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Assess the stress and coping strategies among spouses of myocardial infarction survivors in a selected hospitals with a view to prepare an instructional module

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Abstract
Acute Myocardial Infarction is one of the leading causes of death worldwide, affecting over 3 million people each year and resulting in over 1 million deaths in the United States. Myocardial Infarction (MI) affects the entire family.
Aim: The study aims to assess the stress and coping strategies among the spouses of Myocardial Infarction survivors. Objectives: 1. Assess the stress among spouses of MI survivors. 2. Assess the coping strategies among spouses of MI survivors. 3. Assess the correlation between the stress and coping strategies among spouses of MI survivors. 4. Associate the level of stress among spouses of Myocardial Infarction survivors with their selected demographic variables. 5. Associate the level of coping among spouses of MI survivors with selected demographic variables.
Methods: Descriptive non-experimental research design was used. The conceptual framework was based on Roy's Adaptation Model. A total of 100 patients with spouses of Myocardial Infarction survivors were selected by purposive sampling technique. The investigator collected data using interview technique. The stress was measured using Perceived Stress Scale and coping strategies was measured using Brief Cope scale checklist. The data was analyzed using descriptive statistics (frequency distribution, mean and standard deviation) and inferential statistics (chi-square test).
Results: The findings revealed that 50(50%) had moderate stress, 47(47%) had severe stress and 3(3%) had mild stress among spouses of myocardial infarction survivors. The overall coping strategies revealed that, 96(96%) had average coping, 3(3%) had good coping and only 1(%) had poor coping among myocardial infarction survivors. The mean score of stress was 31.98±3.45 and the mean score of coping was 73.99±3.98. The calculated Karl Pearson's Correlation value r = -0.395 showed a negative correlation which was found to be statistically significant at p p<0.001 level.
Conclusion: It was found that 50% had moderate stress and 96% used emotion focused, coping strategies.

Keywords: Myocardial infarction, stress, coping strategies, spouses

Introduction

According to the worldwide burden of disease, cardiovascular heart disease accounts for over a quarter (24.8 percent) of all fatalities in India. The introduction of thrombolytic therapy, angioplasty, and by-pass procedures has revolutionized the management of coronary artery disease. Spouses take on more responsibility for patient care, even if they frequently believe they lack the requisite information or skills. Fears of MI among spouses, as well as insecurity about how to deal with the issue and the necessity to be alert at all times has a negative impact on their ability to cope.

Background of the Study

Patients and family members are in a state of crisis following a myocardial infarction as they try to reconcile the event's impact and adjust to the uncertainties of hospitalization and the initial healing period. (Fleury & Moore, 1999) [36]. the spouse's personal health, a terrible life experience in the previous year, and assistance from health care providers are all factors that influence worries. For both patients and their families, the experience of a cardiac episode is a significant cause of stress. After a MI, the patient's spouse plays an important part in his or her recovery and adaptation.

Need For the Study

There is a scarcity of nursing research on the coping and stress experiences of MI patients' spouses. From a nursing standpoint, it is critical to investigate the spouse's attitudes and coping resources following the patient's MI since they may have an impact on the patient's recovery, emotional adaption to the disease, and the entire family's coping with the changes caused by MI.

Statement of the Problem

A study to assess the Stress and Coping strategies among spouses of Myocardial Infarction survivors in a selected hospitals with a view to prepare an Instructional Module.

Objectives

- Objectives of the study were to assess the stress among spouses of Myocardial Infarction survivors.
- Assess the coping strategies among spouses of Myocardial Infarction survivors.
- Assess the correlation between the stress and coping strategies among spouses of Myocardial Infarction survivors.
- Associate the level of stress among spouses of Myocardial Infarction survivors with the selected demographic variables of survivors.
- Associate the level of coping strategies among spouses of Myocardial Infarction survivors with the selected demographic variables of survivors.

