Makara Journal of Health Research

Volume 29
Issue 1 *April*

Article 10

4-30-2025

Knowledge, Attitudes, and Practices of Adults for Periodic Health Assessment in Al Ahsa, Saudi Arabia

Fatimah Yousef Alhafedh
Public Health Department, College of Applied Medical Sciences, King Faisal University, Al Ahsa 31982, Kingdom of Saudi Arabia, ffy1423@gmail.com

Rawan Ahmed Almusaileem
Public Health Department, College of Applied Medical Sciences, King Faisal University, Al Ahsa 31982, Kingdom of Saudi Arabia, 221426346@student.kfu.edu.sa

Zahraa Hassan Aljaafar
Public Health Department, College of Applied Medical Sciences, King Faisal University, Al Ahsa 31982, Kingdom of Saudi Arabia, 221433141@student.kfu.edu.sa

Rayhanah Saleh Alaayesh
Public Health Department, College of Applied Medical Sciences, King Faisal University, Al Ahsa 31982, Kingdom of Saudi Arabia, 221436150@student.kfu.edu.sa

Edric Estrella
Public Health Department, College of Applied Medical Sciences, King Faisal University, Al Ahsa 31982, Kingdom of Saudi Arabia, eestrella@kfu.edu.sa

Recommended Citation

Alhafedh FY, Almusaileem RA, Aljaafar ZH, Alaayesh RS, Estrella E. Knowledge, Attitudes, and Practices of Adults for Periodic Health Assessment in Al Ahsa, Saudi Arabia. Makara J Health Res. 2025;29.

Makara J Health Res. 2025;29(1):74–79
doi: 10.7454/msk.v29i1.1790

Makara Journal of Health Research

Knowledge, Attitudes, and Practices of Adults for Periodic Health Assessment in Al Ahsa, Saudi Arabia

Fatimah Yousef Alhafedh*, Rawan Ahmed Almusaileem, Zahraa Hassan Aljaafar, Rayhanah Saleh Alaayesh, Edric Estrella

Public Health Department, College of Applied Medical Sciences, King Faisal University, Al Ahsa 31982, Kingdom of Saudi Arabia

Abstract

Background: Regular medical consultation, such as annually or semi-annually for check-ups, especially to diagnose chronic conditions, is essential for health maintenance, particularly in adults. The aim of this study is to analyze the knowledge, attitudes, and practices of adults aged 30 years or older for obtaining periodic professional health assessment in the city of Al Ahsa in Saudi Arabia.

Methods: A cross-sectional study was conducted in a total sample of 472 adults. Multistage sampling was employed, and data were collected using a Google Forms survey and analyzed using JASP and OpenEpi. Descriptive and logistic regression analysis was used to analyze the data.

Results: Of the participants, 46.2% reported engaging in regular medical consultation. While knowledge and positive attitudes were generally high, logistic regression showed that attitude was significantly associated with consultation behavior.

Conclusion: A gap exists between knowledge/attitudes, and practice regarding regular medical consultation in Al Ahsa. Interventions targeting attitudes may be effective in promoting regular medical consultation.

Keywords: early detection, health promotion, periodic health examination, preventive medicine

INTRODUCTION

Regular medical consultation is a crucial component of preventive healthcare, enabling early detection of diseases and timely intervention, and maintaining the overall health and well-being of individuals.[1,2] It is particularly significant for individuals aged 30 years and above, as they are more susceptible to various health complications and chronic diseases,[3,4] such as cardiovascular diseases, diabetes, and certain cancers. Regular medical consultations can lead to improved health outcomes, reduced morbidity and mortality, and decreased healthcare costs, which make it very important in public health for early intervention before complications start. Early detection is considered a secondary level of prevention, which makes it very important in public health for early intervention before complications start, increasing life expectancy and well-being of society, and reducing the burden on the economy.[5] Early irregular clinical follow-up should be considered a risk factor for complications.[6] Understanding attitudes and practices related to regular medical consultation is vital in assessing the healthcare-seeking behavior of the residents of Al Ahsa.[7,8]

***Corresponding author:**
Fatimah Yousef Alhafedh
Public Health Department, College of Applied Medical Sciences, King Faisal University, Al ahsa, Kingdom of Saudi Arabia
E-mail: ffy1423@gmail.com

