

Assess The Variables Impacting Elderly Individuals' Utilization Of Primary Health Care Services At Makkah Healthcare Cluster 2024

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Abstract:

Background: In recent years, the proportion of older adults in emerging nations has dramatically increased. Makkah, as a religious and healthcare hub in Saudi Arabia, is home to a significant elderly population. The Kingdom of Saudi Arabia (KSA) has seen rapid demographic shifts in recent years, with a growing proportion of elderly individuals. This poses new challenges for the healthcare system, particularly in primary health care (PHC), which is the first point of contact for individuals in need of medical attention.

The study aim: To investigate the Variables influencing the elderly population's use of PHC services in the Makkah Healthcare Cluster (MHC) in the past 1, 3, and 6 months.

Method: A cross-sectional study design was used to collect data from 190 older adults in the MHC, KSA from January to July 2024.

Results: Primary health care services were used by less than half of the participants in the past 1 month, by 68.4% in the past 3 months, and by 73.8% in the past 6 months. PHC services use was associated with age, education level, tobacco use, chronic illnesses, perceived general health status today, a physical component summary score, employment, and perceived general health status in the past 3 and 6 months. The primary predictor of PHC services use at 1, 3, and 6 months was chronic illnesses (OR = 13.32), (OR = 19.63), and (OR = 17.91), respectively.

Conclusion: Although many factors were associated with PHC service utilization, the strongest predictor of PHC service utilization was chronic illnesses. This study recommended that develop more specialized services for elderly individuals within PHC centers, ensuring comprehensive care for chronic conditions and functional disabilities.

Introduction:

In practically every country in the world, the proportion of elderly adults is steadily rising ⁽¹⁾. In practically every country in the world, the proportion of elderly adults is steadily rising. It is anticipated that this will rise to 21.1% by 2050, having risen to 11.7% in 2013 ⁽¹⁾. One the proportion of senior individuals (those over 60) in the Kingdom of Saudi Arabia (KSA) is roughly 5.2% ⁽²⁾. It is anticipated that this percentage will rise to 8.1% by 2025 and 21.8% by 2050 ⁽³⁾. The combination of

the declining fertility/birth rate and the advancements in health, nutrition, and health care services has led to an increase in the population and the percentage of persons in this age group ⁽⁴⁾. This demographic move to elder adults has significant implications for health, society, economics, and epidemiology ⁽⁵⁻⁷⁾.

The aging demographic shift is linked to a rise in the prevalence of age-related chronic diseases (like diabetes, heart disease, hypertension, rheumatic diseases, and dementia) as well as other aging-related conditions like fall-related fractures, osteoporosis, digestive issues, insomnia, depression, and so forth. These conditions are all significantly more common in older adults ⁽⁸⁾. Furthermore, a variety of ailments create pain for many older persons, which limits their range of motion ⁽⁹⁾. Reduced activity levels cause other physical and cognitive functions to deteriorate more quickly, and older persons frequently have a variety of psychosocial difficulties as a result ^(10,11).

Numerous research have revealed that the Saudi population has a high prevalence of common chronic conditions, including diabetes mellitus, hypertension, overweight and obesity, heart disease, and metabolic syndrome. Some of these studies have also found that the prevalence rises noticeably with age ⁽¹²⁻²¹⁾. This rise in prevalence is mostly due to a mix of genetics, rich nutrition, and a sedentary lifestyle ^(18, 22). Programs aimed at managing chronic diseases and health education were found to be ineffective and difficult to access in Saudi primary care services, according to an analysis of treatment quality ⁽²³⁾.

The majority of preventive care, screening, and chronic illness management occur at PHCCs, which are regarded as the foundation of the healthcare system. A toolkit has been created by the World Health Organization to make PHCC evaluation easier. This toolkit offers questions that enable assessment of the availability of counseling services, health care services, accessibility, and user-friendliness ⁽²⁴⁾. Although there were some studies that studied health status of older adults in KSA ⁽¹²⁻²¹⁾, a comprehensive literature review revealed a dearth of research regarding factors that influence PHC service use among older adults in KSA. Hence, this study aimed to examine patterns and factors associated with PHC utilization by aged 50 years and older living in the Makkah, KSA.

