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RESEARCH ARTICLE

ASSESSMENT OF KNOWLEDGE, ATTITUDES AND PRACTICES ON RHEUMATIC HEART DISEASE AMONG CARDIAC PATIENTS IN AMRAN CITY, YEMEN

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Abstract

Background: All three layers of the heart—the pericardium, myocardium, and endocardium (including the valves)—may sustain irreversible damage as a result of rheumatic heart disease (RHD). Rheumatic heart disease is the result of valvular damage caused by an abnormal immune response to group a streptococcal infection, usually during childhood. The study aims to achieve the assessment of Knowledge, Attitudes and Practices (KAP) on rheumatic heart disease among cardiac patients in Amran city, Yemen.
Method: The descriptive analytical method was used. The questionnaire was used as a tool for collecting data the research sample was (121) of those accompanying rheumatic heart patients in clinics and medical centers in the city of Amran, and they were selected in a simple random method. The data was analyzed and processed statistically using the Statistical Package for the Social Sciences program (SPSS) and many statistical methods, and after conducting the data analysis process and testing the study hypotheses.
Result: The study found that heart patients in Amran have knowledge about rheumatic heart disease causes and symptoms, but lack knowledge about risk factors and disease history. Most suffer from arthritis and do not practice regular exercise. There were no significant differences in opinions about rheumatic heart disease and risk factors among heart patients due to variables like gender, age, education, and living conditions. Rural residents showed statistically significant differences.
Conclusions: The study reveals that patients with rheumatic heart disease have the highest knowledge about the causes and symptoms, but also the risk factors associated with the disease. The knowledge of the disease's history is the most common, followed by rheumatic fever. Arthritis is the most common risk factor. The study found no significant differences in opinions among heart patients in Amran, but significant differences were observed in rural residents' opinions due to factors like gender, age, and living conditions.
Keywords: Amran, cardiac patients, rheumatic heart disease, Yemen.

INTRODUCTION

Rheumatic heart disease can result from a streptococcal infection, which is usually acquired in childhood and can cause abnormal immune responses that harm the valves[1]. Although in wealthy countries the incidence of this poverty-related disease has almost entirely declined, it remains a major worry in developing countries[2]. In affluent countries, rheumatic heart disease has virtually vanished due to very successful preventive measures, mostly based on the use of penicillin and associated with social and economic progress.

However, the 2008 Population Reference Bureau[3] states that more than 80–85% of children under the age of 15 (about 2 billion) live in areas where rheumatic heart disease is common. This disease is the leading cause of heart failure in children and young adults globally, leading to disability and premature mortality in addition to having a detrimental effect on the labor markets of developing countries[4]. Rising rates of birth control refusal and rural flight in developing countries

mean that over the next 20 years, the number of people at risk for rheumatic heart disease will probably increase dramatically[5]. The medical community's lack of interest in the disease is evident in the few publications and congress presentations on the subject, which explains why the illness is not well covered by the media. Acute rheumatic fever frequently appears three weeks after streptococcal pharyngitis[6]. It can affect the joints, skin, brain, and heart. Around half of individuals with acute rheumatic fever have cardiac inflammation mostly located in the valvular endocardium[7].

Even while the initial attack might result in severe valvular disease, recurrent, less symptomatic episodes of acute rheumatic fever are the most common cause of cumulative valve damage leading to rheumatic heart disease. This shows that the disease may be subtle at first[8]. Early echo-cardiography-based detection of silent rheumatic heart disease (exhibiting no clinical symptoms) with minor valve abnormalities by active surveillance programming may be crucial since secondary prevention can avert unfavorable outcomes[9]. The justification, initial experiences, and therapies for rheumatic heart disease using echocardiography[10]. The study's objective was to assessment of Knowledge, Attitudes and Practices (KAP) on Rheumatic Heart Disease among cardiac patients in Amran city, Yemen.

MATERIAL AND METHODS

Research Methodology:

The descriptive analytical approach was used, as it is the most appropriate for such research. The descriptive approach is based on describing the phenomenon and collecting data and information about it, then classifying and applying it to reach conclusions and generalizations that help to understand and develop reality.

The Research Community:

The original research community of the current research consists of all rheumatic heart patients' attendance at Amran Clinics and Medical Centers.

Research sample:

The research sample amounted to (121) of rheumatic heart patients in clinics and medical centers in the city of Amran, and they were selected in a simple random manner.