Al Ahsa, a city in eastern Saudi Arabia, is known for its rich cultural heritage and diverse population.[9] A study conducted in Saudi Arabia found that educated individuals are more likely to understand the importance of preventive services and take action to protect their health before they face sickness.[10] Several factors influence an individual's decision to seek regular medical consultation. These factors can be broadly categorized as predisposing, enabling, and reinforcing factors. Predisposing factors include socio-demographic characteristics such as age, gender, education level, and health beliefs. Enabling factors encompass access to healthcare services, insurance coverage, and financial resources. Reinforcing factors involve social support, physician recommendations, and health education. Understanding the knowledge, attitudes, and practices of regular medical consultation among the residents of Al Ahsa aged 30 years and above is essential in developing effective healthcare strategies tailored to the needs of this demographic.[7,11] There is a gap in knowledge and research about the knowledge, attitudes, and practices of residents of Al Ahsa aged 30 and above related to regular medical consultation in Al Ahsa. Based on several studies, investigators found that many people who attend regular follow up are at lower risk of consequences resulting from late detection of that disease, also there are many factors that may affect attending a regular follow up, that factors include: knowledge, culture, age, gender, income, distance and accessibility of follow up services.[12,13]

This research aimed to describe the knowledge, attitudes, and practices of residents of Al Ahsa aged 30 and above related to regular medical consultation. By investigating their knowledge, attitudes, and practices, the investigators can identify potential barriers that might hinder individuals from seeking regular medical care.[14,15] Additionally, this research is expected to provide insights into the factors promoting regular medical consultation, leading to better health outcomes for the inhabitants of Al Ahsa.[8,16] Through this study, investigators can effectively contribute to the development of innovative strategies and policies that encourage and facilitate regular medical consultation among residents aged 30 years and above in Al Ahsa.[17,18] Ultimately, this research will enable healthcare providers to deliver more personalized and effective care by understanding the factors that influence regular medical consultation in this specific demographic.[13,19]

METHODS

This study was an analytical cross-sectional study that was conducted to evaluate the knowledge, attitudes, practices, and influencing factors regarding regular medical consultation among residents of Al Ahsa aged 30 years and above. Participants were recruited from the population of Al Ahsa.[20, 21] The study aimed to include a diverse sample representative of the community's demographic makeup. This population was selected specifically to intervene and benefit this community as needed.

The study protocol was reviewed and approved by King Faisal University Research Committee with the number ETHICS1,874, which was provided on January 23, 2024. Informed consent was obtained electronically before participation. All data were collected and processed anonymously to maintain confidentiality and privacy regarding income and attitudes.

Data collection took place between January 2024 and June 2024. Participants were recruited from the population of Al Ahsa. Eligibility Criteria: Inclusion criteria were: (1) Residents of Al Ahsa, (2) Aged 30 years or above, (3) Willing to participate in the study. Exclusion criteria were: (1) Non-residents of Al Ahsa, (2) Individuals below 30 years of age, (3) Individuals' inability/unwillingness to consent (or lack of legal guardian consent), (4) Individuals with communication barriers, and healthcare professionals. The minimum sample size was calculated using OpenEpi with a desired precision of 5% and a confidence level of 95%. Based on this calculation, the minimum required sample size was 768. To account for potential non-response, we aimed to recruit a final sample size of 845. From the estimated sample size of 845, only 472 completed the survey, which introduced nonrespondent bias, so the result cannot be generalized.

A multistage sampling design was conducted.[22,23] First, investigators divided Al Ahsa residents randomly into three regions according to the living area by using stratified sampling. The three regions are Al Hofuf, Al Mubarraz, and the villages. Then another stage of stratified sampling technique to divide them according to the districts each strata had, then took 50% from each, for example, there is 95 districts in Al Hofuf, In Al Mubarraz there is 51 districts, and the total villages is 32 villages, after we took the half it has been approximately 47 districts from Al Hofuf, 25 districts from Al Mubarraz, And 16 villages. After that, by using Systematic Sampling, investigators randomly selected individuals from the selected district in the supermarket and other gatherings several times.

