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ORIGINAL RESEARCH

The Impact of Heart Attack and Sudden Cardiac Death Risk Perception on Lifestyle Modification Intention Among Adults in Jazan Province

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Purpose: This study aimed to assess the perception of sudden cardiac death (SCD) and heart attack risk and its influence on the intention to adopt healthy lifestyle behaviors among the general population in Jazan province, Saudi Arabia. SCD refers to an abrupt and unexpected loss of heart function resulting in death, and its incidence has been alarmingly increasing worldwide. Several factors, including smoking, hypertension, diabetes, obesity, and specific medications, have been associated with an elevated risk of SCD.

Methods: A descriptive cross-sectional study was conducted using a pretested questionnaire distributed among the general population in Jazan province. Descriptive statistics, chi-square, and *t*-tests were employed for data analysis.

Results: The study included 974 participants with a mean age of 27.90 ± 9.32 years, of whom 56% were female. More than half of the participants perceived themselves as highly susceptible to SCD, and all participants demonstrated a moderate willingness and readiness to modify their unhealthy lifestyle behaviors. Age, gender, marital status, body mass index (BMI), history of hypertension, dyslipidemia, medication use, physical exercise, and family history of chronic diseases and SCD were statistically associated with the perception of SCD.

Conclusion: The study revealed a high-risk perception and a moderate readiness to adopt lifestyle modifications. These findings can inform the development of effective strategies and support programs aimed at reducing the burden of SCD.

Keywords: sudden cardiac death, risk perception, lifestyle behaviors, Jazan

Introduction

Sudden cardiac death (SCD) refers to sudden death from a cardiac cause within a short period, usually within one hour of symptom onset, in individuals without any previous conditions to explain the fatality.[1–3] Globally, SCD occurs at a rate of 50 to 100 cases per 100,000 people in general populations.[4–6] Gulf countries, including Kuwait, the United Arab Emirates, and Saudi Arabia, have reported higher-than-average rates of cardiac-related fatalities, with SCD accounting for 41%, 40%, and 37% of deaths, respectively.[7] In Saudi Arabia's Eastern Province, 59% of SCD cases have been attributed to cardiovascular pathology.[8]

Several risk factors have been associated with SCD, including smoking, a family history of chronic diseases such as diabetes (DM), dyslipidemia, hypertension (HTN), obesity, and certain medications used for neuropsychiatric conditions.[9,10] The emergence of the coronavirus disease 2019 (COVID-19) has further impacted physical and mental health, potentially contributing to increased SCD cases.[11,12]

The actual risk of developing SCD varies depending on the illness and clinical and demographic variables such as sex and age. The prevalence of SCD also varies with age, decreasing in early childhood and increasing in adolescence after an initial higher risk during early infancy.[13] Notably, young women have been found to face a higher risk of premature death, even in the absence of pre-existing cardiac conditions.[14]

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Multiple studies have highlighted a poor relationship between SCD risk perception and adherence to preventive measures.[7,15–18] Additionally, low awareness of cardiovascular diseases (CVDs) has been observed among Saudi women, emphasizing the need for well-organized educational and awareness programs on CVD risk factors within the Saudi population.[7,17]

Based on the identified knowledge gap, our study aims to assess the risk perception of SCD and its impact on the intention to modify lifestyle among the general population of Jazan Province. We hypothesize that there is a lack of awareness regarding SCD-related factors among Jazan Province residents, highlighting the need for targeted interventions to enhance knowledge and promote lifestyle modifications.

Materials and Methods

Study Design, Setting, and Population

A cross-sectional, descriptive observational study design was employed to conduct the research among the general population in Jazan, located in the southwest corner of Saudi Arabia. The study targeted all adult males and females aged ≥18 years who resided in Jazan City at the time of the study and met the inclusion criteria. Participants who refused to participate were not included.

Sample Size and Sampling Method

The sample size for this cross-sectional study was calculated using the Raosoft sample size calculator (http://www.raosoft.com) based on the estimated population of Jazan from the 2019 census report, which is approximately 1.673 million.[19,20] The calculation considered a prevalence of 50%, an error margin not exceeding 5%, and a 95% confidence interval. Additionally, a 25% non-response rate was anticipated. The sample for this study was selected using a convenience sampling technique. It was chosen as the sampling technique for this study due to its practicality and feasibility in accessing a wide range of participants from the general population in Jazan province.

