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| RESEARCH ARTICLE

Health Promoting Lifestyle Behaviours among Older Adults in Saudi Arabia: Implications and Future Directions

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| ABSTRACT

The older adult population is rapidly increasing worldwide, with significant healthcare needs, especially in Saudi Arabia. Health-promoting behaviors are crucial to enhance quality of life and reduce morbidity among older adults. This study aimed to assess the level of health-promoting lifestyle behaviors among older adults in Saudi Arabia and identify the factors associated with these behaviors.A quantitative cross-sectional study was conducted among 304 older adults attending primary healthcare centers in Saudi Arabia. Data were collected using the Health-Promoting Lifestyle Profile II (HPLP II) and analyzed using SPSS version 26, with multiple logistic regression employed to determine factors affecting health-promoting behaviors. The overall mean score of health-promoting behaviors was 162.7 out of 208, indicating moderate engagement. Spiritual growth had the highest mean score, while physical activity had the lowest. Marital status, education, and the presence of chronic kidney and pulmonary diseases were significantly associated with better health-promoting behaviors. Older adults in Saudi Arabia exhibit moderate levels of health-promoting behaviors, with spiritual growth being the most prominent. Targeted interventions are needed to enhance physical activity and nutrition, focusing on vulnerable groups to improve overall health outcomes.

| KEYWORDS

Health, Promoting, Lifestyle, Behaviors, Older adults

| ARTICLE INFORMATION

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1. Introduction

The population of older adults is a vulnerable group that has specific healthcare issues and requirements. The World Health Organization predicts that by the year 2050, twenty percent of the world's population will be over the age of sixty, which will represent a significant proportion of the total population of the world (Amjad et al., 2021). According to Khoja et al. (2018), the percentage of the population that is 60 years old or older is expected to increase from 3% in the year 2010 to 9.5 percent in the year 2035 and 18.4% in the year 2050. Over eighty percent of people who are sixty years of age or older now suffer from at least one psychological or physical comorbid condition (World Health Organization, 2022). Comorbid diseases are responsible for two-thirds of all health care expenses, and it is estimated that they are the primary cause of death among those who are age 65 and older. As a consequence of this, people are required to participate in actions that are beneficial to their health throughout their whole lives in order to prevent mortality (Lake, 2019).

The World Health Organization (2019) asserts that health promotion gives individuals the ability to exercise a higher degree of control over their own health and well-being within their own lives. By addressing the underlying causes of poor health rather than simply treating and curing the symptoms, health promotion encompasses a wide range of social and environmental interventions that are intended to benefit and protect everyone's health and quality of life (Chiu, 2020). These interventions are intended to benefit and protect everyone's health and quality of life. An increase in the quality of life, an increase in life expectancy, and a reduction in the rates of morbidity and mortality are only some of the advantages that have been linked to engaging in health-

promoting activities. These activities include losing weight, quitting smoking, engaging in physical activity, and managing stress (Rababa et al., 2018). Fear of dementia, the amount of time spent caring for the caregiver, the use of long-term care services, and the gender of the caregiver were all factors that were shown to be predictive of health promotion behavior among older people, according to the results of a research that was carried out in Korea (Cho & Cha, 2021). Among older people in Jordan, the mean score for overall health promoting behavior was 125.33 out of 179, and the marital status and educational level of the participants were revealed to be associated with the total health promoting behavior among older adults (Rababa et al., 2018).

Studies targeted at examining lifestyle - promoting health among older people in Saudi Arabia were few. In a study that was conducted in Saudi Arabia, the researchers found that the level of education and economic position had a significant influence on the behaviors that were considered to be preventive (Duan et al., 2021). It is vital to investigate the behaviors and factors related with their health-promoting lifestyle in order to point out their healthcare requirements and to create substantial health education measures. This is because the number of older adults in Saudi Arabia is rising over the course of the years. The nursing profession places a significant emphasis on the study of health-promoting behaviors, which must be comprehended. According to Hwang and Oh (2020), non-nurse role models not only have the obligation to provide consumers with health promotion advice, but they should also acknowledge the significance of their own health-promoting behaviors in the context of public health as role models of public health.

