Stress and Coping of Patients with Myocardial Infarction in Bangladesh

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ABSTRACT

Myocardial infarction (MI) is a major health problem in Bangladesh. Having a heart attack is a stressful situation for most people. Stress is the individual’s subjective perception and emotional response to stressors experienced during the suffering of MI. Coping is an individual cognitive and behavioral effort. Effective coping can help reduce the level of stress in MI patients. The aims of this study were to identify the level of stress and coping of patients with MI and to examine the relationship between stress and coping of patients with MI. This was a descriptive correlational study. Eighty-eight subjects participated in this study. Data were collected by using structured questionnaires. The questionnaires were validated and tested for reliability, and yielding acceptable values of alpha coefficients (> .80). Descriptive statistics and the Pearson coefficient (r) were used.

It was found that MI patients experienced a moderate level of stress, with 21.6% reporting a high level of stress. Overall, subjects reported used coping strategies sometimes and supportant coping was rated as often used. No significant relationships were found between stress and coping. However there were some relationships found between overall stress and tension subscale, and optimistic coping. The findings provide implications for nursing practice. Stress management programs should be developed for patients with MI in Bangladesh.

Key words: stress, coping and myocardial infarction
Background and Significance of the Problem

According to the Bangladesh National Health System Profile (2005) and World Health Organization (2009), heart disease is the major cause of death in Bangladesh. Myocardial Infarction (MI) is one of the most commonly found heart diseases. MI is defined as death or necrosis of myocardial cells which, without prompt treatment, can damage the affected part of the heart.

MI is one of the most stressful life events to many individuals. Stress may increase blood pressure, the heart rate, muscle tone, and alertness, and breathing becomes deeper and more rapid (Urden, Stacy, & Lough, 2002). Continued stress after MI made the patients less likely return to work, and caused more hospital re-admissions and higher mortality rates (Webster & Christman, 1988 as cited in Stewart et al., 2000).

In this situation MI patients need to cope with their stressful situation to minimize or reduce level of stress and to prevent further complications. Effective coping can help in many ways: it can reduce stress and maintain equilibrium; it helps make sound decisions; it maintains autonomy and freedom; it motivates to meet social and environmental demands; it maintains stable social, psychological and physical states; and it can control the potential stressor before it becomes a threat or avoidance of negative self-evaluation is used (Lazarus & Folkman, 1984). MI patients who use maladaptive coping strategies, such as avoiding or denial seeking treatment or not adhering to medication, develop early signs of further MI (Alonzo & Reynolds, 1998). This leads to an increased likelihood of cardiovascular readmission and a higher risk of morbidity and mortality (Shemesh et al., 2004). Different coping strategies might cause different results such as effective coping that can resolve or diminish stress (Livneh, 1999). Coping helps to improve the patient's physical, psychological, social and emotional well-being (Taylor & Brown, 1994).

Currently there are no known studies to demonstrate the extent to which patients with MI in Bangladesh have experienced stress and how they have coped with it. This study was conducted to offer the baseline data for further studies to improve care for this group of patients.
Objectives of the Study

The aims of this study were to identify: (1) the level of stress in patients with MI; (2) coping strategies that have been frequently used by patients with MI; and (3) to examine the relationship between stress and coping in patients with MI.

Technical Terms

Stress is a physiologic phenomenon. Stress is a condition that sees particular interaction between a person and the environment and makes the body react in specific situations. When a specific event occurs such as MI the body produces changes whereby a person is exposed to tension, frustration, worries and this is called stress. There are 4 dimensions of stress and these include worries, tension, joy, and demands. According to the measures used by Fliege et al. (2005), the higher the score the greater the level of stress.

Coping refers to the cognitive and behavioral efforts which MI patients used to manage specific stressful perceptions that were thought to be beyond their resources. Jalowiec’s 8 coping styles (2003) were used to guide the construction of the questionnaire used in this study. The 8 dimensions of coping include: confrontive, evasive, optimistic, fatalistic, emotive, palliative, supportant, and self reliant; higher the score, the more frequent use of coping strategies.

