

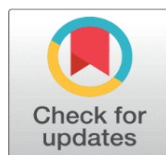
ASSESSMENT OF KNOWLEDGE REGARDING PREVENTION, RISK FACTORS AND EARLY SIGNS OF MYOCARDIAL INFARCTION (MI) AMONG ADULTS IN SELECTED RURAL COMMUNITY, WEST BENGAL

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Received 01 April 2024

Accepted 03 May 2024

Published 18 May 2024

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DOI

[10.29121/granthaalayah.v12.i4.2024.5561](https://doi.org/10.29121/granthaalayah.v12.i4.2024.5561)

Funding: This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

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ABSTRACT

Introduction: The nonexperimental study was undertaken to assess the knowledge regarding prevention, risk factors and early signs of Myocardial Infarction (MI) in selected rural community, West Bengal.

Objectives: To determine the knowledge regarding prevention, risk factors and early signs of Myocardial Infarction (MI) among adults.

To identify the association between knowledge regarding prevention, risk factors and early signs of Myocardial infarction (MI) among adults with selected demographical variables.

Methods: A descriptive study was conducted to assess the knowledge regarding prevention, risk factors and early signs of Myocardial Infarction (MI) among adults in selected rural community, West Bengal. Total 180 participant were selected through non probability convenience sampling technique is used. In the study Conceptual framework based on Rosenstoch's Health Belief Model. Data was collected from adult of rural community in Dhania Khali by valid and reliable structure interview schedule to assess the knowledge regarding prevention, risk factors and early signs of MI.

Result: The findings revealed that most 46.11% adults belonged to the age group of 51-60 years 86.67% adults were Hindu that 83.33% adults had history of MI in the family 52.78% adults passed secondary examination 67.78% adults had no history of addiction. 56.11% adults of rural community had average knowledge, there was a statistically significant association between knowledge score and age

χ^2 at (df1) = 3.841, $p > 0.05$, educational status χ^2 at (df1) = 3.841, $p > 0.001$ and religion χ^2 at (df1) = 3.841, $p > 0.001$, and type of family χ^2 at (df1) = 3.841, $p > 0.001$, and income χ^2 at (df1) = 3.841, $p > 0.001$, and addiction χ^2 at (df1) = 3.841, $p > 0.05$. The study finding could implicated in the field of nursing practice, education, administration, and research. Recommendation was need for future research.

Conclusion: It in concluded that knowledge of the community people can be increased through awareness programme. Recommendations were a large sample of adults in different settings for making broad generalization.

Keywords: Prevention of MI, Risk Factors of MI, Early Signs of MI

1. INTRODUCTION

One of the prime causes of dying in the world is Myocardial Infarction. Acute Myocardial Infarction occurs when the blood supply- to any part of the heart is interrupted. This is most frequently coronary artery disease (CAD) affects coronary arteries, which supply blood to the heart. The plaque build-up then narrows or blocks one or more of the coronary arteries and then CAD occurred. The most

common symptoms are Chest discomfort (angina). Chest discomfort(angina) and heart attack or other heart disease like arrhythmia or heart failure is the complication of CAD. [Brown \(2020\)](#)

Coronary heart disease (CHD) is major common type of cardiovascular disease and is the foremost cause of death in world. Mortality due to CHD has lowering in developed countries where as India and many other developing countries are still encounter a significant increase in CHD morbidity and death rates. Studies exposes that Indians are more vulnerable to coronary artery disease (CAD) and have a higher case-fatality rate than the western populations.

Myocardial infarction (MI) colloquially known as a heart attack result from interruption of myocardial blood flow and resultant ischaemia and is a leading cause of death worldwide. [Fleisher et al. \(2014\)](#)

Acute Myocardial Infarction remains cause of morbidity and mortality worldwide AMI occurs when myocardial blood supply to the heart, is diminished critical threshold and overwhelms myocardial repair mechanism designed to maintain operating function and homeostasis. An AMI known as heart attack, coronary occlusion or a “coronary” which is a life-threatening characterized by formation of localized necrotic within the Myocardium occlusion of coronary artery following the rupture of a susceptible atherosclerotic plaque and then ischemia occurred due to decreased oxygen shortage. If this condition is left untreated for a sufficient period it can cause damage heart muscle and death of heart muscle (myocardium). Myocardial necrosis begins at approximately 30 minutes after coronary occlusion, classic acute myocardial infarction with extensive damage occurs when the percussion of myocardium decreased severely below its needs. [Gupta & Yusuf \(2023\)](#)

2. PROBLEM STATEMENT

Assessment of knowledge regarding prevention, risk factors and early signs of Myocardial Infarction (MI) among adults in selected rural community, West Bengal.

