

Patients' Awareness and Perception Toward Warning Signs of Heart Attacks: A Mixed Method Study

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ABSTRACT

Introduction: Most Heart attack is characterized by early warning signs that include central chest pain, pain or discomfort in the arms or shoulder, discomfort or pain in the jaw, neck, or back, sensations of weakness, dizziness, or loss of consciousness, and difficulty breathing, combining nausea and vomiting that occur with some patients. Awareness plays a major role in the treatment process, starting with the early recognition of warning signs and the timely arrival at the hospital. If patients are not aware of the signs of an acute myocardial infarction, they cannot seek treatment that could improve outcomes. Patients who do not perceive warning signs may choose not to seek medical care that could improve their outcomes. **Purpose:** To evaluate the awareness and perception of ischemic heart disease patients toward warning signs of a Heart Attack **Method:** A convergent(parallel) mixed methods design has been used, mixing the quantitative and qualitative approaches. 165 patients with ischemic heart diseases from cardiac care units who were chosen using convenience and purposive sampling participated in the study. A questionnaire was used to collect the quantitative data, and a 7-item semi-structured interview guide was developed to gather qualitative data. **Results:** The study showed a high awareness score. Six themes and sub-themes emerged. These themes include dubious recognition, imagination, worry, family support, experience (Experience with episodes and psychological tension experience), religious issues, and consequences. **Conclusion:** The awareness was high. The participants' clear perception of the patient was related to their experience with the attack. **Suggestion:** Utilizing the results of a study by decision makers to identify aspects of the problem and develop human resources for emergencies.

Keywords: Awareness, Perception, Warning Signs

INTRODUCTION

Cardiovascular diseases (CVDs) are complicated conditions that are the main causes of death in globally [1]. CVDs are non-communicable diseases (NCDs) that are chronic illnesses that are never caused by an infectious process, are not transmitted, have courses for a long time, are difficult to cure, and may lack a fully effective treatment [2]. World health organization(WHO) lists NCDs such as diabetes, cancer, and CVD as one of the world's ten most important health issues "Ten Threats to Global Health in 2019 [3]. The pathophysiology of CVDs, which are primarily due to atherosclerosis, includes blood vessel remodeling, which could result in blood flow restrictions that affect the heart and nervous system [3]. Hypertension, coronary artery disease (CAD), congenital heart disease, stroke, heart failure, and vascular disease are conditions that fall under the general term CVDs [4]. However, ischemic heart disease (IHD), a type of CVD, is the major leading cardiac cause of death worldwide, accounting for more fatalities than any other known cause [5]. Myocardial infarction(MI) is the major form of IHD and it is characterized by a disturbance between the demand on the cardiac muscle and the blood supply of the coronary artery [6]. MI is the medical name for Heart Attack(HA) [7]. The risk of death increases when the blood nourishment to the heart suddenly stops, resulting in cardiac tissue damage; a clogging of one or more coronary arteries usually prevents blood reaching to the heart muscles [6]. It typically involves the formation of plaques inside the coronary arteries that disturb blood flow [8]. The plaque materials are cholesterol, fat, and cellular debris that have collected in the artery over time [9]. Complications of MI include myocardial dysfunction, arrhythmias, mechanical consequences (free wall rupture, ventricular septal rupture, rupture in papillary muscle), heart failure, and pericarditis

[10]. Most cases of heart attacks are characterized by warning signs that include chest pain and discomfort in the center area that remain for more than a few minutes or that disappears and comes back; pain in the arms or shoulder; jaw pain or discomfort, neck pain, or back pain; weakness, lightheadedness, or faint; and breathing shortness [11]. Patients can reduce their risk of deterioration and death by rapidly recognizing warning signs that may suggest HA is happening and seeking timely treatment [12]. A delay in hospital admission for receiving emergent treatments is critical and dangerous to HA patient life and leads to a negative prognosis [13]. Approximately 800,000 individuals get acute MI annually, and in the majority of cases, 27% of them die before reaching the hospital [14]. The basic approach for treating these patients is to rapidly restore blood flow using either primary percutaneous coronary intervention (PCI) or, if not immediately accessible, fibrinolytic therapy [10]. PCI and thrombolysis restore the blood flow and oxygen to the myocardium [15]. Infarction zone depends on ischemia time (The period during which the heart muscle lacks blood supply and oxygen); the primary method to decrease it and enhance the result is to decrease the duration of ischemia by minimizing any delay and ensuring successful revascularization in patients with MI [16]. In reality, after the onset of MI symptoms, a delay in reperfusion of 30 minutes causes a 1.5% increase in mortality [7]. A delay of 30 minutes increases the risk of death within one year by 7.5%; this highlights the significance of promptly recognizing symptoms and responding appropriately [17]. Pre-hospital delays are caused by patients being late in calling an ambulance or getting transferred to the hospital; an awareness deficit about HA symptoms may be the reason for this delay, which increases death rates [18]. Adults' perspectives on the risk of CVDs significantly