Hypothesis

- There will be a significant correlation between stress and coping strategies among spouses of myocardial infarction survivors.
- There will be a significant association between stresses of Myocardial Infarction survivors with the selected demographic variables of survivors.
- There will be a significant association between coping strategies of Myocardial Infarction survivors with the selected demographic variables of survivors.

Materials and Methods

- **Research design:** Non-experimental research design
- **Setting of the study:** Krishna hospital at Cuddalore
- **Population:** Spouses of myocardial infarction survivors
- **Sample:** Spouses of Myocardial Infarction survivors who were in cardiac OPD, Intensive care unit, Postoperative ward, Cardiac catheterization lab
- **Sample size:** 100
- **Sampling technique:** Purposive sampling technique

Sampling Criteria

Inclusion criteria

- Spouses who are available at the time of data collection.
- Spouses who are available in cardiology outpatient department.
- Spouses who are available with the patient at the time of discharge.
- Spouses of patients who are diagnosed with Myocardial Infarction or undergone any surgeries less than 2 years such as PTCA, CABG.

Exclusion criteria

- Spouses of Survivors who are diagnosed with other medical and psychiatric illness including substance abuse.

Tool for Data Collection

Section 1: Demographic variables of Myocardial Infarction survivors (15)

Demographic data consisted of age, gender, residence, occupation, marital status, education, socioeconomic status, family history, co morbidities, substance use, smoking history, psychiatric illness, prior/past illness history/medical history, surgeries/procedures undergone, and medication use before MI.

Section 2: Perceived Stress Scale Questionnaire (PSS)

The tool consisted of 10 questions. This tool was originally developed by Sheldon Cohen et.al. (1983) [37]. The tool used to assess the stress on spouse of Myocardial Infarction survivors. The inventory was scored by a five-point Likert scale ranging from never (= 0), almost never (= 1), sometimes (= 2), often (= 3), to very often (= 4). Reverse scoring was given to question numbers 4, 5, 7, 8.

0 = 4, 1 = 3, 2 = 2, 3 = 1, 4 = 0.

Section 3: Brief cope (coping orientation to problems experienced inventory)

This tool was originally developed by Carver (1997).The tool consisted of 28 self- report items to assess the coping strategies on spouse of Myocardial Infarction survivors. The scale determines coping styles with scores on the following three sub scales:

- Problem-focused coping
- Emotion-focused coping
- Avoidant coping.

Ethical Consideration

- Ethical Clearance was obtained from Institutional Ethics Committee of A.C.S Medical College and Hospital(No.303/2021/IEC/ACSMCHDt.10.08.2021)
- Informed written consent was obtained from the spouses of myocardial infarction survivors.
- The subjects selected for the study were assured of the confidentiality of the information provided to the investigator.

Pilot Study

- Pilot study was conducted at Krishna hospital for a period of one week.
- Permission was obtained from the Dr. Sr Krishna, M.S, Chief of the Hospital.
- Pilot study was conducted from 05.11.2021 to 11.11.2021 with 10 spouses of myocardial infarction survivors at Krishna hospital.
- The investigator felt to distribute a pamphlet on MI after data collection to the survivors.

Data Collection Procedure

The data collection period was from 12.11.2021-12.12.2021. Data was collected from spouses of Myocardial Infarction survivors from Krishna hospital Cuddalore as it was more feasible and accessible to the investigator. Written permission was obtained from the Dr. Sr Krishna Chief of the Hospital of Krishna hospital on 13.10.2021.

Scope of the study

The scope of the present study is to investigate the coping strategies and stress among spouses of MI survivors with a view to prepare an Instructional Module. This study will help to identify the coping styles adopted. This study will help to understand the level of stress, thereby enable the nurses to provide care accordingly.

