

## Illness Perception And Its Relationship With Readiness To Change In Post Myocardial Infarction Patients

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### Abstract:

**Background of the study:** Surviving a Myocardial Infarction is often the beginning of a long period of rehabilitation. Illness perceptions are the organized cognitive, emotional representations or beliefs that patients have about their illness. These perceptions have been found to be important determinants of behaviour and outcomes. Change processes are overt and covert activities that individuals engage in when they attempt to modify problem behaviours. Assessing patient's readiness to change aids in understanding the stages of change and to intervene appropriately steering towards healthful practices.

**Aim:** This study aims to assess Illness perception, readiness to change and its relationship in post myocardial infarction patients

**Method:** A descriptive study was undertaken for a period of six weeks in inpatient and outpatient department of Cardiology of CMC, Vellore. A total of 150 patients were selected using consecutive sampling technique. Patients with critical illness, psychiatric illness and co morbid illness except diabetes mellitus and hypertension were excluded from the study. A standardized self-administration questionnaire Brief Illness Perception Questionnaire (BIPQ) and University of Rhode Island Change Assessment scale (URICA) was used to assess the illness perception and readiness to change in post MI patients.

**Results:** The findings of the study reveals that the mean age group of the subjects was  $59.69 \pm 8.99$ . The total BIPQ score was  $20.31 \pm 4.89$ , denoting overall low negative illness perception. Majority (88%) of the subjects were in action stage of readiness to change. There was a significant negative correlation between illness perception and readiness to change ( $r = -0.39, p < 0.001$ ). There was no significant difference of illness perception and readiness to change between the comparison of selected clinical and demographic variables.

**Conclusion:** This study enables the health care providers to understand the relationship between the illness perception and readiness to change. Assessing the illness perception and readiness to change should become an integral component in determining the treatment outcomes.

**Key Word:** Illness perception, Readiness to change, Post MI patients, BIPQ, URICA.

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### I. INTRODUCTION

In recent evolutionary past in field of health care, Myocardial Infarction (MI) is the leading cause of morbidity and mortality globally. The Global Burden of Disease (GBD) study done in 2013, reveals that about 8.6 million myocardial infarctions have occurred worldwide. After undergoing the rapidly successive physical symptoms of MI which also include, anxiety and fear of impending doom, the few patients who survive the event undergo a recovery process which is a vulnerable period both physically and emotionally (Lauwalker, 2007). The booming of MI has led to the occurrence of vast layers of lifestyle changes and modifications such as periodic checkups, investigations, and adherence to the therapeutic regimen, to sustain the life and productivity. It has been a challenge for each patient who undergoes this life-threatening event to maintain a positive perception of illness based on the availability of information to adapt to the changes in behaviour. Illness perception has been found to be an important determinant of behaviour and has been associated with treatment adherence and functional recovery (Hirani, 2006). Patient's own perceptions about health and illness may influence their rehabilitation and recovery process (Whitmarsh et al., 2003; French et al., 2006)

Another integral concern that haunts the mind and life of post MI patients but remains unexpressed is their state of readiness to change. Readiness to change (RTC) is the ability of a person to continuously initiate

and respond to desired positive change in ways that create advantage, minimize risk, and sustain performance. Assessing RTC aids in understanding the stages of change and implementation of appropriate interventions steering towards healthful practices. Indeed, the personal experience of the investigator in witnessing the challenges faced by post MI patients, their struggle in perceiving the illness, giving away past habits, modifying lifestyle and adhering to the therapeutic regimen specific to medication, diet and exercise, which exhibits their readiness to change towards their illness has provoked her to further explore the entreaties. Therefore, looking into the relationship of illness perception with readiness to change in post MI patients is the interest of this study.

## **II. OBJECTIVES OF THE STUDY**

1. To assess the illness perception in post myocardial infarction patients.
2. To assess the readiness to change in post myocardial infarction patients.
3. To determine the relationship between illness perception and readiness to change in post myocardial infarction patients.
4. To compare illness perception and readiness to change based on demographic and clinical variables in post myocardial infarction patients

## **III. HYPOTHESIS**

The p value < 0.05 is considered to be significant for testing hypothesis in the present study.

- H1: There is a significant relationship between illness perception and readiness to change in post myocardial infarction patients.
- H2: There is a significant difference in the illness perception and readiness to change of post myocardial infarction patients based on their demographic and clinical variables.

## **IV. METHODOLOGY**

**Approach and research design:** Quantitative research approach with descriptive correlational study design was used.

**Settings of the study:** The study was conducted in the inpatient and outpatient department of cardiology, Christian Medical College, Vellore.

