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"Assessing The Awareness Of Cardiac Disease Among Guardians Of Cardiac Patients In A Tertiary Care Hospital: A Cross-Sectional Study"

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ABSTRACT

Background: Cardiovascular diseases (CVDs) are indeed a leading cause of death worldwide, responsible for about one in four deaths. The burden of CVDs continues to rise due to multiple factors, including poor awareness about the disease, lack of education on its risk factors, and insufficient understanding of preventive measures.

Objectives: The objective of this study was to evaluate the knowledge, attitudes, and practices related to cardiovascular health among family members of cardiac patients attending a tertiary care hospital.

Materials and Methods: This study was carried out among 150 adult participants, consisting of family members of cardiac patients. A stepwise, questionnaire-based approach was used to interview the family members, utilizing surveillance methods and other resources, with all responses being scored.

Results: The analysis of 150 family members caring for cardiac patients reveals key insights. Younger adults (30% aged 31–40 years) predominantly serve as caregivers, with most having at least secondary education. A majority (82.7%) rely on healthcare professionals for health information, while 71.3% consistently accompany patients to the hospital. Emotional (40%) and financial (36.7%) strains are prevalent, though 30% find caregiving fulfilling. The chi-square test yielded no significant difference ($\chi^2 = 0.0$, $p = 1.0$), indicating that time spent with patients does not significantly impact family members' knowledge of heart health.

Conclusion: Our study reveals a gap between knowledge, attitudes, and practices related to cardiovascular health. Although knowledge scores were slightly lower, caregivers exhibited strong attitudes and practices. This underscores the significant role that doctors and healthcare professionals play in educating caregivers about cardiac diseases.

Key Words: Cardiovascular health, cardiac diseases, family members, knowledge, attitude, practices, health education, healthcare professionals, lifestyle modifications, protective factors, tertiary care hospital.

INTRODUCTION: Cardiovascular diseases (CVDs) primarily affect the heart and blood vessels, encompassing conditions such as coronary (ischemic) heart disease (CHD), peripheral arterial diseases, rheumatic heart diseases, congenital heart diseases, cerebrovascular diseases, pulmonary embolism, and deep vein thrombosis[1]. Globally, CVDs, particularly CHD, are leading contributors to morbidity and mortality[2]. In fact, it is anticipated that in the coming years, CHD will become the

leading cause of death in developing countries. Currently, cardiovascular diseases account for one in four deaths worldwide, totaling approximately 12.9 million fatalities[3-4].

In developing nations like India, public health faces considerable challenges, with 80% of cardiovascular disease (CVD) cases being attributed to factors such as tobacco use, unhealthy diets, lack of exercise, and excessive alcohol consumption.[5] Individuals exhibiting poor behavioral health scores face a fourfold higher risk of all-cause mortality compared to those with the best scores.[6] The World Health Organization (WHO) advocates for raising public awareness regarding diet and physical activity, recognizing these as critical strategies to enhance cardiovascular health behaviors.[7] Understanding the risk factors associated with CVD and implementing preventive measures are essential for ensuring early detection of these diseases. Achieving the desired health behaviors necessitates a thorough understanding of the social contexts influencing disease. Moreover, early detection of CVDs can significantly save lives and resources.[8-9] Awareness of CVD and the associated risk factors is considered to be crucial in to encourage individuals to make changes toward a healthy lifestyle.[10-11]

"Therefore, studies on **awareness, perceptions, and behaviors** enhance our understanding of cardiovascular health literacy and community actions." Currently, there is a scarcity of such studies in South Asia. While many cardiac patients in India receive support from family members or accompanying persons during their treatment, existing research has predominantly focused on patient awareness. The critical role of these family members and the need for increased awareness among them are often overlooked. We aim to target these family members in order to develop effective strategies for promoting early awareness.

MATERIALS AND METHODS: The present study was conducted in the Department of General Medicine, tertiary care health center, from March 2022 to June 2023. This cross-sectional study involved the application of specific inclusion and exclusion criteria to select participants. Individuals above 18 years of age who were accompanying cardiac patients to the hospital and were willing to provide consent were included in the study. Those under 18 years of age or unwilling to participate were excluded. A total of 150 family members of cardiac patients were selected for the study. Upon entry, a detailed history and clinical examination were conducted. After obtaining informed consent from both the patients and their family members, the data were recorded in a structured proforma. The collected data were then entered and analyzed using the Statistical Package for the Social Sciences (SPSS) version 21.0.