3. OBJECTIVE

- 1) To determine the knowledge regarding prevention, risk factors and early signs of Myocardial Infarction (MI) among adults.
- 2) To identify the association between knowledge regarding prevention, risk factors and early signs of Myocardial infarction (MI) among adults with selected demographical variables

4. METHODOLOGY

A descriptive study conducted in Dhaniala Khali rural community, Hooghly, West Bengal from 19/02/23 to 18/03/23. Nonprobability convenience sampling technique is used to selected 180 respondents (30 to 60 years age group). The present study was carried out after getting all permission from the concerned authority. Informed consent was taken. The study was based on Rosen stock's (1974) Health belief Model. Content validity of tools was established by 09 experts from the field of Medical Surgical nursing, general physician, and professor of community medicine. Reliability of the tool were established by split-half method. Calculated reliability “r” was 0.89 for this tool indicating that tool to be reliable for research study. For administration, all tools were transformed into Bengali language

and linguistics validation done by linguistic experts. Descriptive and inferential statistics both were used to analysis the data. [Heart Attack: Symptoms and Treatment \(2023\)](#)

Data analysis was planned on the basis of objectives of the study using descriptive (frequency and percentage distribution, mean, median, standard deviation, mean percentage) and inferential statistics (chi-square test). Objectives of the study was considering, two tools were used totally and data were organized in three sections: Section I: Finding related to demographic characteristics of adult in community, Section II: Finding related to knowledge of prevention, risk factors and early signs of Myocardial Infarction (MI) among adults. Section III: Finding related to association between knowledge level with selected demographical variables. [Introduction to Epidemiology Public Health 101 Series CDC \(2018\)](#)

5. RESULTS

A total of 180 participant were included in this study. The majority age group of the Maximum number of subjects in rural area 83 (46.11%) belong to the age group 51-60 years in rural community. Maximum number of subjects 94 (52%) were males in rural community. Most of the subjects 156 (87%) adults belonged to Hindus. Most of the subjects 174 (97%) participants were married in rural community. Maximum number of subjects 92 (51%) stay in nuclear family in rural community. Majority of the subjects 137 (76%) had 5 family members in rural community. Most of subjects 150 (83%) had no family history of MI in rural community. Maximum number of subjects 102 (57%) were secondary passed. Maximum number of subjects 64 (35.56%) were unemployed in rural community. Maximum number of subjects 91(50.55%) adults' income was ≤Rs.10000/- in rural community. Maximum number of subjects 113 (63%) adults had no habit and addiction in rural community. [Knowledge and Practice Regarding Prevention of Myocardial Infarction \(2023\)](#)

Maximum number the adults of rural community 101 (56.11%) adults of rural community had average knowledge, 45 (25%) adults had good knowledge, 34 (18.89%) of them had poor knowledge regarding prevention, risk factors and early signs of MI. [Myocardial Infarction \(2023\)](#)

The chi - square test inferred that there was significant association is found between knowledge score and demographic variables of adults of rural community like age, religion, educational status, monthly family income and addiction. Statistical significance was set at $p < 0.05$. [Sweis & Jivan \(2023\)](#)

Data present in [Figure 1](#) shows that 46.11% adults belonged to the age group of 51-60 years, 27.78% adults belonged to the age group 41-50 and 26.11% adults belonged to the age group 30-40 years. [Figure 2](#) shows that 52.22% adults were male and 47.78% adults were female. [Figure 3](#) shows that 86.67% adults were Hindus and only 13.33% were Muslims. [Figure 4](#) shows that 51.11% adults belonged to the nuclear family and 48.89% adults belonged to the joint family. [Figure 5](#) shows that 83.33% adults had history of MI in the family and 16.67% adults show did not have history of MI in the family. [Figure 6](#) showed that 52.78% adults had passed secondary examination, 21.67% adults passed Higher Secondary exams, 20% passed Graduate and post-graduation and 5.55% had passed primary education. [Figure 7](#) showed that 62.78% adults were not addicted but 37.22% adults were addicted. [Figure 8](#) shows that 37.31% adults had smoking habit, 35.83% adults had khaini habits, 19.40% adult had gutkha habits of them and 7.46% adults were alcoholic. [The New 2018 Cholesterol Guidelines \(2023\)](#)

