ScientificScholar®
Knowledge is power
Publisher of Scientific Journals

https://jcardcritcare.org

Journal of Cardiac Critical Care TSS

Original Article

Knowledge and Attitudes of Cardiovascular Patients Toward Dietary Modifications: A Population-Based Study

Sulaiman Umar[1], Salihu Ismail[2], Ijaida Joseph Ijabula[3], Ahmad Dahuwa Abdulkadir[4], Kefas Luka Kyari[5], Kanchan Devi[6]

[1]Department of Nursing Science, College of Health Sciences, Federal University, Birnin Kebbi, Kebbi, [2]Department of Nursing Services, Federal University of Health Sciences Teaching Hospital, Azare, Bauchi, [3]Department of Medical Surgical Nursing, College of Nursing and Midwifery Yola, Adamawa, [4]Department of Community Health Nursing, Adamu Adamu College of Nursing and Midwifery, Federal University of Health Sciences Teaching Hospital, Azare, Bauchi, [5]Department of Medical Surgical Nursing, College of Nursing Sciences, Lafia, Nasarawa, Nigeria, [6]Department of Medical Surgical Nursing, Satish Chandra Pandey Memorial College of Nursing and Paramedical Sciences, Gonda, Uttar Pradesh, India.

***Corresponding author:**
Sulaiman Umar,
Department of Nursing Science, College of Health Sciences, Federal University, Birnin Kebbi, Kebbi, Nigeria.

rnumarsulaiman91@gmail.com

Received: 23 September 2024
Accepted: 27 January 2025
EPub Ahead of Print: 02 April 2025
Published: 15 April 2025

DOI
10.25259/JCCC_46_2024

Quick Response Code:

ABSTRACT

Objectives: The objectives of this research were to evaluate the knowledge and attitudes of cardiovascular patients toward dietary modifications and to find the statistically significant relationship between their attitudes and selected sociodemographic characteristics.

Material and Methods: The design used for this research was a population-based cross-sectional study design. Random sampling technique was used to select 109 cardiovascular patients receiving treatment in outpatient department in a Tertiary Hospital (Kebbi Medical Centre, Kalgo), Kebbi State, Nigeria. The study was carried out within 11 months (January 2023–December 2023). The data were collected from 109 participants using a self-structured questionnaire on knowledge and attitudes toward dietary modifications. The gathered data underwent statistical analysis utilizing the Statistical Package for the Social Sciences version 22.0.

Results: The result reveals that most of the participants are between the age range of 50 and 59 years (46.7%) and a small percentage of the participants were 70 years or older (11.7%). Those with average knowledge scores were the majority making 37.6% of the study sample. These were followed by those respondents with poor knowledge making 36.7% of the sample. The ones with the lowest number of respondents were the ones with good knowledge who made up 27.7% of the study sample. Therefore, $H_{0:1}$ hypothesis was declined, while the $H_{1:1}$ hypothesis was approved. The cardiovascular patients with positive attitudes toward dietary modifications were 86.2% of the whole study sample. Those with negative attitudes were minority in number making only 13.8% of the total study sample. Therefore, $H_{0:1}$ hypothesis was turned down, while the $H_{1:1}$ hypothesis was endorsed. There was no relationship between any of the respondents' sociodemographic variables and their attitudes, $P > 0.05$ in each case. Hence, $H_{0:1}$ hypothesis was endorsed while $H_{1:1}$ hypothesis was declined.

Conclusion: The results revealed that most of the patients had average knowledge and positive attitudes toward dietary modifications. Moreover, the relationship between the patients' sociodemographic characteristics was not statistically significant.