RESULTS: The analysis of the sociodemographic characteristics of the 150 participants reveals several key insights into the profile of family members serving as caregivers for cardiac patients. The age distribution indicates a predominance of younger adults, with the largest group (30%) falling within the **31–40 years** age range, followed closely by **23.3%** in the **18–30 years** category. This trend suggests that family members, particularly younger individuals, play a significant role in caregiving for cardiac patients. Gender distribution shows a slight male predominance, with **53.3%** of the participants identifying as male compared to **46.7%** female.

In terms of education, a majority of family members have attained at least secondary education, with **36.7%** completing this level and **30%** holding a college or university degree. Only **6.7%** reported having no formal education, indicating a generally educated caregiver population that may influence their health literacy and ability to understand medical information. The occupational data further illustrates a diverse family member caregiver landscape, with **36.7%** identifying as housewives, followed by **16.7%** each for unemployed and self-employed/employed individuals. Additionally, **10%** are retired, and **6.7%** are students. (Table 1)

The analysis of the questionnaires completed by 150 family members caring for cardiac patients reveals several important insights into their roles in patient health management. A significant **82.7%** of participants primarily rely on healthcare professionals for health information, while only **17.3%**

turn to media sources. The main motivations for these family members to take on caregiving roles include providing emotional support (**56.7%**) and managing financial responsibilities (**36.7%**). Most family members (approximately **71.3%**) consistently accompany patients to the hospital, demonstrating their commitment to care. Financially, a substantial **90.7%** provide support for the patient's medical needs. Regarding time spent with patients, **50%** dedicate an average of **4 to 6 hours** daily. The caregivers also show a solid understanding of heart health, with **70%** recognizing the importance of meditation, exercise, and a healthy diet as protective factors against heart disease. Additionally, **72%** believe that heart disease can be prevented through lifestyle modifications. In emergencies, **85.3%** indicate they would take the patient to the hospital immediately if severe chest pain occurs, highlighting their proactive approach to managing health crises. Overall, these findings underscore the vital role that family members play in the health management of cardiac patients. (Table 2)

The analysis of the impact of caregiving on family members' well-being, based on responses from 150 participants using a Likert scale, highlights several key areas of concern. Emotional stress is prevalent, with **40%** of family members strongly agreeing and **30%** agreeing that caregiving causes significant emotional strain. Financial strain is also a common issue, with **36.7%** strongly agreeing and **33.3%** agreeing that caregiving has impacted their financial situation. Physical health concerns, such as fatigue and exhaustion, were noted by **33.3%** who strongly agreed and **30%** who agreed, showing a substantial toll on physical well-being. On the positive side, **30%** of participants strongly agreed and **40%** agreed that caregiving provides a sense of fulfillment. However, caregiving has also affected social life, with **33.3%** strongly agreeing and **30%** agreeing that it reduced their social interactions. Regarding work-life balance, **26.7%** strongly agreed and **33.3%** agreed that caregiving negatively affected their career or work. Overall, these findings reveal both the challenges and emotional rewards that family members experience in their caregiving roles. (Fig 1)

The observed frequencies (Table 3) show that among family members who spent less than 4 hours with the patient, 30 had a high level of knowledge about heart health, while 20 had a low level of knowledge. For those who spent 4–6 hours with the patient, 70 had a high level of knowledge, and 30 had a low level of knowledge. The expected frequencies (Table 4), calculated based on the overall distribution of knowledge levels, indicate that we would expect 33.33 family members with high knowledge and 16.67 with low knowledge in the "less than 4 hours" group. Similarly, we would expect 66.67 family members with high knowledge and 33.33 with low knowledge in the "4–6 hours" group.

The chi-square test statistic of 0.0 and the corresponding p-value of 1.0 indicate that there is no statistically significant difference between the observed and expected frequencies. This suggests that the time spent with the patient does not significantly influence the level of knowledge about heart health among family members.