Results

The table 1 showed that 40(40%) were between 50–55 years, 13% were between 35-45 years, 27% were aged

between 45-50%, 20% were aged between more than 55%. 53(53%) were male, 47% were female, 21% were residing in urban area, 79(79%) were residing in rural area, 33% were employed, 67(67%) were unemployed, 100(100%) were married, 69(69%) had primary school level of education, 14% had illustrate, 13% had secondary school level, 4% had graduate. 1% belonged to upper class, 38% belonged to upper middle, 11% belonged to upper lower, 50(50%) belonged to lower middle socioeconomic status, 16%, had consanguineous family history, 84(84%) had non-consanguineous family history. 3% had diabetes mellitus, 1% had renal problem, 96(96%) had hypertension as co-morbidity.49% no use of substances, 51(51%) consumes alcohol and smokes Beedi, 49% consumes cigarette. 100(100%) had no psychiatric illness. 41(41%) had MI as past medical history, 39% had angina, 20% others. 34(34%) had undergone stent replacement 3% had undergone bypass graft surgery, 32% had undergone coronary bypass grafting, 2% had undergone mitral valve replacement, 29% had undergone PTCA and 99(99%) had taken aspirin before MI, 1% had taken calcium channel blockers.

Table 1: Frequency and percentage distribution of demographic variables of Myocardial Infarction survivors.

Demographic Variables	Frequency	Percentage
Age		
35 – 45 years	13	13.0
45 – 50 years	27	27.0
50– 55years	40	40.0
>55 years	20	20.0
Gender		
Male	53	53.0
Female	47	47.0
Residence		
Rural	79	79.0
Urban	21	21.0
Occupation		
Employed	33	33.0
Unemployed	67	67.0
Education		
Illiterate	14	14.0
Primary school level	69	69.0
Secondary school level	13	13.0
Graduate	4	4.0
Socioeconomic status		
Upper class	1	1.0
Upper middle	38	38.0
Lower middle	50	50.0
Upper lower	11	11.0
Family history		
Consanguineous union	16	16.0
Non-consanguineous union	84	84.0
Co-morbidities		
Diabetes mellitus	3	3.0
Hypertension	96	96.0
Renal problems	1	1.0
Substance use		
Alcohol	51	51.0
No	49	49.0
Smoking		
Cigarette	49	49.0
Beedi	51	51.0
Prior/past illness history/medical history		
Previous MI	41	41.0
Angina	39	39.0
Others	20	20.0
Surgeries/procedures undergone		
Bypass graft surgery	3	3.0
Stent replacement	34	34.0
Coronary bypass grafting	32	32.0
Mitral valve replacement	2	2.0
PTCA	29	29.0
Medication use before MI		
Aspirin	99	99.0
Calcium channel blockers	1	1.0

Table 2: Frequency and percentage distribution of level of stress among spouses of Myocardial Infarction survivors

Level of Stress	Stress	
	F	%
Mild (≤50%)	3	3.0
Moderate (51 – 75%)	50	50.0
Severe (>75%)	47	47.0

The table 2 depicts that 50(50%) had moderate stress, 47(47%) had severe stress and 3(3%) had mild stress among spouses of Myocardial Infarction survivors.