influence their decision-making processes towards their health [19]. Perception of risk is a cognitive process that influences individuals' behavior when faced with potentially hazardous situations [20]. Individuals may vary in their perception of risk, which can influence various behaviors, including those connected to their health [21]. Patients who lack a perception of the warning signs of HA or do not believe they are at risk for IHD disease, do not explore medical care [22].

MATERIALS AND METHODS

The study used a convergent (parallel) mixed methods design, involving simultaneous collection, independent analysis, and merging of both quantitative and qualitative data. This mixed methods design aimed to increase the research findings' generalizability, credibility, and dependability [23]. The study population included 1000 IHD patients admitted to cardiac units at Baquba Teaching Hospital and Al Khalis General Hospital. The convenience non-probability (purposive) sampling method was used to select the study sample. The minimum sample size was 174 patient, confidence level of 85% and a 5% margin of error. The qualitative data was gained from 10 participants after reaching the saturation point. The included participants were patients who participated voluntarily, with different age groups, male and female patients with multiple levels of education, and even the uneducated and admitted to cardiac units who were conscious, oriented, and alert. Excluded are the patients with mental and neurological illnesses such as Alzheimer's and amnesia, patients with aphasia, deafness in any age group, and patients during the attack. The instrument used in the quantitative study was a questionnaire (assessment of awareness about heart attack among adults) comprising socio-demographic data form and awareness towards HA, there were 22 questions in the questionnaire: two about the introduction, six about risk factors, eight about symptoms, four about options for diagnosis and treatment, and two about the complications of a HA. Each question had the same score, (one point for each right response and zero otherwise). Subsequently, the total results were calculated using the instrument's scoring. No, to-bad awareness was received by those who scored 0–11, while adequate to-good awareness was received by those who scored 12–22 [24]. The questionnaire was in English, and then the researcher translated it by using Brislin's back-translation approach. After translation, the content validity index (CVI) and Cronbach alpha were done with acceptable results. The qualitative study used 7 semi-structured qualitative questions

developed to measure the perception of patients toward warning signs of HA. Trustworthiness includes credibility(to guarantee internal validity), dependability(To promise reliability), confirmability (To offer assurance objectivity), and transferability(to ensure external validity) to investigate the reliability of the qualitative information done by the researcher [25].

Ethical Considerations and Administrative Arrangement

The researcher was given initial permission from the University of Baghdad's College of Nursing's Scientific and Ethical Committee to conduct the study on 22/11/2023. Additionally, permission from the original researcher and author was obtained to use the instrument used to conduct the quantitative research. The approval was achieved After distributing the study protocol and questionnaire to the Central Statistics Organization's/ Ministry of Planning on 12/12/2024. Before starting data collection, the college sent a task facilitation letter to the Diyala Health Directorate, training and Development Centre, and Ministry of Health to officially request permission to conduct the study. To that end, an interview was held with the appropriate committee on 10/1/2024. The committee approved, and permission to conduct the study at Baquba Teaching Hospital and Alkhalis General Hospital was obtained on 14/1/2024. Participants were informed about the study's goals and purpose, and their consent was gained verbally or in writing. The sample can withdraw at any time; there are no consequences for that and no benefits (financial, gift, etc.) to the patients.

