



“A STUDY TO ASSESS THE EFFECTIVENESS OF A SELF-INSTRUCTIONAL MODULE ON KNOWLEDGE REGARDING LIFESTYLE MODIFICATION FOR MAINTAINING HEALTHY HEART AMONG CARDIAC PATIENTS IN SELECTED HOSPITAL AT NASHIK”

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Abstract : Cardiovascular diseases remain a major global health concern, largely influenced by modifiable lifestyle factors. Patient education plays a crucial role in promoting heart-healthy behaviors, especially among individuals already diagnosed with cardiac conditions. This study aimed to assess the effectiveness of a Self-Instructional Module (SIM) on knowledge regarding lifestyle modification for maintaining a healthy heart among cardiac patients admitted to a selected hospital in Nashik.

A pre-experimental one-group pre-test and post-test design was adopted, involving 60 cardiac patients selected through simple random sampling. Data were collected using a structured knowledge questionnaire comprising 34 multiple-choice items related to general cardiac awareness, lifestyle modification, diet, exercise, and stress management. Reliability of the tool was established using the split-half method, yielding an internal consistency coefficient of 0.89. Ethical approval and informed consent were obtained prior to data collection.

Descriptive and inferential statistics were employed for data analysis. The findings revealed that 61.67% of participants had inadequate knowledge in the pre-test, whereas 86.67% demonstrated adequate knowledge in the post-test. A significant improvement was observed in all domains of knowledge, with the paired *t*-test indicating a statistically significant difference between pre- and post-test scores ($p < 0.05$). The results confirm that the SIM was effective in enhancing knowledge on lifestyle modification among cardiac patients.

KEYWORDS

Self-Instructional Module (SIM), Lifestyle Modification, Cardiac Patients, Healthy Heart; Knowledge; Patient Education

I. INTRODUCTION

The heart is a vital muscular organ responsible for pumping oxygenated blood throughout the body to sustain life. However, modern lifestyle factors such as unhealthy diet, physical inactivity, stress, smoking, and excessive alcohol intake significantly increase the risk

of cardiovascular diseases. Conditions like hypertension, coronary artery disease, and myocardial infarction continue to rise globally and are now among the leading causes of death, especially in developing countries.

Lifestyle modification—including regular exercise, healthy eating, stress management, and cessation of harmful habits—plays a crucial role in preventing and managing heart diseases. Educating cardiac patients about these practices is essential, as proper knowledge empowers individuals to make healthier choices and improves their overall quality of life. Therefore, structured educational tools such as Self-Instructional Modules (SIM) are valuable for enhancing patients' understanding and promoting heart-healthy behaviors.

OBJECTIVES

- i. To assess the level of knowledge regarding lifestyle modification for maintaining healthy heart among cardiac patients.
- ii. To evaluate the effectiveness of the Self-Instructional Module (SIM) on knowledge regarding lifestyle modification among cardiac patients

HYPOTHESIS

H1: - There is a significant difference between pretest and post-test knowledge scores regarding the lifestyle modification for maintaining healthy heart among cardiac patients will be significantly higher than the pre-test knowledge score.

OPERATIONAL DEFINITIONS

1. Assess: -

According to Oxford Dictionary: According to Oxford Dictionary assess means to evaluate the value or quality.

In this study: In current study assess means to find out the way in which the Hypertension affects the body.

2. Effectiveness: -

According to oxford dictionary: Effectiveness is the ability to produce a specific result or to exert a specific measurable influence.

In this study: In this study Refers to a significant increase in the level of knowledge of the clients with Coronary artery disease regarding life style modification to maintain heart health, which is measured from: pre-test, Self Instructional Module and comparing the mean scores with the post-test scores.

3. Self-Instructional Module:: -

According to oxford dictionary: It refers to Self-instructional teaching materials and methods are designed and arranged so that students can learn by themselves.

In this study: It refers to the learning material prepared in marathi and English language, by the researcher to provide information.

4. Knowledge: -

According to oxford dictionary: Knowledge is information and skill acquired through experience or education.

In this study: In this study It refers to correct responses from the participants regarding lifestyle modifications for maintaining healthy heart which will be measured by structured interview schedule & knowledge score.

5. Life style: -

According to oxford dictionary: The way in which a person or a group of people lives and works a comfortable/healthy/lavish, etc.