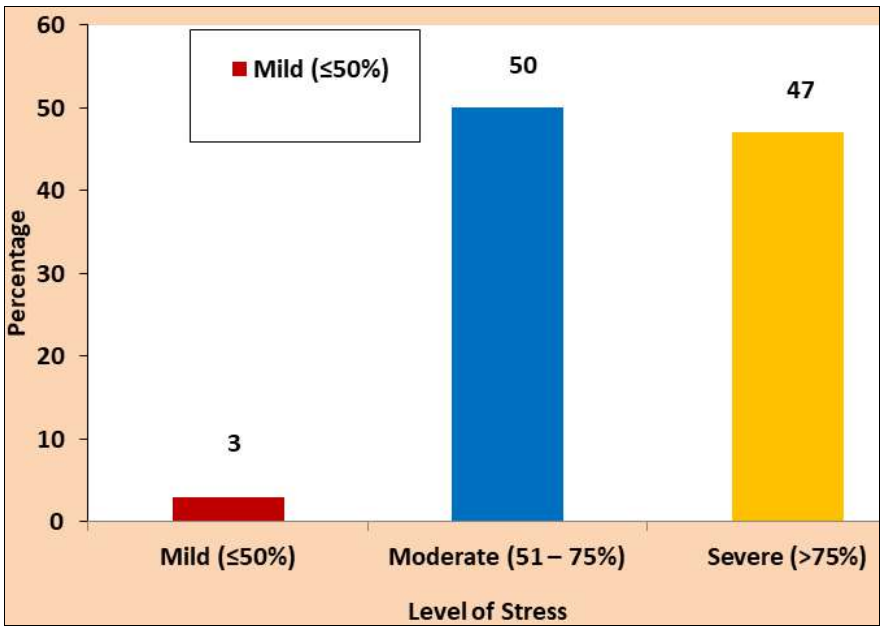

Fig 1: Level of stress

Table 3: Frequency and percentage distribution of level of type of coping strategies among spouses of Myocardial Infarction survivors.

Coping	Poor (≤50%)		Average (51–75%)		Good (>75%)	
	F	%	F	%	F	%
Problem – focused coping	1	1.0	8	8.0	91	91.0
Emotion – focused coping	0	0	99	99.0	1	1.0
Avoidant coping	94	94.0	6	6.0	-	-
Overall	1	1.0	96	96.0	3	3.0

The table 3 depicts that with respect to problem – focused coping 91(91%) had good coping, 8(8%) had average coping and only 1(1%) had poor coping.

With regard to emotion – focused coping, 99(99%) had average coping, 1(1%) had good coping.

Considering the avoidant coping, 94(94%) had poor coping and 6(6%) had average coping.

The overall coping strategies revealed that, 96(96%) had average coping, 3(3%) had good coping and only 1(%) had poor coping among myocardial infarction survivors.

With regard to level of coping strategies among the spouses of myocardial infarction survivors. Coped good with 91% using problem focused coping. Coped average with 99%using emotion focused coping whereas avoidant coping was poorly used (94%) which is a promising finding.

