Delay Times and Decision Making Processes in Acute Myocardial Infarction: A Qualitative Literature Review

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Abstract

Background: High morbidity and mortality rates in patients with Acute Myocardial Infarction (AMI) worldwide are usually related to delays in Seeking Medical Care (SMC). Improper patient's perceptions and decision making processes contributed to this delay.

Aims: (1) To review the subjective experiences and decision making processes in patients who delayed in reporting AMI symptoms; (2) To review the gender role regarding the decision making process in regards to delays in SMC for AMI.

Methods: A literature review search was conducted using CINAHL and MEDLINE. The search was limited to full text, peer reviewed, qualitative studies from 2002 to 2009.

Results: Patients with AMI symptoms tended to delay in their decisions to SMC. Decision making processes to SMC were influenced by the experienced symptoms. Patients experienced atypical symptoms were more delayers than those experienced the classical symptoms. When patients perceived their symptoms of cardiac origin they seek medical care with shorter delay times than those perceived them of non cardiac origins. The laypersons and context of the event influenced patients' interpreting and responses to these symptoms. Women predominal and atypical symptoms of AMI, and improper responses toward these symptoms contributed to being more delayers than men.

Conclusion: It is substantial to raise public awareness to the factors that impact decision making processes in regards to SMC when experiencing AMI symptoms. Further research is needed to understand the phenomenon of delay from an Arabic cultural and ethnic value.

Keywords: Qualitative, Symptoms, Experiences, Acute Myocardial Infarction, Decision Making Process, Delay Time, Medical Care.
Introduction

High morbidity and mortality rates in patients diagnosed with AMI worldwide are usually related to delay in seeking medical care. In Jordan, ischemic heart diseases are the leading cause of death with an estimated 26,000 incidence of AMI cases each year.

The importance of patients' decisions during health emergencies was first investigated in the 1970s, when it was noted that almost 50 percent of patients delayed seeking medical care for an Acute Myocardial Infarction (AMI) for up to four hours. In response to the time criticality of treatment for AMI, the chain of survival concept was introduced in the 1980s. The chain of survival process of optimal treatment for AMI and cardiac arrest included, early access to emergency medical systems, early Cardiopulmonary Resuscitation (CPR), early defibrillation and early advanced medical care.

Improper patients’ perceptions and decision making processes contributed to delay in SMC. The decision making process to seek medical care at the onset of AMI symptoms is affected by many factors. The demographic, behavioral, affective, cognitive, social and clinical factors were well studied quantitatively. Little is known about patients’ personal feelings, health beliefs, thoughts, perceived reasons for deciding to seek medical care and experiences at the onset of AMI in Arab and Middle East region.

Extensive and in depth review of literature about the delay time in patients diagnosed with AMI will aid in better understanding of an AMI patient's behaviors and decision making processes while experiencing these symptoms. Insight into factors influencing the decision time to seek medical care is important in order to minimize the time lapse between patients' first becoming aware of symptoms and SMC.

The aims of this study were: (1) To review qualitative studies that investigated the experiences and decision making processes in AMI patients who delayed reporting their symptoms; (2) To describe gender role in AMI patients’ decisions in regards to seeking medical care.

This paper will guide Jordanian nurses in developing appropriate evidence-based interventions and health education programs to raise the public awareness in regards to avoiding delay in SMC for AMI patients. Gender specific differences must be considered when developing these educational programs and interventions.

Search Strategy Methods

The literature search was conducted using CINAHL and MEDLINE data base. Key search terms used were: qualitative, symptoms, experience, acute myocardial infarction, decision making process, delay time and medical care. To have an adequate search, the qualitative traditions; phenomenology, grounded theory, and ethnography keywords or (concepts) were used. The inclusion criteria for selected articles were; full text qualitative studies that are available in Jordan, published in peer reviewed journals between the years 2002 to 2009, and published in the English language. The primary reviewed literature was organized according to the flow of tasks of literature review which was proposed by Polit and Pick.

Searching Results

The initial search identified 206 potential studies. After reviewing the abstracts of these studies only 16 articles met the inclusion criteria. After in-depth reading of each study, further five studies were excluded. One more study was included, based on screening of the references. Thus, twelve studies met the inclusion criteria and were thoroughly investigated in this paper.

