

ORIGINAL RESEARCH

CRITICAL CARE

Coping Strategies Scale for myocardial infarction survivors

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Abstract

Background & objective: Studies have indicated that myocardial infarction survivors (MIS) not only experience physiological and physical issues but also psychosocial issues. The survivors consciously or unconsciously may adopt certain strategies to cope with their biological and / or psychosocial issues. Such coping strategies may vary from culture to culture.

The current study aimed to develop a scale to investigate the coping strategies adopted by myocardial infarction survival in Pakistani culture.

Methodology: For this purpose, 25 MIS were interviewed and were asked about how they MIS cope with their biological and psychosocial issues. From this phenomenology, their coping statements were recorded and items were generated. Following the phase of scale development, the scale of 13 items with a 4-point Likert scale was administered on 200 MIS.

Results: The use of Principle Component Factor Analysis through Varimax Rotation suggested two factors i.e. Spiritual Coping and Solution-Focused Coping.

Conclusion: The results of the current study indicated the MIS not only use solution-focused coping but they also get involved in spiritual coping in managing their biological as well as psychosocial issues in Pakistani culture. The results are discussed in context to the importance of spirituality and a solution-focused approach.

Key words: Coping strategies; Spiritual coping; Solution-focused coping; Myocardial infarction survivors; Pakistan

Abbreviations: CDC – Cardiovascular diseases; MI – myocardial infarction; CSS – Coping Strategies Scale

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1. Introduction

Cardiovascular diseases (CVDs) are the major cause of mortality as compared to any other diseases. In 2010, 17.6 million population in the United States had suffered from cardiovascular diseases, in which 8.5 million population undergo myocardial infarction (MI).¹ Pakistan is a developing country, where about 67.5% population is loaded with cardiac diseases.² Heart diseases are as common in females as they are common in males.³ Cardiac diseases are the main reason for death in the world. It is becoming the major cause of death in western as well as eastern countries.

MI is one of the cardiac diseases, which is prevailing in developed as well as developing countries. During MI, a sudden uncomfortable pain occurs around the chest, which may also move toward the arms, hands, jaw, or back. However, in some cases, small MI also occurs, without showing any symptom of pain, which is also known as silent myocardial infarction.⁴ Acute myocardial infarction (AMI) is also the name of a heart attack, which develops because of the reduction in blood supply toward the heart because of a blockage formation. Such blockage may also develop as a result of fat or cholesterol i.e., also called plaque formation.⁵

Several patients may experience psychological symptoms immediately even after the attack of the heart, which is considered to be a normal reaction to such a threatening event.⁶ Individuals who have increased anxiety, worry or depression related to their illness or health condition may have increase chances of having another attack in a future life.⁷ Similarly, social causes are also considered to play role in the progress of cardiac diseases. Lack of support from family, work-related stress, or family-related issues can be more serious causes in the progress of coronary heart diseases.⁸ Some of the patients cope up with their anxiousness through ignoring or denying their symptoms. On the other hand, some patients show less motivation and compliance toward the directions of their physicians or doctors. Therefore, they experience more complications in their future life.⁹

There are also different coping strategies used by such patients to overcome stressful events. Coping strategies are defined as a group of behavioral and cognitive actions to minimize stressful events or situations. Informing the patients about different coping strategies may help them in reducing their psychological symptoms, including stress and hopelessness. Effective coping is considered to be an important component among patients with post-MI as well as for their families, in case of depression or anxiety.¹⁰ An effective coping strategy may help patients with MI in making appropriate decisions in life and to have a balanced physical, psychological, social, and emotional state. On the other side, such patients of MI, who involve maladaptive coping strategies such as avoidance of the problems or not showing compliance for following a proper treatment may have increase chances of developing further symptoms of MI, thus enhancing the chances of mortality due to MI.

Researches have also found differences in the coping strategies adopted by males and females and there are cross-cultural variations. Studies suggest that females usually show less concern about their health issues. They usually deny or take time for having proper treatment related to health problems, as they have to work hard in the family and do not want to worry other members of the family. Therefore, they use a variety of different coping strategies such as repressing and denying, to overcome their associated symptoms.¹¹ Studies state that people may also use an

avoidance coping strategy. However, the use of avoidance coping strategy can be troublesome coping in the case of cardiac patients.¹² Another research study conducted in Iran, where 98% of individuals are Muslims, concluded that religious values, connection to God, and interconnectedness to others are also important and significant during the events of MI. Spirituality gives strength and hope to reduce threats from such life-threatening events as cardiovascular diseases.¹³

Cross-culturally, the coping strategies may vary depending on the socio-economic conditions, healthcare system/infrastructure, religious influence etc. Therefore, it was an important step to explore coping strategies among the MI survivors, to enable them to understand the importance of post MI management approaches. Thus, this study was aimed to investigate the coping strategies among MI survivors and to develop the cultural relevant scale in order to assess coping strategies.

