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Original Research Article

AWARENESS ABOUT THE GOLDEN HOUR FOR MYOCARDIAL INFARCTION AND STROKE IN THE FIELD PRACTICE AREA OF GOVERNMENT MEDICAL COLLEGE, MAHABUBNAGAR

Usha Rani Chadalwada[1], Dharnamoni Sandeep Kumar[2], Savalam Mahalakshmi[3], Vijay Kumar Boddu[4]

[1]*Professor & HOD, Department of Community Medicine, Government Medical College, Mahabubnagar, Telangana, India.*
[2]*Assistant Professor, Department of Community Medicine, Government Medical College, Mahabubnagar, Telangana, India.*
[3]*Assistant Professor, Department of Community Medicine, Government Medical College, Mahabubnagar, Telangana, India.*
[4]*Post-graduate, Department of Community Medicine, Government Medical College, Mahabubnagar, Telangana, India.*

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Corresponding Author:
Dr. Dharnamoni Sandeep Kumar, Assistant Professor, Department of Community Medicine, Government Medical College, Mahabubnagar, Telangana, India.
Email: ssandy621@gmail.com.

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ABSTRACT

Background: The "Golden Hour" refer to the critical first hour after the onset of symptoms of myocardial infarction or stroke, during which prompt medical intervention can significantly improve patient outcomes. Golden hour for stroke is 240min and MI is 60min. This study aims to assess the awareness regarding the Golden Hour of myocardial infarction and stroke.

Material and Methods: A cross-sectional study was conducted in the field practice area of Government Medical College, Mahabubnagar. Data collection carried out over one month, from June 1, 2024, to June 30, 2024 in a sample size of 200 participants by simple random sampling. pre-designed, semi-structured questionnaire that included questions related to demographic details, awareness of myocardial infarction and stroke symptoms, knowledge of the Golden Hour, and actions to be taken during an emergency.

Results: The concept of the Golden Hour, a critical time frame for seeking immediate medical attention after a heart attack or stroke, was understood by 41.7% of participants, while 58.5% lacked this awareness. Among those who knew about the Golden Hour, 71.6% correctly identified it as 60 minutes, but 28.4% did not know the exact time frame.

Conclusion: This study highlights critical areas where awareness is lacking and emphasizes the need for enhanced educational efforts to improve the early recognition of heart attack and stroke symptoms, which are vital for reducing morbidity and mortality in the population.

Keywords: Golden hour, Myocardial infarction, Stroke

INTRODUCTION

Cardiovascular diseases (CVDs) are the leading cause of death globally, responsible for an estimated 17.9 million deaths annually. CVDs encompass a range of disorders affecting the heart and blood vessels, including coronary heart disease, cerebrovascular disease, rheumatic heart disease, and other conditions. Alarmingly, more than four out of five CVD-related deaths are due to heart attacks and strokes, with one-third of these deaths occurring prematurely in individuals under 70 years of age.[1] This significant mortality burden underscores the urgent need for effective prevention and timely management of these conditions.

India, in particular, has witnessed a rapid epidemiological transition from infectious diseases to noncommunicable diseases like CVDs. This shift has occurred over a relatively short period, leading to a rise in premature mortality due to CVDs.[2] The disability-adjusted life years (DALYs) for ischemic heart disease, a key component of CVDs, highlight the regional variations within the country, with Punjab (5,759), Tamil Nadu (4,788), and Haryana (4,244) recording the highest DALYs per 100,000 people.[3] These data reflect the substantial health and

economic burden posed by CVDs across different states.

One critical factor in reducing mortality and morbidity associated with myocardial infarction (heart attack) and stroke is the timely recognition and management of symptoms. The "Golden Hour" is a well-established concept in emergency medicine, referring to the critical first hour after the onset of symptoms of myocardial infarction or stroke, during which prompt medical intervention can significantly improve patient outcomes. Treatments such as thrombolytic therapy, percutaneous coronary intervention for myocardial infarction, and thrombolysis or thrombectomy for stroke are most effective when administered within this window.