Twelve qualitative studies investigated the AMI patients' experiences and decision making processes regarding delays SMC. Two-thirds of the studies were carried out in both the USA and UK. Three of the studies were carried out in Sweden and one was conducted in Hong Kong. Out of the 12 selected studies, five authors described the qualitative approach followed in conducting their studies as: feminist
poststructuralist approach;\textsuperscript{7} ethnographic;\textsuperscript{8} phenomenological approach;\textsuperscript{10} and grounded theory approach\textsuperscript{12,15} The remaining seven studies used the traditional descriptive qualitative approach.\textsuperscript{9,11,13-15,16-18} There were variations in sampling techniques across the 12 studies. Only two studies used convenience sample \textsuperscript{8,18} while the rest of studies used purposive sample.\textsuperscript{8,10-18} Regarding gender representation, three studies included more women than men in their sample,\textsuperscript{14,16,18} seven studies included only women,\textsuperscript{7,9,11-13,17} and 2 studies included equal numbers of women and men in their sample.\textsuperscript{10,15} Software analysis programs were used to analyze the data of two studies,\textsuperscript{8-9} while the rest of the studies (10) have been analyzed manually according to traditional qualitative analysis techniques\textsuperscript{7,9,11-18} (Table 1).

**Table (1): Summary of the Reviewed Qualitative Reports about Delay Times in AMI.**

<table>
<thead>
<tr>
<th>Author, Year, and Country</th>
<th>Aim</th>
<th>Data Collection</th>
<th>Sample and gender</th>
<th>Main findings</th>
</tr>
</thead>
</table>
| 1. Albarran, Clark, Crawford, (2007), UK. | Explore the nature of symptoms as experienced by women prior to and during AMI. | In depth semi-structured tape-recorded | Purposive n = 12; 12 women, 0 men | 1. Gradual awareness  
2. Not having chest pain  
3. Responding to symptoms |
| 2. Arslanian-Engoren, (2005), USA. | To facilitate a better understanding of the treatment-seeking decisions. | In depth semi-structured tape-recorded | Purposive n = 10; 10 women, 0 men | 1. Power  
2. Language  
3. Subjectivity: Different than expected |
| 3. Brink, Karlson, Hallberg, (2002), Sweden | To obtain an increased understanding of the individual's thoughts, feelings, and actions at the onset of an acute heart attack. | In depth semi-structured tape-recorded | Purposive n = 22; 11 women, 11 men | 1. Acute reactions  
2. Health beliefs  
3. Symptom perception |
2. Explore factors affect women's decisions to seek help for MI symptoms. | In depth semi-structured tape-recorded | Purposive n = 25; 25 women, 0 men | 1. Maintaining control through self-medication  
2. Not recognizing symptoms  
3. Engendered perception |
| 6. Johanson, Swahan, Stromberg, (2006), Sweden. | To describe variations on how individual perceived suffering symptoms of AMI. | Semi-structured tape recorded interview. | Purposive n = 15; 6 women, 9 men | - Factors influencing Delay:  
1. Health care factor  
2. Personal factor  
3. Sociocultural factor  
- Coping strategies:  
1. Manageability  
2. Vulnerability  
3. Interaction |
| 7. MacInns, (2006), UK. | To explore women illness perceptions post AMI using self regulatory model of illness behavior as a theoretical framework. | Semi-structured tape recorded interview. | Purposive n = 10; 10 women, 0 men | 1. Interpretation of symptoms and illness presentations.  
2. Coping response.  
3. Appraisal- the influence of family and friends. |
| 8. McSweeney,Lefler, Crowder, (2005), USA | To explore women’s with AMI diagnostic experience | In –depth ethnographic interviews, tape-recorded | Convenience n = 40; 40 women, 0 men | 1. Awareness  
2. Seeking treatment  
3. Frustration  
4. Treatment decisions  
5. Anger. |
2. Perceived risk of AMI  
3. Psychological factors and emotional responses  
4. Use of NHS  
5. Context of the event |
To explore and describe women's symptoms and the reasons for delay in seeking medical care at the time of the first AMI

Interview guide based on a literature review, and researchers own experiences as cardiac nurses tape-recorded

Purposive n = 19; 19 women, 0 men

1. Women’s experiences of symptoms
2. Delay seeking action

To identify the patterns of cognitive, affective, and behavioral responses of women from the onset of symptoms of AMI to the decision to obtain medical care to the action of seeking care and entry into the medical system.