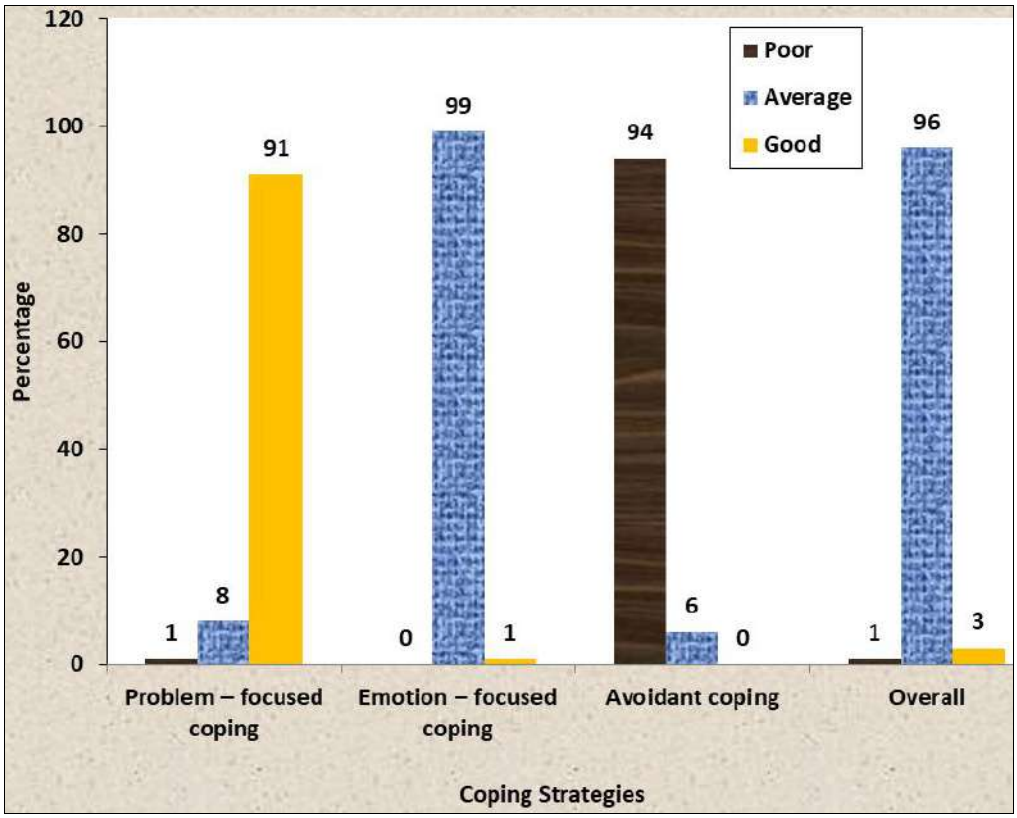

Fig 2: This table depicts that 99% were used emotion – focused coping

Table 4: Correlation between stress and coping strategies among spouses of Myocardial Infarction survivors.

Variables	Mean	S.D	Karl Pearson's Correlation 'r' Value
Stress	31.98	3.45	r= -0.395 p=0.0001 S***
Coping	73.99	3.98	

****p*<0.001, S – Significant

The table 4 depicts that the mean score of stress was 31.98±3.45 and the mean score of coping was 73.99±3.98. The calculated Karl Pearson's Correlation value of r = -0.395 shows a negative correction which was found to be statistical significant at *p*<0.001 level. This clearly infers that when the coping strategies among Myocardial Infarction survivors increase their stress level decreases.

Discussion

The first objective of the study was to assess the stress among spouses of myocardial infarction survivors

The present study revealed that with regard to the level of stress among the spouses of myocardial infarction survivors were 59(50%) had moderate stress, 47(47%) had severe stress and 3(3%) had mild stress among spouses of Myocardial Infarction survivors.

The present study findings are consistent with M al-hasan (2002) study on stress and stressors of myocardial infarction spouses in the early period after discharge in cardiology clinics of four public hospitals at Jordan. The findings were the majority of spouses were stressed to a moderate level, with 20% expressing severe levels of stress.

The second objective of the study was to assess the coping strategies among spouses of Myocardial infarction survivors

The present study findings revealed that with regard to the level of coping strategies among the spouses of Myocardial Infarction survivors problem focused coping was predominant 91(91%) had good coping, 8(8%) had average coping and only 1(1%) had poor coping. With regard to emotion–focused coping, 99(99%) had average coping, 1(1%) had good coping. Considering the avoidant coping, 94(94%) had poor coping and 6(6%) had average coping. The overall coping strategies revealed that, 96(96%) had average coping, 3(3%) had good coping and only 1(%) had poor coping among myocardial infarction survivors.

The present study findings are also consistent with the survey findings of coping strategies with stress in spouses with acute myocardial infarction and individuals without a history of fixed Myocardial Infarction done by Seyed Mahmood Sadr Bafghi *et al*. (2018) [25]. According to the findings, 118 spouses with MI (53.6%) chose an emotion-focused coping strategy. Ninety-seven MI spouses (82.2%) who used an emotion-focused coping approach reported a negative stress perception. Furthermore, 71 (60.2%) of MI spouses who adopted an emotion-focused coping approach reported extremely high stress levels. The majority of MI spouses were severely stressed, while the majority of the control groups were extremely stressed, according to the study. Most MI spouses who are stressed adopt an emotion-focused coping strategy, suggesting that stressed people are more likely to use inadequate coping strategies.

