ORIGINAL ARTICLE

Knowledge, attitudes, and practices regarding heart disease prevention in adults aged 40 and above attending care hospital

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ABSTRACT

Background: Cardiovascular diseases (CVDs) constitute the leading causes of mortality worldwide, and prevention measures are particularly crucial among middle-aged and older populations. The increasing prevalence of obesity, diabetes, and sedentary lifestyles is contributing to the rise in CVD prevalence in Saudi Arabia.

Objective: To examine knowledge, attitudes, and practices (KAP) on prevention of heart disease among adults of 40 years and older who visit a care hospital.

Methods: A cross-sectional survey of 309 hospital attendees was performed with a structured questionnaire assessing aspects of demographic factors, knowledge of CVD risk factors, attitudes toward prevention, and self-reported prevention practices. Associations were evaluated using descriptive statistics and inferential analyses.

Results: Although more than 80% of the participants gave positive answers concerning their attitudes toward the prevention of heart diseases, only half of them had the proper knowledge, and preventive measures like routine screening were not consistent. Screening behaviors were reported to be better in men and those with higher education. Only one-quarter remembered a health care provider telling them they were overweight.

Conclusion: Knowledge gaps and low levels of participation in preventive practices are alarming although opinions are favorable. These gaps should be addressed through improved health education, regular counseling by healthcare providers, and culturally specific interventions that would lead to better long-term outcomes in cardiovascular health.

Keywords: Cardiovascular disease, heart disease prevention, knowledge, attitudes, practices, preventive health, Saudi Arabia, health behavior.

Introduction

Noncommunicable diseases (NCDs) have emerged as a major public health concern in recent decades, with cardiovascular diseases (CVDs) accounting for the majority of morbidity and mortality worldwide [1]. Heart disease is unique among CVDs in that it develops quietly and is closely connected with risk factors that may be modified, such as stress, poor diet, smoking, and sedentary lifestyles [2]. Heart disease is growing increasingly prevalent, which is directly related to aging populations and lifestyle changes, making prevention a global public health priority [3].

Fortunately, good habits, greater understanding, and early risk factor treatment can help prevent a considerable number of heart disease cases [4]. Because of their cumulative risk factor exposure, people over the age of

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40 are especially vulnerable to cardiovascular issues, making preventative measures critical [5].

It is critical to understand people's knowledge, attitudes, and practices (KAP) regarding heart disease in order to promote preventative behaviors and develop successful health treatments. KAP research makes it easier to identify behavioral patterns, misconceptions, and awareness gaps that may block prevention efforts. It is critical to concentrate on the population over 40 because early lifestyle adjustments and greater health literacy in this cohort can significantly reduce the long-term burden of CVD [6].

Despite international awareness-raising efforts, many people over the age of 40 continue to be unaware of the modifiable risk factors and early warning signs of CVD [7,8]. According to research, information alone is insufficient unless accompanied with positive attitudes and consistent practice of healthy practices [9]. Misconceptions, a lack of health literacy, and limited access to preventative therapies can all impede public health program success [10,11].

Rapid urbanization and lifestyle changes have resulted in an increase in NCDs, particularly heart disease, in developing countries such as Egypt. However, preventive medicine usually remains reactive rather than proactive, prioritizing treatment over prevention [12,13]. People over the age of 40 are especially vulnerable because they have greater cardiovascular risk factors. As such, reducing morbidity and mortality necessitates early detection and lifestyle adjustments [14].

Hospital facilities provide a unique opportunity to analyze and influence patient behavior. Care facility patients are an important target population for educational interventions since they may already be at high risk or exhibit early warning symptoms. However, there is a significant gap in localized public health data, as few studies in Saudi Arabia have investigated the level of awareness, attitudes, and preventative measures within this group [15]. This study's aim is to assess the KAP of Saudi Arabian people aged 40 and above who visit Care Hospital with regard to heart disease prevention. The goal of the study is to find behavioral and awareness gaps that may help guide future health education initiatives and population-specific preventative measures.

Materials and Methods

Study design

This study used a cross-sectional design to assess the KAP regarding heart disease prevention among adults aged 40 years and above who attended Care Hospital in Riyadh. The objective was to evaluate participants' understanding of heart disease, their perceptions of its risks, and their lifestyle behaviors related to prevention. Data collection was conducted over a 2-month period, from May to June 2025.

Study population

All adults aged 40 years and above attending inpatient wards and outpatient clinics at Care Hospital in Riyadh, regardless of their reason for visit, were considered for participation.

Sample size

The sample size was calculated using a 95% confidence level, 5% margin of error, and 50% assumed prevalence of adequate knowledge. The minimum required sample size was 300, accounting for possible nonresponse.