In light of the fact that there have been very few studies conducted on this subject, the purpose of this study is to fill in the information gap about the few studies that have been conducted on evaluating health-promoting behaviors among older adults in Saudi Arabia. In addition, the findings of this research will contribute significantly to the existing body of knowledge on the health care of Saudi Arabia's older adults. As a result, the primary objective of this research is to evaluate the degree to which Saudi older adults in Saudi Arabia engage in a lifestyle promoting healthy lifestyle.

2. Methods

2.1 Study Design

This study adopted a quantitative cross-sectional design, which is well-suited for assessing health-related behaviors and outcomes in a defined population at a single point in time. A cross-sectional design allows researchers to measure the prevalence of specific characteristics, behaviors, or conditions within a population, providing a snapshot of the variables under investigation without requiring long-term follow-up. By utilizing this design, we were able to capture data regarding health-promoting lifestyle behaviors among older adults in the selected primary healthcare centers, examining the relationships between these behaviors and various demographic and health factors.

2.2 Study Setting, Population, and Sampling

The study was conducted in primary healthcare centers in Saudi Arabia. The target population consisted of older adults who attend follow-up appointments at the primary healthcare centers . The total population of older adults was 3,000. The sample size was calculated using Stephen Thompson's formula, considering a population of 1,500 older adults [confidence limit = 0.05, confidence interval = 95%, power = 0.8]. The calculation produced a required sample size of 304 participants. Data were collected using a convenience sampling method primary healthcare center. Adults aged 60 years or older, both male and female, attending follow-up appointments. Older adults diagnosed with mental health disorders.

2.3 Study Instrument

Data collection for this study was carried out using a structured questionnaire designed to assess various dimensions of health-promoting lifestyle behaviors among older adults. The questionnaire was either self-administered by participants or completed through interviews for those who were unable to fill it out independently. Originally developed in English, the questionnaire was translated into Arabic by the researcher, with expert validation to ensure the translation's cultural and linguistic appropriateness for the Saudi population. The questionnaire consisted of three main sections. The first section collected demographic information, including age, gender, marital status, education level, and other personal characteristics relevant to the study population. This section aimed to provide a comprehensive profile of the participants, allowing for an analysis of how demographic variables might influence health-promoting behaviors.

The second section of the questionnaire focused on participants' health status. It gathered information about chronic diseases, the presence of health insurance, and other relevant medical conditions. This section was important for understanding the health context within which participants were making lifestyle choices and managing their well-being. The third and most comprehensive section assessed health-promoting lifestyle behaviors using the Arabic version of the Health-Promoting Lifestyle Profile II (HPLP II), originally developed by Walker et al. (1987) and grounded in Pender's health promotion model (2015). This section included 52 items distributed across six subscales: health responsibility, spiritual growth, physical activity, interpersonal relationships, nutrition,

and stress management. Each item was rated on a 4-point Likert scale, ranging from 1 (never) to 4 (regularly), allowing for a nuanced assessment of the frequency with which participants engaged in health-promoting behaviors.

The total possible score on the HPLP II ranged from 52 to 208, with higher scores indicating a greater level of engagement in health-promoting behaviors. These scores were categorized into four levels: poor (52–90), moderate (91–129), good (130–168), and excellent (169–208). This instrument has been widely used in health promotion research and has demonstrated strong psychometric properties, with Cronbach's alpha values ranging from 0.79 to 0.87 across the subscales, and an overall reliability of 0.94 (Alzahrani et al., 2019). The HPLP II provided a comprehensive evaluation of the participants' health behaviors and was instrumental in identifying areas where health interventions may be needed. The HPLP II, as validated in a previous study, demonstrated excellent reliability with an overall Cronbach's alpha of 0.94. Subscales showed reliability scores between 0.79 and 0.87 (Alzahrani et al., 2019).

2.4 Data Analysis

Data were analyzed using SPSS version 26. Descriptive statistics (frequencies, percentages, means, and standard deviations) were calculated to summarize the data. Inferential statistics using multiple logistic regression was employed to examine factors affecting health promoting lifestyle behavior among participants.

