family		
Yes	96	42.7
No	129	57.3
Money to utilize health service		
Enough	156	69.3
Not enough	69	30.7
Travel time to the nearest health care facility		
<15 minutes	154	68.4
≥15 minutes	71	31.6
Perceived distance to the nearest health center		
Near	194	86.2
Fairly near	30	13.4
Far	1	0.4
Accessible transportation to health care facility		
Yes	224	99.6
No	1	0.4
Perceived transportation cost		
Expensive	5	2.2
Fair	22	9.8
Cheap	74	32.9
Not necessary	124	55.1
Accessible to health care personnel		
Yes	38	16.9
No	187	83.1
Awareness on the services of health care facilities		
Low level	110	48.9
High level	115	51.1

Health service utilization. Most of the elderly (68.4%) utilized health services, whereas some of the respondents (31.6%) did not utilize health services within a year. Among the elderly who utilized health services, the majority of the elderly (90.9%) having hypertension (49.3%) utilized health services for acute care, and only a small percentage (9.7%) of the respondents utilized health services for health screening. Although some respondents (42.9%) utilized follow-up care for hypertension (47%), a few elderly (10.4%) were admitted to the hospital for vision problem (31.3%) within a year. The most common health care resource among the respondents was doctor (90.7%), whereas some respondents (21.3%) practiced self-medication. The majority of the respondents utilized nearby GP clinics.

Bivariate analysis of factors associated with health service utilization. Bivariate analysis (chi-square test) are shown in Table 4. Sex and habit were statistically associated with health service utilization ($p \leq 0.001$ and $p = 0.005$). More females (76.9%) utilized health services than males (53.7%). More elderly without at risk habits (75.8%) utilized health services than those with at risk habits.

Regarding the enabling factors, financial support of family, perceived transportation cost, and accessibility to health care personnel were associated with health service utilization ($p = 0.034$, $p = 0.050$, and $p = 0.021$). The elderly receiving financial support of family (76%) had greater utilization than those not receiving financial support of family (62.8%). Despite perceiving

transportation cost “fair or expensive,” most of the respondents utilized health service (88.9%) than others. The elderly without access to health care personnel (71.7%) utilized health services more than those with access to health care personnel (52.6%).

Statistically significant association was found between health service utilization and some need factors, such as diagnosed chronic disease and perceived health status ($p \leq 0.001$ and $p \leq 0.001$). Elderly (81.1%) who were diagnosed with a chronic disease utilized health services more than those without a chronic disease (46.3%). However, the respondents who perceived their health status as “fair” or “poor” showed greater utilization (85.5%) than the respondents who perceived their health status as “good” (21.7%).

Table 3. Need factors among the elderly (N = 225)

Need factors	Number of respondents	Percentage (%)
Diagnosed chronic diseases		
Yes	143	63.6
No	82	36.4
Perceived health status		
Good	60	26.7
Fair	93	41.3
Poor	72	32
Activities of daily living		
Dependent (<6)	12	5.3
Independent (6)	213	94.7

Table 4. Bivariate analyses of factors associated with health service utilization

Category	Health service utilization		p
	Yes (N = 154)	No (N = 71)	
Sex			<0.001*
Male	44 (53.7%)	38 (46.3%)	
Female	110 (76.9%)	33 (23.1%)	
Habit			0.005*
At risk	54 (58.1%)	39 (41.9%)	
No risk	100 (75.8%)	32 (24.2%)	
Financial support of family			0.034*
Yes	73 (76%)	23 (24%)	
No	81 (62.8%)	48 (37.2%)	
Not necessary	82 (66.1%)	42 (33.9%)	
Perceived transportation cost			0.050*
Cheap	48 (64.9%)	26 (35.1%)	
Fair or expensive	24 (88.9%)	3 (11.1%)	
Accessible to health care personnel			0.021*
Yes	20 (52.6%)	18 (47.4%)	
No	134 (71.7%)	53 (28.3%)	
Diagnosed chronic disease			<0.001*
Yes	116 (81.1%)	27 (18.9%)	
No	38 (46.3%)	44 (53.7%)	
Perceived health status			<0.001*
Good	13 (21.7%)	47 (78.3%)	
Fair or poor	141 (85.5%)	24 (14.5%)	

* $p \leq 0.05$

Table 5. Multiple logistic regression of factors influencing health service utilization