Study tools

Data were collected using a structured questionnaire, adapted from validated tools previously used in similar KAP studies on heart disease prevention [16]. To ensure cultural appropriateness and clarity, the questionnaire was translated into Arabic and pretested on a small sample.

It comprised the following sections.

- Socio-demographic data (age, gender, education, and occupation).
- Knowledge of heart disease risk factors and preventive measures.
- Attitudes toward heart disease and its prevention.
- Practices related to lifestyle choices and heart disease prevention.

Trained data collectors administered the questionnaire in private settings within the hospital after explaining the study's purpose and obtaining written informed consent.

Inclusion criteria:

- Adults aged 40 and over 40.
- Attending inpatient wards or outpatient clinics at Care Hospital.
- Being open to taking part and giving informed consent.

Exclusion criteria:

- Individuals with cognitive impairment or severe illness who prevent questionnaire completion.
- Individuals who decline to participate.

Ethical consideration

- The study was approved by the Institutional Review Board (IRB) of Care Hospital.
- Participants were informed about the study's purpose, and informed consent was obtained.
- Confidentiality and privacy of participant information were strictly maintained.
- Participation was entirely voluntary.

Data analysis

Collected data were coded and entered into SPSS. Descriptive statistics (frequencies, percentages, means, and SD)

summarized KAP levels. Inferential statistics (chi-square test, *t*-test, or ANOVA) were used to examine associations between demographic variables and KAP scores. A *p*-value of <0.05 was considered statistically significant.

Results

The results of Table 1 indicate that most of the respondents were females, who comprised 90% of the sample, whereas males were 10%. This indicates that the study population may have a high proportion of females, which could be an indication that women have a high health-seeking behavior in Care Hospital. Regarding age, most participants (44.7%) were aged between 40 and 45 years. Lower percentages belonged to older age groups. Nevertheless, the proportion of those who failed to provide the age (42.1%) could be a hindrance in the analysis regarding age. Most participants (76.1%) were highly educated with a university degree or higher, which shows a high level of education in the study group. A low percentage possessed secondary (14.9%), primary (6.1%), or intermediate education (2.9%(. Data on employment status indicated that a vast majority of 95.8% of the participants were employed and only 4.2% of the participants were not.

The results of Table 2 reveal a moderately healthy awareness level, with more than half (52.1%) of the respondents acknowledging that they had some sort of disease condition. Nevertheless, 36.2% stated that they had no conditions, and 11.7% did not know, indicating that a large percentage of the population might not be fully aware of their health conditions. Participants were questioned on whether there was a history of diabetes in the family, 46.6% said yes, a family member had been diagnosed with diabetes, and 51.1% said no. Very few (2.3%) were not aware. This demonstrates that almost 50% of the sample could possess a genetic risk factor of having CVD.

Table 1. *Socio-demographic characteristics.*

		N (= 309)	%
Gender	Female	278	90.0%
	Male	31	10.0%
Age	40-45	138	44.7%
	46-50	23	7.4%
	51-55	12	3.9%
	56-60	6	1.9%
	Unknown	130	42.1%
Educational level	Intermediate	9	2.9%
	Primary	19	6.1%
	Secondary	46	14.9%
	University or above	235	76.1%
Working status	No	13	4.2%
	Yes	296	95.8%

Regarding the frequent healthcare participation, only 35.3% of them had a doctor whom they saw on a regular basis. Most of them (62.8%) lacked routine follow-up, and this could diminish their possibility of early identification of cardiovascular risks. Most (67.3%) had already checked their blood sugar levels, which is good screening behavior against diabetes, a strong CVD risk factor. Nevertheless, 31.4% had never done that, indicating a lapse in preventive care. Over half (56.3%) of the participants had checked their cholesterol or lipid levels, whereas 41.4% had not. Cholesterol testing is an important practice that helps identify the risk of heart disease, and thus, these numbers can be improved. Last, 26.5% had ever been informed by a health professional that they were overweight, whereas 68.9% had not.

The results of Table 3 and Figure 1 indicate that most of the participants were generally positive toward CVD risk factors. Precisely, 44.3% of the respondents were categorized as good attitude, and this implies good knowledge and interest in the prevention of CVD. A very good attitude was seen in another 23.9% and 12.9% showed an excellent attitude, so more than 80% of the subjects had a moderate or higher opinion about managing or preventing heart disease. Conversely, only 15.2% and 3.6% displayed fair and poor attitudes, respectively, toward CVD risk factors.