Keywords: Attitudes, Cardiovascular patients, Dietary modifications, Knowledge, Population-Based

INTRODUCTION

Dietary modification is a key strategy that may prevent a large number of primary and secondary cardiovascular events.[1] Cardiovascular diseases, which include coronary heart disease,

atherosclerosis, peripheral artery diseases, and stroke are disorders that affect the heart and blood vessel.[2] There were an estimated 422.7 million cases of cardiovascular diseases and 17.92 deaths worldwide, which accounted for nearly one-third of the total deaths. Among many established risk factors for cardiovascular disorders, dietary modification plays a significant role. Numerous studies have enhanced our understanding of the association between dietary modifications and cardiovascular health.[3] The majority of the current literature exploring the connection between dietary patterns and the risk of cardiovascular diseases employ factor analysis and suggests an inverse relationship between healthy eating habits and the occurrences of cardiovascular diseases.[4] Unhealthy dietary intake is ranked as a major factor for cardiovascular disease and death globally.[5]

However, annually 30% of all global mortalities are from cardiovascular diseases, and more than 75% occur in low and middle-income nations. It was predicted that the current trend of cardiovascular disease deaths continues, every year, cardiovascular disease deaths will rise to nearly 23.3 million by 2030.[6] The top five nations with the highest population of men with cardiovascular disorders are found in Central and Eastern Europe. In the first half of the twentieth century, cardiovascular disorders are non-existent in African nations. The top five nations with the highest number of women with cardiovascular diseases are Burkina Faso, Chadi, Mali, Niger, and Somalia (African countries).[7] The main causes of cardiovascular diseases are sedentary lifestyle, physical inactivity, unhealthy dietary intake, and smoking.[8]

Moreover, another study revealed that the majority of respondents (cardiovascular patients) had poor knowledge of cardiovascular diseases but a moderate level of adherence toward the management of cardiovascular disorders in Lebanon.[9] Understanding the knowledge, attitude, and preventive measures related to cardiovascular diseases is important for early detection, management, and adherence to recommended dietary modifications. Positive attitude toward cardiovascular diseases significantly shapes patients' behavior to adhere to recommended lifestyle changes and treatment regimens.[10] Some study findings from tertiary care center in Nepal revealed that only 46.7% of the cardiovascular patients had good knowledge, while 53.3% had poor knowledge of dietary modifications.[11] In another study which was conducted in Delta Nigeria among cardiovascular patients, the result showed that the majority of the respondents are knowledgeable about cardiovascular diseases and have positive attitudes toward dietary modifications.[12]

In addition, dietary modifications are important in the prevention and management of cardiovascular disorders, but only few population-based study was conducted on knowledge and attitudes toward dietary modifications.[13] Therefore, the researcher felt that there is needs-to-carry-out an investigation to assess the knowledge and attitudes of cardiovascular patients toward dietary modifications in a selected Tertiary Hospital in Northwest Nigeria.

Objectives

Objectives of the study were to evaluate cardiovascular patients' knowledge and attitudes toward dietary modifications and to find the statistically significant relationship between patients' attitudes and their selected sociodemographic variables.

Research hypotheses

- $H_{1:1}$ There was knowledge of dietary modifications among cardiovascular patients.
- $H_{1:2}$ There were positive attitudes toward dietary modifications among cardiovascular patients.
- $H_{0:3}$ There was no statistically significant relationship between their attitudes toward dietary modifications and patients' selected sociodemographic characteristics.

MATERIAL AND METHODS

Study design and population for the study

Population-based cross-sectional study design was adopted to assess knowledge and attitudes of cardiovascular patients toward dietary modifications and to find the statistically significant relationship between their attitudes and selected sociodemographic characteristics.

Sample size

Sample size was calculated using Taro Yamane formula below

$$n = N/1 + N\,(e)^2$$

N = population size (150)
n = Sample size (?)
e = Confidence level (0.05)
(Yamane 1967)
$n = 150/1 + 150\,(0.05)^2$
$n = 150/1 + 150\,(0.0025)$
$n = 150/1 + 0.375$
$n = 150/1.375$
$n = 109$.

Sampling technique

A random sampling technique was adopted to select 109 cardiovascular patients in the outpatient department in a Tertiary Hospital (Kebbi Medical Centre, Kalgo) Northwest, Nigeria.