Discussion: The global burden of cardiovascular diseases (CVDs) is increasing, particularly in developing countries experiencing rapid health transitions[12]. Our study of 150 family members accompanying cardiac patients to the hospital highlights the significant gaps in cardiovascular health knowledge, attitudes, and practices, mirroring findings from other studies on CVD risk factors. In our study, the majority of participants were female (**46.7%**), reflecting traditional caregiving roles, where males often act as the wage earners and are less available to attend clinics due to time constraints. This is supported by the fact that **53.3%** of caregivers were male, but many were not available or reluctant to participate in the study.

The majority of family members were engaged in caregiving roles due to their close relationship with the patients, with **36.7%** being housewives and **16.7%** unemployed, highlighting the flexibility of their schedules but also indicating potential financial constraints. In contrast, studies from other regions, particularly developed countries, show a more even gender distribution and reliance on external caregiving services, which contrasts with the higher financial and time burden borne by

family caregivers in this population. Most family members spent **4-6 hours** daily with the patient, indicating the level of involvement required in managing patient care. Additionally, **90.63%** of family members supported patients financially, underscoring the economic strain that caregiving places on families.

Despite being physically present and engaged in patient care, many family members in our study demonstrated a lack of awareness of the protective factors against heart disease. About **70%** of participants identified meditation, exercise, and a healthy diet as key protective factors, but a significant portion remained unaware of important risk factors and symptoms. This aligns with findings from a study by Vaidya et al., where only **29.7%** of participants identified hypertension as a cause, and **60%** were unable to recognize any heart attack symptoms. Our results similarly showed that **71.88%** of family members believed that heart disease could be prevented through lifestyle modifications, yet many lacked detailed knowledge about specific symptoms or interventions.

In comparison to the studies conducted in Sudan, Nigeria, and Korea, our study of 150 participants reveals similar patterns regarding the sources of information on cardiovascular health. In our study, a significant 82.7% of family members relied primarily on healthcare professionals for cardiac health information. This closely mirrors the 88% reported in the Sudanese population (Hassan, Jarelnape & Elbasheer, 2022)[13] and the 64.4% found in Nigerian university workers (Ansa, Oyo-Ita & Essien, 2007).[14]

However, the contrast is evident when compared to Nigerian teachers and bankers, where television was the dominant source of information, contributing 53.8% and 43.8% respectively, with healthcare professionals playing a minimal role (7.5% and 13.8%) (Awosan et al., 2013)[15]. This disparity may reflect differences in media accessibility or trust in healthcare professionals across different populations. Similarly, Kim et al. (2022)[16] observed comparable trends in their study among Korean women, indicating variations in the reliance on healthcare professionals based on geographical and cultural contexts. Overall, our findings align more closely with those in Sudan and Nigeria's healthcare-focused groups, emphasizing the crucial role healthcare staff play in patient education in our study population.

Finally, a concerning finding from our study is the lack of awareness regarding the “golden period” for intervention in cardiac events. **85.94%** of family members stated that they would take the patient to the hospital immediately if they experienced severe chest pain, but many were unaware of the critical importance of timely interventions. This gap in knowledge could have serious implications for patient outcomes during cardiac emergencies. Therefore, our study underscores the urgent need for better-targeted education and awareness programs to empower family members with the necessary knowledge to improve patient outcomes.

The findings highlight the multifaceted challenges of family caregiving in cardiac care, which parallels similar studies in developing regions but contrasts with the more structured support systems seen in developed countries. Addressing these gaps through community-level interventions and improving access to public health information could have a significant impact on reducing the burden of cardiovascular diseases in such settings.

CONCLUSION: In summary, our research reveals critical deficiencies in the understanding of cardiovascular health among family members caring for cardiac patients. While these caregivers play an essential role in supporting their loved ones, many lack vital knowledge about significant risk factors, warning signs, and the necessity of prompt medical attention for cardiovascular issues. The fact that most caregivers rely on healthcare professionals for information indicates a pressing need for improved public health education and community engagement efforts. By implementing focused awareness initiatives for family members, we can enhance their comprehension of cardiac health, which is crucial for fostering better patient care and mitigating the impact of cardiovascular diseases on families.

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Table 1: The analysis of the Sociodemographic characteristics.