Table 4 shows the findings of a comparative analysis of the level of knowledge about CVD risk factors, based on gender. There was no significant difference between male and female in the awareness of having a disease condition (*p* = 0.280). The majority of those who answered "No or don't know (91.9%)" were females and the same applies to females (88.2%), who were the majority among those who said that they were aware of their health condition.

Regarding family history of diabetes, whilst higher numbers of males (13.2%) compared to females (7.3%) reported a positive family history, the result was not found to be significant (*p* = 0.08). Knowledge about diabetes in families was similar in both genders. The gender difference in the data having a regular doctor was also not significant (*p* = 0.11). Nevertheless, a somewhat larger proportion of males (13.8%) than females (8.0%) said that they regularly saw a doctor, possibly reflecting a minor tendency toward increased involvement in routine care in men. Big gender disparities came out in personal health screening knowledge. With blood sugar testing, there was a significant difference in the proportion of males (13.0%) and females (4.0%) who reported having undergone testing (*p* = 0.013).

In cholesterol testing, the gender disparity was even more pronounced (*p* = 0.001), at 14.9% of males reporting having been tested against only 3.7% of females. This indicates a significant disparity in preventive care practices, as men being more likely to have their lipid levels tested. Finally, recommendations concerning their overweight status by health practitioners were also more common in males (18.3%) than in females (7.0%),

Table 2. Summary of knowledge about CVD risk factors.

	I don't know		No		Yes	
	N	%	N	%	N	%
Are you aware if you have any disease conditions?	36	11.7%	112	36.2%	161	52.1%
Has any member of your family been diagnosed with diabetes (type 1 or 2)?	7	2.3%	158	51.1%	144	46.6%
Do you have any clinic or hospital doctor who you visit regularly?	6	1.9%	194	62.8%	109	35.3%
Have you ever performed a clinical test of your blood sugar level?	4	1.3%	97	31.4%	208	67.3%
Have you ever performed a clinical test of your blood cholesterol/lipid level?	7	2.3%	128	41.4%	174	56.3%
Has any health professional ever suggested that you are overweight?	14	4.5%	213	68.9%	82	26.5%

Table 3. Summary of attitude about CVD risk factors.

Attitude about CVD risk factors	Frequency	Percent
Poor	11	3.6
Fair	47	15.2
Good	137	44.3
Very good	74	23.9
Excellent	40	12.9
Total	309	100.0

and this difference was also found to be statistically significant ($p = 0.0278$).

The results of Table 5 provide an education comparison of knowledge on CVD risk factors. Knowledge of disease conditions also differed greatly according to the level of education ($p = 0.0098$). The awareness was highest among the participants who had university education and above (83.9%) against very low levels of awareness among those with intermediate (2.5%) or primary education (3.7%). There was also a statistically significant difference in terms of education level with regard to family history of diabetes ($p = 0.01$). University graduates (84.7%) were more likely to be aware whether a family member had diabetes or not than their less-educated counterparts, a true testament to the roles played by education with regard to family health awareness.

There was no significant relation between the education and the possession of a regular doctor ($p = 0.388$). Nevertheless, the more educated (81.7%) had the highest proportions of having visited the doctor regularly, and this appears to show a propensity toward more regular health follow-ups among the better-educated. The education was highly significantly associated with blood sugar testing ($p < 0.001$). Among the tested individuals, 77.9% were university-level educated, whereas testing was significantly lower in the intermediate- and primary-level educated individuals.

Likewise, the prevalence of cholesterol testing was strongly related to having a university education (85.1%) than secondary education (12.1%) and lower education groups ($p < 0.001$). Last, having been advised by a health professional regarding one being overweight was not significantly related to the level of education ($p = 0.57$). Nevertheless, a higher percentage of recipients of such advice (81.7%) had university education, indicating that educated people could be more probable to get or identify professional health advice.

The results of Table 6 provide a comparison of knowledge about CVD risk factors based on work. There was no statistically significant correlation between employment and awareness of disease conditions ($p = 0.49$). There was no difference in awareness between the working (95.0%) and nonworking participants (5.0%). Work status showed a significant correlation with knowledge of family history of diabetes ($p = 0.025$). Participants who were working (93.1%) had a higher proportion of reporting a knowledge of a family history of diabetes than their nonworking counterparts (6.9%), which could be due to the employed individuals being more exposed to health-related information or conversation.

There was also a large difference in the existence of a regular doctor based on the work status of people ($p = 0.043$). The proportion of those who had a usual clinic or hospital doctor was also higher among those who were working (92.7%) than the nonworking participants (7.3%), indicating that the working population is more engaged in health care access. Nevertheless, the employment and the performed blood sugar test had no significant connection ($p = 0.88$). Both groups reported similar testing rates, and thus, employment did not have a significant effect on this particular preventive health behavior.