Statistical analysis:

The research used SPSS software to process data, calculate arithmetic averages and standard deviations, verify construct validity and stability, and use tests like Independent-Samples T-test and One Way ANOVA to analyze the data. The Pearson correlation coefficient and Cronbach's Alpha Equation were used to analyze the data's internal consistency and stability.

RESULTS AND DISCUSSION

The study aimed to determine if there were statistically significant differences between the average opinions of research sample members about rheumatic heart disease and associated risk factors among heart patients in the city of Amran, based on variables such as gender, age, educational level, place of residence, profession, marital status, economic status, number of family members, common room, living in a crowded area, and living in a room alone. The T-test was used for variables (gender, age, educational level, place of residence, occupation, marital status, economic situation), and one way ANOVA test for variables (age, educational level, occupation, marital status, economic status).

Table 1: Distribution of sample members in different variables.

Distribution	Frequency (%)	Distribution	Frequency (%)
Age (Yrs)		**Job Title**	
1-10	8(6.6)	Student	44(36.4)
11-20	26(21.5)	Employee	11(9.1)
21-30	40(33.1)	Craftsman	22(18.1)
31 - 40	27(22.3)	Non-operational	44(36.4)
41 - 50	20(16.5)	**Marital Status**	
Place of residence		Married	76(62.8)
Rural	74(61.2)	Single	41(33.9)
Urban	47(38.8)	Divorced	1(0.8)
Size of Family		Widowed	3(2.5)
10 people or less	72 (59.5)	**Economic Situation**	
More than 10 people	49(40.5)	Low	23 (19)
Living in a crowded area		Good.	74 (61.1)
Yes.	62(51.2)	Very good	21(17.4)
No	59(48.8)	Excellent	3(2.5)
Living in a room by yourself		**Educational Level**	
Yes		Illiteracy	47(38.8)
No		Basic	21(17.4)
Shared room		Secondary	15(12.4)
Yes.	98 (81)	University	38(31.4)
No	23 (19)		

Table 2: **Frequencies and percentages of the opinions of the research sample to know the level of knowledge of companions of patients with rheumatic heart disease.**

No	Statement	Measurement Score		Total
		Yes	No	
		Frequency (%)	Frequency (%)	Frequency (%)
2	Do you know the causes of rheumatic heart disease?	70(57.9)	51(41.1)	121(100)
3	Do you know the symptoms of rheumatic heart disease?	70(57.9)	51(42.1)	121(100)
7	Do you know how to treat rheumatic heart disease?	67(55.4)	54(44.6)	121(100)
6	Do you know the complications that may result from developing rheumatic heart disease?	65(53.7)	56(46.3)	121(100)
5	Do you know how to prevent rheumatic heart disease?	64(52.9)	57(47.1)	121(100)
1	Do you know about rheumatic heart disease?	60(49.6)	61(50.4)	121(100)
4	Do you know the risk factors associated with rheumatic heart disease?	47(38.8)	74(61.2)	121(100)

Table 3: Frequencies and percentages of the opinions of the research sample to know the level of knowledge of companions of rheumatic heart patients.

No	Statement	Measurement Score		Total
		Yes.	No	
		Frequency (%)	Frequency (%)	Frequency (%)
	History of the disease			
1	Have you been diagnosed with RHD?	118(97.5)	3(2.5)	121(100)
2	Were you experiencing symptoms such as heart pain or shortness of breath?	91(75.2)	30(24.8)	121(100)
3	Does anyone in your family have RHD or other heart conditions?	53(43.8)	68(56.2)	121(100)
4	Does your family have rheumatic fever?	46(38)	75(62)	121(100)
	Risk factors			
6	Do you have arthritis?	116(95.9)	5(4.1)	121(100)
9	Have you used antibiotics for symptoms of rheumatic fever?	110(90.9)	11(9.1)	121(100)
8	Do you have a symptom of tonsillitis?	107(88.4)	14(11.6)	121(100)
5	Do you have frequent sore throats?	105(86.8)	16(13.2)	121(100)
11	Have you used arthritis medications?	103(85.1)	18(14.9)	121(100)
10	Did you feel better after using the prescribed medication?	101(83.5)	20(16.5)	121(100)
7	Do you have difficulty breathing?	91(75.2)	30(24.8)	121(100)
13	Have you used painkillers such as aspirin?	78(64.5)	43(35.5)	121(100)
14	Did you feel an improvement in joint pain after using aspirin?	77(63.6)	44(36.4)	121(100)
12	Have you had previous interventions?	62(51.2)	59(48.8)	121(100)
3	Are you obese or thin?	54(44.6)	67(55.4)	121(100)
4	Do you suffer from diseases such as diabetes or high BP?	45(37.2)	76(62.8)	121(100)
1	Do you smoke?	30(24.8)	91(75.2)	121(100)
2	Do you exercise regularly?	19(15.7)	102(84.3)	121(100)

RHD= rheumatic heart disease

Table 4: T-test to find out the differences in the opinions of the respondents about rheumatic heart disease and its associated risk factors among heart patients in Amran city for the different variables.