	Health service utilization			
	COR (95% CI)	<i>p</i>	AOR (95% CI)	<i>p</i>
Sex				
Male	1		1	
Female	0.35 (0.19 – 0.62)	<0.001*	0.50 (0.18 – 1.38)	0.180
Habit				
At risk	1		1	
No risk	0.44 (0.25 – 0.79)	0.005*	0.52 (0.20 – 1.34)	0.178
Physical exercise				
Perform exercise	1		1	
Do not perform exercise	0.74 (0.42 – 1.31)	0.305	3.02 (1.07 – 8.53)	0.037*
Financial support of family				
Yes	1		1	
No	1.88 (1.04 – 3.39)	0.036*	2.77 (1.00 – 7.69)	0.050*
Perceived transportation cost				
Not necessary	1	0.075	1	0.031*
Cheap	1.06 (0.58 – 1.94)	0.856	0.79 (0.29 – 2.16)	0.651
Fair or expensive	0.24 (0.07 – 0.86)	0.028*	0.08 (0.01 – 0.54)	0.010*
Accessible to health care personnel				
Yes	1		1	
No	0.44 (0.22 – 0.90)	0.024*	0.14 (0.04 – 0.50)	0.003*
Diagnosed chronic disease				
Yes	1		1	
No	4.98 (2.72 – 9.09)	<0.001*	2.27 (0.79 – 6.50)	0.127
Perceived health status				
Good	1	<0.001*	1	
Fair or poor	0.47 (0.02 – 0.10)	<0.001*	0.03 (0.01 – 0.09)	<0.001*

**p* ≤ 0.05

Multiple logistic regression of factors influencing health service utilization. As described in Table 5, multiple logistic regression was carried out to determine independent factors influencing health service utilization. In the model, all predisposing factors, enabling factors, and need factors were included, except accessible transportation. The variable accessible transportation was excluded because of its lack of an odds ratio and effect on the model. Results were presented in terms of odd ratios, which included crude odd ratios (COR) and adjusted odd ratios (AOR) with *p* and confident intervals.

The respondents who did not perform physical exercise utilized health services 3.02 times more than those who performed physical exercise [AOR = 3.02, 95%CI: 1.07–8.53]. In addition, the respondents who had no financial support utilize health services 2.77 times more than those who had financial support [AOR = 2.77, 95%CI: 1.00–7.69]. Conversely, the respondents who perceived the transportation cost as “fair” or “expensive” were 92.0% less likely to utilize health services compared with others [AOR = 0.08, 95%CI: 0.01–0.54].

The respondents without access to health care personnel were 86.0% less likely to utilize health services than those with access to health care personnel [AOR = 0.14,

95%CI: 0.04–0.50]. Furthermore, the respondents who perceived their health status as “fair” or “poor” were 97.0% less likely to utilize health services than those who perceived their health status as “good” [AOR = 0.03, 95%CI: 0.01–0.09].

Discussion

Predisposing factors influencing health service utilization. Predisposing factors including sex and health habit were statistically associated with health service utilization and served as significant predictors of health service utilization in univariate analysis. However, physical exercise was the only predisposing factor influencing health service utilization after adjusting for the effect of other variables in the model.

Previous studies presented different points of view on sex. In this study, inequality in health service utilization by sex existed among the respondents. In Bangladesh and Ethiopia studies, female respondents were less likely to utilize health care than male respondents.^{24,25} However, some studies reported that women used outpatient services more than men did.^{26,27} A recent local study has shown that health seeking behavior was not associated with sex.²⁸ Gender equity was an issue to consider for health

service utilization and in delivery of health care services.

The respondents with at risk habits were less likely to utilize health services than their counterparts. Habits such as smoking, alcohol drinking, and betel chewing are behavioral risk factors of NCD.²⁹ Thus, those individuals with behavioral risk factors utilized more health services than their counterparts.

In this study, the older people who did not perform physical exercise were more likely to utilize health services than those individuals who performed physical exercise. Thus, those individuals who did not perform physical exercise may experience more sickness than their counterparts. WHO recommend physical activity for health³⁰ and exercise was a cost effective way of preventing and managing certain chronic diseases and conditions.

Enabling factors influencing health service utilization. Some enabling factors, such as financial support of family, perceived transportation cost (fair or expensive), and accessibility to health care personnel, were significantly associated with health service utilization and served as significant predictors of health service utilization.

The elderly who had no financial support of family were more likely to utilize health services than those individuals who had financial support. In contrast, studies in Ghana and Ethiopia reported that respondents with no financial support were significantly less likely to utilize health care than those with financial support.^{15,31} In China, the older persons obtaining financial assistance from friends or social relief were less likely to be hospitalized than those relying on pensions, work, or family because of expensive hospital care.²⁶ In Myanmar, the majority of the elderly depended on their family for financial and material support.¹² Hence, those individuals who do not have financial support from family may experience financial burden for health care.

Regarding perceived transportation cost, the respondents who reported that transportation cost as “fair” or “expensive” were less likely to utilize health services than the reference group. The study in Ethiopia reported that the respondents who perceived transportation cost as “cheap” were 2.5 times more likely to utilize health services than those individuals who reported the transportation cost as “expensive”.²⁵ Socioeconomic inequalities affect health service utilization of the individual, and financial costs and transport problems were important barriers in the access to medical appointments in lower-income individuals.³² Hence, the poor respondents may encounter financial burden to accessibility of health care.