Inclusion criteria

Both males and females' cardiovascular patients receiving treatment in outpatient department of Kebbi Medical Centre, Kalgo, Northwest Nigeria. Participants that are interested to participate and were available during data collection are included.

Exclusion criteria

Both males and females' cardiovascular patients who are not receiving treatment in outpatient department in Kebbi Medical Centre, Kalgo, Northwest Nigeria. Participants who are not interested to participate and were not available during data collection are excluded.

Preparation/development and description of the questionnaire

Self-structured knowledge questionnaire was developed by the investigator to obtain data from cardiovascular patients. The questionnaire used for this study was self-prepared knowledge questionnaire which was developed to assess the knowledge and attitudes of cardiovascular patients toward dietary modifications. The questionnaire was formulated based on the researcher's experience and consultation with experts in the field of medical-surgical nursing (cardiothoracic and critical care nursing) and nutrition and dietetics. The questionnaire for data collection was closed ended questionnaire to meet the aims of the research. The tool consisted of three sections: Section A, B, and C.

- Section-A: Sociodemographic characteristics of cardiovascular patients included eight items such as sex, marital status, ethnicity, age, educational status, religion, occupation, and previous family history of cardiovascular disorder.
- Section-B: Questionnaire on dietary modifications, there are 40 knowledge questions, each question has multiple choices with four options (a, b, c, and d). Any correct option was assigned a score of one mark, and unanswered or wrong answer scored zero.
- Section-C: Questionnaire on attitudes toward dietary modifications. There were 20 attitude questions, each question had two options (a and b), each correct answer was assigned a score of one mark, and unanswered or wrong answer scored zero.

Table 1 shows scoring key for knowledge tool, the tool comprised 40 questions related to knowledge of dietary modifications, each question has multiple choices with four responses (a, b, c, and d), and each correct answer was given a score, while the wrong answer and unanswered were scored zero. The maximum score was 40 and the minimum was zero.

Table 2 shows the level of knowledge score, and the level of knowledge score was graded as good, average, and poor. 70–100% (28–40 score) were graded as good, 50.0–67.5% (20–27 score) were graded as average, and 0.0–47.5% (28–40 score) were graded as poor level of knowledge.

Table 3 shows the scoring key for the attitude questionnaire, the tool comprised 20 questions related to attitudes on dietary modifications. Each question has two responses (a and b), any correct answer was assigned a score of one mark, while unanswered or wrong answer scored zero. The maximum score was 20 and the minimum was zero.

Table 4 shows the level of attitude score, level of attitudes score was graded as negative and positive, and 0.0–35% (0–7 score) were graded as negative attitudes. Moreover, 40–100% (8–20 score) were graded as positive attitudes.

Method of data collection and analysis

Data were collected from the participants using the self-prepared tool. The data were analyzed using inferential and descriptive statistics, with the Statistical Package for the Social Sciences version 22.0; simple criteria were analyzed by frequency and percentage distribution. Chi-square tests were used to find the relationship between the patients' attitude toward dietary modifications and their selected sociodemographic characteristics.

Table 1: Scoring key for knowledge questionnaire.

Question number	Maximum score	Minimum score
1–40	40	0

Table 2: Level of knowledge score.

Level of knowledge	Scores	Percentages
Good	28–40	≥70
Average	20–27	≥50 <70
Poor	0–19	≤47.5

Table 3: Scoring key for attitudes questionnaire.

Question number	Maximum score	Minimum score
1–20	20	0

Table 4: Level of attitudes score.

Level of attitudes	Scores	Percentages
Positive	8–20	≥40
Negative	0–7	≤35

Table 5: Sociodemographic characteristics of the participants *n*=109.