Results

Quantitative Findings About Awareness Toward Warning Signs of Heart Attack

The results showed that the mean age of patients with average age was 60.05 years old. Concerning the patient's sex, the higher percentage were male (68.71%). The total mean score was 17.04; therefore, on the scoring scale (0-11 poor awareness, 12-22 adequate to good awareness), the patient's awareness level is good. Regarding the educational level, a higher percentage of patients completed primary school (34.4%). Regarding employment status, the highest percentage of patients were retirees (30.8%). Concerning to residences, the percent of patients were sequentially urban (57.81 %). The study results showed that the highest percentage of patients had three or more risk factors, 36.12%, while smokers had the highest percentage, 54%.

Table 1 (A): IHD Patient's Sociodemographic Characteristics (N = 165)

		Frequency	Percent
Age	Mean (SD):60.05 ± 11.754		
Sex	Male	114	69.1%
	female	51	30.9%
	Total	165	100.0%
Educational Attainment	Un educated	43	26.1%
	Primary	57	34.5%
	Secondary	29	17.6%
	Diploma	20	12.1%
	Bachelor	13	7.9%
	Post graduate	3	1.8%
	Total	165	100.0%
The Occupation	Employee	32	19.4%
	Un employee	17	10.3%
	Free work	21	12.7%
	Retired	51	30.9%
	Housekeeper	44	26.7%
	Total	165	100.0%

Table 1 (b): IHD Patient's Sociodemographic Characteristics (N = 165)

		Frequency	Percent
The Residency	Urban	96	58.2%
	Rural	69	41.8%
	Total	165	100.0%
Risk Factors	Non	15	9.1%
	HT	10	6.1%
	DM	7	4.2%
	Hyperlipidemia	1	0.6%
	Combination of two Risk Actors	64	38.8%
	A combination of Three and More	68	41.2%
	Total	165	100.0%
Smoking	Currently Smoker	61	37.0%
	Ex-Smoker	25	15.2%
	Non-Smoker	79	47.9%
	Total	165	100.0%

Table 2: Awareness Toward Warning Signs of Heart Attack(N=165)

	Questions	Yes (1score)		No (0score)		Mean Score
1	Have you ever heard about a heart attack?	N=121	72.9%	n=44	26.5%	0.73
2	Heart attack is a leading cause of death worldwide	N=137	82.5%	n=28	16.9%	0.83
3	High blood pressure, high cholesterol levels, and diabetes are the major risk factors for heart attack.	N=140	84.3%	n=25	15.1%	0.84
4	Physical inactivity and an unhealthy diet are the risk factors for heart attack.	N=146	88.0%	N=19	11.4%	0.88
5	Family history of heart attack and old age further increases the risk of a heart attack.	N=100	60.2%	N=65	39.2%	0.60
6	Smoking is a risk factor for heart attack.	N=158	95.2%	N=7	4.2%	0.95
7	Being overweight increases the chance of getting a heart attack.	N=140	84.3%	N=25	15.1%	0.84
8	Stressful life leads to a heart attack.	N=153	92.2%	N=12	7.2%	0.92
9	Pain, discomfort, pressure, and tightness in the chest is a symptom of heart attack.	N=147	88.6%	N=18	10.8%	0.89
10	Pain in the neck, jaws, and backside of the chest is a symptom of a heart attack.	N=87	52.4%	N=78	47.0%	0.52
11	Pain in the arms especially left arm and numbness in the arms is a symptom of a heart attack.	N=135	81.3%	N=30	18.1%	0.81
12	Nausea and vomiting is a symptom of heart attack.	N=85	51.2%	N=80	48.2%	0.51
13	Cold sweats and excessive fatigue is a symptom of heart attack	N=114	68.7%	N=51	30.7%	0.69
14	Feeling light-headed and dizzy is a symptom of heart attack.	N=109	65.7%	N=56	33.7%	0.66
15	Shortness of breath is a symptom of heart attack.	N=134	80.7%	N=31	18.7%	0.81
16	Stomach pain and burning sensation in the chest is a symptom of heart attack	N=97	58.4%	N=68	41.0%	0.58
17	Heart attack is usually diagnosed by ECG.	N=135	81.3%	N=30	18.1%	0.81
18	Angiography is a diagnostic test used to find the blockage inside the arteries of the heart.	N=130	78.3%	N=35	21.1%	0.78
19	Angioplasty and bypass surgery are the treatment procedures for heart attack.	N=126	75.9%	N=39	23.5%	0.76
20	Heart attack can be treated by home remedies.	N=104	62.7%	N=61	36.7%	0.63
21	Delay in the treatment of heart attack causes life-threatening complications like heart failure and cardiac arrest.	N=154	92.8%	N=11	6.6%	0.93
22	Delay in treatment of heart attack can cause death.	N=158	95.2%	N=7	4.2%	0.95
	Total mean score	17.034				