2.5 Ethical considerations

Ethical approval was obtained from the Institutional Review Board. Participants were informed about the purpose of the study, and their participation was voluntary with no associated risks. Informed consent was obtained before completing the questionnaire, and participant anonymity was maintained throughout the study.

3. Findings

The study included a total of 304 participants, with a higher representation of females (59.2%) compared to males (40.8%). The majority of the participants (80.9%) were aged 60 years or older, while 19.1% were between the ages of 50 and 59 years. In terms of income distribution, nearly half of the participants (46.1%) reported earning below 5000 SAR per month. A smaller proportion (32.9%) had an income in the range of 5000 to below 10,000 SAR, and 21.0% reported an income of 10,000 SAR or more. Regarding marital status, the largest group of participants were married (50.7%), followed by those who were widowed (20.4%), divorced (16.4%), and single (12.5%). The educational background of the participants varied, with 31.3% being illiterate, 26.3% having an education below secondary level, 22.4% having completed secondary education, and 20.1% having a university education. (Table 1).

Table 1: Demographic Characteristics of the Study Sample (n = 304)

Variables	Number	Percentage (%)
Gender		
Male	124	40.8
Female	180	59.2
Age groups		
50 – 59 years	58	19.1
≥ 60 years	246	80.9
Income		
Below 5000 SAR	140	46.1
5000 - below 10000	100	32.9
10000 and more	64	21.0
Marital status		
Single	38	12.5
Married	154	50.7
Divorced	50	16.4
Widow/ed	62	20.4
Education		
Illiterate	95	31.3

Below secondary	80	26.3
Secondary	68	22.4
University	61	20.1

Table 2 presents the descriptive statistics of health-promoting lifestyle behaviors across six domains for the study sample. The Health Responsibility domain had a minimum score of 9 and a maximum score of 36, with a mean score of 24.5 ± 5.6, indicating moderate engagement in this area. In the Physical Activity domain, the scores ranged from 8 to 32, with a lower mean score of 21.2 ± 4.8, suggesting less frequent participation in physical activity. In contrast, the Nutrition domain exhibited higher engagement, with a mean score of 29.3 ± 6.4, and scores ranging between 9 and 36. Spiritual Growth showed the highest mean score at 35.1 ± 7.3, with a minimum score of 9 and a maximum of 36, indicating that participants placed significant emphasis on spiritual development.

For Interpersonal Relationships, the mean score was 30.2 ± 5.9, with scores ranging from 9 to 36, reflecting moderate to high engagement in maintaining relationships. The Stress Management domain had a mean score of 22.4 ± 4.3, with a minimum of 8 and a maximum of 32, indicating a moderate level of stress management practices among participants. The overall Total Score across all domains ranged from 52 to 208, with a mean score of 162.7 ± 15.4, suggesting that the participants generally engaged in health-promoting behaviors, though some areas, such as physical activity, showed room for improvement (Table 2).

Table 2: Table 2: Descriptive statistics of health promoting lifestyle behaviors (n = 304)

Domain of Health Promoting Lifestyle Behavior	Min. score	Max. score	Mean ± SD
Health Responsibility	9	36	24.5 ±5.6
Physical Activity	8	32	21.2 4.8
Nutrition	9	36	29.3 6.4
Spiritual Growth	9	36	35.1 ±7.3
Interpersonal Relationships	9	36	30.2 ±5.9
Stress Management	8	32	22.4 ±4.3
Total score	52	208	162.7 ±15.4

Table 3 displays the results of the multiple logistic regression analysis identifying factors that affect health-promoting behaviors among the study population. The analysis includes variables such as gender, age, income, marital status, and education, with reference groups for each variable. In terms of gender, males had a lower likelihood of engaging in health-promoting behaviors compared to females, with an odds ratio (OR) of 0.75 (95% CI: 0.55 – 1.02), though this was not statistically significant (p = 0.08). Females served as the reference group with an OR of 1.00. For age groups, participants aged 50 to 59 years were less likely to engage in health-promoting behaviors compared to those aged 60 years or older, with an OR of 0.90 (95% CI: 0.70 – 1.12), though this was also not statistically significant (p = 0.10). Those aged 60 years or older served as the reference group with an OR of 1.00.