**Study duration:** The study was conducted for a period of six weeks from 15.01.2018 to 25.02.2018.

**Sample:** A total of 150 subjects who fulfilled the inclusion criteria were selected using consecutive sampling technique.

### ***Inclusion criteria:***

Post myocardial infarction patients who fulfilled the following inclusion criteria were selected

- Those able to read and write either in English/ Hindi/ Telugu/ Tamil or Bengali.
- Those who have completed a minimum period of one year after myocardial infarction and currently on treatment.
- Those who have ST elevation myocardial infarction (STEMI).

### ***Exclusion criteria:***

Post myocardial infarction patients who had the following criteria were excluded

- Those who had critical illness.
- Those diagnosed with psychiatric illness.
- Those who had co morbid illness except diabetes mellitus and hypertension.

### ***Procedure methodology:***

The hospital numbers registered for next day's OPD visit were collected by the investigator and viewed in the medical records department (MRD) to ensure that the subjects fulfilled the inclusion criteria. The ensured charts were marked to enable the Medical Records Officer (MRO) to inform the investigator when the patients reported to the MRO counter of OPD. And for in patients, the investigator went through the charts, identified post myocardial infarction patients and checked the eligibility that fulfilled the inclusion criteria. Consecutive sampling technique was used to choose the subjects. The investigators identified the subjects, introduced herself to them, developed a good rapport and explained the need and purpose of the study. A written consent in their respective languages was obtained from the subjects who agree to participate in the study. The tool was translated to Tamil, Hindi, Telugu and Bengali and back translation was done. The demographic and clinical proforma, The Brief Illness perception Questionnaire and University Rhode Island Change Assessment Scale were administered and collected data as self-reported questionnaires. The patients were given adequate privacy

and time to clarify their doubts. The time taken for each participant to fill the questionnaire required a minimum of 30 minutes.

**Statistical analysis:**

The data were analysed using the Statistical Package for Social Sciences (SPSS) Version 17.0 for windows. Descriptive statistics for categorical variables were presented using frequency and percentage, while mean, standard deviation and median (IQR) were used for continuous variables to describe the demographic and clinical variables. The total illness perception score of the post MI patients was calculated by adding the individual question mean. The readiness to change in post MI patients was assessed and the category to which they belong was identified. The relationship between illness perception and readiness to change in patients was presented by comparing the total BIPQ score with readiness to change using Pearson correlation coefficient test. The comparison of the clinical and demographical variable with illness perception score and readiness to change was analysed using independent t test for two categories, ANOVA for more than 2 categories and Chi square test. The “p” value < 0.05 was considered as statistically significant for the present study.

## V. DESCRIPTION OF THE INSTRUMENTS

The instruments comprise of the following parts:

**Part I:**

Proforma on the demographic variables included age, gender, marital status, education, monthly income, occupation, type of family and residence. And clinical variables included onset of illness, time of diagnosis, treatment, prior hospitalization, compliance to medication, diet, exercise and health education on medication, diet and exercise.

**Part II:**

It includes two sections.

**Section A:**

The Brief Illness Perception Questionnaire (BIPQ) which was developed from Illness Perception Questionnaire Revised (IPQ-R) was used to identify the illness perception in this study. It is an eight-item scale, ten point rating scale which was designed to rapidly assess the cognitive, emotional representations of illness and comprehension of the disease.

Scoring and interpretation was done as follows:

- The cognitive perception of the disease (items 1,2,3,4 and 5).
- The emotional perception of the disease (items 6 and 8).
- The comprehension of the disease includes (item 7).
- Item no. 3 , 4 and 7 were reverse scored

The total illness perception score was calculated by adding up the individual question mean. The maximum total score is 80 and the minimum total score is 0. High score indicates high negative illness perception and low scores low negative illness perception.

**Section B:**

The University of Rhode Island Change Assessment Scale (URICA) questionnaire designed to measure the stages of change was used to assess the readiness to change. It is a 32- item, five point rating instrument. It has four sub scale stages- Precontemplation, contemplation, action, and maintenance.

Scoring and interpretation was done as follows:

- Pre-contemplation subscale (items 1, 5, 11, 13, 23, 26, 29, and 31).
- Contemplation sub scale (items 2, 4, 8, 12, 15, 19, 21, and 24).
- Action sub scale (items 3, 7, 10, 14, 17, 20, 25, and 30).
- Maintenance sub scale (items 6, 9, 16, 18, 22, 27, 28, and 32).