Method and Instrument of Data Collection

A pretested anonymous self-administered electronic survey[21] was utilized after obtaining permission to use it. The electronic survey took approximately four to five minutes and was distributed through various social media channels, including WhatsApp, Twitter, Telegram, and Snapchat. The questionnaire consisted of four sections, each containing questions related to different aspects of the study's objectives. The first section collected demographic information such as age, gender, marital status, place of residence, level of education, and income. The second section recorded personal risk factors, including HTN, DM, dyslipidemia, smoking status, obesity, physical activity compliance, substance abuse, personal history of cardiac illness, and familial history of cardiac disease or SCD. The third section comprised eight questions to assess the risk perception of SCD scored on a 5-point Likert scale ranging from strongly disagree (0 points) to strongly agree (5 points). Risk perception scores were categorized as low risk (13 or less), moderate risk (14 to 26), and high risk (27 or above). The fourth section contained nine questions evaluating the impact of SCD risk perception on participants' willingness to change their lifestyle behaviors, including exercise, smoking, and dietary habits. Each item was assessed on a 5-point Likert scale from strongly disagree (0 points) to strongly agree (5 points). Perceived willingness scores were categorized as low perceived willingness (5 points or less), moderate perceived willingness (6 to 10), and high perceived willingness (11 points or more).[22]

Pilot Study

Before the commencement of the study, a pilot study was conducted involving 10% of the required sample size to evaluate participants' understanding of the survey used for data collection. Based on the results of the pilot study, specific improvements and reordering of some questions were implemented. The data from the pilot study were not included in the final data analysis.

Ethical Consideration

The study received primary review and approval from Jazan University's Scientific Research Ethics Committee (REC) with reference number REC-44/02/311. The study adhered to the ethical principles of Saudi Arabia and conforms with the principles outlined in the Declaration of Helsinki. Informed consent was obtained from each participant before they commenced the anonymous questionnaire. Participants were free to withdraw from the survey at any point during the research process. Confidentiality and privacy were maintained, and participants were not questioned about any information that could reveal their identity.

Statistical Analysis

Data verification and coding were performed manually using an Excel spreadsheet. The Statistical Package for the Social Sciences (SPSS version 23) was used for data entry and analysis. Descriptive statistics were calculated, including frequency and percentage for qualitative variables and mean and standard deviation for quantitative variables. Appropriate statistical tests, such as chi-square and t-tests, were applied to determine significance. A p-value <0.05 was considered statistically significant.

Results

Baseline Sociodemographic Characteristics and Personal Risk Factors

A total of 974 participants responded to the survey, with a mean age of 27.90±9.32 years. Most participants were female (56.01%), and over half were married (62.42%). A significant proportion of the participants had attained education (79.16%). In terms of BMI, 44.56% were underweight, 43.33% fell within the normal range, 8.62% were overweight, and only 3.49% were classified as obese. Approximately 41.68% of participants reported having parents with first-degree relatives who were consanguineous [Table 1]. Regarding personal risk factors [Table 2], a majority of participants did not report any chronic cardiac or non-cardiac problems. DM was reported by only 52 participants (5.34%), while HTN and

Table 1 Baseline Sociodemographic Characteristics of the Participants in the Study (N= 974)

Variable	Frequency	Percent
Age, years (mean| SD)	27.9	9.32
Gender		
Male	428	43.94%
Female	546	56.06%
Marital Status		
Single	345	35.42%
Married	608	62.42%
Divorced	15	1.54%
Widow	6	0.62%
Family monthly income level		
< 5000 SR	139	14.27%
5000 to 10,000 SR	290	29.77%
10,000 to 20,000 SR	375	38.50%
> 20,000 SR	170	17.45%

(*Continued*)

Table 1 (Continued).