Scoring: (0-11 poor awareness, 12-22 adequate to good awareness)

Qualitative Results about Perception of Patients Toward Warning Signs of Heart Attack (N=10)

Dubious Recognition

Prior to the occurrence of a heart attack, there are warning signs that act as an indicator of potential danger for the patient. The participants exhibited varying degrees of recognition of these symptoms, but together, they emphasized all the warning signs that manifest in patients. The participants had knowledge of the symptoms and the impending danger; some were extremely confident that these were signs indicative of a heart attack, while others were unsure and had not yet arrived at a conclusive certainty.

The predominant symptoms are chest pain, fatigue, dyspnea, tachycardia, indigestion, and excessive perspiration. The fewest participants recognized thirst, dry mouth, and severe headaches. As stated by the second participant "I experienced difficulty breathing and intense stomach burning, which seemed to rise upwards, causing a choking sensation, I found that when it occurs, it is often accompanied by involuntary drops of sweat. When I fell unconscious, everything in my hands fell, and upon regaining consciousness, the pain persisted, prompting me to visit the physician on the same day". When the third participant was asked about the warning signs and how he recognized them when they occurred, he responded by saying: "I felt an unusual

heaviness in my body, accompanied by fatigue and pain on the left side above my left breast nipple. The discomfort spread to the left side and left arm. As the day progressed, the heaviness in my arm, chest pain, and unusual sweating increased. Despite the cold weather, I felt nauseous, without vomiting, and had difficulty breathing, accompanied by chest heaviness and depression, leading to a distressing mental state". Meanwhile, the ninth patient stated, "At the outset, I began to feel fatigue, profuse sweating, and chest pain. I couldn't walk for a distance, and my heart rate accelerated, accompanied by dry mouth and a feeling of thirst".

The Imagination

When asked to explain the warning signs, the participants provided various interpretations of the symptoms based on their imagination and the important times they experienced throughout the attack. While their explanations differed, they all conveyed a consistent message by emphasizing the seriousness and severity of the symptoms they experienced. For instance, the sixth participant characterized it as "I woke up to intense chest pain, feeling as if I were suffocating", while the eighth participant stated "intense pain in the chest, as if a knife had struck the center of my chest and radiated upwards to my neck". Meanwhile, the fifth participant provided further details about their imaginative interpretation of the circumstance, stating "One cold

morning, while moving heavy iron pieces, I felt muscle spasms in my chest. Dismissing the issue, I continued working until someone struck me with a sharp spear in the chest. Collapsing, drenched in sweat from head to toe, my energy was depleted"

Worry

The symptoms of a heart attack might manifest abruptly or gradually, escalating to a critical stage when the patient reaches a peak. At this juncture, individuals experience a sense of apprehension for several causes, contingent upon their personal disposition and thinking. Additionally, they have a dread of the unfamiliar that ensues after encountering these intense sensations, which they have never previously encountered. Some individuals experience a sense of proximity to death and have anxieties for their own well-being, as well as that of their families, children, and related matters. The sixth participant elucidated this" The thought of leaving life and my family crossed my mind during the severity of the symptoms feeling I was on the brink of death". The eighth participant reported" When the symptoms occurred with me, I began to think about death and instructed my siblings about my children and wife. At that moment, I thought that divine help was necessary, For a moment, I felt despair about returning to life because the symptoms were completely different, and I had never seen anything like them before". The concept of impending mortality and confronting an uncertain destiny, coupled with a time of introspection on a potentially error-ridden past, engenders profound trepidation towards the circumstances. The fifth participant expressed the following essence: "I began reciting the testimony of faith out of the belief that I might perish, and my sole preoccupation was to approach my Creator with a pure conscience that exemplifies virtuous actions."