The data collection instrument was created with Google Forms using Arabic and English. It was made by the investigators themselves and divided into 3 sections with 23 items. The first section was about demographic characteristics. This section comprised 6 questions designed to gather demographic data such as age, gender, income, education level, having insurance, and where they live. The second section was a knowledge assessment. A short quiz consisting of 10 questions was included to determine the respondents' level of knowledge about the importance and benefits of regular medical consultation; those who scored 5 or more were classified as having a high level of knowledge. The third section was about attitudes, Practices, and Influencing Factors. For attitudes, 3 questions were aimed at understanding the respondents' attitudes towards regular medical follow-ups. For the proportion of respondents who are doing a regular medical consultation, 1 question was introduced. For practices, 1 question describes the frequency and regularity of the respondents' medical consultations. Finally, for influencing Factors, 2 questions to identify barriers and facilitators that affect the respondents' decisions to seek regular medical care. The data collection instrument was a researcher-developed questionnaire utilized as a data collection tool. The questionnaire was pilot tested on 20 participants to assess clarity, face validity, and reliability. To minimize bias, this study employed multistage sampling, ensured respondent anonymity, used clear survey questions, and acknowledged limitations like cross-sectional design and self-reported data. Future research should prioritize longitudinal studies, objective measures, and cultural context.

The data collected through Google Forms has been exported to Microsoft Excel for coding and analysis. There were no missing responses, as all questions in the form were marked as required. Statistical analysis was done by using JASP 0.16.3.0 and OpenEpi with the level of significance of Alpha = 0.05, CI = 95%. Descriptive statistics were utilized to calculate proportions and confidence intervals for the various measures assessed by the questionnaire. The sum of the correct responses on the 10-item inventory of knowledge on regular medical consultation was calculated for each participant. The

participants who obtained a score of 5 or higher were classified as having a high level of knowledge; otherwise, a low level of knowledge. Similarly, for attitude, the sum of the four items was calculated, and those who obtained a score of 4 were classified as having a positive attitude; otherwise, a negative attitude. Finally, the other question to describe the frequency and regularity of the respondents' medical consultations and influencing factors was classified as it is. Logistic regression analysis was employed to explore the association between knowledge levels and regular medical follow-up practices, adjusting for confounders such as age.

RESULTS

The respondents (N = 472) were classified according to various socio-demographic variables such as gender, age, educational level, and income. Table 1 shows the distribution of the respondents based on socio-demographic variables. Table 1 also shows that 65.68% of residents in Al Ahsa aged 30 years and above have a high level of knowledge regarding regular medical consultation. Positive attitudes toward regular medical consultations were observed in 75.4% of the respondents. However, when it comes to actual practices, only 46.2% reported engaging in regular medical consultation.

A logistic regression analysis was conducted to identify factors associated with the likelihood of engaging in regular medical consultation. Table 2 shows a strong association. Specifically, the odds ratios for knowledge, age, income, gender, and attitude. These findings suggest that while knowledge and income are less associated with regular follow-up, age and, particularly, attitude have a stronger association.

DISCUSSION

This study aimed to assess the knowledge, attitudes, and practices of Al Ahsa residents aged 30 and above regarding regular medical consultation. The findings revealed that a significant proportion of the participants demonstrated a high level of knowledge regarding regular medical consultation, suggesting a general awareness of the importance of regular health check-ups within this population. However, a notable gap was identified between knowledge and practice, as evidenced by the lower proportion of residents who are engaging in regular consultation; only 46.2% of participants reported engaging in regular medical follow-ups. This discrepancy indicates that a considerable portion of the population does not translate their knowledge into consistent action, highlighting potential barriers to the adoption of regular medical consultation practices. Comparing these findings with other studies, such as the one conducted on virtual consultations during the COVID-19 pandemic in Malaysia,[24] we see similar trends where knowledge and attitudes were generally good, but the practice was poor. In this study, 65.68% of the participants have a high level of knowledge, 75.42% have a positive attitude, and only 46.2% were doing a regular follow-up. The study conducted on virtual consultations during the COVID-19 pandemic in Malaysia found that 69.7% of participants had good knowledge of virtual consultation. 80.9% expressed positive attitudes towards virtual consultation. Only 24.6% reported actual virtual consultation use. No significant correlation between knowledge and practice. This finding that a significant proportion of Al Ahsa residents demonstrate high knowledge regarding regular medical consultation, yet a smaller proportion engages in the practice, reflects a common knowledge-attitude-practice gap observed in numerous health behavior studies. This phenomenon, where awareness does not translate into action, has been documented in research on diabetes self-management and preventive screening.[25,26]

TABLE 1. The descriptive analysis of the respondents (N = 472)