Each item was scored on a scale of one to five. The formula given by the author, below, was used to compute the scores. The first step used to calculate readiness to change was to get the mean for each subscale. Then, the mean of Precontemplation (PC) was subtracted from the sum of the mean of subscales - contemplation(C), Action (A) and maintenance (M). i.e. Readiness to change = ( C + A + M) - PC .

**Table 1: The readiness to change score:**

S.no	Subscales	Score
1	Pre-contemplation	< 8
2	Contemplation	8 – 11
3	Action	11 – 14
4	Maintenance	>14

**Ethical considerations**

The study was performed after getting approval from the Research committee of the College of Nursing, Christian Medical College, Vellore. A written informed consent was obtained from participants in a language known to them after explaining the purpose of the study. Privacy of the subjects and confidentiality of the information was maintained throughout the study and information gathered was utilized only for the research purpose.

**VI. RESULTS**

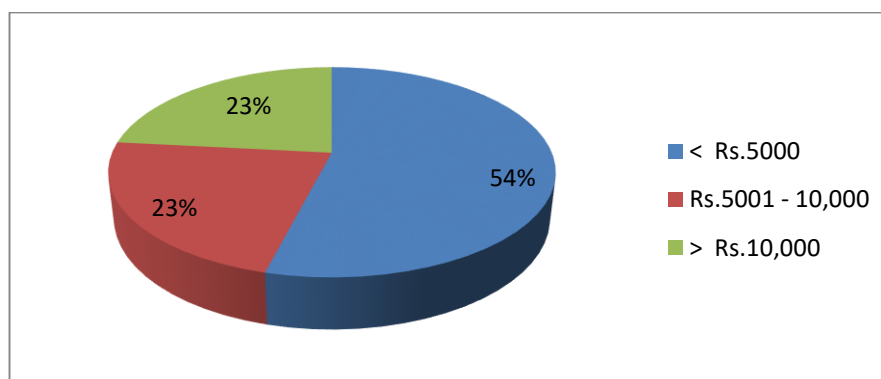
The results are represented in tables and figures under the following parts and sections:

**Part 1: Distribution of subjects based on demographic and clinical variables**

**Table 2: Distribution of the subjects based on demographic variables**

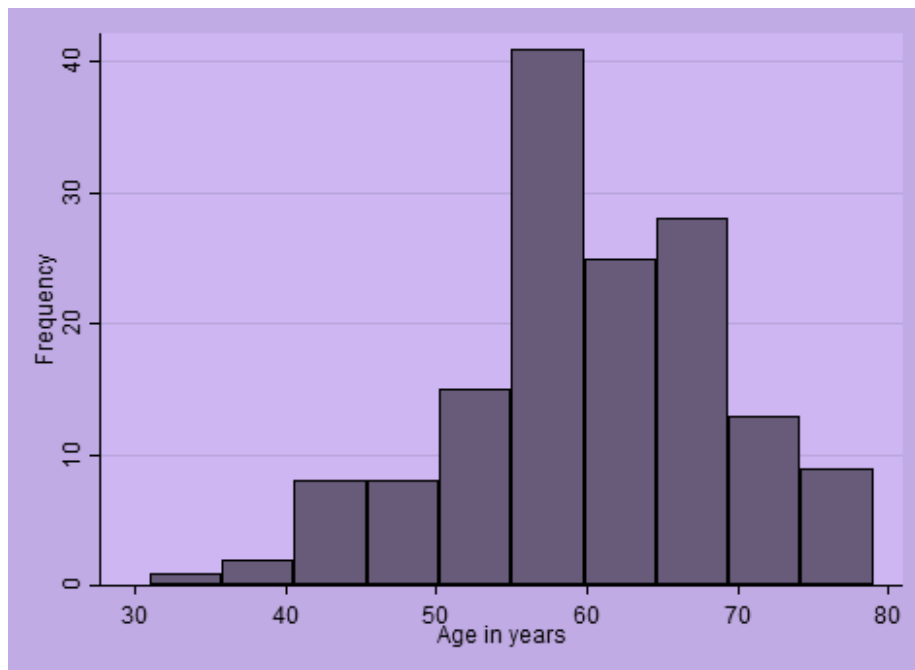
S.No	DEMOGRAPHIC VARIABLES	Number (n)	Percentage (%)
1	Gender		
	• Male	131	87.3
	• female	19	12.7
2	Marital status		
	• Married	143	95.3
	• Unmarried	3	2.0
	• Widowed	4	2.7
3	Education		
	• Primary school	70	46.7
	• High school	58	38.7
	• Graduate	22	14.6
4	Occupation		
	• Skilled	20	13.3
	• unskilled	130	86.7
5	Type of family		
	• Nuclear	112	74.7
	• Joint	38	25.3
6	Residence		
	• Urban	51	34
	• Rural	99	66

**Table 2** shows that the majority (87.3%) of the subjects were male, 95.3% subjects were married and only 46.7 % of them had primary school education of which the majority (86.7%) were unskilled by occupation. Most of the subjects (74.7%) were from nuclear families of which 66% hail from rural area.