Semi-structured interviews.

Purposive n = 52; 52 women, 0 men.

1. Knowing: 1.1 Knowing and going 1.2 Knowing and letting someone take over 1.3 Knowing and going on the patient's own terms 1.4 Knowing and waiting 2. Managing 2.1 Managing an alternative 2.2 Hypothesis 3. Minimizing

To describe symptom experience of women and men with AMI and to compare the symptom experience based on gender.

Semi-structured interviews.

Purposive n = 20; 10 women, 10 men.

1. Male symptom experience 2. Female symptom experience 3. Gender-based differences and similarities in AMI symptom experience

**Findings**

**Experiences and the Decision Making Processes**

**The Commonly Experienced Symptoms:** The commonly experienced symptoms by patients with AMI were classified into classical and atypical symptoms. Patients who had classical symptoms published by the American Heart Association (AHA), reported their experiences of the disease symptoms as "dramatic" or "media picture." These symptoms included chest sensations of heaviness, tightness, pressure, squeezing, pain, discomfort in one arm or both, jaw and neck pain and shortness of breath. Atypical symptoms were intermittent weakness, tiredness, discomfort in chest and breathing, indigestion, an urge to vomit and dizziness. Other descriptions included crushing chest pain, changes in breathing patterns, and upper limb pain or numbness.

The variations of symptoms experienced in patients with AMI affected their responses and decisions to seek medical care. Patients paid a great attention to classical symptoms because they were severe and intolerable. They knew that the problem was either of cardiac origin or other serious causes that needed immediate medical care. Patients called for emergency services or laypersons that either took them immediately to hospital or called the emergency system for them at the onset of the symptoms. Patients who experienced atypical symptoms appraised them as not serious and did not attribute them to a cardiac origin. Patients in this category tended to delay for several hours and even days before deciding to seek medical care.

**Symptom Perceptions, Interpretations and Responses:** Patients' delay, or decision delay, is the period of time from the onset of acute symptoms to the decision to ask for help. AMI patients' perceptions; interpretations and consequent responses to symptoms played a great role in their decision to delay SMC.

Patients' perceptions about the origin of symptoms played a significant role in making the decision to seek medical care. Patients who experienced intermittent and non-specific symptoms such as chest discomfort, epigastric pain, fatigue, and neck or jaw pain persuaded themselves that such symptoms would disappear. They denied the symptoms, tried to minimize and to normalize their significance.
They attributed these symptoms to age, stress, or tiredness from hard work. Other groups of patients attributed these symptoms to other causes rather than AMI, such as stomach, muscle problems, or flu. Patients reacted passively and attempted to manage these symptoms by themselves and consequently delayed SMC.

They decided to take medications, displaying "lessen the pain a bit," "self-care handling," or tried to endure their pains or waiting to see if it would be resolved by itself.

When patients experienced severe chest pain, they perceived the seriousness of the symptoms and attributed them to a cardiac source, displaying "symptom awareness," or "becoming aware of the threat." patients responded positively by deciding to seek medical care resources early.

Patients who were aware of their susceptibility of AMI such as; those with a family history of cardiac diseases, previous angina attacks and high cholesterol, combined with knowledge of their symptoms did not delay in deciding to seek medical care early.

Patients' health beliefs played an important role in the decision making process to seek medical care at the onset of symptoms. Patients did not want to believe that they had AMI, and they displayed "invulnerability illusion," therefore, they ignored their symptoms and delayed reporting them until they worsened. This category of patients perceived themselves as invulnerable to diseases such as AMI because they had maintained a healthy lifestyle, had no familial history for Coronary Heart Disease (CHD) and had no history of co-morbid health problems like Diabetes Mellitus (DM) and Hypertension (HTN).

The effect of the previous AMI symptoms representation and experience of the patients were also reported. The predominantly reported symptoms of patients with previous second, third, or fourth AMI attacks were the slow onset of chest pain (mild pain) and breathlessness.