Variables	N	%
Gender		
Female	271	57.4
Male	201	42.6
Age (years)		
30–40	271	57.4
41–50	143	30.3
Above 50	58	12.3
Education level		
High school and below	133	28.2
Diploma	85	18.0
Bachelor's degree	218	46.2
Master's and higher level	36	7.6
Average income		
Less than 5000 SAR	131	27.8
5000–10,000 SAR	177	37.5
More than 10,000 SAR	164	34.8
Level of knowledge		
Low level of knowledge	162	34.3
High level of knowledge	310	65.7
Attitude		
Negative	97	20.6
Positive	356	75.4
Doing regular follow-up		
Yes	218	46.2
No	254	53.8
The frequency and regularity		
Every 3 months	13	2.8
Every 6 months	206	43.6
Every 1 year	218	46.3
Every 3 years	22	4.6
Every 5 years	13	2.8
Preventing factors		
I do regular follow-up	218	46.2
I do not have time	45	9.5
I just do not care	130	27.6
I do not have any symptoms	68	14.4
I do not have resources	11	2.3

SAR: Saudi Arabian Riyal

TABLE 2. Crude association with the practice of regular medical consultation

Variables	Odds Ratio	95% CI
Gender		
Female[Ref]		
Male	0.434*	0.09 – 2.00
Age (years)		
30–40[Ref]		
41–50	1.653*	0.83 – 3.31
Above 50	7.049*	2.80 – 17.5
Average income		
Less than 5000 SAR[Ref]		
5000–10,000 SAR	0.261*	0.10 – 0.67
More than 10,000 SAR	0.432*	0.18 – 1.06
Knowledge		
Low level of knowledge[Ref]		
High level of knowledge	0.7*	0.17 – 2.90
Attitude		
Negative[Ref]		
Positive	1.36*	0.37 – 4.97

*$p < 0.05$

Another study showed different results. The study conducted in Morocco found an above-average level of knowledge.[27] These knowledge levels were associated with several personal characteristics. Moreover, these knowledge levels proved to be powerful predictive factors for the intention to undergo screening, along with regular medical consultations and recommendations to undergo screening. In the current study, no significant association was found between levels of knowledge and doing regular follow-up.

Several factors may contribute to this knowledge-action gap, including individual beliefs and attitudes towards healthcare, socioeconomic factors, accessibility to healthcare services, and cultural influences. This study also emphasized the crucial role of attitudes in influencing regular medical consultation behavior. Specifically, 75.4% have positive attitudes towards regular medical consultation, which is a promising sign, as they are strongly associated with the likelihood of engaging in regular consultation, as shown by the higher odds ratio for attitude. This suggests that interventions aimed at improving attitudes towards medical consultations could be effective in increasing the rate of regular consultation. Conversely, the strong association we observed between positive attitudes and the likelihood of engaging in regular consultations is consistent with established health behavior theories. Both the Health Belief Model[28] and the Theory of Planned Behavior[29] underscore the importance of attitudinal factors in predicting health behaviors. These theories suggest that individuals are more likely to undertake preventive actions, such as regular medical consultations, when they perceive the benefits of these actions and hold positive beliefs about them. This finding emphasizes the potential effectiveness of interventions aimed at cultivating positive attitudes towards regular medical consultations in promoting their uptake within the population.

Many studies have shown that women tend to utilize healthcare services, particularly preventive services, more frequently than men. This is often attributed to factors like reproductive health needs, greater health awareness, and different health-seeking behaviors.[30,31] This may be due to factors like reproductive health needs and greater awareness of preventive care. Other studies explore how gender roles and cultural factors can influence healthcare-seeking behavior, sometimes leading to men delaying or avoiding check-ups. However, it's also important to consider cultural and social factors that can influence gender roles in healthcare. In some contexts, men may be less likely to seek care due to societal expectations or beliefs about masculinity.

Healthcare utilization patterns often vary significantly across different age groups. Older adults tend to have higher rates of healthcare utilization overall, often due to a higher prevalence of chronic conditions. However, the type of utilization might differ; it could be more for illness visits than preventive consultations. Younger adults may underutilize preventive services, sometimes due to a perception of being healthy or a lack of awareness about the importance of preventive care.[32] Socioeconomic status, often measured by income, is a major determinant of access to healthcare and healthcare utilization. Lower-income individuals and communities often face barriers to accessing care, including lack of insurance, inability to afford co-pay or medications, lack of transportation, and limited access to healthcare facilities.[33] These disparities can lead to significant differences in health outcomes. These comparisons suggest that the relationship between knowledge, attitude, and practice is complex and may be influenced by various factors, including cultural and systemic ones.