Family Support

Participants reported having significant familial support. Their family consisted of spouses, offspring, and grandchildren. The participants, particularly those residing with their families, received familial assistance. The participants rely on their families for optimism and the imperative of getting treatment promptly to save their lives and facilitate their transportation to hospitals, as stated by the fourth participant" Due to the excruciating and disruptive nature of the pain, I promptly reached out to my brother to request transportation to the hospital. The prayers and Quranic verses spoken by my daughter uplifted my spirits, instilling in me a renewed sense of hope, strength, and tranquility". The sixth participant stated that despite their son's offer to take them to the hospital, they declined, believing that the discomfort would diminish. Subsequently, I became unconscious, and he promptly transported me to the emergency department".

EXPERIENCE

Experience with Episode

The interview done with the participants regarding their experiences with warning signs of a heart attack revealed that, as heart attack patients, they conveyed their experiences in many manners, effectively demonstrating their situation during the attack. Although they were aware of, read about, or acquired knowledge about individuals with comparable symptoms, their encounters were distinct. "As the fourth participant stated," Before experiencing it myself, I wasn't aware of the seriousness of a heart attack, neither from reading

nor otherwise, until it happened to me. I experienced it firsthand". The fifth participant reported" I can now recognize the symptoms, previously unaware of their severity except through personal experience, not through media or reading". During the interview, it became evident that those who had observed their family members experience heart attacks possessed a shallow comprehension of the symptoms and indicators. Nevertheless, their understanding of the actuality and gravity of a heart attack was incomplete until they had encountered it. This is the core of the sixth participant's statement: "I had heard of heart attacks before, but I didn't realize their severity and difficulty until it happened to me, experiencing all the symptoms firsthand".

Experience with Psychological Tension

Certain individuals within the group of participants experienced challenging and terrible life circumstances. These events encompassed arduous working conditions and insufficient financial resources required for his family's livelihood, along with immediate feelings of anger and psychological strain arising from diverse factors (such as conflicts with others, familial issues, etc.), which were discovered to trigger early indicators of a heart attack. The eighth participant elucidated, "Before the manifestation of symptoms, I had amassed a considerable amount of psychological stress as a result of assuming the role of the family's leader and without a secure government position, relying solely on arduous unpaid labor to meet our daily needs with significant hardship barely. During the period of intense psychological stress, the symptoms abruptly manifested". Several participants experienced the manifestation of heart attack symptoms as a result of familial issues and conflicts with individuals that provoked rage. The third participant reported this:" These symptoms emerged promptly following a period of intense psychological stress caused by my children's academic underperformance with low grades. While in an upright position, I experienced the onset of symptoms, characterized by discomfort originating in my arms and radiating to my shoulders, as well as a palpable sensation of agony in my chest". The presence of negative comments, misunderstandings with individuals, and challenges in managing them significantly contributed to psychological suffering and triggered feelings of wrath. This is apparent in the remarks made by the sixth participant:" I experienced symptoms following psychological stress caused by derogatory remarks, which provoked intense anger within me. The seventh participant:" I encountered profound anxiety as a result of a conflict with certain persons that provoked a strong sense of wrath within me. Subsequently, I encountered profound respiratory distress, thoracic discomfort, and further indications".

Religious Issues

A crucial and potent aspect that significantly aided patients in enduring the initial stages of a heart attack, along with its warning signs, was their unwavering belief in God and their engagement with spiritual and religious topics. This provided them with a sense of security and inner peace. Divine spiritual and religious beliefs provide followers with a sense of connection to an unlimited source of power and assistance linked to God, his messengers, and those who invoke him. This is the statement made by the fifth participant:" Despite the pain, I derived solace from my profound bond with God. This unwavering devotee had never abandoned the early morning prayers in the mosque for five years. I briefly contemplated the well-being of my juvenile offspring but swiftly attained tranquillity by placing my