Figure 1

n=180

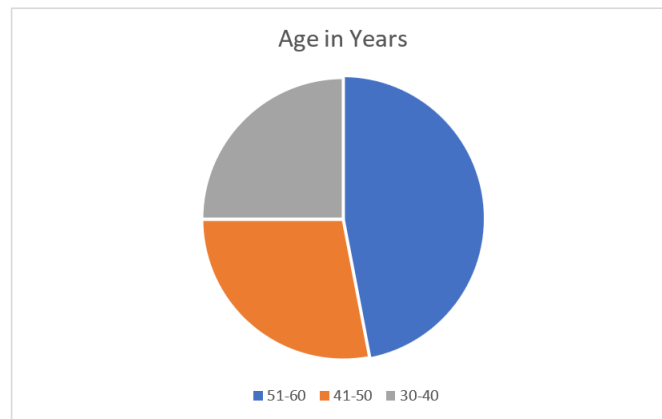


Figure 1 Pie Diagram on Age Distribution of Rural Community

Figure 2

n=180

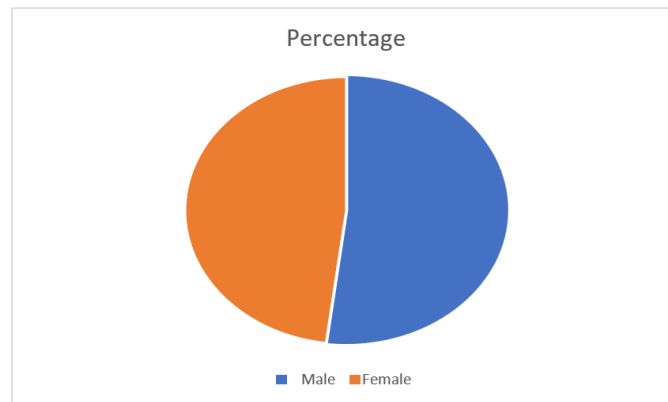


Figure 2 Pie Diagram on Gender Distribution of Rural Community

Figure 3

n=180

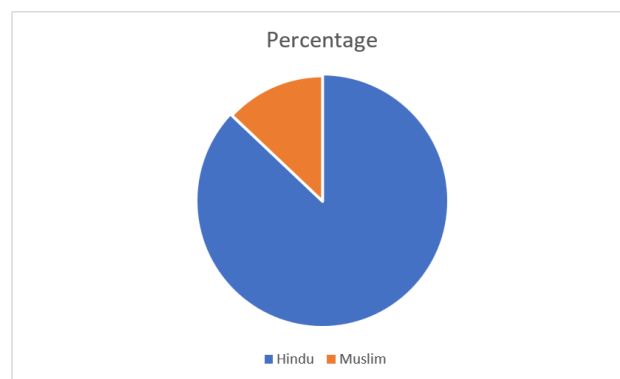


Figure 3 Pie Diagram on Religion of Rural Community

Figure 4

n=180

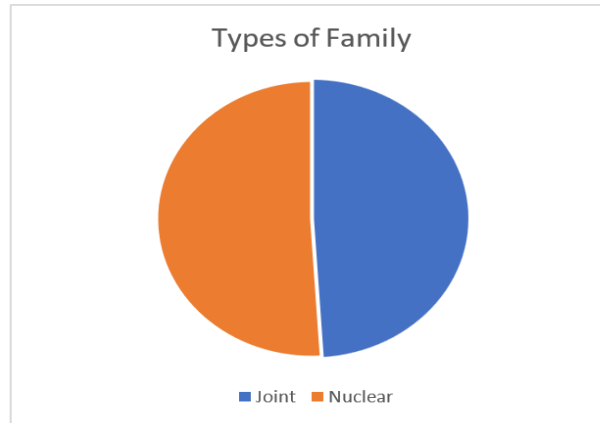


Figure 4 Pie Diagram on Type of Family of Rural Community

Figure 5

n=180

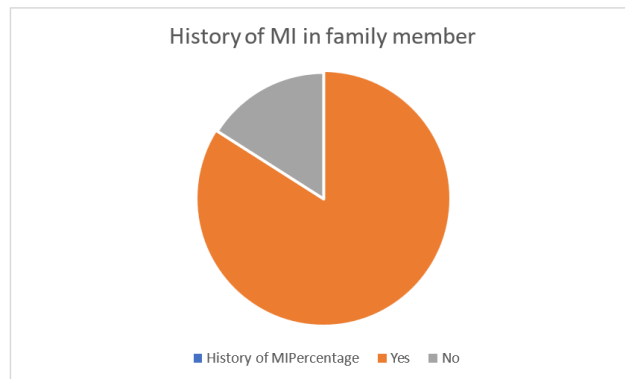


Figure 5 Pie Diagram on History of MI in Family Member in Rural Community

Figure 6

n=180

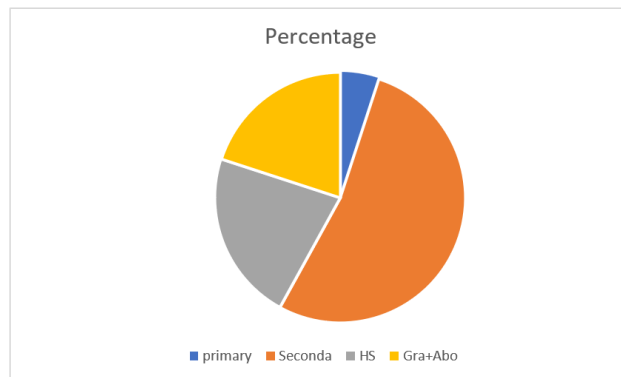


Figure 6 Pie Diagram on Level of Education

Figure 7

n=180

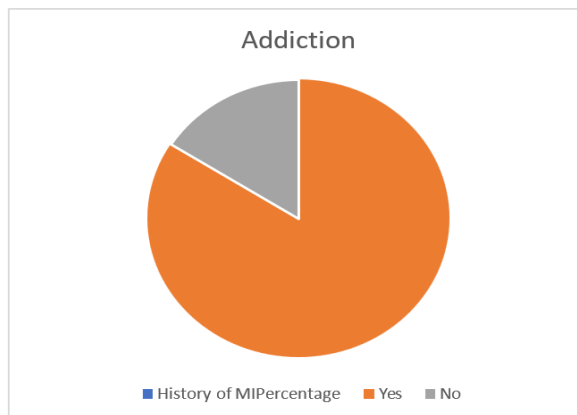


Figure 7 Pie Diagram on Addiction of Rural Community

Figure 8

n=67

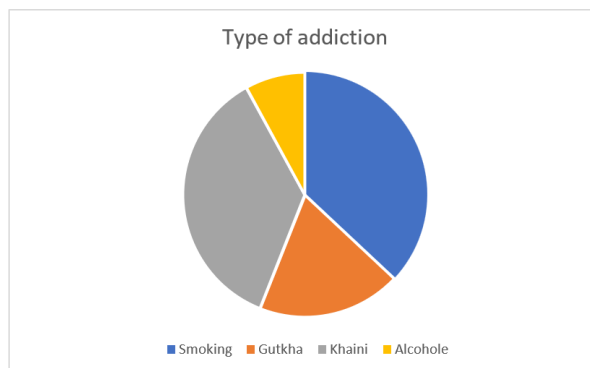


Figure 8 Pie Diagram on Type of Addiction of Rural Community

Discussion related to knowledge score regarding prevention, risk factors and early signs of (MI) in the adults of selected rural community

Table 1

Table 1			n=180
Knowledge	Score	Frequency	Percentage
Good	>29	45	25
Average	16-28	101	56.11
Poor	<16	34	18.89
Minimum score - 0			
Maximum score - 34			

Section-II Finding related to knowledge of prevention, risk factor and early sign of Myocardial Infarction (MI) among adults. Data presented in [Table 1](#) that result disclosed that Most of the adults of rural community (56.11%) adults of rural

community had average knowledge, (25%) adults had good knowledge, (18.89%) of them had poor knowledge regarding prevention, risk factors and early signs of MI.

Table 2

Table 2					n=180
Variables	Obtained Range	Mean	Median	Standard Deviation (±)	
Knowledge regarding prevention, risk factors and early signs of MI	12-34	22.76	24	6.17	
Minimum score = 0					
Maximum score = 34					

Data presented in Table 2 that in knowledge regarding prevention, risk factors and early signs of MI among adults in rural community. Mean was 22.76, median was 24 and standard deviation was ± 6.17.