In this study: In this study It refers to strategies to be followed by individuals to lead a healthy life style in order to maintain and promote heart health.

SCOPE OF THE STUDY

- This study will help to understand maintaining the healthy lifestyle of people having cardiovascular disease.
- This study will help and increase the knowledge about the lifestyle modification of people.

ASSUMPTION

- The clients who are suffering from cardiac diseases have a basic knowledge about Lifestyle Modification Program.
- The clients as adults will express their knowledge about Lifestyle Modification.

LIMITATION OF THE STUDY

1. The study is limited to the cardiac wards of the selected hospitals.
2. Assessment is limited only to the patients who are having myocardial infarction, angina pectoris.

DELIMITATION OF THE STUDY

1. This study is delimited to the patients with the CAD who are not willing to participate in the study.
2. Cardiac patients who all are not able to read & write English and Marathi.

ETHICAL ASPECTS

Ethical consideration is the act of moral principle which the researcher has to follow while conducting nursing research to ensure the right and welfare of individuals, groups or community under study.

- The study had been approved by ethical and research committee.
- The formal written permission had been obtained from the selected Hospital authority to conduct the study.

- The informed consent was taken from the Patients who participated in this study.
- The purpose of the study was explained to the subjects/patients.
- Privacy of subjects, Confidentiality and Anonymity of the data was guarded.
- Scientific objectivity of the study was maintained with honesty and impartiality.

CONCEPTUAL FRAMEWORK

Concept is defined as a complex mental formulation of an object, property or an event that is derived from the individual’s perception and experience.

Conceptualization refers to the process of forming and structuring ideas, which serve as the foundation for developing a conceptual framework essential for research design. This process guides researchers in determining what data needs to be collected and provides direction for the entire research process.

Theories and conceptual models play a crucial role in establishing a conceptual context for a study. In this study, the primary objective was to evaluate the effectiveness of a Self-Instructional Module (SIM) in enhancing the knowledge of cardiac patients regarding lifestyle modification.

Conceptual models integrate interrelated concepts or abstract ideas, systematically organized to align with a common theme. The conceptual model chosen

for this study is based on Pender’s Health Promotion Model, which is designed to assess knowledge about lifestyle modifications among cardiac patients.

Developed by Nola Pender, the Health Promotion Model (HPM) serves as a complementary approach to the traditional health protection model. It emphasizes health promotion by enhancing an individual’s well-being. This model primarily focuses on three key areas:

- Individual characteristics and experiences
- Behavior-specific cognitions and affect
- Behavioral outcomes

By utilizing this model, the study aims to provide insights into how structured educational interventions can improve awareness and encourage positive lifestyle changes among cardiac patients.

REVIEW OF LITERATURE

A literature review is a summary and analysis of research published on a specific topic.

Literature reviews give a "snapshot" of individual articles and explain how each work has contributed to the field's understanding of the topic.

The purpose of a literature review is to trace the history of research on a particular subject, evaluate that research, and identify aspects of the topic that need further study.

In this study the reviews of various studies are presented under the following headings

- Literature related to myocardial infarction.
- Literature related to knowledge regarding myocardial infarction.
- Literature related to Angina Pectoris.

Research design

The research design is the backbone of the structure of the study. It provided a framework that supports the study and holds it together. The research design is the plan, structure and strategy of investigations of answering the research questions in an overall plan or blueprint to conduct a research study.

Evaluation Research studies are an applied form of research design which involve the judgment about how well a specific programme, practice, Procedure or policy is working.

Non-experimental research design refers to research that does not involve manipulation of variables or random assignment of participants to different conditions. Instead, it observes and analyzes the impact of naturally occurring variables.

The present study is Non-experimental and one group pre-test post-test research design. Keeping in view the objective of the study, the investigator will observe the subject prior to the intervention, i.e. pre-test will be taken. The self-instructional module will be administered to the subjects. Then again, the group will be assessed (post-test).

Table no. 1: Representation of research design

Study Group
Pre-Test (O1)
Self-Instructional Module (X)
Post-Test (O2)

Study Group	Pre-Test (O1)	Self-Instructional Module (X)	Post-Test (O2)
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Cardiac Disease patients at selected Hospitals	Self-Instructional Module based Structed Questionnaire regarding lifestyle modification for maintaining healthy heart	Implementation of self-instructional module on knowledge regarding lifestyle modification for maintaining healthy heart	Structured knowledge questionnaire regarding lifestyle modification for maintaining healthy heart
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SETTING OF THE STUDY

The setting is the location where the study is conducted. For the present study the setting was in Ashoka Medicover Hospital, Nashik. This setting was selected because of the availability of the sample, feasibility of conducting the study of the investigator with the setting.