Variable	Frequency	Percent
Educational level		
Informal education	13	1.33%
High school	151	15.50%
Diploma and Bachelor	771	79.16%
Master and PhD	39	4.00%
Are your Parents first-degree relatives?		
Yes	406	41.68%
No	568	58.32%
BMI		
Less than 18.50 (Underweight)	434	44.56%
From 18.50 to 24.99 (Healthy)	422	43.33%
From 25 to 29.99 (overweight)	84	8.62%
From 30 or more (obese)	34	3.49%

Abbreviations: SD: Standard deviation. SR: Saudi Riylas. BMI: Body mass index.

Table 2 Risk Factors Among the Participants of the Study

	Frequency	Percent
Have you been diagnosed with Diabetes Mellitus?		
Yes	52	5.34%
Have you been diagnosed with Hypertension?		
Yes	77	7.91%
Have you been diagnosed with Dyslipidemia?		
Yes	74	7.60%
Do you take medication (to lower blood pressure, cholesterol level, blood sugar, and others)?		
Yes	145	14.89%
Do you use anabolic steroids?		
Yes	25	2.57%
Do you have a heart problem? (Myocardial infarction, congestive heart failure, arrhythmia, use of pacemaker, rheumatic heart disease, and myocardial hypertrophy)		
Yes	30	3.08%
Do you exercise?		
Yes, regularly at the rate of 30 minutes for 5 days a week	154	15.81%

(*Continued*)

Table 2 (Continued).

Yes, 3 times a week	168	17.25%
Yes, once a week	274	28.13%
No, I do not exercise at all	378	38.81%
Do you smoke?		
Active smoker	115	11.81%
Ex-smoker	19	1.95%
No	840	86.24%
Is there a family history of heart problems? (Myocardial infarction, congestive heart failure, arrhythmia, use of pacemaker, rheumatic heart disease, and myocardial hypertrophy)		
Yes	152	15.61%
Is there a family history of Hypertension?		
Yes	444	45.59%
Is there a family history of diabetes mellitus?		
Yes	490	50.31%
Is there a family history of obesity?		
Yes	176	18.07%
There is no family history.		
Yes	299	30.70%
Is there a family history of sudden cardiac death?		
Yes	126	12.94%

dyslipidemia were reported by 77 and 74 participants, respectively. A history of pre-existing cardiac problems was reported by only 3.08% of participants. Approximately 15% reported using medication for conditions such as high blood pressure, diabetes, and cholesterol control, and 2.57% reported using anabolic steroids for performance enhancement. Only 15.81% engaged in frequent physical exercise (at least 30 minutes, at least five days per week), while 38.81% reported not engaging in regular exercise. Among the participants, 11.81% were current smokers, whereas 86.24% were non-smokers. A family history of cardiac or non-cardiac disease was reported by 69.30% of participants, while 12.94% reported a family history of SCD.

Perceived Risk of Sudden Cardiac Death and Heart Attack Among the Participants and the Intentions to Change Lifestyle Behaviors

The participants' perceived susceptibility to sudden cardiac death (SCD) was assessed using eight questions on a 5-point scale, as described previously. The study found that approximately 62.63% of participants perceived SCD risks as high, with a mean score of 28.75 ± 5.28. Moderate perception was reported by 37.13% of participants, while only 0.21% reported a low perception [Table 3, Figure 1]. Regarding participants' willingness to change unhealthy lifestyle behaviors, including diet, physical activity, and smoking among smokers, more than half of the participants expressed moderate willingness to change. In terms of physical activity, approximately 76.18% of participants considered exercising for at least 2.5 hours per week, and 46.92% had already initiated regular exercise. The mean score for readiness to change physical activity behavior was 8.56 ± 1.87. Concerning dietary behavior, 59.13% of

