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Research Article

Realising the seriousness – The experience of suffering a second myocardial infarction: A qualitative study

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ABSTRACT

Objectives: The aim of this study was to describe people's experiences of suffering a second myocardial infarction.
Research methodology: A descriptive qualitative design. Interviews were conducted with eight persons afflicted by two myocardial infarctions. Data were analysed with qualitative content analysis.
Findings: The analysis resulted in one theme and four categories. The theme was 'Realising the seriousness' and the categories were: 1) Knowledge from previous experience; 2) A wake-up call for lifestyle changes; 3) The future becomes unpredictable; 4) Trying to find balance in life. The participant's previous experience contributed to a better understanding of the symptoms of myocardial infarction and how to act when suffering a second myocardial infarction. After their second myocardial infarction, the participants became really aware of the need to implement a healthier lifestyle, as doing so might avoid a third myocardial infarction. The risk of suffering or even dying due to yet another myocardial infarction felt more tangible after their second one.
Conclusion: A second myocardial infarction is a different event in comparison to the first one, which makes afflicted people realise the seriousness and importance of making life style changes. They are more affected both physically and psychologically.

Implications for clinical practice

- The patient should be aware that myocardial infarction is a chronic illness and what he/she can do in order to decrease the risk of suffering a recurrent myocardial infarction.
- The health care personnel in the field of secondary prevention and cardiac rehabilitation should pay attention to first-time myocardial infarction patients' illness representations, with the purpose of helping them realise the seriousness of it.
- Further research is needed to explore long-term effects of a second myocardial infarction.
- Further research is needed to investigate if people have altered needs regarding secondary prevention, including cardiac rehabilitation, after being afflicted with their second myocardial infarction.

Introduction

Having a myocardial infarction (MI) can be a life-threatening event and as an often unexpected and sudden illness, it impacts the person's daily life (Alun et al., 2001). People experience sleep disturbances, fatigue and depression after having an MI (Agewall and Henareh, 2012; Johansson et al., 2010). Survivors of MI describe feelings of shame, helplessness and self-blame for being affected by an MI and their prior lifestyle (Jensen and Petersson, 2003) and a loss of control over their lives (Baldacchino, 2011). The readjustment period after an MI can take time. Brink et al. (2002) found there was a reduction in both the physical and mental components of health-related quality of life (HRQL) five months after being affected by an MI. One year later, there was an improvement in HRQL, but still at reduced levels, especially regarding

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women's physical health (Brink et al., 2005). The findings are consistent with those of Staikos et al. (2017), showing posttraumatic stress in the first year after MI.

When estimating a person's total cardiovascular risk, people with a previous MI are considered to have a high cardiovascular risk (Johansson et al., 2017; Piepoli et al., 2016), as studies show that many people recovering from an MI express fear of having another (Johansson et al., 2003; Junehag et al., 2014). The anxiety that they might suffer another MI was described by some patients as one of the most negative emotions with which they ever had to deal with (Petricek et al., 2017). We know that secondary prevention, in terms of delaying the progression of the disease through treatment and rehabilitation, are important in reducing the risk of recurrent MIs (Pietrzak et al., 2014). Most patients suffering a second MI did so in the first years after their first one (Strömbäck et al., 2017) with a reported prevalence of recurrence between 11% (Smolina et al., 2012) and 12.7% (Fox et al., 2010).

In summary, there is a wide range of research describing people's experiences with an MI. However, most research has been focused either on people's experiences of a first MI or on investigating their overall experiences of suffering an MI in general, including those with a single MI event and those with recurrent MIs. The literature review showed there is a lack of qualitative research, focusing solely on people affected by two MIs. Therefore, the aim of this study was to describe people's experiences when having a second MI. We believe this to be valuable in supporting those suffering a second MI and might also be useful in preventing recurrent MIs.

Method

Research design

The study used a descriptive qualitative design to describe peoples' experiences with a second MI. Data were gathered in individual semi-structured interviews and analysed using qualitative content analysis (Graneheim and Lundman, 2004).