The influence of culture on patients' perceptions and decisions to seek medical care were reported. Kaur reported that patients' decisions to seek medical care with AMI at the onset of symptoms were affected negatively by their cultural values. Patients tended to use traditional treatments like "Chinese oil" to manage their AMI' symptoms. They considered this oil a treatment for all kinds of pain. Furthermore, Kaur reported that Chinese people have a strong emphasis on collectivism, which creates a tendency to make, "self sacrifices" and continue fulfilling their roles and responsibilities toward their extended families despite their pain, which contributed to delays SMC.

The Influence of Laypersons

Patients' decisions to seek medical care were influenced by laypersons around them.

The reviewed studies reported that the presence of others shortened the delay time in seeking medical care only when laypersons gave the advice to seek medical care, took patients to hospital, or called for ambulance. Johanson et al. used the thematic expression "interaction" with three sub-categories "support from surrounding" and "concerns for the family" to reflect the influence of laypersons at the onset of their symptoms. The findings emphasized that the presence of others who provided psychosocial support for the patients, called for an ambulance or took the patients to an ED contributed positively in decreasing the delay time of deciding to seek medical care. On the other hand, laypersons that tried to make the patients’ relax and gave them medications affected their decisions to seek medical care negatively and consequently increased their delay time.

Patients, who decided not to inform others about their symptoms, were those who are concerned about their responsibilities toward their families and who feared troubling them. These patients decided to normalize or ignore their symptoms to delay SMC. They were confused and attributed their symptoms to angina.
Patients who experienced these symptoms tended and consequently delayed reporting them. Atypical symptoms between women was emphasized. Furthermore, women described their pain as coming rather acutely or suddenly, including pressure in chest, left arm pain, scapular pain, pain starting in the epigastric region and continuing up to the throat, making it difficult to breathe. The exceptional emerged symptoms experienced by women, and which hindered patients with AMI to report their symptoms early were the Prodromal Symptoms (PSs). The PSs were defined as intermittent symptoms that appear before AMI or that increased in frequency and/or severity before and disappears after the MI. The most often reported PSs were unusual fatigue, physical exertion, sleep disturbances, shortness of breath, indigestion, and anxiety. Feelings of depression and an inability to enjoy life as before without any specific explanation were also reported.

The studies that recruited solely women participants stated that women who delayed reporting their symptoms of AMI were those perceived these symptoms as not that serious. Women attributed their symptoms to be of non cardiac origin, assuming origins such as acid reflux, sinus related, pulled muscle, being overweight, lack of exercise, or menopause. Other women attributed their symptoms to the ageing process, hormone replacement therapy, smoking, indigestion, and lack of exercise. Women who compared their symptoms with other family members or friends who have previously been diagnosed with AMI, perceived their symptoms as serious only when these symptoms were similar. Other women attributed their pain to being old, stressed, and tired. Fear and an embarrassment of not having AMI also contributed in the delay process of AMI patients.

When men and women misinterpreted their symptoms, they decided to delay SMC. They attempted to handle their symptoms by taking antacids, walking, resting, sleeping, taking a bath, trying to induce vomiting to relieve stomach discomfort, or having a drink. All mentioned
of a uniform pattern of reported symptoms and reporting their symptoms properly.

**Implication and Recommendation**

Understanding the experiences and perceptions of patients with AMI from their own subjective experiences, is a primary step for nurses to understand the factors influencing the decision making processes to seek medical care, and therefore providing evidence-based care to control delays in reporting AMI symptoms.

The development of public health interventions must take into consideration the uniqueness of symptom perceptions, interpretations, and decision making processes in patients with AMI. There is a need to develop individualized interventions that take into account the variety of individual factors, such as the variation of symptoms, responses, self-care, cultural beliefs and values about illness. The involvement of significant other laypersons in the decision making process regarding SMC in the pre-hospital phase also should be considered.

Research that takes into consideration gender differences in the phenomena of delay of SMC in AMI patients, will lead to the development of gender specific policies and interventions. This will increase the efficiency and effectiveness of services through an understanding of gender differences and enhance the health and life expectancy of both men and women with AMI. Emergency department assessment checklists must be redesigned to be gender specific.

The reported information in this study will help Jordanian nurses working in Coronary Care Units (CCUs), rehabilitation centers, and outpatient clinics to understand the ways in which patients with AMI perceive, interpret symptoms and seek medical care. This will aid in developing health interventions that take into consideration the uniqueness of symptom's perceptions and interpretation.