Table 3 Participants' Perceived Risk for Heart Attack and Sudden Cardiac Death

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1- It is likely that I will suffer from a fatal heart attack in the future.	294 (30.18%)	245 (25.15%)	348 (35.73%)	79 (8.11%)	8 (0.82%)
2- My chances of suffering from a fatal heart attack in the next 10 years are great.	343 (35.22%)	290 (29.77%)	290 (29.77%)	44 (4.52%)	7 (0.72%)
3- I will likely have a fatal heart attack because of my past and present behaviors.	291 (29.88%)	253 (25.98%)	298 (30.60%)	113 (11.60%)	19 (1.95%)
4- I feel sure that I will have a fatal heart attack.	431 (44.25%)	280 (28.75%)	226 (23.20%)	32 (3.29%)	5 (0.51%)
5- I am concerned about the likelihood of having a fatal heart attack in the future.	313 (32.14%)	225 (23.10%)	263 (27.00%)	138 (14.17%)	35 (3.59%)
6- I am not worried that I might have a fatal heart attack.	159 (16.32%)	178 (18.28%)	264 (27.10%)	237 (24.33%)	136 (13.96%)
7- It is likely that if I suffer from a cardiac event, it will be fatal.	199 (20.43%)	248 (25.46%)	349 (35.83%)	151 (15.50%)	27 (2.77%)
8- I will die within 10 years if I have a heart attack.	149 (15.30%)	161 (16.53%)	364 (37.37%)	253 (25.98%)	47 (4.83%)

participants considered consuming at least five servings of fruits and vegetables per day, while 36.65% had already adopted this behavior. The mean score for readiness to change dietary behavior was 8.75 ± 1.88. Among smokers, 47.02% expressed the intention to quit smoking within two months, while only 19.4% had already reduced or eliminated their smoking behavior. The mean score for readiness to change smoking behavior was 9.02 ± 1.87 [Table 4, Figure 1].

Association Between Participants' Sociodemographic Profile, Risk Factors, and Perception of Heart Attack and SCD

Table 5 presents the associations between baseline sociodemographic variables, personal risk factors, and perceived risk of SCD and heart attack. The perceived risk was found to be strongly correlated with age (p-value= 0.0001) and marital status (p-value= 0.047). A majority of women in the study perceived SCD risks as high. Participants with hypertension or dyslipidemia who reported taking medications for their respective conditions were more likely to perceive a high risk of

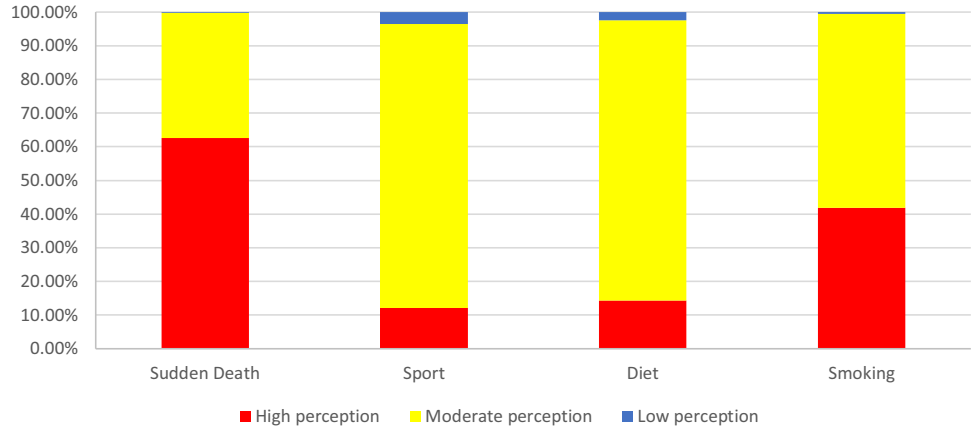

Figure 1 The scores of the participants' perceived susceptibility to heart attack and sudden cardiac death and perceived willingness to alter sports, diet, and smoking behaviors.