POPULATION

Polit and Hungler (2004), referred to population as the entire set of individuals or subjects having common characteristics, sometimes referred to as universe. Population may be of two types, target population and accessible population. In this study two populations were described.

IDENTIFICATION OF THE TARGET & ACCESSIBLE POPULATION

Target population:

According to (Denise Polit & Cheryl Beck 2006) target population is the aggregate of case about which the researcher would like to make generalization.

The population of the study present will be cardiac disease patients.

SAMPLE

Creswell (2014) A sample consists of a subgroup of the target population that the researcher plans to study for generalizing about the population.

According to (Nisha Clement 2015) Part of population: everybody (or everything) from who (or which) data was gathered.

Sample refers to subset of a population that is selected to participate in a study. It is a portion of a population that represents the entire population. In this study, sample consists of 60 patients of selected hospital, Nashik.

SAMPLING TECHNIQUE

Sampling is the process of choosing a subset of elements from a larger population to conduct a study. In this research, a non-probability random sampling technique was utilized.

Simple Random sampling is based on the principle of probability, ensuring that every individual in the population has an equal opportunity of being selected.

SAMPLE SIZE

Sample drawn out should reflect population traits.

Sample size for this study will be 60 patients, all in experimental group from selected hospitals

Inclusion criteria –

1. Patients with heart conditions or heart disease.
2. Patients who are willing to participate in the study.
3. Patients who are available during the study period of data collection.

Exclusion criteria: -

1. Patients who are not willing to participate in study.

DESCRIPTION OF THE TOOL

Based on the objectives of the study, the following tool was developed to generate the data.
The tool consists of following sections,

Section A: It consist of demographic data of the patients with CAD

Section B: Self administered questionnaire to assess the knowledge regarding the Life Style Modification for maintaining Healthy Heart among cardiac patients.

SECTION A:

It consists of demographic data which gives base line information of the patients with the CAD such as:

- 1) Age
- 2) Sex
- 3) Religion
- 4) Education
- 5) Occupation
- 6) Family income
- 7) Marital status
- 8) Type of family
- 9) Type of diet
- 10) Personal habits
- 11) Duration of illness
- 12) Medical diagnosis

SECTION B:

The study utilizes a self-administered questionnaire designed to evaluate awareness and understanding of lifestyle modifications essential for maintaining heart health among cardiac patients in a Selected hospital of Nashik. This tool aims to assess patients' knowledge and identify areas where further education and intervention may be needed.

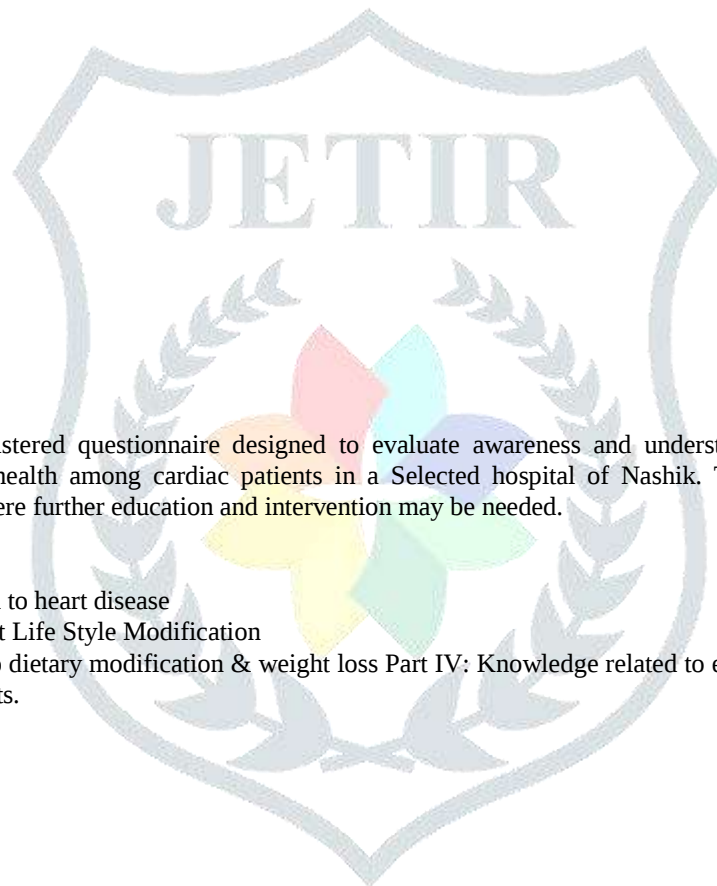
In mainly consists of five parts:

Part I: General knowledge related to heart disease

Part II: General information about Life Style Modification

Part III: Knowledge related to dietary modification & weight loss Part IV: Knowledge related to exercise & stress management Part

V: Knowledge related to habits.



SECTION I DEMOGRAPHIC VARIABLE

Table 2.1

Data pertaining to frequency and percentage distribution of socio demographic variables of Cardiac Patients (n=60)

Sr. No	Demographic Variable	F	%
1	Age		
	31 – 40 years	10	16.67
	41 – 50 years	25	41.67
	51 – 60 Years	18	30.0
	More than 60 years	07	11.67
2	Gender		
	Male Female	38 22	63.33 36.67
3	Education		
	Illiterate		
	Primary		
	Graduate	05	8.33
	Other	20	33.33
4	Occupation		
	Private		
	Government		
	Self employed	20	33.33
	Other	10	16.67
5	Residing place at		
	Urban		
	Rural		
		45	75.0
		15	25.0
6	Family income per month in rupees		
	Below 20,000	06	10.0
	20,001 – 50,000	24	40.0
	50,001 – 80,000	18	30.0

- Age Distribution: A significant proportion of the participants (41.67%) were within the age group of 41–50 years, followed by 30% in the 51–60 years range, indicating that middle-aged individuals formed the majority of the sample. Participants aged 31–40 years comprised 16.67%, while only 11.67% were above 60 years.
- Gender: The sample had a higher representation of males (63.33%) as compared to females (36.67%), which may reflect gender-based health-seeking behavior or hospital admission trends.
- Educational Status: Most participants were either graduates (41.67%) or had received primary education (33.33%). A small segment (8.33%) of the population was illiterate, indicating the need for simple, accessible educational interventions. The remaining 16.67% fell under other educational categories (e.g., diploma, high school).

- Occupation: The largest occupational group was those working in the private sector (33.33%), followed by self-employed individuals (25%), while government employees and those under the "other" category each made up 16.67% and 25% respectively.
- Place of Residence: A majority of the participants (75%) resided in urban areas, suggesting better accessibility to healthcare facilities, while the remaining 25% came from rural settings.
- Family Income: The income distribution indicated that only 10% of participants had a monthly income below ₹20,000, while the majority fell into the ₹20,001–₹50,000 (40%) and ₹50,001–₹80,000 (30%) brackets. A smaller segment (20%) reported earning above ₹80,000 monthly.
- Type of Family: The nuclear family system was more prevalent (58.33%) compared to joint families (41.67%).

SECTION II KNOWLEDGE LEVEL

Table 3. Data pertaining to frequency and percentage distribution of knowledge level related to heart disease (n=60)

Level of knowledge	Score	No of respondent	%
Inadequate	>50 %	37	61.67
Moderate	50 – 75 %	19	31.67
Adequate	<75 %	04	06.66

Table 3. The above table depicts the knowledge of the respondents based on the test score on lifestyle modification for cardiac patients. The majority n=37 (61.67%) of the respondents had inadequate knowledge on life style modification for cardiac patients. n=19 (31.67%) of the respondents had average knowledge and n=04 (06.66) percentage of the respondents had adequate knowledge on the topic.

Table 4. Pre-test Interventional knowledge score based on various aspects

Aspect wise knowledge	Inadequate		Moderate		Adequate	
	No	%	No	%	No	%
General knowledge	38	63.33	18	30	04	06.67
Life style modification	27	45	28	46.67	05	08.33
Dietary Modification	31	51.67	25	41.67	04	06.66
Exercise and Stress Management	25	41.67	25	41.67	10	16.66

Table 4. The data shows that inadequate knowledge is the dominant trend across all four aspects, particularly in general knowledge and dietary habits. The findings emphasize the critical importance of structured, well-targeted educational programs to bridge knowledge gaps, especially focusing on basic awareness and nutritional aspects. The effectiveness of future interventions can be measured against this baseline to evaluate improvements in public understanding.