Framework of the Study

Lazarus and Folkman’s conceptualization of stress and coping was used to guide this study (1984). Lazarus and Folkman defined coping as the constantly changing cognitive and behavioral efforts used to manage specific external and internal demands that are appraised as taxing and that exceed the resources of the person. As human beings, MI patients have to find ways to cope with uncomfortable feeling by using different coping strategies.

Coping may change the person’s appraisal of the stressful experience. Lazarus and Folkman’s stress and coping theory is also called the transactional model of stress and coping. The transactional model of stress represents the interaction between the individuals and their environments. Patients with MI usually feel chest pain due to a decreased oxygen supply, and increased oxygen demand, Patients may feel uncertain, and try to cope with MI by seeking treatment, or social, familial or financial support. In such a circumstance, they try to cope with the stressful situation. Coping is a response that helps patients with MI to reduce the level of
stress. They may reduce/minimize their level of stress by using the following coping styles: confrontive, evasive, optimistic, fatalistic, emotive, palliative, supportant, and self-reliant (Jaloweic, 2003).

Research Methodology

This was a descriptive correlational study conducted at a medical college hospital in Bangladesh. Eighty-eight patients with MI were recruited from the coronary care unit and outpatient department. The sample size was estimated by using power analysis. Data were collected by the primary researcher through a set of structured questionnaires. They consisted of: a Demographic Data Form (DDF); a Health Related Questionnaire (HRQ); a Perceived Stress Measuring Scale (PSMS); and a Coping Scale (CS). The original English questionnaires were translated into the Bangla language by an expert bilingual translator. Subjects were selected based on inclusion criteria and they were assured about their rights in participating in this study. The issues of confidentiality, anonymity, and the right of withdrawal were addressed prior to the data collection. This study received formal approval and permission from the participating institution. Data were analyzed and presented using descriptive statistics and inferential statistics, and the Pearson product moment correlation.

Results

Subject in this study were middle-aged adults (M = 51 years, SD = 10.30). More than three-quarters of them were male (77.3%) and Muslim (85.2%). Nearly one-quarter of the subjects (22.7%) were business persons. More than one-quarter (27.3%) had a monthly income that was more than US$143. More than a half of them (59.1%) thought that their income was not adequate. Forty-one percent had experienced MI within 4-6 months. More than half of the subjects were admitted twice (62.5%). More than three-quarters (78.4%) of them had a family history of MI. Nearly three-quarters (68.2%) had no knowledge about MI but 71.6% of them took drugs regularly.
Stress
Patients with MI who participated in this study experienced a moderate level of stress (M = 65.89, SD = 6.83), of which the majority of them (76.1%) experienced a moderate level of stress, followed by those with a high level (21.6%). Among the four dimensions of stress, worries was at the highest level and was rated with the highest mean score (Table 1).

Table 1.
Minimum, Maximum, Mean, Standard Deviation, and the Level of Stress among Patients with MI (N=88)

<table>
<thead>
<tr>
<th>Stress</th>
<th>Min</th>
<th>Max</th>
<th>M</th>
<th>SD</th>
<th>Level</th>
<th>Overall stress level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Stress</td>
<td>33</td>
<td>74</td>
<td>65.89</td>
<td>6.83</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worries</td>
<td>5</td>
<td>20</td>
<td>15.18</td>
<td>3.79</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>Tension</td>
<td>9</td>
<td>18</td>
<td>13.53</td>
<td>1.95</td>
<td>Moderate</td>
<td></td>
</tr>
<tr>
<td>Joy</td>
<td>6</td>
<td>20</td>
<td>13.75</td>
<td>2.89</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>Demands</td>
<td>6</td>
<td>20</td>
<td>13.43</td>
<td>2.81</td>
<td>Moderate</td>
<td></td>
</tr>
</tbody>
</table>

Coping
Patients with MI who participated in this study used various coping strategies. Overall, they reported that they ‘sometimes used’ them. Among 8 types of coping styles, the supportant coping style was often used by this group of subjects. As for the other styles, they reported them as ‘sometimes used.’