Materials and Methods

A cross-sectional study design was used to examine PHC services utilization patterns and to identify factors associated with and predictive of health care utilization/non-utilization in the past 1, 3, and 6 months. The study was conducted in the catchment areas associated with three comprehensive PHC centers which provide services from 8 a.m. to 4 p.m., and most of these health centers serve large numbers of people and offer many preventive and curative health care services situated in Makkah, KSA.

Adequate sample size needed for binary logistic regression ⁽²⁵⁾ was determined using the formula proposed by Peduzzi et al., (1996) ⁽²⁶⁾. They suggested a minimum N that is at least 10 times K , where K is the number of predictors in the model. Using their criteria, the minimum sample size needed for this study was 190 participants. A proportional convenience sample of 190 older adults, aged 50 and older, participated in this study. Dependent Variables: PHC service utilization in the past 1, 3, and 6 months. Participants were asked the following. Did you visit the primary health care center in your region during the past month? Past 3 months? Past 6 months?

Independent Variables: Based on Anderson's behavioral model, predisposing, enabling, and need factors were included as follows ⁽²⁷⁾: predisposing factors included age (years), gender (male or female), health behavior measuring tobacco use (smoker or nonsmoker), employment status (unemployed, retired, and employed), education level (no education, primary school, and secondary), and marital status (married, single, separated or divorced, and widowed). Enabling factors included monthly income and health insurance coverage (insured or not insured). Need factors included chronic illness self-reports (have/do not have a chronic illness).

Additionally, cognitive impairment was measured by using the Elderly Cognitive Assessment Questionnaire (ECAQ) ⁽²⁸⁾. Perceived general health was measured in two ways: (1) on a scale of 1 to

10, with a 1 representing the “worst I have ever felt” and a 10 representing the “best I have ever felt.” What number would best represent your general health today? 3 months ago? 6 months ago? And (2) perceived general health status in the past 1-month period was measured using the 12-Item Short Form Health Survey version 2 (SF- 12v2) ⁽²⁹⁾.

SF-12v2 measures eight health domains: physical function, role-physical, bodily pain, general health, vitality, social functioning, role-emotional, and mental health. These domains are summarized as physical component summary (PCS) and mental component summary (MCS) scales and use norm-based scoring. When the scores are transformed, the general population has a mean of 50 and a standard deviation of 10. So, when compared to the general population, health related quality of life (HRQOL) is considered to be lower than the norm if PCS or MCS scores are calculated to be lower than 50 ⁽²⁹⁾.

Descriptive statistics were used to describe study variables. Chi-square associations with categorical variables and Pearson correlations were conducted to establish associations between independent and dependent variables and to identify which variables would enter logistic regression model. Correlation tests included were Spearman’s rho, Point Biserial r , Phi coefficient (ϕ), and Cramer’s V and was used depending on the level of measurement for each variable. Three binary logistic regression models were developed for utilization/non-utilization of PHC services during the past 1, 3, and 6 months. The probability ($P < 0.05$) was taken as minimum level of significance.

Permission for conducting study was obtained from Ministry of Health Ethical Committee. All participants were notified that the data collected would be treated with anonymity and confidentiality. In addition, personal informed verbal consent was obtained from all participants.

Results:

Table (1) shows participants’ characteristics. The mean age of participants was 64.6 years (SD = 9.7). There were more male (57.4%) participants, and the majority of participants were married (88.4%). About 36.8% of participants had no formal education, although 42.1 percent of the participants received a primary school education and 21.1 percent received a secondary education or higher. Most of the participants were unemployed (55.3%) and nonsmokers (71.1%). The majority (93.7%) had some type of health insurance coverage.