2. Methodology

2.1. Phase 1: Development of Coping Strategies in Myocardial Infarction Scale (CSMIS)

2.1.1. Step 1: Exploring phenomenology. In this phase, open-ended interviews were conducted with MI patients to explore the phenomenology, to get items for the scale development. The phenomena were explored related to coping strategies from 25 MI patients through open-ended interviews. Patients were provided with a statement that “how do they overcome their issues or problems with their illness?” All the patients responded to the questions and their verbatim was noted down.

2.1.2. Step 2: Expert validation. In this step, the statements, which were in the verbatim of different patients, were reviewed for validation from 3 experts having experience in the psychology field for more than 5 or 6 years. Experts rated the statements and their comments on the statements were also focused to make the statements more accurate. Some of the statements were merged, to make the scale more precise, as they were depicting the same meaning. The Likert scale was also developed based on rating from

Table 1: Factor structure and Eigen Values of Coping Strategies in Myocardial Infarction Scale with Varimax Rotation (N=200)

Sr No.	Item No.	Factor 1	Factor 2
1	11	.67	
2	15	.65	
3	1	.64	
4	8	.63	
5	7	.55	.41
6	10	.51	
7	3	.50	
8	2	.49	
9	12	.46	
10	5		.76
11	6		.75
12	4		.58
13	13		.49
Eigen values		3.77	1.55
% of Variance		29.03	11.93
% of Cumulative		29.03	40.97

Note: Items with .40 or above loading are boldfaced

“never at all”, “very rare”, “rarely” and “always” Then, the finally evaluated scale was prepared for a pilot study.

2.1.3. Step 3: Pilot Study. The pilot study was conducted on the male and female patients from the government hospitals, to determine any ambiguity or difficulty in understanding the items. About 20 patients were selected for the pilot study. Some of the questionnaires were filled by the researcher after reading each statement, in front of the participant, and asking them to rate their responses. While some of the questionnaires were filled by the participants themselves. Thus, after the pilot study, it was concluded that the participants had no difficulty in comprehending and understanding the items of the developed scales.

2.2. Procedure

The research was conducted after taking permission from the Institute of Clinical Psychology, UMT. The

Table 2: Psychometric properties of Coping Strategies Scale in MI Survivors (n=200)

Factor	K	Mean ± SD	Alpha (α)
SC	9	21.9±4.0	.75
SFC	4	9.5 ±2.3	.62
CSS T	13	31.4 ±5.3	.77

Note: k = no. of items, α= Cronbach’s Alpha, SC = Spiritual coping, PFC = Solution-focused coping, CSS T = Total of Coping Strategies Scale.

Table 3: Summary of inter–corelations, Means, Standard Deviation for the Scores of CSS and its sub scales (n= 200)

Factors	RC	SFC	CSMI T
SC	-	.38**	.91**
SFC		-	.72**
CSS T			-
M	21.94	9.54	31.48
SD	4.04	2.33	5.39

Note. SC = Spiritual coping, SFC = Solution- focused coping, CSS = Coping Strategies Scale

permission letters were also assigned from the hospitals, for the research purpose. Participants were provided with verbal informed consent, explaining the nature and purpose of the research as well as their willingness to participate in the study. After the willingness of the participants, the demographic questionnaire and scales were administered on the participants. Each participant took about 10 to 15 minutes in completing the questionnaire. Some of the participants were illiterate, therefore, the researcher herself read the statements of the scales, in front of the patients for data collection. Thus, a sample of 200 participants was collected from the different government hospitals of Lahore.

3. Results

In this section, the psychometric properties of the indigenous developed scale i.e. Coping Strategies Scale (CSS) for MI survivors, were measured through considering the Eigen Values, Inter Factor correlation, and internal consistency of the scale.