Variables	Frequency	Percentage
Sex		
Female	72	66.1
Male	37	33.9
Total	109	100.0
Marital status		
Single	10	9.2
Married	58	53.2
Widowed	18	16.5
Widower	13	11.9
Divorcee	10	9.2
Total	109	100.0
Educational status		
No formal education	37	33.9
Primary School	44	40.4
Secondary School	13	11.9
Tertiary Institution	15	13.8
Total	109	100.0
Ethnicity		
Fulani	39	35.8
Hausa	66	60.6
Igbo	1	0.9
Yoruba	3	2.8
Total	109	100.0
Religion		
Islam	80	73.4
Christianity	29	26.6
Total	109	100.0
Occupation		
Unemployed	52	47.7
Employed	57	52.3
Total	109	100.0
Previous family history of CVD		
Yes	37	33.9
No	72	66.1
Total	109	100.0

CVD: Cardiovascular disease

Table 5 above shows that in terms of sex, most of the respondents were females (66.1%), while the remaining (33.9%) were males. However, based on their marital status, the majority were married (53.2%), while the minority were divorced and single (9.2% each). Looking at their educational status, we could deduce that the majority had primary education (40.4%) followed by those with no formal education (33.9%). Minority also had a secondary level of education (11.9%). Ethnicity showed that majority were Hausas by tribe (60.6%) followed by Fulani (35.6%). Igbo and Yoruba were the minority tribes in this study making up 1 (0.9%) and 3 (2.8%), respectively. Furthermore, with regard to religion, we could also see that the highest number of respondents were Muslim (73.4%), followed by Christians (26.4%). No any other respondent practiced other religions. Employed respondents were the majority (52.3%) and unemployed were the minority (47.7%). Finally, larger number of the respondents (66.1%) answered that they had no previous history of cardiac diseases, but also some of the respondents answered that they had the history of cardiovascular disorder (33.9%).

Table 6: Respondents' knowledge scores of dietary modification *n*=109.

Level	Ranges (%)	Frequency	Percentage
Good	70–100	28	25.7
Average	50–60	41	37.6
Poor	0–40	40	36.7
Total	-	109	100.0

Table 6 above shows the knowledge scores of the respondents in which the respondents' scores of knowledge are categorized into good, average, and poor levels of knowledge.

RESULTS

It is shown that Table 1 scoring key for knowledge question on dietary modifications.

Table 2 level of knowledge score which was graded as good, average and poor.

Table 3 scoring key for attitudes questionnaire on attitudes toward dietary modifications.

Table 4 level of attitudes score which was graded as negative and positive.

Table 5 above showed sociodemographic characteristics of the respondents. Table 6 respondents' knowledge scores of dietary modifications which was graded as good, average and poor.

Figure 1 displayed the attitudes scores of the respondents. Those with positive attitudes towards dietary modifications were highest in number with 86.2% of the whole study sample. Those with negative attitudes were less compared to those with positive attitudes. Those with negative attitudes were minority in number making only 13.8% of the total study sample. Therefore, the figure showed that most of the participants had positive attitudes.

The Table 7 relationship between the respondents' levels of attitude toward dietary modifications and their selected sociodemographic characteristics which revealed that there

Table 7: Relationship between respondents' level of attitudes toward dietary modifications and their selected sociodemographic characteristics (n=109).

Variables	Attitudes level				X^2	*P*-value	Df
	Negative		Positive				
	F	%	F	%			
Age							
40–49 years	5	4.6	15	13.8	4.320	0.229	3
50–59 years	6	5.5	15	45.9			
60–69 years	1	0.9	18	16.5			
≥70 years	3	2.8	11	10.1			
Sex							
Female	11	10.1	94	86.2	0.411	0.770	1
Male	4	3.4	33	30.3			
Marital status							
Single	0	0.0	10	9.2	5.972	0.201	4
Married	8	7.3	50	45.9			
Widow	5	4.6	13	11.9			
Widower	1	0.9	12	11.0			
Divorcee	1	0.9	9	8.3			
Educational status							
No formal education	6	5.5	31	28.4	0.434	0.933	3
Primary school	5	4.6	39	35.8			
Secondary school	2	1.8	11	10.1			
Tertiary Institution	2	1.8	13	11.9			
Ethnicity							
Fulani	4	3.7	35	32.1	2.066	0.559	3
Hausa	11	10.1	55	50.5			
Igbo	0	0.0	1	0.9			
Yoruba	0	0.0	3	2.8			
Religion							
Islam	12	11.0	68	62.4	0.095	0.757	1
Christianity	3	2.8	26	23.9			
Occupation							
Unemployed	4	3.7	48	44.0	3.372	0.185	2
Employed	11	10.1	46	42.2			
Previous family history of CVD							
Yes	4	3.7	33	30.3	0.121	0.728	1
No	11	10.1	61	55.9			