Likewise, work status was not significantly related to having had tested blood cholesterol/lipid levels ($p = 0.13$), yet a larger proportion of the working participants had been tested (94.3%) compared to the nonworking (5.7%). Finally, although a higher proportion of working (92.7%)
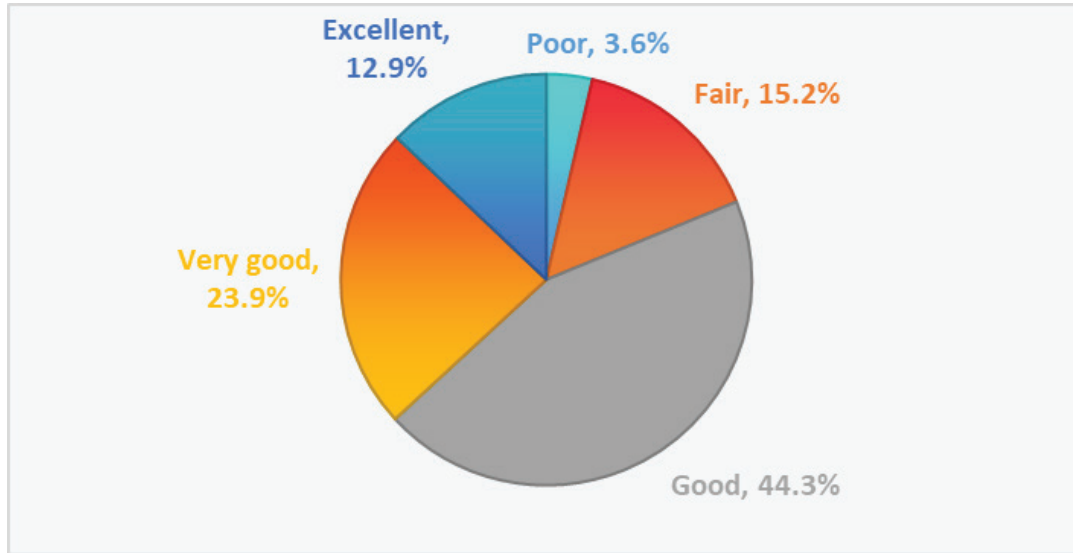
Figure 1. *Summary of attitude about CVD risk factors.*

Table 4. *Knowledge according to sex.*

		Gender				*p*-value
		Female		Male		
		N	%	N	%	
Are you aware if you have any disease conditions?	No or don't know	136	91.9%	12	8.1%	0.280
	Yes	142	88.2%	19	11.8%	
Has any member of your family been diagnosed with diabetes	No or don't know	153	92.7%	12	7.3%	0.08
	Yes	125	86.8%	19	13.2%	
Do you have any clinic or hospital doctor who you visit regularly?	No or don't know	184	92.0%	16	8.0%	0.11
	Yes	94	86.2%	15	13.8%	
Have you ever performed a clinical test of your blood sugar level?	No or don't know	97	96.0%	4	4.0%	0.013
	Yes	181	87.0%	27	13.0%	
Have you ever performed a clinical test of your blood cholesterol/lipid level?	No or don't know	130	96.3%	5	3.7%	0.001
	Yes	148	85.1%	26	14.9%	
Has any health professional ever suggested that you are overweight?	No or don't know	211	93.0%	16	7.0%	0.0278
	Yes	67	81.7%	15	18.3%	

compared with nonworking (7.3%) respondents heard that they were overweight from a health professional, the difference was not significant ($p = 0.10$).

Discussion

NCDs have emerged as a major public health concern in recent decades, with CVDs accounting for the majority of morbidity and mortality worldwide [1]. Heart disease is unique among CVDs in that it develops quietly and is closely connected with risk factors that may be modified, such as stress, poor diet, smoking, and sedentary lifestyles [2]. Heart disease is growing increasingly prevalent, which is directly related to aging populations and lifestyle changes, making prevention a global public health priority [3].

Fortunately, good habits, greater understanding, and early risk factor treatment can help prevent a considerable number of heart disease cases [4]. Because of their cumulative risk factor exposure, people over the age of 40 are especially vulnerable to cardiovascular issues, making preventative measures critical [5].

It is critical to understand people's KAP regarding heart disease in order to promote preventative behaviors and develop successful health treatments. KAP research makes it easier to identify behavioral patterns, misconceptions, and awareness gaps that may block prevention efforts. It is critical to concentrate on the population over 40 because early lifestyle adjustments and greater health literacy in this cohort can significantly reduce the long-term burden of CVD [6].