Table 2.
Minimum, Maximum, Mean, Standard Deviation and the Level of Coping Style Being Used by Patients with MI (N-88)
### Relationship between Stress and Coping

This correlational study revealed no significant relationship between overall stress and overall coping. Among stress subscales, ‘joy’ had a negative relationship with overall coping and 4 out of 8 coping styles (p<.01). This indicated that the higher patients with MI perceived ‘joy’, the lower the use of such coping styles. Among 8 coping styles, optimistic coping had a negative relationship with overall stress and 2 out of 4 stress subscales (p<.05 and p<.01, respectively). These findings suggested that the higher the level of stress, the lower the use of optimistic coping.
Table 3

Correlation between Overall Coping Style, Subscales of Coping Style and Overall Stress and Subscales of Stress (N=88)

<table>
<thead>
<tr>
<th>Coping</th>
<th>Overall Stress</th>
<th>Worries</th>
<th>Tense</th>
<th>Joy</th>
<th>Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall coping</td>
<td>-.05</td>
<td>.19</td>
<td>-.13</td>
<td>-.51**</td>
<td>.23*</td>
</tr>
<tr>
<td>Confrontive coping</td>
<td>-.05</td>
<td>.06</td>
<td>-.04</td>
<td>-.37**</td>
<td>.21</td>
</tr>
<tr>
<td>Evasive coping</td>
<td>.11</td>
<td>.31**</td>
<td>-.02</td>
<td>-.41**</td>
<td>.30**</td>
</tr>
<tr>
<td>Optimistic coping</td>
<td>-.25*</td>
<td>-.03</td>
<td>-.32**</td>
<td>-.35**</td>
<td>-.00</td>
</tr>
<tr>
<td>Fatalistic coping</td>
<td>.17</td>
<td>.24*</td>
<td>.07</td>
<td>-.13</td>
<td>.17</td>
</tr>
<tr>
<td>Emotive coping</td>
<td>.00</td>
<td>.17</td>
<td>-.13</td>
<td>-.35</td>
<td>.22</td>
</tr>
<tr>
<td>Palliative coping</td>
<td>-.06</td>
<td>.03</td>
<td>-.07</td>
<td>-.26</td>
<td>.12</td>
</tr>
<tr>
<td>Supportant coping</td>
<td>.16</td>
<td>.12</td>
<td>.25*</td>
<td>.12</td>
<td>-.07</td>
</tr>
<tr>
<td>Self reliant coping</td>
<td>-.25</td>
<td>-.00</td>
<td>-.31**</td>
<td>-.51**</td>
<td>.13</td>
</tr>
</tbody>
</table>

*p<.05, ** p<.01

Discussion

The findings indicated that patients with MI participating in this study had moderate levels of stress with the highest score on the ‘worries’ subscale. MI is a serious condition and contributes to a high level of stress during the acute phase (2 to 3 days) and gradually reduces (Alexander, Fawcett, & Runciman, 1999; Bennet et al., 2001). In this present study, the data were collected from patients who came for a follow-up visit at an outpatient department and hospitalized patients. For the latter group, the data were collected 3 days after admission when the patients’ hemodynamic status was stable. This timing of the data collection may contribute to the moderate level of stress as opposed to the high level of stress found in patients in the acute attack condition. However, they may continue to have certain worries. This finding is supported by the work of Al-Hassan and Sagr (2002) who found that stress decreased after discharge. They collected data at two to six weeks after the first MI experience and discharge from the hospital.
and found most of the patients experienced moderate levels of stress. Only 20% of them reported high level of stress. MI patients described their feelings as fear, threat or anxiety and these make the situation more stressful.

Some other factors may help explain why subjects in this study reported only moderate levels of stress. First, more than three-quarters of subjects had a family history of MI. This may make them more familiar with the disease and its conditions. Second, family bonding was and is a Bangladeshi cultural tradition. Parents and their children live together. In this study the majority (97.7%) of the subjects got family support. During the period of illness patients may receive more support from his/her family, particularly from their female spouse (wife) or children. Even though there was no data as to who their primary caregivers were, it was evident that there were more male patients in this study (77.3%). These male patients may be more likely to receive support from their wives and that can help lessen their stress. This phenomenon has been well-established in family support literature; male patients receive high support from their wives as opposed to when husbands take care of their wives (Kristofferzon, Lofmark, & Carlsson, 2003). Third, although one-quarter of the subjects reported that their income level was more than US$ 143, more than half of them stated that their income was not adequate. Fortunately, in this study more than three-quarters of the subjects got partial treatment payment from the hospital. This factor could help reduce their stress.