As there were no Arab participants in the reviewed literature, there were no qualitative studies that have been conducted in Arab responses contributed in increasing the delay time. Understanding how Jordanians' expectations and perceptions influence their interpretations of symptoms from an ethnic and cultural perspective. Published information and mass media campaigns have to be conducted to reach a wide range of the Jordanian public sectors where the lack of knowledge regarding this topic is enormous.

**Limitations**

The study was limited to the available as full text journals in Jordan, which limits access to potentially important reports and themes. Additionally, when qualitative reports do not include data to establish trustworthiness, credibility, dependability, provability, and transferability, data must be accepted cautiously. Results of this qualitative review cannot be generalized to all men and women patients who experience AMI. Qualitative study methodology cannot be used to infer findings to other populations with different cultural and ethnic perspectives, particularly as most of the studies were done in western countries. While all reviewed studies reflect a report that is acceptable and reliable in terms of patient experiences, particularly those with a short time interval between event and interview, the findings only pertain to patients who survived the acute coronary event, providing no data on the most severe instances of patients who died from their AMI before reaching hospital. Furthermore, an inability to interview surviving AMI patients with hemodynamic instability, is a selection bias and will cause further limitations in obtaining a complete story about the time delay and decision making process to seek medical care of patients with AMI.

**Conclusion and Summary**

Delays in SMC in AMI symptoms can be a life costing decision. The decisions of patients with AMI to seek medical care at the onset of the symptoms is a complex phenomena and based on interaction of knowledge, previous experience, beliefs, cognitive, emotional processes and the context of surrounding event. Women were
countries, further research is needed to experience atypical or prodromal symptoms prior to the onset of real symptoms of AMI. It is substantial to raise public awareness to the factors that impact the decision making process in regards to seeking medical care when experiencing AMI symptoms. Further research is needed to understand the phenomena of delay from Arab cultural values and ethnic perspectives.

References


described to delay longer because they usually

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تأخر مرضى احتشاء عضلة القلب وعملية صنع القرار بالحصول على الرعاية الطبية: مراجعة أدبية للدراسات النوعية

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الملخص

يعود العامل الرئيس في ارتفاع نسبة الأمراض والوفيات بين المرضى المصابين باحتشاء العضلة القلبية الحاد إلى تأخر هؤلاء المرضى في التبلغ عن العلامات والأعراض. إن الإدراك والتفسير الخاطئ لأعراض هذا المرض له الدور الأكبر في عملية تأخر اتخاذ القرار بالحصول على الرعاية الطبية.

تمت، في هذه الدراسة مراجعة الأدوات المتعلقة موضوع البحث، وذلك بالاستعانة بالأبحاث المنشورة في مجلات علمية محكمة، ثم استرجاعها من قواعد البيانات (CINAHL and MEDLINE).

لقد وجد أن تأخر مرضى احتشاء عضلة القلب في اتخاذ القرار الصحيح للحصول على الرعاية الطبية يعود إلى عدم المعرفة بأعراض المرض، والإدراك الخاطئ لهذه الأعراض وتفسيرها على أنها أعراض لأمراض أخرى، مما أدى إلى تأخيرهم في اتخاذ القرار الفوري أو الاتصال بالطبيب، أو أحد الأقارب أو الأصدقاء، واتخاذ.action ويكنه مكانة في الاتصال من الطوارئ أياً كان. وجد أن النساء أكثر تأخرًا من الرجال؛ نظرًا لعدم وضوح الأعراض لديهن، واعتقاد النساء أن هذا المرض يصيب الرجال فقط، وإعطاء النساء الأولوية أكبر للمسؤولين كأمهات ورائدات في الوظائف، وعدم الذهاب إلى وقت الطوارئ.

هناك ضرورة ملحقة لاجتماع برامج تدريبية تهدف إلى رفع مستوى الوعي بين عامة الناس، والكوارد الصحية بأعراض هذا المرض، وأهمية الحصول على الرعاية الطبية في الوقت المناسب.

الكلمات الدالة: دراسة نوعية، أعراض، علل، احتشاء عضلة القلب الحاد، عملية اتخاذ القرار، تأخر طلب الرعاية الطبية.