Table 5. Knowledge according to education.

		Educational level								p-value
		Intermediate		Primary		Secondary		University or above		
		N	%	N	%	N	%	N	%	
Are you aware if you have any disease conditions?	No or don't know	5	3.4%	13	8.8%	30	20.3%	100	67.6%	0.0098
	Yes	4	2.5%	6	3.7%	16	9.9%	135	83.9%	
Has any member of your family been diagnosed with diabetes	No or don't know	7	4.2%	13	7.9%	32	19.4%	113	68.5%	0.01*
	Yes	2	1.4%	6	4.2%	14	9.7%	122	84.7%	
Do you have any clinic or hospital doctor who you visit regularly?	No or don't know	7	3.5%	14	7.0%	33	16.5%	146	73.0%	0.388
	Yes	2	1.8%	5	4.6%	13	11.9%	89	81.7%	
Have you ever performed a clinical test of your blood sugar level?	No or don't know	7	6.9%	13	12.9%	8	7.9%	73	72.3%	<0.001*
	Yes	2	1.0%	6	2.9%	38	18.3%	162	77.9%	
Have you ever performed a clinical test of your blood cholesterol/lipid level?	No or don't know	7	5.2%	16	11.9%	25	18.5%	87	64.4%	<0.001*
	Yes	2	1.1%	3	1.7%	21	12.1%	148	85.1%	
Has any health professional ever suggested that you are overweight	No or don't know	7	3.1%	15	6.6%	37	16.3%	168	74.0%	0.57
	Yes	2	2.4%	4	4.9%	9	11.0%	67	81.7%	

*significant *p* value.

Table 6. Knowledge according to work.

		Work				p-value
		No		Yes		
		n	%	n	%	
Are you aware if you have any disease conditions?	No or don't know	5	3.4%	143	96.6%	0.49
	Yes	8	5.0%	153	95.0%	
Has any member of your family been diagnosed with diabetes	No or don't know	3	1.8%	162	98.2%	0.025*
	Yes	10	6.9%	134	93.1%	
Do you have any clinic or hospital doctor who you visit regularly?	No or don't know	5	2.5%	195	97.5%	0.043*
	Yes	8	7.3%	101	92.7%	
Have you ever performed a clinical test of your blood sugar level?	No or don't know	4	4.0%	97	96.0%	0.88
	yes	9	4.3%	199	95.7%	
Have you ever performed a clinical test of your blood cholesterol/lipid level?	No or don't know	3	2.2%	132	97.8%	0.13
	Yes	10	5.7%	164	94.3%	
Has any health professional ever suggested that you are overweight?	No or don't know	7	3.1%	220	96.9%	0.10
	Yes	6	7.3%	76	92.7%	

*significant *p* value.

Despite international awareness-raising efforts, many people over the age of 40 continue to be unaware of the modifiable risk factors and early warning signs of CVD [7,8]. According to research, information alone is insufficient unless accompanied by positive attitudes and consistent practice of healthy practices [9]. Misconceptions, a lack of health literacy, and limited access to preventative therapies can all impede public health program success [10,11].

Rapid urbanization and lifestyle changes have resulted in an increase in NCDs, particularly heart disease, in developing countries such as Egypt. However, preventive medicine usually remains reactive rather than proactive,

prioritizing treatment over prevention [12,13]. People over the age of 40 are especially vulnerable because they have greater cardiovascular risk factors. As such, reducing morbidity and mortality necessitates early detection and lifestyle adjustments [14].

Hospital facilities provide a unique opportunity to analyze and influence patient behavior. Care facility patients are an important target population for educational interventions since they may already be at high risk or exhibit early warning symptoms. However, there is a significant gap in localized public health data, as few studies in Saudi Arabia have investigated the level of

awareness, attitudes, and preventative measures within this group [15].

Conclusion

Adults aged 40 and older should improve their KAP for heart disease prevention in order to reduce cardiovascular risk. Moderate levels of awareness and irregular use of preventative methods are prevalent in practice with this population, highlighting the significance of education and clinical communication. Hospitals and health care providers play a vital role in promoting healthy habits through routine screenings, counseling, and culturally relevant interventions. Empowering population health methods that encourage early screening and lifestyle changes can have a significant impact on cardiovascular outcomes in aging populations.

List of Abbreviations

CVDs   Cardiovascular diseases
IRB   Institutional Review Board
KAP   Knowledge, attitudes, and practices
NCDs   Noncommunicable diseases

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this article.

Funding

Consent to participate

Informed consent was obtained from all the participants.

Ethical approval

The study was approved from Care IRB committee (approval no IRB-004/280725) date: 28/7/2025.

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