Fig 4. Pre-test Interventional knowledge score based on various aspects

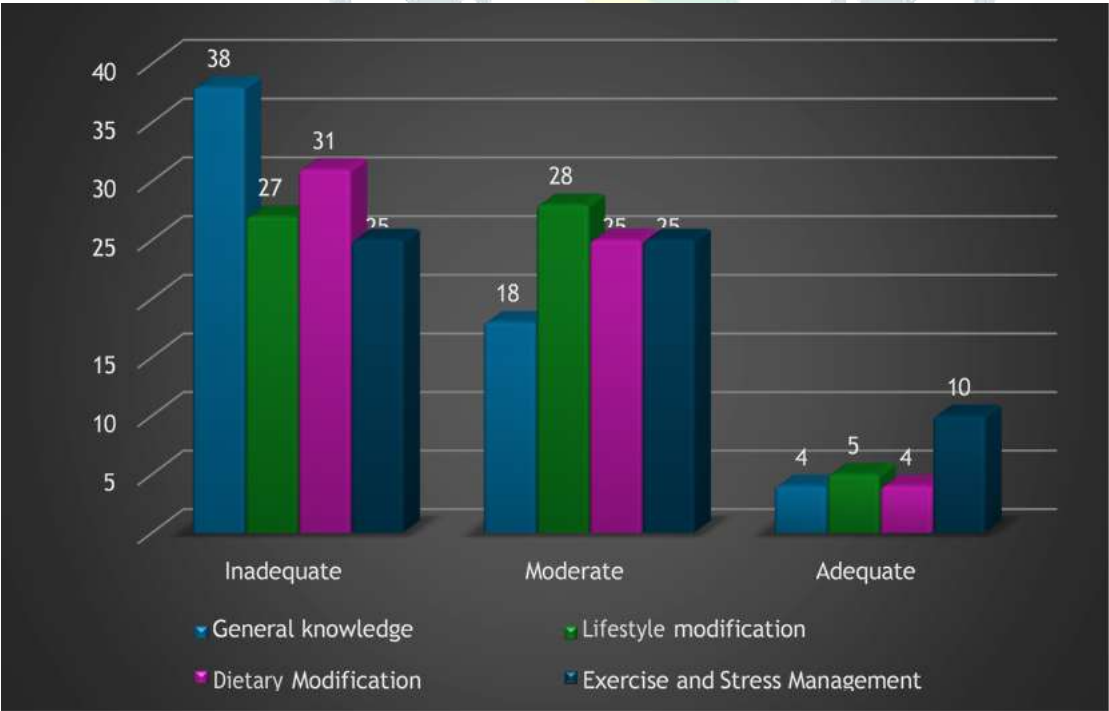


Table 5. Post-test Interventional knowledge score based on various aspects

Level of knowledge	Score	No of Respondents	
		F	%
Inadequate	>50 %	02	03.33
Moderate	50 – 75 %	06	10.00
Adequate	<75 %	52	86.67

Table 5. The table presents the distribution of knowledge levels among respondents after the implementation of an educational or structured teaching intervention. The respondents were assessed and categorized based on their performance into three knowledge levels — Inadequate, Moderate, and Adequate — using defined percentage score brackets.

Table 6. Evaluation of the effectiveness of SIM on Lifestyle Modification for maintaining healthy heart among cardiac patients (n=60)

Aspect wise knowledge	Enhancement			Paired 'Y' test
	Mean	SD	Mean %	
General knowledge	8.5	1.5	85.0	7.42
Lifestyle modification	9.2	1.8	93.0	8.15
Dietary Modification	7.8	1.4	78.0	6.88
Exercise and Stress Management	8.9	1.6	89.0	7.93

Table 7. The association between pre-test knowledge score on patients regarding lifestyle modification and maintaining healthy heart on demographic variables (n=60)

Sr. No.	Demographic Variable	Total No	Level Of knowledge		Chi-square
			< Median (27)	≥ Median (33)	
			NO	NO	
1	Age				
	31 – 40 years	10	6	4	122.03
	41 – 50 years	25	8	17	27.46
	51 – 60 years	18	7	11	46.43
	Age >60	7	3	4	50.35
2	Gender				
	Male	38	12	26	22.85