To enhance the rate of regular medical consultations, it is crucial to address the barriers identified, such as a lack of concern and the absence of symptoms. Public health campaigns could focus on educating the population about the benefits of preventive healthcare, regardless of current health status. Additionally, the strong association between age and regular follow-up suggests that older residents may be more receptive to such interventions. Addressing the knowledge-action gap and promoting positive attitudes towards regular medical consultation should be a priority for healthcare providers and public health authorities. Effective strategies may include targeted educational campaigns, community engagement programs, and interventions aimed at improving health-care accessibility and affordability.

This study, while revealing valuable insights into the knowledge, attitudes, and practices of Al Ahsa residents regarding regular medical consultations, is subject to

several limitations. Its cross-sectional design restricts the ability to establish causal relationships, offering only a snapshot of the situation. Reliance on self-reported data from Google Forms may introduce bias, and the geographic specificity of the study limits generalizability to other populations. Moreover, the study's exploration of barriers to regular medical consultations, beyond the identified knowledge-action gap and attitudinal influences, remains limited. Future research should prioritize longitudinal studies to establish causality and employ qualitative methods to delve deeper into the 'why' behind observed behaviors. Intervention studies are needed to evaluate the effectiveness of strategies aimed at improving consultation rates, and comparative studies across regions would help elucidate cultural and socioeconomic influences. Analyzing the healthcare system in Al Ahsa to identify systemic barriers and investigating specific barriers, such as transportation or insurance, is crucial. Additionally, exploring technology's role in improving adherence and developing targeted interventions for specific demographics, like older adults, would significantly advance our understanding and improve healthcare practices.

CONCLUSIONS

In conclusion, while the residents of Al Ahsa demonstrate a good understanding and positive attitudes towards regular medical consultations, there is a need to convert this knowledge into consistent health-seeking behavior. Future research should explore strategies to bridge this knowledge-action gap and investigate the role of cultural and systemic factors in influencing health practices.

CONFLICT OF INTEREST

None declared.

FUNDING

This study was supported by King Faisal University.

Received: January 27, 2025 | Accepted: April 25, 2025

REFERENCES

1. Vaishya R, Sibal A, Venkatraman S, Kar S, Sriram SR, Reddy PC. Significance of preventive health checkups in enhancing well-being: A comprehensive review. *Natl B Examinations J Med Sci*. 2025;3:411–32.
2. Altwaijri SA, Alotaibi AMF, Alahmadi FS, Alyamani AMA. Preventive medicine and its role in enhancing public health: The critical importance of routine health screenings. *Int J Health Sci*. 2017;1:339–60.
3. Watson KB, Wiltz JL, Nhim K, Kaufmann RB, Thomas CW, Greenlund KJ. Trends in multiple chronic conditions among US adults, by life stage, behavioral risk factor surveillance system, 2013–2023. *Prev Chronic Dis*. 2025;22:240539.
4. Ganesh Diagnostic. *6 diseases you must get screened when you turn 30s*. New Delhi: Ganesh Diagnostic and Imaging Centre Pvt. Ltd., 2024.
5. StatPearls. *Prevention strategies*. Treasure Island (FL): StatPearls Publishing, 2024.
6. Jacobson AM, Hauser ST, Willett J, Wolfsdorf JI, Herman L. Consequences of irregular versus continuous medical follow-up in children and adolescents with insulin-dependent diabetes mellitus. *J Pediatr*. 1997;131:727–33.
7. Almaqhawi A, Alsayil S, Al Qadhib M, Alkhawfi A, Alkhalaf A, Al Khowildi Z. Patient's perspective on factors affecting health-seeking behavior in Al-Ahsa, Saudi Arabia. *Cureus*. 2022;14:e30078.
8. Al-Balawi AM, Al-Mutairi DM. Knowledge, attitudes, and practices among central sterile supply department staff in ministry of defense hospitals in the eastern province of Saudi Arabia: A cross-sectional study. *Edelweiss Appl Sci Technol*. 2025;9:2259–69.
9. Nasef MS, Al-Jaber HE. Spatial analysis of population and residential characteristics in the villages of Al-Ahsa Oasis: Geographic study. *Manshur Atmajallat Dirasat Alkhalij Waal Jazirah Alarabiyah*. 2024;50:5–61. Arabian.
10. Midhet FM, Sharaf FK. Impact of health education on lifestyles in central Saudi Arabia. *Saudi Med J*. 2011;32:71–6.
11. Alshammari ML, Al-Banaqi AH, Almutairi AS, Alqahtani SS, Alharbi MM, Haji EM, *et al*. Knowledge, attitudes, and practices about parkinson's disease among the general population of the Eastern Province of Saudi Arabia. *Healthcare*. 2025;13:795.
12. A'aqoulah A, AlAhmari R, Alahmary K, Al Sudairy AA, Innab N, Abu Saris R. Factors affecting utilization of primary healthcare services in Saudi Arabia. *Inquiry*. 2025;62:469580251326444.
13. Almalki M, Fitzgerald G, Clark, M. Health care system in Saudi Arabia: An overview. *East Mediterr Health J*. 2011:17:784–93.
14. Glanz B, Rimer BK, Viswanath K. *Health behavior and health education: Theory, research, and practice*. San Francisco: Jossey-Bass; 2008.
15. Ouzennou N, Aboufaras M, Nacer N, Mejdouli H, Chouikh J, Rkha S. The triad of knowledge, regular medical consultation, and recommendations for enhanced breast cancer screening intention in Morocco. *J Cancer Res Clin Oncol*. 2024;150:60.
16. World Health Organization. *Adherence to long-term therapies: evidence for action*. New York: World Health Organization, 2003.
17. Al Khashan H, Abogazalah F, Alomary S, Nahhas M, Alwadey A, Al-Khudhair B, *et al*. Primary health care reform in Saudi Arabia: Progress, challenges and prospects. *East Mediterr Health J*. 2021;27:1016–26.
18. Bandura A. Self-efficacy: Toward a unifying theory of behavioral change. *Adv Behav Res Ther*. 1978;1:139–61.
19. Kennedy BM, Rehman M, Johnson WD, Magee MB, Leonard R, Katzmarzyk PT. Healthcare providers versus patients' understanding of health beliefs and values. *Patient Exp J*. 2017;4:29–37.