Additionally, about 72.1% of participants had chronic illnesses and 96.8% showed no evidence of cognitive impairment. For perceived general health status on the SF-12v2 for the past 1 month, the mean physical component summary (PCS) score was 41.28 (SD = 11.0) and 50.46 (SD= 7.3) for the mental component summary (MCS) score. For perceived general health status today, in the past 3 and 6 months, the means were 6.61 (SD = 1.3), 6.46 (SD = 1.3), and 6.64 (SD = 1.3), respectively.

In the past 1, 3, and 6 months, 41 percent of participants used medical services in the past 1 month. In the past 3 months, 68.4 percent of participants had used medical services, and in the past 6 months, 73.8 percent of participants had used medical services.

Table (1): Descriptive statistics of the predisposing, enabling, and need variables of elder adult participants ($n = 190$).

Variables	%	Mean (S.D.)
Predisposing variables		
Age (in years)		64.6 (9.7)
Gender		
Male	57.4	
Female	42.6	
Marital status		
Married	88.4	
Widow	11.6	

Variables	%	Mean (S.D.)
Education level		
No education	36.8	
Primary school education	42.1	
Secondary and higher education	21.1	
Employment status		
Unemployed	55.3	
Retired	41.1	
Employed	3.7	
Tobacco user		
Nonsmoker	71.1	
Smoker	28.9	
Enabling variables		
Health insurance		
Uninsured	6.3	
Insured	93.7	
Need variables		
Chronic illnesses		
No chronic illnesses	27.9	
Have chronic illnesses	72.1	
Cognitive impairment		
No cognitive impairment	96.8	
Have cognitive impairment	3.2	
Perceived general health status today		6.61 (1.3)
Perceived general health status in the last 1 month		
PCS score		41.28 (11.0)
MCS score		50.46 (7.3)
Perceived general health status in the past 6 months		6.46 (1.3)
Perceived general health status in the past 12 months		6.64 (1.3)

Table (2) shows that factors Associated with Elder Adults' PHC Services Utilization. In the Past 1-Month Period: Participants who used significantly more PHC services in the past month were those who (a) had no formal education or had a primary school education, (b) were nonsmokers, (c) had a chronic illness, (d) had perceptions of poorer health status, and (e) had symptoms or poor physical health (lower SF-12v2 PCS score).

In Past 3-Month Period: Factors significantly associated with increased use of PHC services were (a) increasing age, (b) being unemployed or retired, (c) having no formal education or only a primary school education, (d) being nonsmokers, (e) having a chronic illness, (f) those having poor self-rated general health status today, and (g) those having a poor self-rated general health status in the past 3 months (**Table 2**).

In Past 6-Month Period: Significantly greater use of PHC services was associated with (a) increasing age, (b) being unemployed or retired, (c) having no formal education or only a primary school education, (d) being nonsmokers (e) having a chronic illness, (f) those having poor self-rated

general health status today, and (g) those having poor self- rated general health status in the past 6 months (**Table 2**).

Table (2): Factors associated with PHC services utilization of elder adults in the past 1, 3, and 6 months.

Variable	Utilization 1-month	Utilization 6-months	Utilization 12-months
Predisposing variables			
Age	0.134	0.229**	0.205**
Gender	-0.093	-0.105	-0.100
Marital status	0.129	0.069	0.017
Education level	-0.220**	-0.200**	-0.240**
Employment status	0.158	0.178*	0.218**
Tobacco use	-0.162*	-0.166*	-0.145*
Enabling variables			
Health insurance	0.087	0.056	0.002
Income	-0.135	-0.073	-0.111
Need variables			
Health insurance	0.087	0.056	0.002
Need variables			
Chronic illnesses	0.453**	0.663**	0.650**
Cognitive impairment	-0.030	0.058	0.034
Perceived general health status today	-0.272**	-0.355**	-0.373**
Perceived general health status in last 1-month			
PCS score	-0.377**	-	-
MCS score	-0.106		
Perceived general health status in last 6-months	-	-0.409**	-
Perceived general health status in the last 12-months	-	-	-0.306**
*Correlation is significant at the 0.05 level (2-tailed). **Correlation is significant at the 0.01 level (2-tailed).			