Table 4 Participant's Intention and Willingness to Modify Their Lifestyle to Reduce the Risk of Heart Attack and Sudden Cardiac Death

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
Exercise					
I am not thinking about exercising for 2½ hours a week.	318 (32.65%)	313 (32.14%)	191 (19.61%)	112 (11.50%)	40 (4.11%)
I am thinking about exercising at least 2½ hours a week.	30 (3.08%)	50 (5.13%)	152 (15.61%)	452 (46.41%)	290 (29.77%)
I am ready or have started to exercise 2½ hours a week.	84 (8.62%)	163 (16.74%)	270 (27.72%)	315 (32.34%)	142 (14.58%)
Diet					
I am not considering eating at least five portions of fruit and vegetables daily.	188 (19.30%)	283 (29.06%)	269 (27.62%)	187 (19.20%)	47 (4.83%)
I am thinking about eating at least five portions of fruit and vegetables a day.	48 (4.93%)	110 (11.29%)	240 (24.64%)	395 (40.55%)	181 (18.58%)
I am ready or started to eat at least five portions of fruit and vegetables a day.	101 (10.37%)	173 (17.76%)	343 (35.22%)	270 (27.72%)	87 (8.93%)
Smoking					
I am not thinking about stopping smoking (If you smoke).	15 (11.19%)	19 (14.18%)	40 (29.85%)	29 (21.64%)	31 (23.13%)
I am thinking of stopping smoking within two months.	13 (9.70%)	17 (12.69%)	41 (30.60%)	35 (26.12%)	28 (20.90%)
I have reduced or stopped smoking.	52 (38.81%)	23 (17.16%)	33 (24.63%)	18 (13.43%)	8 (5.97%)

Table 5 The Correlations Between Participants' Sociodemographic Profile, Risk Factors, and Perception of Heart Attack and Sudden Cardiac Death

Variable	SCD Risk Perception				p-value
	Low or Moderate Perception		High Perception		
	n=364	%37.37%	n=610	%62.63%	
Age (mean| S.D.)	29.26	10.28	27.09	8.61	0.0001*
Sex					
Male	177	48.63%	251	41.15%	0.023*
Female	187	51.37%	359	58.85%	
First-degree relative parents					
Yes	156	42.86%	250	40.98%	0.591
No	208	57.14%	360	59.02%	
Marital status					
Single	214	58.79%	394	65.59%	0.047*
Married	139	38.19%	206	33.77%	
Divorced	6	1.65%	9	1.48%	
Widow	5	1.37%	1	0.16%	

(*Continued*)

Table 5 (Continued).

Variable	SCD Risk Perception				p-value
	Low or Moderate Perception		High Perception		
	n=364	%37.37%	n=610	%62.63%	
Educational level					
Informal education	6	1.65%	7	1.15%	0.466
High school	51	14.01%	100	16.39%	
Diploma and Bachelor	289	79.40%	482	79.02%	
Master and PhD	18	4.95	21	3.44%	
Income In SR					
<5000	50	13.74%	89	14.59%	0.191
5000–10,000	103	28.3	187	30.66%	
10,000–20,000	135	37.09%	240	39.34%	
>20,000	76	20.88%	94	15.41%	
BMI					
Underweight	142	39.01%	292	47.87%	0.005*
Healthy	163	44.78%	259	42.46%	
Overweight	40	10.99%	44	7.21%	
Obese	19	5.22%	15	2.46%	
DM					
Yes	27	7.42%	25	4.10%	0.143
No	337	92.58%	585	95.90%	
Dyslipidemia					
Yes	35	9.61%	39	6.39%	0.0001*
No	329	90.39%	571	93.61%	
HTN					
Yes	37	10.16%	40	6.56%	0.0001*
No	327	89.84%	570	93.44%	
Do you take medication (to lower blood pressure, cholesterol level, blood sugar, and others)?					
Yes	68	18.68%	77	12.62%	0.012*
No	296	81.32%	533	87.38%	
Do you use anabolic steroids?					
Yes	10	2.75%	15	2.46%	0.835
No	354	97.25%	595	97.54%	

(*Continued*)

Table 5 (Continued).