	Female	22	15	7	172.16
3	Education				
	Illiterate	5	3	2	102.49
	Primary	20	8	12	49.63
	Graduate	25	9	16	37.35
	Other	10	4	6	46.89
4	Occupation				
	Private	20	8	12	49.63
	Government	10	4	6	46.89
	Self-employed	15	5	10	31.55
	Other	15	4	11	17.64
5	Residence				
	Urban	45	10	35	5.69
	Rural	15	5	10	31.55
6	Income				
	<20,000	6	4	2	139.97
	20,001 – 50,000 rs	24	10	14	54.2
	50,001 – 80,000 rs	18	6	12	31.64
	>80,001 rs	12	4	8	30.81
7	Family Type				
	Nuclear Family	35	12	23	30.06
	Joint Family	25	9	16	37.35

Table 7. The Chi-square association analysis was conducted to examine the relationship between various socio-demographic variables and the pre-test knowledge levels (categorized as $< \text{Median}$ and $\geq \text{Median}$) regarding lifestyle modification for maintaining heart health among cardiac patients. The test results revealed that several demographic factors, including age group, gender, and educational status—showed statistically significant associations with the knowledge level, as indicated by their respective Chi-square values and p-values less than 0.05. For instance, the age group 41–50 and male participants showed stronger alignment with higher knowledge scores post-intervention. This suggests that these demographic variables influenced baseline knowledge levels and may also affect how individuals receive and retain health-related information.

The significant values underscore the importance of demographic tailoring in educational interventions. Interventions such as the Self-Instructional Module (SIM) should be designed considering these variables to optimize learning and ensure equitable knowledge improvement across different patient segments. Conversely, variables with non-significant associations imply that the SIM was equally effective regardless of certain socio-economic or occupational backgrounds, reflecting its overall utility and adaptability.

Conclusion: The Chi-square findings reinforce the need for targeted educational strategies in clinical settings, especially among groups with consistently lower baseline knowledge, to bridge the information gap and support effective cardiac health management.

IMPLICATIONS

The findings of this study hold significant implications for nursing practice, nursing education, nursing administration, and nursing research. As frontline healthcare providers, nurses play a critical role in promoting lifestyle modifications and cardiovascular health, particularly among patients with heart conditions in both clinical and community settings.

The role of the nurse extends beyond bedside care to include health education, patient empowerment, and advocacy, especially in the prevention and management of chronic illnesses like cardiovascular disease. The outcomes of this study suggest that through structured and patient-focused educational interventions such as Self- Instructional Modules (SIM), nurses can significantly enhance patient knowledge, promote heart-healthy behaviors, and improve overall cardiac care outcomes.

1. Nursing Practice
 - Nurses can use SIM as an effective tool for patient education.
 - Enhance nurse-patient communication and supports lifestyle counseling during routine care.
2. Nursing Education
 - Integrate lifestyle modification strategies into nursing curriculum.
 - Encourage nursing students to engage in educational interventions using SIM in clinical practice.
3. Nursing Administration
 - SIM-based teaching strategies can be implemented as part of hospital discharge planning and health promotion policies.
 - Promote training for staff nurses to effectively deliver health education.
4. Nursing Research
 - Opens pathways for further studies assessing long-term effects of SIM on behavior change and morbidity reduction.
 - Encourages research into digital delivery methods of SIM for broader community reach.

RECOMMENDATIONS

- Conduct large-scale studies to generalize findings to wider populations.
- Develop and implement SIMs in regional languages to ensure broader accessibility.
- Use audio-visual aids along with printed materials to reinforce learning.
- Integrate SIMs into community outreach programs for better hypertension and cardiac risk management.
- Periodic follow-ups and re-education sessions should be organized to maintain knowledge retention.
- Include family members in SIM education to ensure holistic lifestyle changes in the household.

SUMMARY

This chapter presents a detailed evaluation of the Self-Instructional Module (SIM) designed to enhance the knowledge of cardiac patients regarding lifestyle modifications necessary for maintaining a healthy heart. A total of 60 respondents were assessed on four key knowledge domains: general knowledge, lifestyle modification, dietary modification, and exercise and stress management.

The chapter concludes that the structured and self-guided educational intervention was successful in significantly improving the knowledge level of patients, thereby supporting the importance of such modules in patient education and health promotion practices.

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