Participants and procedures

The participants were recruited from five hospitals in Northern Sweden. Cardiac nurses located at these hospitals received information about the study's aim, method, and inclusion criteria by the first author. The participants were asked to be involved by the cardiac nurses during the follow-up visit two to three weeks after discharge. The inclusion criteria included: having a second MI and going to the follow-up visit. Those who met inclusion criteria were asked if they were interested in participating in the study and received oral and written information about the aim of the study.

Ethical approval

Before conducting the study, approval was obtained from the regional Research Ethics Committee of Umeå University (Dnr 2014/131-31). This study conformed to the principles outlined in the Declaration of Helsinki. The participants were informed about confidentiality in presenting the findings. Before the interviews were conducted, the interviewer informed participants of the aim of the study to ensure they understood it correctly. The participants received an informational letter about the study requesting their participation, with all participants providing written consent. Pseudonyms were used when presenting participant data to ensure participant anonymity.

Data collection

Data were collected by semi-structured interviews, using a guide developed by the authors, covering topics about the experience of suffering a second MI. After receiving written consent, the first author phoned participants and asked them to choose a time and place for the interview. Seven of the interviews were conducted face-to-face, and one interview was done by telephone due to the long travelling distance involved. Six of the interviews took place in the participants' homes, and two interviews took place at the interviewer's place of work. The interviews were conducted between December 2014 and October 2017. The first interview was conducted by the first and second author. The following interviews were conducted by the first author. The participants were asked to narrate their experience about having a second MI. The main question was: '*Can you describe your experience of suffering a second MI*?' Follow-up questions were asked to develop or clarify the narratives and included '*What did you think then?*,' '*Can you tell me more about*. . .,' '*Can you give me any examples?*' The last question was: '*Is there anything more you want to tell me?*' The participants were encouraged to talk freely about their experience of the second MI. The interviews lasted between 44 and 92 minutes and were audiotaped and transcribed verbatim by the first author.

Data analysis

The transcribed interviews were analysed using qualitative content analysis (Graneheim and Lundman, 2004). To gain a sense of the material as a whole, the transcribed interviews were read through by the authors several times. The text regarding the participants' experience of suffering a second MI was then extracted into meaning units. The meaning units were condensed and coded. The codes were compared by similarities and differences and sorted into categories based on similarities, an expression of the manifest content of the text. An interpretation of the underlying meaning in these four categories was formulated into one theme. According to Graneheim and Lundman (2004), a theme can be described as the expression of latent content of the text, while a category can be described as the expression of the manifest content. The analysis was conducted by the first author in consultation with the others.

Findings

Eight patients agreed to participate in this study, six men (75%) and two women (25%). The participants were aged 49–79 years (median = 59). Seven participants were living with their partner, and one lived alone. Three of them worked, and five were retired. The data collection took place one month to 4.5 months after the participants suffered their second MI. The period of time between the two MIs ranged from 10 months to 15 years. The analysis resulted in four categories, and from this one theme emerged (Table 1). The theme is the expression for the latent content in the text and runs like a thread through the categories and findings, describing people's experiences of their second MI.

Table 1
Overview of the theme and categories.

Theme	Categories
Realising the seriousness	Knowledge from previous experience A wake-up call for lifestyle changes The future becomes unpredictable Trying to find balance in life

Realising the seriousness

The finding describes peoples' experience of a second MI. Their previous experience (the first MI) contributed to a better understanding of its symptoms. Although they experienced different symptoms compared to the first MI, they knew they were having a second MI. They knew how to act and called the ambulance more quickly than during the first MI. After their second one, the participants became really aware of the need to implement a healthier lifestyle, such as cessation of smoking and eating healthier food: doing so could avoid a third MI. The risk of suffering or possibly dying due to another MI became more tangible after their second one, and great uncertainty was aroused. They found it hard to make plans for the future. In some ways, they were physically restricted and avoided activities that might overstrain them. Participants expressed a wish to live ordinary lives without restrictions. The categories are described below and exemplified by quotations from the participants.

Knowledge from previous experience

When the participants had their second MI, they expressed that they had gained valuable knowledge due to their previous experience. Although most of the participants described that they had different types of symptoms with the second MI, they managed to identify the symptoms as cardiac-related. Compared with the first MI, they better understood that they had suffered an MI.