Variable	SCD Risk Perception				p-value
	Low or Moderate Perception		High Perception		
	n=364	%37.37%	n=610	%62.63%	
Do you complain of heart problems (myocardial infarction, congestive heart failure, arrhythmia, use of pacemaker, rheumatic heart disease, and myocardial hypertrophy)?					
Yes	16	4.40%	14	2.30%	0.084
No	348	95.69%	596	97.70%	
Do you smoke?					
Active smoker	50	13.74%	65	10.66%	0.44
Ex-smoker	8	2.20%	11	1.80%	
No	306	84.07%	543	87.54%	
Do you exercise?					
Yes, regularly at the rate of 30 minutes for 5 days a week	42	11.54%	112	18.36%	0.010*
Yes, 3 times a week	58	15.93%	110	18.03%	
Yes, once a week	104	28.57%	170	27.87%	
No, I do not exercise at all	160	43.96%	218	35.74%	
Family history of heart problems, HTN, DM, dyslipidemia, and obesity?					
Yes	276	75.82%	399	65.41%	0.001*
No	88	24.18%	211	34.59%	
Family history of SCD?					
Yes	62	17.03%	64	10.49%	0.0001*
No	302	82.96%	546	89.51%	
Intention to change dietary, physical activity, and smoking behaviors (Mean/SD)					
Physical activity	8.52	1.58	8.57	2.02	0.692
Diet	8.72	1.7	8.77	1.98	0.659
Smoking	1.49	2.5	8.57	2.97	0.064

Note: The alpha criterion for the p-value was set to 0.05. *Significant in univariate analysis (chi-square and *t*-tests).
Abbreviations: SD, Standard Deviation; S.R, Saudi Riyals; B.M.I, Body Mass Index; HTN, Hypertension; DM, Diabetes Mellitus; SCD, Sudden cardiac death.

SCD. There was a statistically significant relationship between physical activity and risk perception (p-value = 0.010), with inactive individuals reporting a low perception of SCD risks. Participants' risk perception was significantly associated with a family history of SCD and a family history of cardiovascular disease, obesity, hypertension, diabetes mellitus, or dyslipidemia. No statistically significant relationship was found between SCD and factors such as parental consanguinity, educational attainment, family income, diabetes, use of anabolic steroids, smoking, or previous history of cardiovascular disease.

Discussion

Sudden cardiac death (SCD) refers to an unexpected nontraumatic cardiac arrest leading to death in an otherwise healthy individual. In Saudi Arabia, cardiovascular causes account for approximately 59% of SCD cases.[8] To contribute to the existing

knowledge on SCD, we conducted a cross-sectional observational study using a web-based survey to assess the overall perceptions of SCD among adults and its relationship with lifestyles in Jazan, the southern region of Saudi Arabia.

Our study revealed that over half of the participants had a high perception of SCD, as indicated by a mean score of 28.75 ± 5.28, signifying a significant level of concern. This finding is consistent with a study conducted in Riyadh in 2020, which examined adolescents' perceptions of their susceptibility to CVDs and found that nearly two-thirds of the participants believed they had a high-risk perception of SCD.[16] However, it is essential to note that previous studies have reported conflicting results. For instance, a study conducted in Riyadh between September 2020 and May 2021 found that 86% of participants had a moderate risk perception of SCD, and risk perception increased with the number of CVD risk factors.[21] Similarly, studies conducted in Saudi Arabia, Jordan, Nigeria, and the United States between 2008 and 2019 reported that people, especially women and young individuals, tended to be overly optimistic about their risk of developing CVDs.[23–28] Contrary to these findings, our study revealed that women and younger participants had a higher risk perception of SCD, despite being limited by the younger population that we have in this study. This aligns with a survey conducted in the USA in 2019, which found that young adults had a higher perception of CVD risk.[25] However, other studies have reported different results. For instance, a study conducted in Riyadh found that older individuals had a higher perception of the risk of heart disease.[17] Similarly, studies conducted in Jordan and Malaysia reported that older adults had a higher perception of their risk of heart disease.[23,29] These variations in findings highlight the importance of considering cultural and regional differences when studying risk perceptions and emphasize the need for future research to understand the factors contributing to these differences.

Our study also identified several personal and demographic factors influencing participants' perceptions of their risk for SCD. Women in our research exhibited a higher risk perception of SCD themselves compared to men, which is supported by a study conducted in Pennsylvania in 2008.[28] One possible explanation for this finding is that women tend to have a deeper understanding of the factors that increase their risk of CVDs.[30] However, older studies have yielded contradictory results, indicating that women may underestimate their risk of developing CVDs.[15,18] Future studies involving larger populations are required to further investigate the differences in risk perception between males and females and the factors contributing to them.