The third objective of the study was to assess the correlation between the stress and coping strategies among spouses of MI survivors

The present study revealed that the mean score of stress was 31.98±3.45 and the mean score of coping was 73.99±3.98. The calculated Karl Pearson's Correlation value of r = -0.395 shows a negative correction which was found to be

statistically significant at $p<0.001$ level. This clearly infers that when the coping strategies among myocardial infarction survivors increase their stress level decreases.

Present study findings are consistent with M. Asgar (2010) [6] a descriptive study "stress and coping of spouses with myocardial infarction in Bangladesh". MI spouses were found to have a moderate amount of stress, with 21.6 percent having a high level of stress. Overall, individuals said they used coping techniques on occasion, with supportive coping being the most common. There were no significant links discovered between stresses and coping. There were, however, some links discovered between total stress and tension sub scales, as well as positive coping.

The fourth objective of the study to associate the level of stress among spouses of Myocardial Infarction survivors with the selected demographic variables of survivors

The present study revealed that the demographic variable socio economic status (χ^2= 38.597, p=0.0001) had shown statistically significant association with level of stress among spouses of Myocardial Infarction survivors at $p<0.001$ level. The demographic variables substance use (χ^2=9.751, p=0.008), smoking (χ^2=9.751, p=0.008) and surgeries / procedures undergone (χ^2=20.456, p=0.009) had shown statistically significant association with level of stress among spouses of Myocardial Infarction survivors at $p<0.01$ level. The demographic variable gender (χ^2=6.579, p=0.037) had shown statistically significant association with level of stress among Myocardial Infarction survivors at $p<0.05$ level. The other demographic variables had not shown statistically significant association with level of coping strategies among Myocardial Infarction survivors.

The above findings were contradictory with the non-experimental descriptive exploratory research design study findings by Shilpa. S (2019) in Uttar Pradesh on stress and coping among post-myocardial infarction survivors. Results and conclusions were 63.3 percent of post- Myocardial Infarction survivors are stressed frequently, 33.3 percent are stressed occasionally, and 3.4 percent are stressed extremely. It demonstrates that patients were frequently stressed. 86.66 percent have average coping methods, whereas 6.67 percent have both inadequate and adequate coping strategies. There is a substantial relationship between post-MI survivors' stress levels and some demographic characteristics such as residency, worry about recurrent Myocardial Infarction, fear of death, and worry about financial loss (P value 0.05). There is a significant relationship between levels of coping behavior among post-MI survivors and some socio-demographic characteristics such residency and Myocardial Infarction history (P value 0.05). There is a strong relationship between post-MI survivors' coping behavior and their stress levels (P value 0.05).

The fifth objective of the study to associate the level of coping strategies among spouses of Myocardial Infarction survivors with the selected demographic variables of survivors

The present study revealed that the demographic variable age (χ^2= 13.285, p=0.039) had shown statistically significant association with level of coping strategies among spouses of myocardial infarction survivors at $p<0.05$ level. The other demographic variables had not shown statistically significant association with level of coping strategies among spouses of myocardial infarction survivors.

The above findings were contradictory in association of gender with the findings of a longitudinal descriptive study by which compared the perceived support, coping, social support and quality of life 1 month after myocardial infarction between men and women in Sweden. The results were women utilized more evasive and support coping strategies than males and evaluated psychologic aspects of heart disease as more difficult to handle. The physical and psychologic elements of quality of life were scored by women.