Table (3) shows factor that predicted PHC Service Utilization. The variable associated with PHC services utilization in the past 1-, 6-, and 12-month period was chronic illness (OR 13.324, 95% CI 3.614–49.128), (OR 19.634, CI 7.679–50.203), and (OR 17.915, 95% CI 6.974–0.023), respectively.

Table 3: Binary logistic regression analysis of predictors of PHC service utilization of elder adults in the past 1, 3, and 6 months

	PHC service utilization in the past 1 month			PHC service utilization in the past 3 months			PHC service utilization in the past 6 months		
	OR	CIs		OR	CIs		OR	CIs	
Predisposing factors		Lower	Upper		Lower	Upper		Lower	Upper
Age	0.98	0.94	1.02	1.00	0.95	1.05	0.97	0.92	1.03

	PHC service utilization in the past 1 month			PHC service utilization in the past 3 months			PHC service utilization in the past 6 months		
	OR	CIs		OR	CIs		OR	CIs	
Education level									
No education	1.37	0.37	5.03	0.76	0.14	4.00	3.26	0.56	18.80
Primary education	0.66	0.24	1.82	0.45	0.13	1.51	1.50	0.44	5.07
Secondary and higher education	1.00	-	-	1.00	-	-	1.00	-	
Employment status									
Unemployed	1.49	0.11	19.59	1.99	0.20	19.5	2.62	0.23	29.02
Retired	1.40	0.11	17.40	1.82	0.20	16.1	4.57	0.44	47.19
Employed	1.00	-	-	1.00	-	-	1.00	-	-
Tobacco use	0.78	0.34	1.77	0.78	0.30	2.03	0.83	0.30	2.30
Need factors									
Chronic illnesses	13.3**	3.61	49.12	19.6**	7.67	50.2	17.9**	6.97	0.02
Perceived general health today	0.92	0.67	1.26	1.03	0.61	1.75	0.65	0.42	1.03
PCS score	0.97	0.93	1.02						
Self-perceived general health in the past 3 months				0.66	0.37	1.17			
Self-perceived general health in the past 6 months							0.96	0.62	1.48

OR: odds ratio.

CIs: 95% confidence interval.

**OR statistics is significant at the 0.001 level.

Discussion:

This study aims to investigate the Variables influencing the elderly population's use of PHC services in the Makkah Healthcare Cluster (MHC) in the past 1, 3, and 6 months for elder adults. Data on medical services utilization in the past 1, 3, and 6 months were not consistent. The findings showed that rate of medical services use by elder adults in the past one month was less than 50%, which was consistent with a study in Hong Kong ⁽³⁰⁾. In the past 3 months, the findings showed that two-thirds of older adults used PHC services for medical health services, which differed from rates reported by Chou and Chi ⁽³¹⁾ study.

In the past 6 months, the findings indicated that three-quarters of older adults used PHC services for medical health services, which is close to the Estonian study ⁽³²⁾. The high rate of medical service utilization in past 6 months compared with rate of utilization in the past 3-month and 1-month periods in the present study can be accounted for by the use of a longer time period. This would have increased the chances of including those who rarely used PHC services. Further studies need to be conducted on the utilization of more and different types of health care service in the changing health

care context.