In addition, the elderly who did not have accessible health care personnel were less likely to utilize health service than their counterparts. In contrast, the study in Ethiopia¹⁷ showed that the respondents who had available health personnel were more likely to utilize health services than those individuals who did not have available health personnel. This result can be ascribed to the fact that health care personnel could provide health information and could refer to appropriate health care facilities.

Need factors influencing health service utilization. Results showed that diagnosed chronic disease and perceived health status were significant predictors in univariate analysis. In multivariate analysis, perceived health status remained as the only need factor influencing health service utilization.

In this study, the respondents who did not have diagnosed chronic disease were 4.98 times to utilize health services than the respondents who had diagnosed chronic disease. By contrast, the study in Uganda reported that the respondents who reported NCDs were more likely to utilize health services during one month relative to their counterparts.³³ Previous studies in China and Korea revealed that chronic disease is a significant predictor of health service utilization.^{16,27} The results of this study indicate the need to find the people who may have chronic diseases and to enhance the effectiveness of chronic disease management program.

Although perceived health status was a strong significant predictor of health service utilization, the older persons who reported their health status as “fair” or “poor” were less likely to utilize health services than their counterparts. This result agreed with a study in China reporting that older residents were less likely to utilize health services when they felt unwell.³⁴ Conversely, individuals with more negative self-perception of aging were more likely to delay care and reported more reasons for delay.³⁵ Hence, attitudes toward one’s aging experience may influence health service utilization.

However, respondents in previous studies with normal and poor self-reported health status were more likely to use inpatient and outpatient services than those individuals with good self-reported health status.^{26,36} A study in Indonesia described that the lack of insurance may decrease access to services, leading to unmet needs and negative health outcomes among the poor elderly.³⁶ Moreover, WHO reported that older people in low- and lower-middle-income countries used health services less significantly even when they were available and that the most common barriers to use health services are the cost of health care visit and transportation. Unfortunately, WHO stated that over

60% of older people in low-income countries did not access health care because of the cost of the visit, the absence of transportation, or an inability to pay for transportation.³⁷

Health service utilization among the elderly. Results showed that most of the elderly 68.4% utilized health service while 31.6% of those did not utilize health services within a year. Similarly, recent studies have reported that 64.5% and 67% of the respondents utilized health services within a year.^{18,38} Nevertheless, a study in Ethiopia reported that only 49.6% utilized health services, whereas 50.4% did not utilize health services within a year.¹⁷

The findings showed that only 9.7% of the respondents utilized health services for health screening, and 90.9% of the respondents visited health facilities for acute care within a year. Similarly, the results of recent studies have stated that the respondents utilized health services for health screening (20.0%) and acute illness or injury (64.5%).¹⁸ Most of the respondents with hypertension visited health facilities for acute care, which agreed with the findings of a previous study.¹⁸ Although the PEN project has been implemented in Insein Township, only a few respondents visited the health facility for health screening. These data suggest that elderly health care services should focus on health screening and health examination for early detection and prompt treatment of health problems among community dwelling elderly.

This study has several limitations. This study was not generalizable for well elderly as it focused on the reported factors affecting utilization of health care among the elderly in Insein Township, Yangon Region. Physically or mentally ill elderly were excluded in this study. Findings could not be generalized for the health service utilization of the aging population from different geographical locations.

Based on the findings of this study, community- and home-based projects for the elderly need to be established for the active participation of family and community in promotion of active and healthy aging rather than focusing on the health service utilization of the elderly. Further, community outreach clinics must be strengthened to remove the difficulty in transportation. Home visits and family health strategies in comprehensive elderly health care and empowerment of public health volunteers in mobilization of community resources are needed to promote effective health care for the elderly. Additionally, a health insurance scheme promoting the current social pension scheme must be developed to cover the health care needs of the older people because OOP spending by households is a major cause of catastrophic expenditure.

Conclusion

This study highlighted that the health needs and health-related problems of the elderly population cannot be viewed in isolation. In addition, the significant influence of perceived health status, financial support of family, perceived transportation cost, and accessibility to health care personnel are the possible indicators of health care inequality issues. The need for health screening of chronic diseases is likely to increase in community. A community-based elderly health care program should be implemented in accordance with the comprehensive policy to include not only medical aspects but also influencing factors. The findings supposed that predictors of health service utilization should be considered to improve the elderly health care program. However, only cross-sectional associations were used to examine the factors influencing health service utilization without aiming to understand the underlying causality. Hence, further studies could explore the problems behind these influencing factors among the elderly.

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Conflict of Interest Statement

The authors declare no conflict of interest.

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