Evidence from the Get with the Guidelines-Stroke hospital Emergency Departments shows that more than one-quarter of stroke patients with a documented onset time and at least one-eighth of all ischemic stroke patients arrived within the first hour of symptom onset. These patients, who arrived within the "Golden Hour," were more likely to receive thrombolytic therapy; however, the administration was often slower compared to those who arrived later. These findings emphasize the need for public health initiatives to not only increase early presentation but also to shorten door-to-needle times for patients arriving within the Golden Hour.[4] Improving these parameters could significantly enhance clinical outcomes and reduce the burden of stroke.

Despite the importance of this concept, awareness of the Golden Hour remains limited in many parts of India, particularly in rural and semi-urban areas. Lack of awareness among the general public about the symptoms and urgency of seeking medical help contributes to delays in treatment, ultimately increasing the risk of mortality and long-term disability. In regions like Mahabubnagar, where healthcare access may be variable, enhancing public awareness about the Golden Hour could be crucial in reducing the burden of these life-threatening conditions.

This study aims to assess the awareness regarding the Golden Hour of myocardial infarction and stroke among the population in the field practice area of GMC, Mahabubnagar. By evaluating the current levels of awareness and identifying gaps, the findings of this study could provide valuable insights for designing targeted health education and intervention strategies to improve outcomes for individuals affected by CVDs in this region.

Objectives

- To assess the awareness of golden hour in Myocardial Infarction & Stroke in Rural community.
- To determine the sociodemographic factors of the study subjects.

MATERIALS AND METHODS

A cross-sectional study was conducted in the field practice area of Government Medical College (GMC), Mahabubnagar, to assess the awareness regarding the "Golden Hour" of myocardial infarction and stroke. The study population comprised residents of the field practice area of GMC, Mahabubnagar. A convenient sampling approach was adopted, with data collection carried out over one month, from June 1, 2024, to June 30, 2024. A final sample size of 200 participants was achieved through simple random sampling. Data were collected using the interview method with a pre-designed, semi-structured questionnaire that included questions related to demographic details, awareness of myocardial infarction and stroke symptoms, knowledge of the Golden Hour, and actions to be taken during an emergency.

The study included individuals aged 18 years and above who provided informed consent to participate. Those under 18 years of age were excluded from the study. The questionnaire was administered by trained field investigators to ensure consistency and accuracy in data collection. The collected data were then analyzed to determine the level of awareness and identify factors associated with knowledge of the Golden Hour for myocardial infarction and stroke among the population in the field practice area.

RESULTS

The study analyzed data from 200 participants from the field practice area of Government Medical College, Mahabubnagar, focusing on demographic characteristics, risk factors, and awareness levels concerning heart attacks and strokes. The age distribution of the participants showed that 32.5% were between 18-24 years, 29.6% were aged 25-50 years, 29.1% were between 51-60 years, and 8.7% were above 60 years.

Occupationally, the study included 26.5% professionals, 25.0% skilled workers, 22.5% unskilled workers, and 26.0% unemployed individuals. Education-wise, 13.7% of the participants held a professional degree, 32.8% were graduates, 9.8% had completed intermediate education, 11.8% had a high school education, and 31.95% were illiterate.

In terms of risk factors, 46.3% of participants had no identifiable cardiovascular risk factors. Of those with risk factors, 34.0% consumed alcohol, 24.6% had hypertension, 20.2% smoked, and 14.3% were diabetic.

Awareness of heart attack symptoms was generally high, with 85.8% recognizing key symptoms like sudden chest discomfort or pain, though 14.2% remained unaware. The concept of the Golden Hour, a critical time frame for seeking immediate medical attention after a heart attack or stroke, was understood by 41.7% of participants, while 58.5%

lacked this awareness. Among those who knew about the Golden Hour, 71.6% correctly identified it as 60 minutes, but 28.4% did not know the exact time frame.