3.1. Factor analysis: Factor analysis was done by exploratory factor analysis (EFA) through SPSS.

Table 4: Mean, Standard Deviation, t and p Values of the Gender of MI survivors on Coping Strategies in Myocardial Infarction Scale and its Factors (n=200)

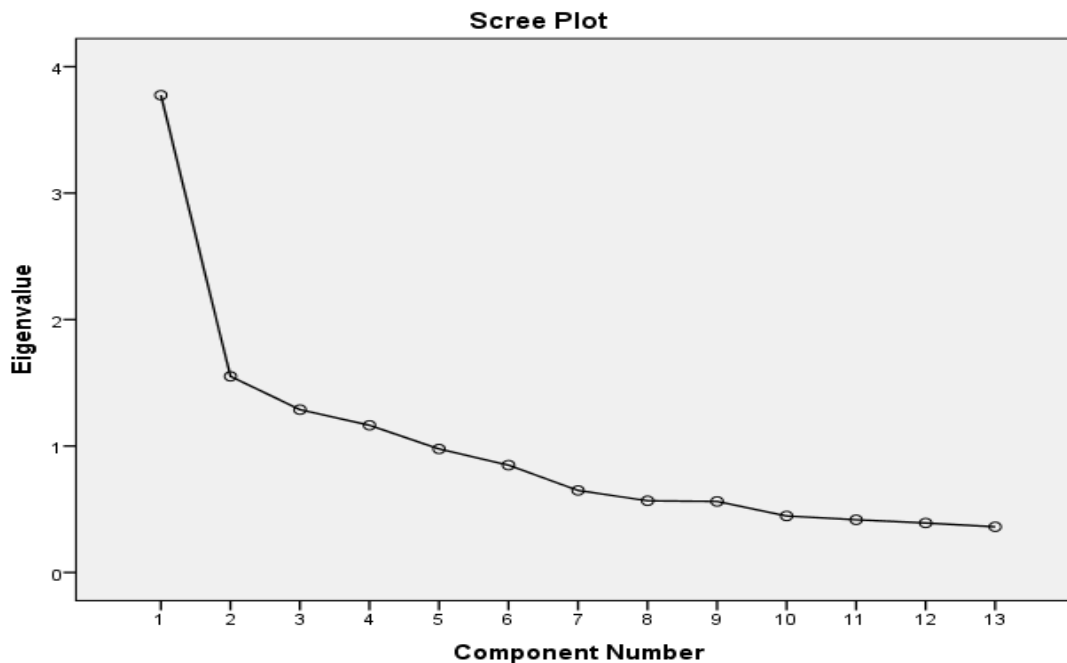
Factors	Male (n = 117)	Female (n = 83)	t	p	95% CI		Cohen's d
	Mean ± SD	Mean ± SD			LL	UL	
SC	22.50 ± 3.7	21.13 ± 4.31	2.33	.021*	.21	2.53	0.341
SFC	9.44 ± 2.52	9.67 ± 2.04	-.71	.47(ns)	-.86	.40	0.100
CSST	31.95 ± 5.16	30.81 ± 5.66	1.45	.14(ns)	-.40	2.68	0.210

Note: SC = Spiritual coping, SFC = Solution focused coping, CSS = Total of coping strategies scale * = p < .05.

Table 5: Effect of education of the patients on coping strategies in Myocardial Infarction Scale and its factors (n=200)

Factor	Under-matric (n = 129)	Matric and above (n = 71)	t	p	95% CI		Cohen's d
	Mean ± SD	Mean ± SD			LL	UL	
SC	21.33 ± 4.18	23.03 ± 3.55	-3.02	.003**	-2.80	-.58	0.438
SFC	9.40 ± 2.24	9.8 ± 2.49	-1.14	.25(ns)	-1.11	.29	0.168
CSST	30.73 ± 5.34	32.83 ± 5.24	-2.6	.008**	-3.64	-.56	0.396

Note: SC = Spiritual coping, PFC = Solution focused coping, CSST = Total of coping strategies scale, ** = p < .01.



EFA suggested two factor solutions through the scree plot (Figure 1). The item analysis was done by computing item-total correlation on 13 items of CSS, all items showed significant item-total correlation. The items above .40 loading were retained for factor

structure (Table 1). Further, sample adequacy, Kaiser-Meyer-Olkin (KMO) was found to be .76, and Bartlett's test of sphericity was found to be significant ($\chi(78) = 624.88, p < .000$).