CVD: Cardiovascular disease, Df: Degree of freedom, F: statistic or F-ratio

was no statistically significant relationship between any of the respondents' socio-demographic characteristics and their attitudes, $P > 0.05$ in each case.

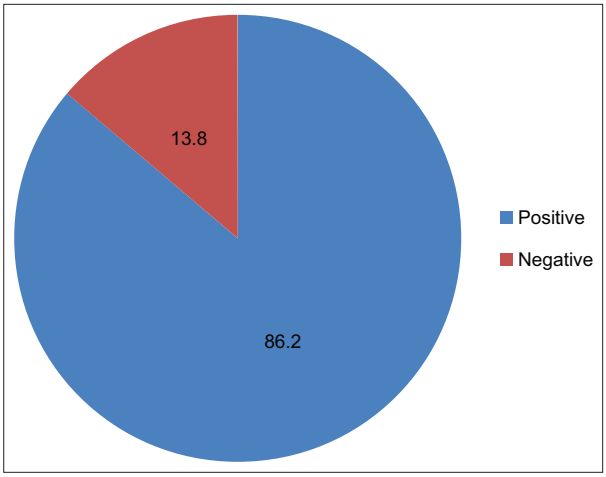

Figure 1: Attitude scores of the respondents toward dietary modifications, n = 109.

DISCUSSION

Maharjan *et al.* conducted a study on knowledge of diet among hypertensive patients in tertiary care center, Nepal: A descriptive cross-sectional study. Data collection among 169 respondents in Kathmandu Diabetes and Thyroid Centre, using a questionnaire. The findings revealed that the majority (53%) had good knowledge of diet.[11]

A cross-sectional study was carried out by Scalvedi *et al.*, on the relationship between nutrition knowledge and dietary intake: An assessment among a sample of Italian adults. The data were collected among 591 participants using questionnaire. The findings showed that many (66%) of the participants had adequate knowledge of dietary modifications.[14]

Another study was conducted by Mekonnen *et al.* on knowledge, attitudes, and practice toward lifestyle modification among diabetes mellitus (DM). Patients attending the University of Gondar Comprehensive Specialized Hospital Northwest, Ethiopia. Systematic random sampling was used to select 422 respondents. Data were collected using self-prepared tool. The results showed that most (53%) of the patients had positive attitude toward dietary modifications. There was no statistically significant association between the patients' attitudes and their selected sociodemographic characteristics with $P > 0.05$.[15]

The major key findings of the study revealed that:
The result showed that those with average knowledge score were the majority making 37.6% of the study sample. These were followed by those respondents with poor knowledge making 36.7% of the sample. The ones with the lowest number of respondents were the ones with good knowledge who made up 27.7% of the study sample. Therefore, $H_{0:1}$

hypothesis was not accepted, while the $H_{1:1}$ hypothesis was endorsed. This is in contrast with a study carried out by Murkute and Joseph, to assess the knowledge and perceived barriers regarding dietary modifications among patients' receiving hemodialysis in dialysis units of selected tertiary care hospitals. Non-probability convenience sampling technique was used 60 patients at dialysis unit of tertiary care hospital. The findings showed that the level of knowledge of dietary modifications among patients receiving hemodialysis is high, most of them (58.3%) had adequate knowledge, 40.0% had moderate knowledge, and only 1.7% had inadequate knowledge of dietary modifications.[16]