Table 3

Table 3							n=180
Area	Maximum possible score	Mean	Median	SD (±)	Mean%	Rank	
Prevention	10	7.04	7	2.06	70.4	1	
Risk factors	12	7.92	8	2.35	66	2	
Early sign	12	7.79	8	2.32	65	3	

Data presented in Table 3 shows that the area wise dealing out of knowledge regarding prevention of MI among adults of rural community. In the prevention area the obtained mean was 7.04 with a median 7 that the responses were normally distributed. The calculated SD was (±)2.06 indicating minimum variation of responses. It ranked 1st with a mean percentage of 70.4.

In the area of risk factors, the obtained mean was 7.92 with a median of 8 showing that the obtained data were normally distributed. The calculated SD was 2.35 signifying mild variation among responses with mean percentage of 66 and ranked 2nd.

In the area of early signs, the obtained mean was 7.79 with a median of 8 indicating that the obtained data were normally distributed. The SD was (±)2.32 signifying mild variation among responses with mean percentage of 65 and ranked 3rd. Participants knowledge regarding prevention was more than risk factors and early sign.

Table 4

Table 4				n=180
Variables	Knowledge		χ^2 Value	
	<Median	≥Median		
Age in years				
Up to 40	14	33		
Above 40	73	60	8.761*	
Educational status				
Up to Secondary	58	47		

Above secondary	14	61	24.38***
Religion			
Hindu	67	89	
Muslim	20	4	13.584***

$$\chi^2 (df1) = 3.841, p < 0.05, p < 0.001$$

The data Presented in Table 4 depict that in the age group up to 40 years 14 adult out of 180 rural community below median level of knowledge, 33 adults had above median level of knowledge whereas in age group above 40 years 73 adults out of 180 rural community had below median level of knowledge and 60 adults had above median level of knowledge. The chi square test was done to find out association between the age and the knowledge score of the adults of rural community. The calculated value of χ^2 was 8.761 which was more than tabulated value for df1 at 0.05 level of significance which is statically significant. So, it can regarding prevention, risk factors and early signs of MI.

Among the rural community that 67 Hindu adults out of 180 rural community had below median level of knowledge and 89 Hindu adults of rural community had above median of Knowledge level whereas 20 Muslim adults had below median level of knowledge and 4 Muslim adults had above median level of knowledge. The chi square test was done to find out association between the religion and the knowledge score of the adults of rural community. The calculated value of χ^2 was 13.854 which was more than tabulated value for df1 at 0.001 level of significance which is statically significant. So, it can be concluded that there was significant associated between religion and knowledge regarding prevention, risk factors and early signs of MI. Hence it can be inferred that there was significant association between religion and knowledge regarding prevention, risk factors and early signs of MI.

Table 5

Table 5		n=180	
Variables	Knowledge		χ^2 Value
	<Median	≥Median	
Gender			
Male	45	50	
Female	42	43	0.075
Marital status			
Married	79	86	
Unmarried	8	7	0.164
Type of family			
Joint	43	45	
Nuclear	78	14	26.33***

$$\chi^2 (df1) = 3.841, p < 0.05, p < 0.001$$

The data presented in Table 5 shows that adults 45 males out of 180 rural community had below median level of knowledge and 50 males of rural community had above median level of knowledge whereas 42 females of rural community had

below median level of knowledge and 43 females of rural community had above median level of knowledge. The chi-square test was done to find out the association between the gender and the knowledge score of the rural community. The calculated value of χ^2 was 0.075 which was less than the table value 3.841 at df1 at 0.05 level of significance. Thus, the computed chi square value is statistically not significant at 0.05 level of significance which is statistically not significant. So, it can be concluded that there was no significant association between gender and knowledge regarding prevention, risk factors and early signs of MI.

Among the rural community those marital status adults that 79 married adults had below median level of knowledge and 86 married adults had above median of knowledge whereas 8 unmarried adults had below median of knowledge and 7 unmarried adults had above median of knowledge. The chi-square test was done to find out the association between the marital status and the knowledge score of the rural community. The calculated value of χ^2 was 0.164 which was less than the table value 3.841 at df1 at 0.05 level of significance. So it can be concluded that there was no significant association between marital status and knowledge regarding prevention, risk factors and early signs of MI.