In the present study, older age was not associated with PHC service utilization in the past 1 month, similar to that found in Spain ⁽³³⁾; however, older age was positively associated with PHC service utilization in the past 3 and 6 months. In contrast, older age in Thailand was associated with fewer health care services use in the past year ⁽³⁴⁾. Lower education level was associated with greater PHC service utilization in the past 1, 3, and 6 months, which was also found in other studies ^(33, 34). Those who were unemployed or retired used more PHC services than those employed in the past 3 and 6 months. As limited PHC literature includes older adults, employment status was among the factors not included in many studies. However, similar results were observed in Ghana ⁽³⁵⁾. Nonsmoking older adults used more PHC services in the past 1, 3, and 6 months compared with smokers. This result was consistent with a previous study ⁽³³⁾.

Chronic illness was significantly associated with PHC service utilization in the past 1, 3, and 6 months, consistent with studies in Thailand and Spain ^(33, 34). Cognitive impairment was not associated with PHC service utilization in the past 1, 3, and 6 months which is in contrast to earlier findings ^(35, 36). This disagreement may be attributed to the fact that only 3.2% of the sample had cognitive impairment in this study and due to different measures being used across studies. The perceived general health status factors were found to be negatively associated with PHC service utilization, indicating that participants who perceived that they were in poor health on the day of the interview tended to use more PHC services during the past 1, 3, and 6 months. One explanation may be that elder adults, especially those who have chronic illnesses, tend to go to health centers mainly to obtain their prescribed medication. Also, both aging and many chronic illnesses are associated with disabilities and complications that are difficult to manage without utilizing health services. Also, chronicity does not portend improvement over a 1-year time period.

Further studies need to be conducted to confirm that perceived general health status today correlates with PHC service utilization of elder adults. Also, those older adults who perceived that they were in poor health, in particular, poorer physical health (PCS score) in the past 1 month, tended to use more PHC services in the past 1 month. This result disagrees with previous studies ^(33, 35). Elder adults who perceived that they were in poor general health status in the past 3 and 6 months used more PHC services in those time periods and this has been found previously ⁽³³⁾.

Age was not a significant predictor of PHC services utilization in the past 1, 3, and 6 months, in contrast to a study in Ghana ⁽³⁵⁾, and education level was not a significant predictor of PHC services utilization in the past 1, 3, and 6 months, which was similar to a South Korean study ⁽³⁶⁾, and neither was employment status a significant predictor of PHC services utilization in the past 1, 3, and 6 months, consistent with the findings by ⁽³⁵⁾. Likewise, tobacco use was not a significant predictor of PHC services utilization in the past 1, 3, and 6 months, similar to a Spanish study ⁽³³⁾.

Chronic illness was the strongest significant predictor of PHC services utilization in the past 1, 3, and 6 months. Multivariate analysis indicated that older adults who had chronic illnesses were 13.3, 19.6, and 17.9 times more likely to use PHC services than those who did not have chronic illnesses in the past 1, 3, and 6 months, respectively. This finding is consistent with another study ⁽³¹⁾. The findings in this study can be explained by the fact that the majority of the elder adults who used PHC services in the past 1, 3, and 6 months had at least one chronic illness, and chronic illnesses need continuous treatment. These data are important for planning purposes for the PHC service centers and suggest that patients with one or more chronic illnesses should be identified so that the PHC can be responsive to their continuous needs.

Conclusion

About three-fourths of older adults in this study reported having at least one chronic illness. Hence, there was an unusually high rate of chronic illness among the participants in this study. In terms of utilization patterns, the findings reflected high utilization rates of PHC services among older adults over a one-year period. The present study identified several predisposing and need factors that were

associated with PHC service utilization. However, the strongest predictor of PHC service utilization was a medical history of chronic illnesses. The results of this study add to the body of knowledge in geriatric nursing regarding older adults' health seeking behavior which will help in developing an effective nursing care programs to promote well-being in elder adults. Good health care planning requires an understanding of PHC service use, and the approach used in this study could be replicated throughout KSA. As such, it would enable the Ministry of Health in KSA to gather relevant data necessary to provide appropriate health care services for elder adults that are both efficient and cost-effective.

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