Variables	Number	Mean	Standard deviation	T test	Significance level at 0.05
Gender					
Male	29	1.42	0.147	1.693	0.93
Female	92	1.36	0.148	1.698	0.96
Place of residence					
Countryside	74	1.4020	0.13131	2.335	0.21
City	47	1.3383	16721	2.214	0.30
Common room variable					
Yes	98	1.37	0.151	988	0.325
No	23	1.40	0.140	-1.036	3.07
Living in a crowded area					
Yes.	62	1.36	0.155	-1.512	0.133
No	59	1.40	0.141	-1.515	0.132
Living in a room alone					
Yes.	31	1.38	0.143	0.113	0.911
No	90	1.38	1.52	116	0.908

Table 5: ANOVA one way test on rheumatic heart disease and its associated risk factors among heart patients in Amran city attributable to different variables.

Variable	Survey Tool	Squares total	Degree of Freedom	Squares mean	F value	Significance level	Verbal connotation
Age	Between groups	0.126	4	0.031	1.440	0.225	Non significant
	Within groups	2.535	116	0.022			
	Total variance	2.661	120				
Educational level	Between groups	0.227	3	0.076	3.635	0.220	Non significant
	Within groups	2.434	117	.021			
	Total variance	2.661	120				
Occupation	Between groups	0.91	3	0.30	1.386	0.250	Non significant
	Within groups	2.570	117	0.022			
	Total variance	2.661	120				
Marital status	Between groups	0.218	3	0.073	3.475	9.280	Non significant
	Within groups	2.444	117	0.21			
	Total variance	2.661	120				
Economic status	Between groups	0.34	3	0.11	2.51	6.75	Non significant
	Within groups	2.627	117	0.022			
	Total variance	2.661	120				
Number of family members	Between groups	0.52	1	0.52	2.359	1.27	Non significant
	Within groups	2.610	119	0.022			
	Total variance	2.661	120				

The results showed no significant differences between the responses of the research sample members regarding rheumatic heart disease and its associated risk factors among heart patients in the city of Amran due to gender, age, educational level, place of residence, occupation, marital status, economic situation, number of family members, or shared room variables.

The results suggest that there are no statistically significant differences between the averages of the responses of the research sample members about rheumatic heart disease and its associated risk factors among heart patients in the city of Amran attributed to the variables of gender, age, education level, place of residence, profession, marital status, economic situation, number of family members, or shared room variable. This is due to the convergence of views among the research sample members despite their different backgrounds and work experiences. The study found no significant differences between the responses of the research sample members about rheumatic heart disease and its associated risk factors among heart patients in the city of Amran, indicating that the variables of gender, age, education level, occupation, marital status, and shared room have no significant impact on the overall response.

The study found no significant differences in the responses of heart patients in Amran regarding rheumatic heart disease and associated risk factors due to living in a crowded area or living in a room alone. The statistical significance was greater than 0.05, indicating no difference in the variables. Both variables were considered as independent variables.

Limitation of study:

Insufficient sample size for statistical measurement accurately. Lack of previous research studies on the topic.

CONCLUSIONS

The study reveals that heart patients in the city of Amran have a high knowledge of the causes and symptoms of rheumatic heart disease (57.9%), but they rank sixth and last in knowledge of risk factors associated with the disease (38.8%). The knowledge of the disease's history is the highest at 97.5%. Family members with rheumatic fever also rank fourth and last at (46) and 38.0%. Arthritis is the highest risk factor associated with rheumatic heart disease (95.9%). However, there are statistically significant differences between the opinions of heart patients in Amran due to factors such as gender, age, education, profession, marital status, economic status, and living in a crowded area.

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AUTHOR'S CONTRIBUTION

Ali AAA: writing of thesis and editing. **Altholey RMA:** formal analysis, conceptualization. **Bakri WMA:** Methodology, formal analysis, visualization. **Shayea YAS:** critical review. **MAN:** data organization. **Aklan ASA:** conceptualization, data organization. **Alseraji ZMA:** literature survey. All authors reviewed the article and approved the final version.

DATA AVAILABILITY

Data will be `made available on request

CONFLICT OF INTEREST

None to declare.

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