In this study more than one-third of the subjects had experienced MI over 4–6 months and more than half of them were hospitalized for the second time. In addition, they reported severe chest pain, dyspnea, distress, and fatigue that may have made them worry. Subjects were worried because more than half of them had no knowledge of MI, but most of them had adhered to medication treatment. Additional item analysis revealed that they reported high scores on two particular items: ‘afraid for the future” and ‘many worries’. In addition, they felt worried about returning to their job, managing their treatment cost, maintaining family expense, and self-care.

Confronting moderate level of stress led subjects in this study to report they ‘sometimes used’ coping. Coping is a process that aims to reduce the level of stress and stress is the condition or circumstances with which a person might have to cope (Keil, 2004). Coping is a constantly changing cognitive and behavioural effort to manage specific external and or internal demands. Patients with MI use different types of coping strategies in different stressful
situations. Uses of different coping strategies can resolve or diminish stress. Jalowiec (2003), proposed eight coping styles. MI patients used: confrontive coping to solved problems; evasive coping to avoided feelings about problems; optimistic coping to think positively; fatalistic coping to feel pessimism and hopelessness; emotive coping to express feelings and make them easier; palliative coping to take action in order to feel well; supportant coping to use formal and informal support; and self-reliant coping to used depending more on one-self than on others to solve problems.

Results revealed that the use of supportant coping scored highest out of eight coping subscale (M = 18.20, SD = 4.78). Among the coping styles, supportant coping was often used by patients with experience of MI. MI has serious consequences for a patient’s physical, mental, and social health. They need support to cope to seriously reduce their stress, and to prevent further complications. One Swedish study indicates both women and men as most frequently using optimistic, self-reliant and confrontive coping, but supportant coping was more used by women (Kristofferzon, 2006). This result was partial in accord with this study. Items of supportant coping “Talked the problem over with family or friends” and “Prayed or put your trust in God”, the mean scores were higher (M = 2.33, and M = 2.80 respectively). This study revealed that the majority of the subjects (85.2%) were Muslim and they had religious beliefs. Sick persons share their feeling or suffering with their family member when deciding the next step or getting support. One study found that women tended to speak first to their son or daughter about their symptoms, while men spoke first to their wives (Aston, as cited in Kristofferzon, Lofmark, & Carlsson, 2003).

The Pearson product-moment correlation coefficient was used to examine the relationship between overall coping style, subscales of coping styles and overall stress and the subscales of stress. The results are presented in Table 3. It was found that there was no significant relationship between overall stress and overall coping strategies. This result was partly in accord with Kristofferzon’s (2005) study.

Among the stress subscales, joy had a negative significant relationship with overall coping and 4 out of 8 coping styles. This result indicated that the higher the joy score, the lower the use of coping. MI sufferers think their chest pain, distress, and dyspnea may come again. Adherence to continuous treatment makes the MI patients feel financial constraints and they feel
lack of joy. For the items of the joy subscale “You enjoy your life” the mean score was higher (M = 2.60, SD = .72). This indicated that patients with MI did not feel happiness. The study found that MI patients’ stress level were higher than their coping levels (Benedetto et al., 2007).

Conclusions

Stress reduction through effective coping is one of the nursing goals in providing care for patients with MI. The data derived from this study could be used as basic information to develop future stress reduction interventions for patients with MI. Nurses can provide information about the causes and consequence of MI to avoided negative feelings and think positively This study reveled that more than three-quarters of MI patient were at the moderate level of stress and sometimes used overall coping methods. Stress reduction intervention may help to reduce stress and minimize further complications or heart attack of patients with MI.

Recommendations

Nursing practices should implement comprehensive stress management programs to improved effective coping styles. In nursing education, the knowledge gained from this study could be beneficial for developing knowledge. This could be particularly useful for developing effective coping methods that could be used in caring for patients with myocardial infarction in Bangladesh. This study should be replicated on a regional or a national basis. The populations studied should be larger and more diverse to improve the generalizability of the findings.
References


Kristofferzon, M. L. (2006). *Life after myocardial infarction in Swedish woman and men: Coping, social support and quality of life over the first year*. Dissertations from the faculty of social sciences, Uppsala University, Sweden