The result revealed that cardiovascular patients with positive attitudes toward dietary modifications were 86.2% of the whole study sample. Those with negative attitudes were a minority in number making only 13.8% of the total study sample. Therefore, $H_{0:1}$ hypothesis was not accepted, while the $H_{1:1}$ hypothesis was endorsed. This is in line with a study conducted by Quintana-Navarro *et al*. on long-term dietary adherence and changes in dietary intake in coronary patients' after intervention with a Mediterranean diet or a low-fat diet. Study revealed that the Mediterranean diet group achieved a high level of compliance in the short-term Mediterranean diet from 41.0% to 89.0%; low-fat diet from 4.0% to 67.0% which was maintained.[17]

The findings showed that there was no association between any of the respondents' sociodemographic characteristics and their attitudes, *P*-value > 0.05 in each case. Hence, $H_{0:1}$ hypothesis was endorsed, while $H_{1:1}$ hypothesis was declined. This is supported with another study carried out by Mekonnen *et al*. on knowledge attitudes and practice toward lifestyle modification among DM patients' attending the University of Gondar Comprehensive Specialized Hospital Northwest, Ethiopia. Systematic random sampling was used to select 422 respondents. Data were collected using self-prepared tool. The results showed that 53.0% had positive attitude toward dietary modification. There was no statistically significant association between their attitude and selected sociodemographic variable with $P > 0.05$.[15] Nutrition screening/assessment is important to identify patients, who may benefit from nutrition intervention. Choosing the appropriate tool remains at discretion of clinicians. Indiscriminate usage of gastric residual volume measurements should be avoided.[18-20]

Recommendation

Based on the research results, the investigator suggests that a similar study is to be carried out on knowledge of dietary modifications among cardiovascular patients using different settings and large sample so that findings of the study will be generalized.

CONCLUSION

The results showed that most of the participants had average knowledge and positive attitudes toward dietary modifications. Moreover, there was no statistically significant association between the patients' attitudes and their selected sociodemographic characteristics.

Ethical approval: The research/study approved by the Institutional Ethics Committee at Kebbi Medical Centre, Kalgo Northwest, Nigeria, number KMCK/EA/011, dated 09th January 2023.
Declaration of patient consent: The authors certify that they have obtained all appropriate patient consent.
Financial support and sponsorship: Nil.
Conflicts of interest: There are no conflicts of interest.
Use of artificial intelligence (AI)-assisted technology for manuscript preparation: The authors confirm that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

REFERENCES

1. Yu E, Malik VS, Hu FB. Cardiovascular Prevention by Diet Modification: JACC Health Promotion Series. J Am Coll Cardiol 2018;72:914-6.
2. Chen W, Zhang S, Hu X, Chen F, Li D. A Review of Healthy Dietary Choices for Cardiovascular Diseases: From Individual Nutrients and Foods to Dietary Patterns. 2023;51:4898.
3. Pan A, Lin X, Hemler E, Hu BF. Diet and Cardiovascular Disease: Advances and Challenges in Population-based Studies. Cell Metab 2018;27:489-6.
4. Riktehgaran R, Shamsi K, Renani EM, Arab A, Nouri F, Mohammadifard N, *et al*. Population Food Intake Clusters and Cardiovascular Disease Incidence: A Bayesian Quantifying of a Prospective Population-based Cohort Study in a Low and Middle-income Country. Front Nutr 2023;10:1150481.
5. Mente A, Dehghan M, Rangarajan S, O'Donnell M, Hu W, Degenais G, *et al*. Diet, Cardiovascular Disease, and Mortality in 80 Countries. Eur Heart J 2023;44:2560-9.
6. Kooh F, Khalil D. Knowledge, Attitude, and Practice Regarding Cardiovascular Diseases in Adult Attending Health Care Centres in Tehran, Iran. Int J Endocrinol Metab 2020;18:e101612.
7. Kebede T, Taddese Z, Girma A. Knowledge, Attitude and Practice of Lifestyle Modification and Associated Factors among Hypertensive Patients On-treatment Follow Up at Yakatit 12 General Hospital in the Largest City of East Africa: A Prospective Cross-sectional Study. PLoS One 2022;17:e0262780.
8. Yang X, Qin Q, Wang Y, Ma Z, Li Q, Zhang F, *et al*. Knowledge, Attitudes, and Practices Regarding Cardiovascular Disease Prevention among MIDDLE SCHOOL STUDENTS in China: A Cross-sectional Study. Front Public Health 2024;12:1301829.
9. Machaalani M, Fakhry B, Zwaihed M, Mendelek K, Nahmoud N, Hammoud T, *et al*. Knowledge, Attitude, and Practice Toward Cardiovascular Diseases in the Lebanese Population. Glob Heart 2022;17:47.