When it came to treatment, 87.3% of participants were aware that heart attacks are treatable, whereas 12.7% were not. The majority, 69.3%, knew that males are more commonly affected by heart attacks, but 30.7% did not. Only 46% recognized that older age groups are at higher risk, leaving 54% unaware of this fact. Knowledge of risk factors was prevalent, with 83% aware, though 17% lacked this knowledge. Similarly, 90.1% recognized the warning signs, while 9.9% did not. Most participants (94.1%) knew how to respond to a heart attack, but 5.9% were uncertain. Regarding CPR, 63.5% were aware of what it entails, but 36.5% were not. Of those familiar with CPR, 59.1% knew how to perform it, while 40.9% did not. Awareness about stroke revealed that 79.8% of participants knew where in the body a stroke occurs, while 20.2% were unaware. Sixty percent of the participants were aware of the risk factors for stroke, and 56.1% knew the warning signs, though 8.9% did not. Awareness that stroke is a medical emergency was high at 87.8%, but only 30.8% understood the "window period" for treatment, with 69.2% unaware of this critical time frame. Similarly, 57.5% were unaware of the Golden Hour concept for stroke, and among those who were aware, only 6.7% knew the correct time frame.

A smaller proportion of participants (37.3%) recognized that heart disease is a risk factor for stroke, leaving 62.7% unaware. However, the majority, 88.4%, knew that stroke requires prompt treatment, and 73.1% understood that a healthy lifestyle, including proper diet, exercise, and avoiding smoking and alcohol, can prevent stroke, though 26.9% were not aware of these preventive measures.

This summary highlights the awareness levels and knowledge gaps in the population, suggesting a need for targeted educational interventions to improve understanding and response to cardiovascular emergencies.

Table 1: Demographic Distribution and Risk Factors of Study Population

Characteristics	No. of Participants	Percentage (%)
Age of the Participant		
18-24 years	67	32.5
25-50 years	61	29.6
51-60 years	60	29.1
>60 years	18	8.7
Occupation		
Professional	55	26.5
Skilled	52	25
Unskilled	46	22.5
Unemployed	53	26
Education Level		
Professional Degree	28	13.7
Graduate	68	32.8
Intermediate	20	9.8
High School	24	11.8
Illiterate	66	31.95
Risk Factors		
No risk factor	94	46.3
Alcohol intake	69	34
Hypertension	50	24.6
Smoking	41	20.2
Diabetes	29	14.3

Table 2: Awareness of Heart Attack Symptoms, Golden Hour, and Treatment

Awareness Category	Aware	Unaware
Awareness of Symptoms of Heart Attack	177 (85.8%)	29 (14.2%)
Awareness of the Golden Hour	86 (41.7%)	120 (58.5%)
Awareness of the Time of the Golden Hour (Among Aware)	62 (71.6% of those aware)	24 (28.4% of those aware)
Awareness of Heart Attack Treatment	180 (87.3%)	26 (12.7%)
Awareness that Males are More Commonly Affected	143 (69.3%)	63 (30.7%)
Awareness that Older Age Groups are Most Commonly Affected	95 (46.0%)	111 (54.0%)
Awareness of Risk Factors	171 (83.0%)	35 (17.0%)
Awareness of Warning Signs	186 (90.1%)	20 (9.9%)
Awareness of How to Respond to a Heart Attack	194 (94.1%)	12 (5.9%)
Awareness of CPR (Cardiopulmonary Resuscitation)	131 (63.5%)	75 (36.5%)
Knowledge of How to Perform CPR (Among Those Aware)	77 (59.1% of those aware)	54 (40.9% of those aware)

Table 3: Awareness of Stroke, Risk Factors, and Prevention Among Study Population

Awareness Category	Aware	Unaware
Awareness of Where Stroke Occurs in the Body	164 (79.8%)	42 (20.2%)
Awareness of Risk Factors of Stroke	124 (60.0%)	82 (40.0%)
Awareness of Warning Signs of Stroke	116 (56.1%)	18 (8.9%)
Awareness that Stroke is a Medical Emergency	181 (87.8%)	25 (12.2%)
Awareness of Window Period for Stroke	63 (30.8%)	143 (69.2%)