Our study did not find a significant relationship between SCD risk perception and factors such as parental consanguinity, educational level, family income, personal history of diabetes, use of anabolic steroids, or prior history of cardiovascular diseases. Other studies have reported similar results, suggesting that higher education does not necessarily lead to a greater awareness of SCD risk factors.[17,21] Additionally, the perception of risk may be influenced by other factors, such as personal experience, media coverage, and cultural beliefs, which may not be directly related to income.[21,28–30]

We found that single participants had the highest risk perception regarding marital status. This finding is consistent with a study conducted in Durham, England, by Biswas et al,[31] who found that married women are less concerned about heart disease than unmarried women. The robust support system in marriage could explain this finding, and several other studies have reported an association between social support and lower cardiovascular morbidity and mortality.[32,33] A strong social support network can help people deal with stress, manage health issues, and overcome obstacles.[34,35]

Our study findings are consistent with previous research and contribute to our understanding of the association between personal risk factors and risk perception.[16,21,25,28,29,36] We observed that individuals with HTN, dyslipidemia, obesity, a family history of SCD, and a family history of chronic diseases had higher risk perceptions. However, our findings differ from those of two studies conducted in Carbondale, Illinois, and New Haven, which reported inconsistent results.[37,38] These discrepancies may be attributed to potential selection bias in terms of class and race, suggesting that these findings may not be generalized to other populations. It is also noteworthy that a personal history of heart disease did not lead to higher risk perception in our study. Still, the low percentage of participants with diagnosed heart disease may have influenced this result. Future studies using different methodologies could yield different results. Additionally, while increasing evidence suggests that diabetes increases risk perception, we did not observe this association in our study. This discrepancy might be attributed to the health education provided by clinicians during diagnosis or follow-up, as physicians have been identified as the primary source of knowledge about CVDs.[39,40]

In terms of physical activity and risk perception, our study found that inactive participants perceived less risk compared to active participants, which is consistent with previous studies.[21,28,37] However, variations in findings across

different studies might be attributed to differences in sample characteristics, and future studies could consider utilizing data from smartwatches for more accurate results.[41–43]

The Strengths and Limitations

Our study has several strengths; it is the first in the Jazan province and it will help to identify how adult populations in Jazan perceive the risk of SCD and assess their willingness to change their risky behaviors. Furthermore, the online survey makes it simple to contact and reach the participants. Our research, however, is subject to some limitations related to the questionnaire, such as untruthful answers, the disparity in understanding of the questions, and potential bias that could have occurred when the study participants interpreted questions according to their emotions. Another inherent limitation of using social media for distribution is that may have predominantly reached younger, healthier, and more educated individuals, thereby constraining the generalizability of our findings to the broader population. Additionally, since most of the study's samples are university students, further studies are needed to determine if the findings can be generalized to other populations.

Conclusions

The current study supports our hypothesis that there is a lack of awareness regarding SCD among Jazan Province residents, and despite our study including the young population due to the distribution method, it was found that younger women perceived their risk of SCD, and this is in line with previous observations. Knowing risk factors related to SCD is essential information for concentrating counseling and educational efforts. To better meet the general population's needs and address the burden of SCD in Saudi Arabia, a supporting program might be created to engage them in health-promoting activities through education and motivation. According to this study's findings, most participants show a moderate willingness and readiness to modify their lifestyle behaviors and those who want to change their lifestyle should be assisted. Consider solutions that handle the many degrees of motivation that might exist. More studies are needed to assess the effectiveness of these and other strategies for increasing the general public's desire to adopt and prioritize healthy lifestyle habits.

Data Sharing Statement

Data is available upon reasonable request from the first author. Kindly contact the first author privately through e-mail.

Ethical Approval and Consent to Participate

The Jazan University Ethical Committee approved the study protocol, with approval number REC-44/02/311, on 26 September 2022. Informed Consent Statement: Informed consent was obtained from all participants involved in the study.

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Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis, and interpretation, or all these areas; took part in drafting, revising, or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

The authors declare no conflicts of interest in this work.

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