10. Siddique AB, Hosen S, Akter H, Hossain SM, Mamun A. Assessment of Knowledge, Attitudes, and Practices Regarding Cardiovascular Diseases (CVDs) among Older Individuals of Rural Bangladesh Findings from a Face-to-face Interview. Front Public Health 2024;12:1336531.
11. Maharjan N, Maharjan N, Li R. Knowledge on Diet among the Hypertensive Patients in a Tertiary Care Center Nepal: A Descriptive Cross-sectional Study. J Nepal Med Assoc 2020;58:98-101.
12. Ofili MI, Nwogueze BC, Agoh E. Knowledge and Awareness of Lifestyle Modifications as a Measure Influencing the Management of Hypertension among Hypertensive Patients at the Delta State University Teaching Hospital, Oghara. J Biomed Investig 2024;12:55-6.
13. Hu S. Report on Cardiovascular Health and Diseases in China 2021: An Updated Summary. J Geriat Cardiol 2023;20:399-430.
14. Scalvedi ML, Gennaro L, Saba A, Rossi L. Relationship between Nutrition Knowledge and Dietary Intake: An Assessment among a Sample of Italian Adults. Front Nutr 2021;13:714493.
15. Mekonnen CK, Abate HK, Tegegne ET. Knowledge, Attitude and Practice Towards Lifestyle Modification among Diabetes Mellitus Patients Attending the University of Gondar Comprehensive Specialized Hospital Northwest, Ethiopia. Diabetes Metab Syndr Obes 2020;13:1969-7.
16. Murkute U, Joseph JV. A Descriptive Study to Assess the Knowledge and Perceived Barriers Regarding Dietary Modifications among Patients Undergoing Haemodialysis in Dialysis Unit of Selected Tertiary Care Hospital. Int J Health Sci Res 2021;11:162-8.
17. Quintana-Navarro GM, Alkala-Diaz JF, Lopez-Moreno J, Perez-Corral I, Leon-Acuria A, Torres-Pena JD, *et al*. Long-term Dietary Adherence and Changes in Dietary Intake in Coronary Patients after Intervention with a Mediterranean Diet or a Low-fat Diet: The CORDIOPREV Randomized Trial. Eur J Nutr 2020;59:2099.
18. Kapoor PM. Nutrition Aggrandizement While on ECMO. J Card Crit Care TSS 2022;6:1-4.
19. Hote MP, Kapoor PM, Malakar J. Critical Care Nutrition Support following Cardiac Surgery in the Pediatric and Adult Population—A Review Article. J Card Crit Care TSS 2022; 6;43-47.
20. Joshi A, Mehta Y. Common Controversies in Critical Care Nutrition: Review of Latest Evidences. J Card Crit Care TSS 2020;3:85-88

How to cite this article: Umar S, Ismail S, Ijabula IJ, Abdulkadir AD, Kyari KL, Devi K. Knowledge and Attitudes of Cardiovascular Patients Toward Dietary Modifications: A Population-Based Study. J Card Crit Care TSS. 2025;9:92-8. doi: 10.25259/JCCC_46_2024