> *"The second time, I knew for sure that it was an MI, I knew it was serious. It was not at all the same pain as the first time, I am surprised that I knew it was a new MI, but I knew it." (Elisabeth 75 years)*

Participants knew they had heart symptoms and that there were no alternatives but to seek prompt medical care. They recognised the symptoms, knew they were serious, and due to their previous MI, called the ambulance more quickly than they did the first time.

> *"Now I understand very clearly that treatment initiates in the ambulance. I didn't know that the first time [first MI], I did not think I needed any treatment then." (Elisabeth 75 years)*

Participants said that after suffering the first MI, they read about symptoms to expect when suffering an MI and how to act if they had a second one. They missed that kind of information during the cardiac rehabilitation programme: how to act when you are having heart-related symptoms.

> *"I took anticoagulants; I understood that it was a new MI. I knew because I'd read about it. I knew how to act." (Martin 59 years)*

Having a plan about how to get to a hospital as quickly as possible in light of symptoms of an MI was of great importance. They did not want to visit places where it could take several hours to reach medical care; they knew the importance of getting treatment quickly after the onset of symptoms.

> *"I'm worried about going to our cottage; the road is in a bad condition, especially after the rain. I don't know if the ambulance can get there." (Theresa 58 years)*
>
> *"I have not been driving my snowmobile as far away as I used to do, I don't want to go so far away. If I get another MI, is it a long way to the hospital." (Henry 67 years)*

The participants who attended the cardiac rehabilitation programme after their first MI declined the offer to participate again after their second one. They thought that since they received the information once, they did not need to hear it again. All participants who did not attend the cardiac rehabilitation programme after their first MI chose to participate after their second one; they wanted more knowledge, for example about the prescribed medications.

A wake-up call for lifestyle changes

The participants described how, after the second MI, they became more aware of the importance of following health advice. It was critical to adopt a healthier lifestyle and decrease the risk of a third MI. If they did have a third MI, it was important to know they had done their best to avoid it.

> *"I think now that I've had it twice, I have to live another way after the second MI." (Simon 79 years)*

Participants said that the change in lifestyle could take a while and that it was not possible to change everything at once; it was not always easy to live as they were told. One participant said he did not manage to adopt a healthier lifestyle after the first MI; it was only after having the second MI that he managed to follow the medical advice he received.

> *"I have lived a certain life for almost 50 years, changing it overnight hasn't worked for me…I have tried to exercise on a significantly higher level this time compared to last time." (Harry 49 years)*

After suffering the second MI, participants tried to exercise more, go out for a walk, or work out. To get started with the exercise, some of them chose to participate in groups for physical activity. Participants become more reflective regarding different kinds of food, such as what to eat and what not to eat. They said they thought more about what they ate and tried to eat more vegetables like cabbage, berries, fruits, and fish, while they also tried to decrease their intake of sugar.

> *"Now I have understood the importance of eating vegetables, berries, fruit and such things; maybe I should eat that all the time." (Eric 56 years)*

One participant said he was served pancakes during his stay at the hospital after the second MI and found it inappropriate, especially after a second MI, as he would never eat that kind of food at home.

> *"When they serve that food, pancakes, at the hospital, they tell us that it's okay to eat that kind of food." (Martin 59 years)*

There were descriptions of the frustration in trying to improve one's way of living by eating healthier food, but despite that, they did not lose weight. Many of them, however, did control their weight on a regular basis.

Participants expressed that if you live as recommended after having an MI, for instance by being more physically active and quitting smoking, you are not supposed to suffer a second MI. One feeling that was elicited was shame over having a second MI. Yet they knew they did not have to be ashamed.

> *"I feel ashamed over having a second MI because I had one MI before. I know that feeling is not rational, but that is the way I feel." (Elisabeth 75 years)*

Participants sought a cause for why they were affected by a second MI. They described, for example, such issues as heredity; some of them knew that they were predisposed to have MIs, or had bad luck due to the stent inserted after the first MI not working well, thereby causing a second MI. One participant expressed that if he had received information about the risk of suffering a second MI and been prescribed the right medication, the second MI might never have occurred. Participants who had continued smoking after the first MI were convinced that smoking elicited the second MI.