Conclusion

The findings of the study showed that 40(40%) of survivors were aged between 50-55 years, 38(38%) of spouses were aged between 55-65 years, 53(53%) were male, 79(79%) were from rural, 67(67%) were from unemployed background, in which 69(69%) were from primary school level and 50(50%) were from lower middle socioeconomic status, in which 84(84%) were from non-consanguineous union family history, 96(96%) had hypertension, 51(51%) had used alcohol substance use and Beedi, 41(41%) had history of previous angina, 34(34%) had underwent stent replacement therapies, 99(99%) had used aspirin. The study findings revealed that among 100 spouses of Myocardial Infarction survivors that 59(50%) had moderate stress, 47(47%) had severe stress and 3(3%) had mild stress among spouses of Myocardial Infarction survivors. Focused coping 91(91%) had good coping, 8(8%) had average coping and only 1(1%) had poor coping. With regard to emotion – focused coping, 99(99%) had average coping, 1(1%) had good coping. Considering the avoidant coping, 94(94%) had poor coping and 6(6%) had average coping. Calculated r values = -0.395 showed a statistically significant negative co-relation. This signifies that when the coping strategies increase their stress level decreases. With regard to gender had shown statistical significance association to stress at (χ^2=6.579, p=0.037) among spouses of myocardial infarction survivors at $p<0.05$ level whereas there was no statistical significant association to coping strategies. With regard to socio economic status had shown statistical significance association to stress at (χ^2=38.597, p=0.0001) among spouses of Myocardial Infarction survivors at $p<0.001$ level whereas there was no statistical significant to coping strategies among the spouses of Myocardial Infarction. With regard to substance use (χ^2=9.751, p=0.008), smoking (χ^2=9.751, p=0.008) and surgeries/ procedures undergone (χ^2=20.456, p=0.009) had shown statistical significant association to stress among spouses of myocardial infarction survivors at $p<0.01$ level whereas there was no statistical significant association to coping strategies among the spouses of Myocardial Infarction survivors. With regard to age there was a statistical significance association to coping strategies among Myocardial Infarction survivors at $p<0.05$ level whereas there was no statistical significance association to stress.

The investigator prepared a self-instructional module with the study findings and experience gained during interaction with the survivors among the spouses of myocardial infarction (Refer appendix). The study findings has brought

the types of coping styles and it was observed that problem solving coping was predominant. Nearly half of the spouses of Myocardial Infarction survivors had severe stress. Nurses should be more sensitive to the needs of the patients, spouses and be more supportive during the stay in hospital. The availability of a self-instructional module at the waiting area will enable patients and their spouses to enhance their coping strategies and deal with the challenging situation.

Nursing Implication

Nursing Practice

- Nurse can provide mass awareness program on cause, signs and symptoms Myocardial Infarction among spouses of myocardial infarction survivors to achieve a good standard of life.
- Nurses can provide a pamphlet (Instructional module) regarding the Myocardial Infarction.
- Nurses can create awareness regarding non-modifiable risk factors.

Nursing Education

- Nurse Educator should focus on assessment and level of knowledge regarding the psychological problems such as stress and coping strategies used by the spouses of Myocardial Infarction survivors who had been admitted in the hospital.
- Create awareness on various coping strategies by appropriate measures such as counseling, distributing pamphlets etc.

Nursing Administration

- Sensitize nursing students, staff regarding psychological problems faced by the spouses of Myocardial Infarction survivors.
- Initiate display of awareness boards regarding non-modifiable life style modifications in appropriate causes namely OPD, cardiac catheterization lab.

Nursing Research

- The present study is an attempt to assess the stress and coping strategies among spouses of Myocardial Infarction survivors which will be a valuable reference material for further researchers.
- Qualitative research can be undertaken to assess stress and coping among survivors of MI patients.

Limitations

- The research was only conducted among spouses of Myocardial Infarction survivors.
- The research was done only in one hospital.
- The data was collected using self-report.

Recommendations for further study

- Use relaxation techniques as an intervention to relieve psychological issues among the spouses of Myocardial Infarction survivors.
- Stress, coping, depression, anxiety among spouses of Myocardial Infarction survivors can be explored qualitatively.
- Similar study can be conducted in qualitatively among the spouse of Myocardial Infarction survivors to explore the types of coping and stress.
- Sessions on stress management and coping strategies can be conducted for spouses of MI survivors and evaluation can be done.

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