Among the rural community that type of family 43 adults out of 180 rural community belonging to joint family had below median level of knowledge and 45 adults belonging to joint family had above median of Knowledge level whereas 78 adults belonging to nuclear family had below median level of knowledge and 14 adults belonging to nuclear family had above median level of knowledge. The chi-square test was done to find out the association between the type of family and the knowledge score of the rural community. The calculated value of χ^2 was 26.33 which was more than the table value 3.841 at df1 at 0.05 level of significance. Thus, the computed chi square value is statistically significant at 0.001 level of significance which is statistically significant. So, it can be concluded that there was significant association between type of family and knowledge regarding prevention, risk factors and early signs of MI.

Table 6

Table 6		n=180	
Variables	Knowledge		χ^2 Value
	<Median	≥Median	
History of MI in the family			
Yes	15	15	
No	72	78	0.040
Occupation			
Unemployed	30	34	
Employed	50	66	0.237
Addiction			
Yes	28	17	
No	59	76	4.635*

$$\chi^2 (df1) = 3.841, p < 0.05$$

The data presented in Table 6 shows that 15 adults out of 180 rural community who had history of MI in family had below median level of knowledge

and 15 adults who had history of MI in family above median level of knowledge whereas 72 adults who had history of MI in family below median and 78 adults had history of MI in family above median level of knowledge. The chi-square test was done to find out the association between the history of MI in family and the knowledge score of the rural community. The calculated value of χ^2 was 0.040 which was less than the table value 3.841 at df1 at 0.05 level of significance. Thus, the computed chi square value is statistically not significant at 0.05 level. Hence it can be inferred that there was no significant association between history of MI in family and knowledge regarding prevention, risk factors and early signs of MI.

Among the rural community 30 unemployed adults out of 180 rural community had below median level of knowledge and 34 unemployed adults had above median level of knowledge whereas 50 employed adults had below median and 66 employed adults had above median level of knowledge. The chi-square test was done to find out the association between occupation and the knowledge score of the rural community. The calculated value of χ^2 was 0.237 which was less than the table value 3.841 at df1 at 0.05 level of significance. Thus, the computed chi square value is statistically not significant at 0.05 level. Hence it can be inferred that there was no significant association between occupation and knowledge regarding prevention, risk factors and early signs of MI.

Among the rural community 28 addicted adults out of 180 rural community had below median level of knowledge and 17 addicted adults had above median level of knowledge whereas 59 non addicted adults had below median level of knowledge and 76 adults had above median level of knowledge. The chi-square test was done to find out the association between addiction and the knowledge score of the rural community. The calculated value of χ^2 was 4.635 which was more than the table value 3.841 at df1 at 0.05 level of significance. Thus, the computed chi square value is statistically significant at 0.05 level. Hence it can be inferred that there was significant association between addiction and knowledge regarding prevention, risk factors and early signs of MI.

6. DISCUSSION

Discussion related to association between knowledge score regarding prevention, risk factors, and early signs of MI.

The present study finding disclosed that there was significantly association between age (in year) and addiction with knowledge scores at 0.05 level of significance. The study finding also express there was significantly association between educational status, religion, type of family, and income with knowledge scores at 0.001 level of significance. Remain in demographic variables such as gender, marital status, history of MI in the family and occupation. ($p>0.05$) are not significantly associated with knowledge scores.

The present study findings are supported by and Sagar B. Dugani et al. (2021) conducted a systemic review and meta-analysis there was association between addiction with higher risk of premature MI.

The present study findings are contrasted by Punam Dahal and Rekha karki et al. Conducted a simple descriptive cross-sectional study in Kathmandu, Nepal. In this study shows that there was significant association between occupation with knowledge. [Global Burden of Disease Study 2019 \(2019\)](#)

The present study findings are contrasted by Mr Dhiraj Kumar Mane et al conducted a descriptive cross-sectional study in Rural Tertiary Care Hospital, karad. In this study shows there is no association between monthly family income and addiction and knowledge of patient regarding AMI.

7. CONCLUSION

The finding of the present study revealed that Majority of the adults of rural community have average knowledge regarding prevention, risk factors and early sign of MI. there was significantly association between age (in year) and addiction with knowledge scores at 0.05 level of significance. The study finding also express there was significantly association between educational status, religion, type of family, and income with knowledge scores at 0.001 level of significance.

8. LIMITATION

The limitation of the present study is

- Sample size was small due to inadequate time.
- Knowledge of adults of only rural community assessed.
- Non probability convenience sampling technique used.
- Cannot generalized to a large population.

CONFLICT OF INTERESTS

None.

ACKNOWLEDGMENTS

None.

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