> *"It is very unnecessary that it happens again if you can prevent it. They could have told me; you have a problem with arteriosclerosis and must fix it; if you don't, you can suffer a second MI." (Eric 56 years)*

There were participants who were grateful for receiving care despite failing to implement the lifestyle changes they were supposed to after the first MI, such as not smoking. They appreciated that in a clear manner they were told that if they continued smoking, it was likely they would suffer a third MI (and might not survive). Participants who managed to quit smoking had positive thoughts.

> *"The doctor told me; You have to quit smoking, it's the only advice I can give you, because if you continue smoking there is 100% chance you will suffer a third MI and you might die." (Bert 71 years)*

The future becomes unpredictable

The experience of suffering a second MI was described as a different and more serious event than the first one. Participants expressed that they did not think they should have survived the second MI. Feelings of uncertainty were manifest due to their anxiety about suffering a third MI, and those kinds of thoughts were frightening. They found it hard to have any specific plans for the future.

> *"After the second MI, the reality comes crawling. I have been more thoughtful." (Bert 71 years)*
>
> *"You get another view on life. You feel like death is coming closer in some way." (Theresa 58 years)*

Some participants said that after the first MI, they did not have thoughts about a second MI. However, after the MI occurred, the risk of a third MI became more of a reality. They did not think they could avoid a third MI, but might be able to delay it. Some also thought they would not survive a third MI.

> *"I'm sure that I will have another MI and that I will die from it. There are many thoughts like that in my mind since I suffered the second MI. This might be the reason why I feel depressed sometimes and lack the energy to do something." (Theresa 58 years)*

Recovery after the second MI was experienced as a longer process than after the first one. Participants described emotions like fear, anxiety, and hopelessness, and it was hard to find the energy to do anything. There were also participants who experienced no differences with the second MI compared to the first one.

Some of the participants anticipated that if they were close to the hospital while having a third MI, it would turn out well. There were participants who were not worried about suffering a third MI; they felt confident about the treatment they received and felt that secondary prevention would protect them. Other participants tried not to think of the risk of a third MI. They wanted to live as good a life as possible, instead of thinking about risks: the idea being that if it happens, it will happen.

> *"I don't have the energy to think of when life will end; it will end when it ends. I don't have to worry about that." (Bert 71 years)*

Trying to find balance in life

After a second MI, the participants experienced decreases in their physical capability and did not manage to be as physically active as before. This led, for example, to their avoidance of activities like washing cars or going by snowmobile in areas where they risked getting stuck, as they did not want to take the risk of overstraining themselves. Another example was that participants planned only half-day instead of full-day activities, as they had before the second MI. Even if participants did not have heart-related symptoms, they said they were resting after activities, and this was something they did not do after the first MI. They expressed how they had become better at saying no to people who asked for help. It was important to do only the things they wanted to do.

> *"I do not say yes so much anymore. I manage to say no. I must be better at saying no. It has been a period now when I have managed to say no. You maybe want to do better things than repair machines; you maybe want to go out fishing." (Eric 56 years)*

There were also participants who declared that they wished to live life as usual, and a way of doing that was for them to go back to work. Then they could focus on things other than illness. A wish to live a healthy life and not be restricted by the illness was expressed.

> *"I want to live a fairly good life. When you become restricted and cannot do a lot of things, then you miss a lot of life. My philosophy is to try to live life, sooner or later we will all die." (Martin 59 years)*

Participants needed someone to talk to about their situation, and knew it should be a trusted person, someone with whom they could be open and at ease. It was less important who that person was. One woman emphasised it was important for women to share experiences with other women in the same situation, and suggested there should be support groups for women only. She thought if men participated, women would not be as open as in a group made up exclusively of women.