Awareness of Golden Hour of Stroke	87 (42.5%)	119 (57.5%)
Knowledge of Correct Golden Hour Time (Among Aware)	6 (6.7% of those aware)	81 (93.3% of those aware)
Awareness that Heart Disease is a Risk Factor for Stroke	77 (37.3%)	129 (62.7%)
Awareness that Stroke Requires Prompt Treatment	182 (88.4%)	24 (11.6%)
Awareness of Stroke Prevention through Healthy Lifestyle	151 (73.1%)	55 (26.9%)

DISCUSSION

This study assessed the awareness of heart attack and stroke symptoms, the concept of the Golden Hour, and related risk factors among participants from the field practice area of GMC, Mahabubnagar. The findings highlight significant gaps in knowledge and awareness that are critical for effective early intervention and treatment.

Comparison with Other Studies:

In our study, 85.8% of participants were aware of the symptoms of a heart attack, particularly chest pain, a figure comparable to the 79.1% awareness rate for chest pain reported in South Korea by Hee-Sook Kim et al,[4] (2020). However, awareness of other symptoms such as pain or discomfort in the jaw, neck, or back was considerably lower, aligning with the 34.8% reported by Kim's study, indicating a universal gap in recognizing less common heart attack symptoms.

Furthermore, only 41.7% of participants were aware of the Golden Hour, a critical period for effective intervention after a heart attack or stroke. This is significantly lower than the awareness levels observed in more developed regions. For instance, in Gahyeon Kim's,[5] study, a much higher proportion of the population was aware of the critical symptoms of myocardial infarction (45.8%) and stroke (52.6%). These differences could be attributed to the variations in health education and the dissemination of information across different populations.

Awareness of Risk Factors and Treatment:

The awareness of heart attack risk factors was relatively high in our study, with 83% of participants recognizing key risk factors. This is consistent with findings from studies in more urbanized settings, such as the work by Hee-Sook Kim et al,[4] which highlighted the importance of education in raising awareness. However, our study also revealed that while a majority were aware of how to respond to a heart attack, knowledge about CPR was lower, with only 63.5% aware of it, and even fewer (59.1%) knowing how to perform it. This gap underscores the need for more widespread CPR training in the community, a need also identified by studies conducted in urban areas with better healthcare access.

Awareness of Stroke:

Stroke awareness in our study revealed that while a significant portion of participants (79.8%) knew where in the body a stroke occurs, there was still a substantial lack of awareness about other critical aspects, such as the "window period" for stroke treatment, with only 30.8% being aware. This finding is in line with Gahyeon Kim's,[5] study, which showed that while there was a reasonable awareness of stroke symptoms, the understanding of the importance of timely intervention was still lacking.

Implications for Public Health

The findings of our study, in comparison with others, underscore the need for targeted public health interventions aimed at improving awareness of heart attack and stroke symptoms, particularly in rural and semi-urban populations. The lower awareness levels in our study, particularly regarding the Golden Hour and CPR, suggest that public health campaigns need to be more effective and far-reaching. Additionally, incorporating education on less common symptoms and the importance of immediate action could help bridge the knowledge gap and improve outcomes.

Limitations and Future Directions

While our study provides valuable insights into the current state of awareness, it is limited by its cross-sectional design and the self-reported nature of the data, which could introduce bias. Future research could focus on longitudinal studies to assess changes in awareness over time and the impact of specific educational interventions. Additionally, exploring the role of social and community-based activities in raising awareness, as suggested by Gahyeon Kim's,[5] study, could provide innovative strategies for improving public health outcomes in similar settings.

CONCLUSION

This study highlights critical areas where awareness is lacking and emphasizes the need for enhanced educational efforts to improve the early recognition of heart attack and stroke symptoms, which are vital for reducing morbidity and mortality in the population.

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