3.2. Factors Description

3.2.1. Factor 1: Spiritual Coping

This is the first factor of the scale named coping strategies in Myocardial Infarction. This factor consisted of 9 items like “remembering ALLAH”, “having faith and believe in ALLAH”, “performing religious offerings like Kalma, Namaz and DaroudPaak”, “having patience” and vice versa.

3.2.2. Factor 2: Solution- focused Coping

This is the second factor of the scale, which consisted of 4 items like “taking medicine”, “spending time with family members”, “taking care of health” and “getting strength and support from family members”.

3.3. Psychometric properties of CSS

The psychometric properties of CSS in MI survivors are shown in Table 2, 3;

3.4. Gender and Coping Strategies

This hypothesis stated that there would be a difference of coping strategies in males and females. Therefore, an independent sample *t*-test was computed to test this hypothesis (Table 4).

3.5. Education and coping strategies

This hypothesis stated that there would be a difference in coping strategies in Myocardial Infarction in individuals with different education groups. This hypothesis was also tested through an independent sample *t*-test.

4. Discussion

This research study was purposed to investigate the coping strategies in MI survivors and to develop an indigenous tool to assess coping strategies used by MI survivors. For this purpose, a quantitative research study design was involved. In this study, male and female who survived after a MI attack from different Government Hospitals, from outdoor as well as indoor patient settings. The research study identified two coping strategies used by the patients of MI, i.e. Spiritual Coping and Solution -focused Coping. These coping strategies were identified through interviewing the MI survivors to explore their lived experiences, which is called phenomenology. In this process, the patients were interviewed related to their coping strategies after a MI attack. The process of phenomenology is considered best approach in

exploring the lived experiences.¹⁴ More importantly, this scale will be assessing culture bases coping strategies.

As the study came up with two factors on coping among MI survivors, i.e. Spiritual Coping and Solution-focused Coping and previous studies have shown that when a patient suffers from such a life-threatening event, they tend to start paying attention more toward spirituality¹⁵ which support the findings of our study. Studies have involved spirituality as emotion-focused coping strategy, in which patients mostly follow and pay attention toward praying, focusing on religious activities, and giving self-confidence. While in the case of problem-focused coping, patients may tend to take care of themselves and take medicine, thus to decrease or deal with their problem or disease.¹⁶ Studies have shown that religiosity and or spirituality are also important for patients with heart diseases.¹⁷ However, studies also state that while focusing on religiosity, the cultural context must be encountered.¹⁸

The increase in the level of religiosity and spirituality is also linked with different psychosocial consequences in cardiac patients thus involving less depression¹⁷⁻¹⁹ less anxiety,²⁰ and resilience.²¹ Therefore, religiosity tends to be associated with fewer chances of heart attack as well as positive outcomes for such diseases.²² A study has stated that positive religious coping strategy further includes different types of copings like asking for help from God and results in decreased distress in heart patients.²³ However, studies have also shown that negative religious coping strategy following spiritual struggle is found to be associated with an increase in distress and depressive symptoms among cardiac patients.²⁴ During emotion-focused coping, spirituality is the most important factor, in which the patient tries to make himself or herself strong through praying, which indicated that during such depressive conditions, patients may search for religious support as their important coping mechanism. Older adults may also find strong religious coping as compared to other age groups.²⁵ Religiosity is linked with positive mental and physical health.²⁶ While spirituality is linked with the handling of stressful life events such as cardiac diseases.²⁷

Our study has shown a significant difference in spiritual coping between the gender and males are more spiritual. However, a few studies have shown that females are more spiritual as compared to

males.²⁸This might be due to the cultural effect as in Pakistani culture; males are more responsible as the family matters are concerned, so males tend to exercise all possible coping strategies. However, there is no such effect of gender if the solution-focused coping is concerned.

5. Limitations

In spite of the implication of the study, our data has few limitations as well, as our study was conducted only in Lahore city, so participants from one city were involved. The indigenously developed tool may not be generalized to other regions of the country. Therefore, the scale should be administered to a larger population for its reliability and validity.

6. Conclusion

The findings of the current research found that MI survivors mostly involve ‘Spiritual Coping Strategy’ as their emotional form of coping strategy to manage and deal with mental health problems after a heart attack. This assessment tool might be useful in the assessment of coping strategies of the MI survivors and they should be counselled by the cardiac experts to adopt such treatment choices, which have a protective approach against MI attack in the future.

7. Conflict of interest

None declared by the authors

8. Authors’ contribution

TK: Concept, data collection, manuscript writing

MR: Concept, final review

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