faith in God's guardianship over him". Integrating religious beliefs with appropriate medical treatment promotes both physical and spiritual well-being for individuals. This is apparent from the testimony of the second patient: "Because of the severe pain in my left arm, my family and I decided to perform arm massages using a fabric from the flag associated with one of the infallible Imams. This practice is said to bring blessings and alleviate pain according to my religious beliefs in Imam Hussein (peace be upon him). As a result, I started to get some alleviation" By strictly following religious principles and divine mandates without any deviation, an individual can maintain the assurance that they are not detached from the assistance and power of the divine. The patient experiences solace throughout crucial moments as their destiny is intertwined with the degree to which they adhere to those teachings. The fourth participant clarified this principle: "Upon experiencing the symptoms, I had a profound sense of depression toward my children and wife. I considered only God and the family of the Prophet Muhammad (peace be upon him) as my saviors, believing that assisting others can prevent disasters and alleviate hardships".

Consequences

Patients perceive heart disease as a condition that leads to significant illness and, ultimately, mortality. Primarily, they possessed a notion that cardiovascular disease is a matter of great importance, intricate to manage, and demanding to endure. Furthermore, when questioned about the paramount course of action to rescue an individual experiencing a heart attack in their presence, the response indicated the necessity of expeditiously and securely transporting the person to the closest hospital or healthcare institution equipped with emergency and critical care services, as articulated by the fourth individual "Had I not promptly sought medical attention, there was a significant risk of severe complications and a high likelihood of mortality". Some people experience a gradual escalation in the degree and severity of symptoms rather than experiencing them all at once. At the height of these symptoms, the participants expressed that the sole remedy is to promptly seek medical attention and treatment, as stated by the fifth participant: "If I had not been promptly taken to the hospital, the probability of mortality would have been significant. Upon the emergence of symptoms, I recognized the utmost importance of prompt intervention, acknowledging the potential inevitability of death". The seventh participant reported, "Had I not quickly received medical assistance, the situation could have deteriorated, potentially leading to an unavoidable fatality. The most significant error is procrastinating or evading a consultation with a specialized physician at a healthcare institution for a patient displaying symptoms". The awareness score was as good as the scoring of the questionnaire, and the perception level was high as measured by semi-structured interviews with IHD patients. The identification of perception level indicates a deeper understanding and sense of patients toward warning signs of HA than measuring awareness score despite the high awareness score.

Discussion

Discussion of the Findings of Awareness Toward Warning Signs of Heart Attacks (Quantitative Study)

The study reveals that the average score for patients' awareness of warning signs of a heart attack is 17.03. Based on the questionnaire scoring, the patients' level of awareness is considered good. This

finding is consistent with a study conducted to survey the findings on identifying warning signs of heart disease and stroke: outcomes from a further investigation of the Chinese Canadian Cardiovascular Health Project that found sufficient awareness of warning signs of HA and stroke [26]. This result can be interpreted through two perspectives. The first perspective suggests that the average age of the sample, which is 60 years old, indicates that patients have likely experienced either personal or community-based experiences with heart-related issues throughout their lifetimes. This exposure may enhance their awareness of HA symptoms, as demonstrated by research conducted to evaluate the level of awareness of age-related changes within the framework of significant life experiences. It discovered that the whole accumulation of life events was associated with a heightened awareness of both the benefits and drawbacks that come with ageing [27]. Nevertheless, the second perspective highlights the educational backgrounds within the sample, ranging from diplomas and bachelor's degrees to master's and doctoral studies. This educational diversity can also contribute to increased awareness, as evidenced by another study that revealed the presence of an interaction effect between education and awareness [28]. By considering both perspectives, we can explain the emergence of a good level of awareness in the results.

Discussion of the Qualitative Research Findings about the Perception of IHD Patients Toward Warning Signs of Heart Attack