Variable	Category	Frequency (n=150)	Percentage (%)
Age	18–30	35	23.3%
	31–40	45	30%
	41–50	30	20%
	51–60	25	16.7%
	61 and above	15	10%
Gender	Male	80	53.3%

	Female	70	46.7%
Education Level	No formal education	10	6.7%
	Primary education	30	20%
	Secondary education	55	36.7%
	College/University degree	45	30%
	Postgraduate degree	10	6.7%
Occupation	Retired	15	10%
	Employed (Job/Self)	25	16.7%
	Unemployed	25	16.7%
	Housewife	55	36.7%
	Student	10	6.7%

Table 2: Analysis of Family Members' Roles in Patient Health Management

Questionnaire Item		**Findings**
Source of Information for Health	Doctors/Health Professionals:	124 (82.7%)
	Media:	26 (17.3%)
Reason for Being a Family Member Caregiver	Emotional Support	85 (56.7%)
	Financial Responsibility	55 (36.7%)
	Health Management	10 (6.6%)
Frequency of Accompanying Patient to Hospital	Always:	107 (71.3%)
	Sometimes:	30 (20%)
	Rarely:	13 (8.7%)
Financial Support Provided by Family Members	Yes:	136 (90.7%)
	No:	14 (9.3%)
Average Time Spent with Patient Daily	< 2 hours:	15 (10%)
	2-4 hours:	30 (20%)
	4-6 hours:	75 (50%)
	>6 hours:	30 (20%)
Knowledge of Protective Factors Against Heart Disease	Meditation, Exercise, Healthy Diet:	105 (70%)
	Only Diet:	20 (13.3%)
	No Knowledge:	25 (16.7%)
Perception on Preventability of Heart Disease	Lifestyle Modifications Can Prevent Heart Disease:	108 (72%)
	Uncertain:	42 (28%)
Action in Case of Severe Chest Pain	Immediate Hospital Visit:	129 (85.3%)
	Wait and See:	21 (14%)

Graph 1: Impact of Caregiving on Family Members' Well-Being (Likert Scale Analysis).

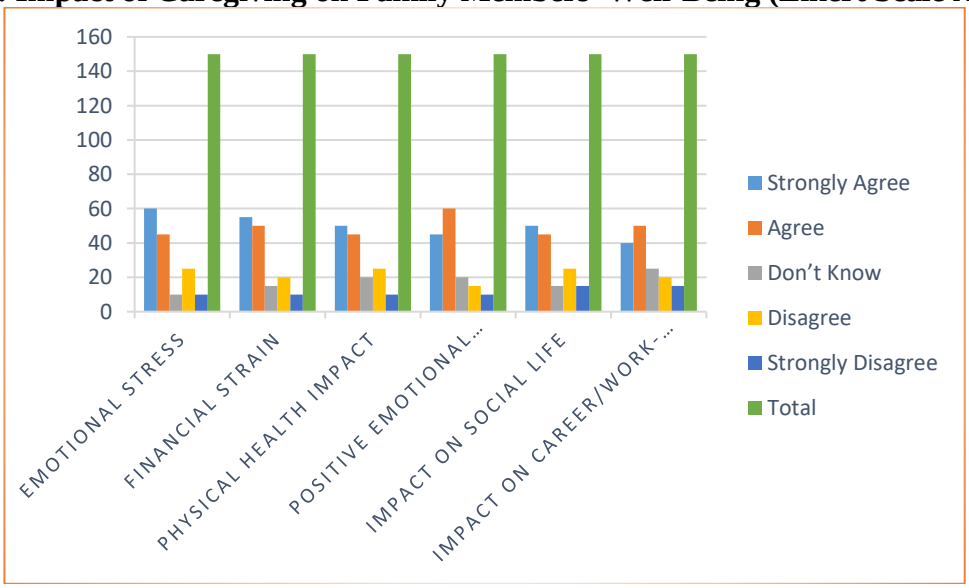

Table 3: Observed Frequencies of Family Members' Knowledge Levels Based on Time Spent with Cardiac Patients

Time Spent (Hours)	**High Knowledge (Yes)**	**Low Knowledge (No)**	**Row Total**
Less than 4 hours	30	20	50
4-6 hours	70	30	100
Column Total	**100**	**50**	**150**

Table 4: Expected Frequencies of Family Members' Knowledge Levels Based on Time Spent with Cardiac Patients

Time Spent (Hours)	**High Knowledge (Yes)**	**Low Knowledge (No)**
Less than 4 hours	33.33	16.67
4-6 hours	66.67	33.33