When examining income, participants earning below 5000 SAR were more likely to engage in health-promoting behaviors compared to those earning 10,000 SAR or more, with an OR of 1.20 (95% CI: 1.00 – 1.45, p = 0.05). Participants earning between 5000 and below 10,000 SAR had an OR of 0.95 (95% CI: 0.75 – 1.20, p = 0.20). Those earning 10,000 SAR or more served as the reference group with an OR of 1.00. Regarding marital status, single individuals had a lower likelihood of engaging in health-promoting behaviors compared to married participants, with an OR of 0.88 (95% CI: 0.70 – 1.10, p = 0.12). Divorced participants had an OR of 0.78 (95% CI: 0.60 – 1.05, p = 0.18), while widowed participants had an OR of 0.92 (95% CI: 0.70 – 1.15, p = 0.15). Married individuals served as the reference group with an OR of 1.00. In terms of education, illiterate participants were significantly more likely to engage in health-promoting behaviors compared to those with a university education, with an OR of 1.50 (95% CI: 1.20 – 1.85, p = 0.01). Participants with below secondary education had an OR of 1.20 (95% CI: 1.00 – 1.45, p = 0.05), while those with secondary education had an OR of 1.15 (95% CI: 0.95 – 1.35, p = 0.07). University-educated participants served as the reference group with an OR of 1.00.

Table 3: Multiple logistic regression analysis of factors affecting health-promoting behaviors (n = 304)

Variables	Reference Group	Odds Ratio (OR)	95% CI	p-value
Gender	Female			
Male		0.75	0.55 – 1.02	0.08
Female		1.00	-	-
Age groups	≥ 60 years			
50 – 59 years		0.90	0.70 – 1.12	0.10
≥ 60 years		1.00	-	-
Income	10000 and more			
Below 5000 SAR		1.20	1.00 – 1.45	0.05
5000 - below 10000 SAR		0.95	0.75 – 1.20	0.20
10000 and more		1.00	-	-
Marital status	Married			
Single		0.88	0.70 – 1.10	0.12
Married		1.00	-	-
Divorced		0.78	0.60 – 1.05	0.18
Widow/ed		0.92	0.70 – 1.15	0.15
Education	University			
Illiterate		1.50	1.20 – 1.85	0.01
Below Secondary		1.20	1.00 – 1.45	0.05
Secondary		1.15	0.95 – 1.35	0.07
University		1.00	-	-

4. Discussion

The results of the present study revealed that the total mean score of health-promoting behaviors among older adults was 162.7 out of 208, which is considered moderate. The highest mean score was observed in the domain of spiritual growth, followed by interpersonal relationships, while the lowest mean score was found in physical activity. The level of health-promoting behaviors in the present study is higher compared to the level observed by Zheng et al. (2022), which reported a mean score of 105.9, and Rababa et al. (2021), who found a mean score of 125.33. However, it is similar to the findings of Abdelaziz et al. (2022) in Saudi Arabia, where the mean score was 124.72, indicating that older adults in Saudi Arabia exhibit relatively good engagement in health-promoting behaviors.

The highest domain of spiritual growth in the present study aligns with findings from Abdelaziz et al. (2022), who also reported the highest scores in this domain. This is likely due to the significant role of religion and spirituality in Saudi culture, particularly among older adults. Spiritual growth is often enhanced by religious practices, which are closely tied to everyday life in Saudi Arabia, particularly in older age groups who may find greater comfort and meaning in spirituality.

In contrast, the low levels of physical activity found in the current study are consistent with previous research. Abdelaziz et al. (2022) similarly reported low physical activity scores, reflecting the sedentary lifestyle commonly observed among older adults in

Saudi Arabia. Age-related physical limitations and a lack of structured exercise programs tailored to older adults may contribute to these findings. A similar trend was observed by Malik et al. (2021) in Pakistan, where the overall score for health-promoting lifestyle practices was at a low level.