The first theme that emerged through the current research is Dubious recognition, which refers to the warning signs experienced by the patient and the suspicion that they might indicate an HA or CVDs. This result aligns with a qualitative study that revealed two main themes: the description of sudden onset and progressive development of warning signs and the misrecognition of these signs with confidence [29]. That means the patient's perception are formed through their description of the warning signs they experienced, in conjunction with their awareness and prior knowledge of these signs, which gives them a questionable distinction. After seeking guidance from the healthcare institution and receiving a definitive diagnosis from trained professionals, they understand the warning signs of an HA and the strategies for managing it. Another theme that emerged from the current research results was the imagination, where patients described the signs and symptoms, they experienced using various metaphors indicating the severity and impact of the condition. This conclusion is comparable to a qualitative study which clarifies the theme of envisioning the sensation of being simultaneously scraped by numerous elongated nails [29]. The interpretation of the theme that emerged is that the participants' imagination in describing the warning signs varied due to differences in age and cognitive development among them, as well as varying levels of education, culture, mental capabilities, and the environment they live in. From the qualitative research results, the theme of worry among patients emerged, which was attributed to various reasons depending on the patient's circumstances and the severity and intensity of their symptoms; this is similar to the result of the study which revealed fear from death, disability, and fear to participant family life [30]. This proves that participants' main cause of worry during a HA is fear of the unknown. They might fear the complications because they do not know what will happen or what comes after death. Additionally, fear for their family and children and what will happen to them. One of the themes that emerged from the current research results was family support, which was found to play a key role in supporting the patient

in multiple aspects; the same result was found in the study family support, the first sub-theme of the support needed theme [31]. That means the family plays a clear role in supporting the patient psychologically, physically, and spiritually. They do this by making the patient feel a sense of belonging to the family, boosting their morale, helping them seek emergency medical care as quickly as possible, praying for them, and enhancing their self-confidence. The current research results have highlighted the theme of personal experience and its impact on increasing participants' perception of the warning signs of an HA. This result is consistent with a study that revealed that the perception of symptoms was influenced by the individuals' own experiences with HA [32]. The result indicates that the patient's expertise with the warning signs of HA enables them to be perceived fully, using all their senses and organs, recognizing the seriousness and intensity of the signs, and knowing how to handle them during the episode prudently. psychological experiences emerged as a sub-theme in the current research results. Participants indicated that some symptoms appeared directly after prolonged stress or during intense anger. These results correspond with the study's findings, indicating that psychological stress is a subcategory of CVD risk factors [33]. The research results highlighted the theme of religious issues and their impact on participants during an HA in terms of accepting the symptoms alleviating stress, and inspiring hope. This, similar to a qualitative study, reveals an important subject of restoring faith. This theme explores the participants' relationship with God before and after their health afflictions [34]. This indicates that religious aspects and spiritual beliefs have the greatest positive impact on the patient by calming them and instilling hope through their connection with God, who represents an immense and unlimited external power that helps to reduce the panic that can exacerbate the severity of the symptoms. The final theme that emerged from the current research results is the consequences. Participants indicated that there are life-threatening complications if the patient fails to seek medical attention promptly. In that case, they may have the same outcome as the study revealed that the main trigger for seeking care was the presence of life-threatening symptoms, particularly chest pain [29]. The conclusion that can be drawn from the outcome is that delaying or evading the pursuit of medical assistance results in perilous consequences that can endanger one's life. Hence, promptly and accurately opting for

medical attention within the initial hours of symptom development greatly enhances the likelihood of preserving the patient's life. The awareness score and perception level were high, but the perception level was deeper in identifying the patients understanding toward warning signs of HA, because the qualitative study that measured the perception allowing the open-ended question that make the participants express about the phenomenon with all sense in contrast to quantitative study that answered with yes or no.

Conclusion

In conclusion, the study revealed that the level of awareness was good and that this level is primarily associated with educational attainment. Patients with two or more risk factors were found to be more aware; this indicates that information alone is not sufficient. The perception level was high.

Limitations

Some patients in critical condition are unwilling to communicate or participate in the research, possibly due to their psychological state. Additionally, there may be resistance from both family members and healthcare staff to prioritize the patient's well-being, even if official approvals have been obtained from policymakers. Patient withdrawal may manifest throughout the session, either in the middle or towards the end, as a result of abrupt symptoms, including chest pain and Tachycardia. The researcher encountered obstacles in performing their study due to the reluctance and delay of specific specialized healthcare facilities. This hindered their ability to carry out the research on a nationwide scale, as well as the short time frame provided for the investigation.

Recommendations

It is advisable to carry out research on a national scale in order to enhance the generalizability of the findings. Performing a study to evaluate the extent of knowledge within the general populace. Furthermore, it is necessary to consider the HA patients in the country to devise suitable solutions that are tailored to their specific requirements.

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