**Figure 1: Distribution of subjects according to family monthly income**

**Figure 1** illustrates that the majority of the subjects family monthly income was less than Rs.5000. And the median and IQR (Q1 & Q3) family monthly income of the subjects was 5000 (3000, 1000).



**Figure 2: Distribution of subjects according to age**

**Figure 2** reveals that majority of the subjects were in the age group of 55 to 60 years. The mean age group of the subjects was  $56.69 \pm 8.99$ .

**Table 3: Distribution of subjects based on clinical variable**

S.no	Clinical variables	Number (n)	Percentage (%)
1	Onset of illness		
	• 1 – 5 Years	101	67.4
	• 6 – 10 years	29	19.3
2	Time of diagnosis		
	• 1 – 5 Years	69	46
	• 6 – 10 years	43	28.7
3	Prior hospitalization		
	• Yes	150	100
4	Compliance to medication		
	• Yes	141	94
5	Compliance to exercise		
	• No	9	6
6	Compliance to diet		
	• Yes	86	57.3
7	Health education on medication		
	• No	64	42.7
8	Health education on diet		
	• Yes	121	80.7
9	Health education on diet		
	• No	29	19.3
10	Health education on medication		
	• Yes	150	100
11	Health education on diet		
	• Yes	138	92
12	Health education on diet		
	• No	12	8
13	Health education on diet		
	• Yes	140	93.3
14	Health education on diet		
	• No	10	6.7

**Table 3** reveals more than half of the subjects (67.4%) had the onset of illness between 1 to 5 years. All the subjects (100%) had prior hospitalization and received treatment. It is also evident from the above table that most of the subjects (94%) were compliant to the medication, while more than half of the subjects (57.3%)

were compliant to exercise and 80.7% were compliant to diet. The table also shows that 100% subjects were given health education on diet, where as 92% received education on exercise, and 93.3% on diet.

**Part II**

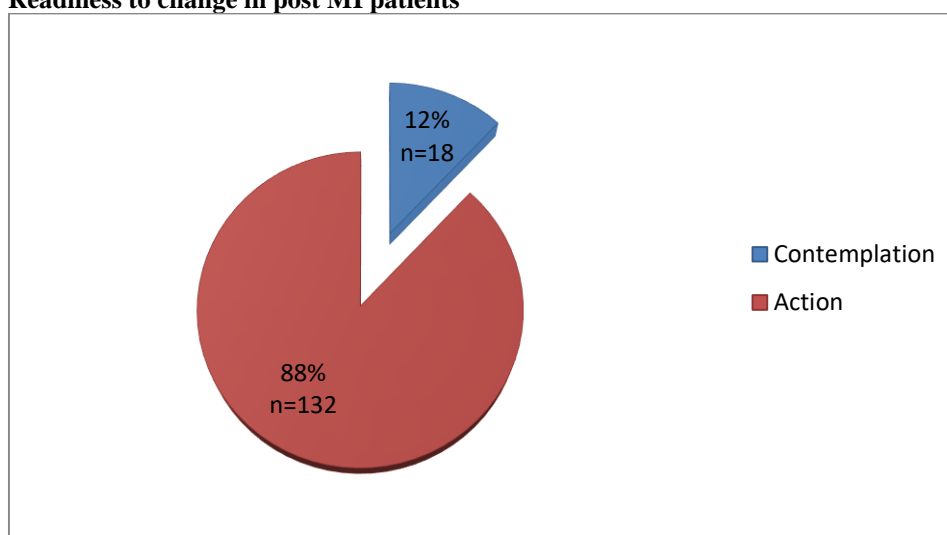
**Section A: Illness perception in post MI patients**

**Table 4: Illness perception mean scores of the subjects according to the components of Brief Illness Perception Questionnaire**

S.no	Illness perception components	Mean	SD	Minimum	Maximum
1	Cognitive perception	12.83	3.31	6.00	27.00
2	Emotional perception	4.69	2.17	1.00	13.00
3	Comprehension of disease	2.80	1.03	1.00	6.00
	Total BIPQ	20.32	4.89		