20. Tolley EE, Ulin PR, Mack N, Robinson ET, Succop SM. *Qualitative methods in public health: A field guide for applied research*. 2nd ed. USA: John Wiley & Sons; 2016.
21. Guest G, Namey EE. *Public health research methods*. Los Angeles: SAGE Publications; 2015.
22. Schmid L. *Multistage sampling–A guide, applications, & examples*. Paris: BachelorPrint, 2023.
23. Taherdoost H. Sampling methods in research methodology; How to choose sampling technique for research. *Int J Acad Res Manage*. 2016;5:18–27.
24. Liew SC, Pallath V, Rasali Y, Foong CC, Hong WH, Tan MP. Knowledge, attitude, and practice of virtual consultation among outpatients at a teaching hospital in Malaysia. *PLoS One*. 2023;18:e0289176.
25. Tam DYS, Lo YYC, Tsui W. Knowledge, practices and expectations of preventive care: A qualitative study of patients attending government general outpatient clinics in Hong Kong. *BMC Fam Pract*. 2018;19:58.
26. Mukeshimana M, Hakizimana G, Mwali C, Umuhoza C, Uwambajimana J, Asingizwe D. The knowledge and practice of self-care management among patients attending a diabetes clinic in Kigali, Rwanda. *Rwanda J Series F Med Health Sci*. 2015;2:24–30.
27. Ouzennou N, Aboufaras M, Nacer N, Mejdouli H, Chouikh J, Rkha S. The triad of knowledge, regular medical consultation, and recommendations for enhanced breast cancer screening intention in Morocco. *J Cancer Res Clin*. 2024;150:60.
28. Rosenstock IM. The health belief model and preventive health behavior. *Health Educ Quart*. 1974;2:354–86.
29. Ajzen I. The theory of planned behavior. *Organ Behav Hum Dec*. 1991;50:179–211.
30. Vaidya V, Partha G, Karmakar, M. (2012). Gender differences in utilization of preventive care services in the United States. *J Womens Health (Larchmont)*. 2012;21:140–5.
31. Saquib J, Alhomaidan HT, Al-Mohaimeed A, Rajab AM, Almazrou A, Saquib N. Gender differences in healthcare status and utilization: A comprehensive study on adults in Saudi Arabia. *J Umm Al-Qura Univ Med Sci*. 2024;10:25–31.
32. Zhang Z, Yin A-T, Bian Y. Willingness to receive periodic health examination based on the health belief model among the elderly in Rural China: A cross-sectional study. *Patient Prefer Adher*. 2021;15:1347–58.
33. National Health Council. *Limited access: poverty and barriers to accessible health care*. Washington: National Health Council, 2023.