> *"I do not think you are as openhearted if men participate in the group. You need to talk in a women's manner, to share experiences and maybe get some good advice. Some advice and some comfort." (Elisabeth 75 years)*

The participants stated that they were supported by their relatives and appreciated the support. Sometimes they experienced their relatives being overprotective, with difficulties in dealing with their condition. However, they understood it was an expression of concern.

Some participants said they did not want to worry their relatives or burden them, and due to that, they did not want to talk to them about how they felt after their second MI. They perceived that the relatives sometimes blamed themselves when they saw that the affected person felt depressed or anxious; to avoid that, the participants chose not to talk about their condition. One way to hide how they actually felt was to create a facade for their relatives.

> *"I don't want to burden them [my relatives]. I try to spare others. It has become a part of me." (Elisabeth 75 years)*

Discussion

The aim of this study was to describe peoples' experiences of dealing with a second MI. The findings showed that the participants realised the seriousness of the illness after suffering a second MI. The second one was experienced as a different and more serious event compared to the first one. The result of the present study indicates that the participants' representation of their illness changed after being afflicted by a second MI. Leventhal et al. (1980) developed a self-regulatory model of health and illness behaviour:

the common-sense model. Illness representation is central in the model, as it is used to understand peoples' response to health threats. The common sense model assumes that people's own definition and representation of an illness risk strongly influenced their health and illness behaviour (Diefenbach and Leventhal, 1996). There are five dimensions of illness representation: identity, cause, timeline, consequences and controllability. In the common sense model, the individual is seen as a problem solver who must deal with the health threat and whatever emotional reactions it aroused. This is described as two parallel processes (Diefenbach and Leventhal, 1996). We are using parts of this model with the purpose of explaining some of our findings.

Participants expressed that they had gained valuable knowledge regarding symptoms and how to act when handling an MI, given their previous experience. This can be linked to the first dimension in illness representation, identity, which refers to beliefs about the illness label and knowledge of its symptoms (Diefenbach and Leventhal, 1996). Although symptoms differed between the two MI events, the participants managed to identify the symptoms as cardiac-related; their previous experience enhanced the identity of the illness. This is consistent with results in previous studies showing that those with a previous MI were more likely to attribute their symptoms to be heart-related, when compared with people without that experience (Fox-Wasylyshyn et al., 2010).

Memories are thought of as an important part of illness representation, since they reflect patients' past experiences of an event, including emotional responses associated with the illness. Due to the patients' previous knowledge and their emotional and behavioural experiences, one would expect enhanced responsiveness to recurrent MI symptoms (Roe et al., 2012). Fox-Wasylyshyn et al. (2007) found that coping responses, like trying to relax or wishing that the symptoms would go away during an MI differed very little among patients with a previous MI or those experiencing their first one. The result of the current study indicates a difference between first and second MIs. Even though the current study did not aim to compare coping responses during them, participants expressed that with the second MI, they knew there were no alternatives in seeking medical care as soon as possible, given their previous experiences. The participants expressed how they better understood the importance of calling the ambulance when having heart symptoms; compared to the results of Wechkunanukul et al. (2017), they experienced a shorter prehospital delay with their second MI. This result is in line with a previous study with a paired design, comparing prehospital delay at the first and second MIs, demonstrating that the prehospital delay was shorter during the second MI (Strömbäck et al., 2018).

Participants in the current study described how, after the second MI, they became much more aware of the importance of following the health advice they received after the first one. The threat of a third MI became more real for them, including the benefits of the actions that had to be taken to decrease the risk of suffering a third MI, which appeared to be worthwhile. The concern about a specific disease can act as a motivator for behavioural changes if the disease is preventable (Diefenbach and Leventhal, 1996) and individuals act to avoid related health threats (Leventhal, 1970). The effort to avoid the threat increases if it is experienced as strong. Broadbent et al. (2006) showed that MI patients' perceptions of the risk of a recurrent MI were based on their own perceptions of the risk and not the actual risk. An important part in managing to do life style changes is to identify life style as a cause of the coronary heart disease (Astin et al., 2014). The participants expressed that after suffering the second MI, they knew the importance of eating healthier food, exercising and smoking cessation to control the disease. One explanation for why people fail to comply with treatment and are not compliant with lifestyle changes might be that some diseases, such as MI, are often asymptomatic after the initial stages and the afflicted person is feeling well (Leventhal and Cameron, 1987). The results of the present study indicate that the illness's representation changes following the second MI and that those experiencing a second MI are more aware of lifestyle changes when it is obvious they can suffer from MI again.