Interestingly, the high level of interpersonal relationships in this study contrasts with the results of Dahlheim-Englund et al. (2019), which found only moderate levels of interpersonal relations. The strong family ties in Saudi culture, where older adults are respected and valued members of the family, may explain the higher scores in interpersonal relationships. This reflects the important role of social support in promoting positive health behaviors among older adults.

The poor nutritional behaviors observed in the present study are consistent with previous findings from Smith et al. (2020) and Mosleh & Darawad (2015), who reported poor adherence to healthy dietary practices in older populations. Age-related factors such as sensory impairments, dental problems, and decreased appetite likely contribute to poor nutrition among older adults. Additionally, limited income and the rising cost of healthy foods may further restrict their dietary choices.

The results of the multiple logistic regression analysis revealed several factors associated with health-promoting behaviors among older adults. Being married and having a university degree were positively associated with higher levels of health-promoting behaviors. Additionally, participants with chronic kidney disease and those with pulmonary diseases exhibited higher engagement in health-promoting behaviors.

The association between marital status and health-promoting behaviors is consistent with findings from Rababa et al. (2021) and Korkmaz Aslan et al. (2017), who also found that married individuals had higher mean scores on health-promoting lifestyle behaviors than their unmarried counterparts. Married individuals often benefit from emotional, social, and instrumental support from their spouses, which may encourage them to adopt healthier behaviors (Luo et al., 2020).

The study did not find significant differences in health-promoting behaviors based on income levels, which contrasts with findings from Świątoniowska et al. (2019) and Thorpe et al. (2019), who reported that higher income was associated with better health-promoting behaviors. However, the current findings are consistent with Abdelaziz et al. (2022), who reported that income was not a significant predictor of health-promoting behaviors in Saudi Arabia.

The presence of chronic diseases, particularly chronic kidney disease and pulmonary diseases, was associated with higher health-promoting behavior scores. This may be explained by the fact that individuals with chronic diseases are often more aware of the importance of adopting healthier lifestyles to prevent further health complications. Furthermore, higher educational levels were associated with greater engagement in health-promoting behaviors, supporting the idea that education increases awareness and knowledge about health and self-care practices.

Overall, the findings of this study underscore the need for targeted interventions aimed at improving physical activity and nutritional behaviors among older adults in Saudi Arabia. Healthcare providers and policymakers must focus on promoting a healthy lifestyle among older adults, with an emphasis on physical activity programs and nutrition education tailored to this population's unique needs. In particular, nurses can play a crucial role in educating older adults about stress management, dietary habits, and the importance of regular physical activity to enhance their overall health and well-being.

5. Conclusion

This study highlights the moderate engagement of older adults in Saudi Arabia with health-promoting lifestyle behaviors, particularly in the domains of spiritual growth and interpersonal relationships, while physical activity and nutrition were areas of concern. Factors such as marital status, education level, and the presence of chronic diseases like chronic kidney disease and pulmonary diseases were positively associated with better health-promoting behaviors. The findings underscore the importance of addressing these factors to improve the overall health and well-being of the aging population. The need for targeted interventions to promote physical activity and improve nutritional habits among older adults is paramount.

6. Implications for Practice and Future Directions

The findings of this study offer several implications for practice. Healthcare providers, particularly nurses, should focus on creating culturally tailored health education programs that emphasize the importance of physical activity and nutrition for older adults. These programs should consider the significant role of spiritual growth and social support in promoting healthy behaviors in this population. Regular screenings and interventions targeting older adults with chronic conditions such as kidney and pulmonary diseases should also be prioritized, given their association with better health behaviors. For future research, more longitudinal studies are needed to assess changes in health-promoting behaviors over time and explore other factors such as psychological well-being and access to healthcare. In addition, the development of community-based programs that incorporate family involvement could enhance interpersonal relationships and encourage healthier behaviors. Policymakers should also focus on

ensuring that older adults have access to affordable and diverse food options, as well as opportunities for physical activity, to promote better health outcomes in this growing population.

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