After the second MI, participants had become more physically restricted, such that recovery after the second MI was felt to be a longer process than after the first one. They described feelings of fear, hopelessness, anxiety and loss of energy to a greater extent than after the first MI. The future felt more uncertain, and they worried about the risk of a third MI. This can be explained by the dimension consequences, which refer to a person's beliefs about consequences of the condition and to what extent it could affect them physically and socially (Diefenbach and Leventhal, 1996). Patients in the present study, who were affected by two MIs, had the experience of an aftermath MI. The participants knew what consequences MIs can have on quality of life and expressed anxiety about suffering a third MI, with the risk of being disabled. The consequences of having a second MI had a greater impact than the first one. Some of them did not think they would survive a third MI.

The dimension of causality is also present in the results of the current study; this refers to a person's ideas about what factors are responsible for eliciting the illness (e.g., heredity, stress) (Diefenbach and Leventhal, 1996). The participants gave the issue greater thought with their second MI and found that it centred around lack of medications and information about the risk of a second MI. Wiles and Kinmonth (2001) explored MI patients' understandings of MI with the purpose of contributing to the development of effective secondary prevention services. They stressed that MI patients may benefit from understanding an MI as an acute event of an ongoing disease process. It has been shown that patients who perceived their MI to be a life-threatening illness were more committed to making lifestyle changes than those who experienced uncertainty about the severity of their illness.

Having someone to talk to about their situation and share their experiences was important to the participants. One woman emphasised that it was important for women to share experiences with other women afflicted with MI. Meeting other people who have also been affected can be experienced as having a healing effect, especially due to that person's ability to recognise themselves in the other people's narratives about the disease (Bergman and Bertero, 2003).

Study strengths and limitations

This study has limitations; for example, only eight participants were interviewed. When determining sample size, we judged the quality of the data collected against the specific aim. Variation was required to allow a more detailed analysis of the data, as participants described experiences rich in content, which revealed a pattern about the findings (Sandelowski, 1995). The data in the current study were collected over a long period, December 2014 and October 2017, which can be seen as a limitation, in terms of influencing dependability (Graneheim and Lundman, 2004). To maintain consistency during data collection over time, we used the same interview guide in all interviews to question the same area for all participants. This can strengthen the dependability (Graneheim and Lundman, 2004). Dependability is also about including more than one researcher in the analysis to discuss alternative interpretations (Graneheim et al., 2017). All of the authors independently checked the analysis and then discussed it prior to reaching a final agreement. To increase confirmability we used quotations from participants to show some of the original data, and we described the analysis process. The findings are not generalisable to the wider population, however, for transferability, we have tried to describe the participants and the context without risking participants' confidentiality (Graneheim and Lundman, 2004; Graneheim et al., 2017).

We do not have data regarding what MI diagnosis (ST-elevation MI or non ST-elevation) the participants had. This can be seen as a limitation as it might have an impact on their understanding of their illness.

Conclusion

A second MI is different compared to the first one, which makes people realise the seriousness and importance of making changes in their lifestyle. People are more affected after the second MI, both physically and psychologically. The illness seems to alter their life, in that having a first MI yields knowledge of the associated symptoms and how to act in the case of a second MI. This new knowledge highlights the need for further research with a long-term perspective of people suffering from a second MI and from their relatives. Also how these people experience cardiac rehabilitation after the second MI, their expressed needs and how personnel in cardiac rehabilitation meet these needs need attention. Research in this area could enhance a better understanding and knowledge about what it means for the person suffering a second MI and how to give the best care.

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Conflict of interest

The authors declare that there is no conflict of interest.

Author contributions

Study design: US, ÅE and B-MW. Data collection: US and ÅE. Data analysis: US, ÅE and B-MW. Manuscript preparation: US, ÅE and B-MW.

Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.iccn.2018.12.002.

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