**Table 4** shows that the total BIPQ score was  $20.32 \pm 4.89$  respectively.

**Section B: Readiness to change in post MI patients**



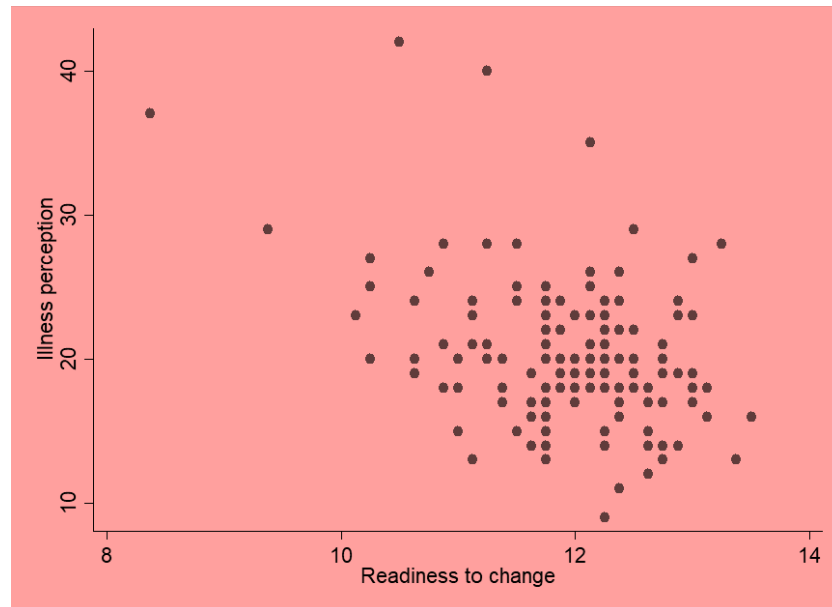
**Figure 3 Distribution of subjects based on readiness to change**

**Figure 3** depicts that 88% of subjects are in action stage and 12% are in contemplation stage of readiness to change.

**Table 5: Readiness to change mean scores on University of Rhode Change Assessment Scale (URICA)**

S.no	Readiness to change	Mean	SD	Minimum	Maximum
1	Precontemplation	-	-	-	-
2	Contemplation	10.44	0.66	8.38	11
3	Action	12.17	0.52	11.13	13.50
4	Maintainance	-	-	-	-

**Table 5** shows that majority (88%) of the subjects were in action stage with mean of  $12.17 \pm 0.52$  and 12% of the subjects were in contemplation stage with mean of  $10.44 \pm 0.66$  of readiness to change.



**Figure 4. Relationship between illness perception and readiness to change**

**Figure 4** depicts that there is a significant negative correlation between negative illness perception and readiness to change ( $r = -0.391$ ;  $P < 0.001$ ).

## VII. DISCUSSION

**The first objective of the study was to assess the illness perception in post myocardial infarction patients.**

Table 2 depicts that the total Brief Illness Perception Questionnaire (BIPQ) score was  $20.31 \pm 4.89$ . Therefore, this study infers that the patients overall had low negative illness perception. Dissonant findings were identified in a study conducted to identify the influence of non-modifiable illness perceptions on attendance at cardiac rehabilitation which reported a higher total illness perception score i.e. high negative illness perception (Blair J et al. 2013). The present study findings could be due to appropriate health education and timely clarification of doubts provided by the health care personnel's in the institution.

The cognitive and emotional component of the tool constitutes to the subjective assessment of perceived severity in this study. The mean of the cognitive perception was  $12.83 \pm 3.32$ , which implies that the subjects did not perceive their MI very negatively. And the emotional perception was  $4.69 \pm 2.17$ , which states that the subjects did not have high negative reactions like fear, anger, and distress generated due to their MI. The comprehension of disease component of the tool points to perceived susceptibility. In this study the mean score of comprehension of the disease was found to be  $2.80 \pm 1.03$ , which shows that the subjects perceived lesser risk, therefore it implies that there was less likelihood for subjects to engage in risk reduction behaviour.

**The second objective of the study was to assess the readiness to change in post Myocardial infarction patients.**

Table 3 reveals that 12% of subjects were in the contemplation stage which implies that they have begun to think about changing their behaviour pertaining to adherence to medications, diet and exercise regimen. While, 88% were in action stage, implementing the advised changes in adherence to the above mentioned behaviours. The findings are dissonant in a cross-sectional study done on 111 patients with heart failure to assess their stages of readiness to change on planned physical activity revealed that 12 patients were in precontemplation, 29 in contemplation, 30 in preparation, 20 in action and 20 in maintenance stages and concluded that majority of the patients are in a preparation stage of readiness to change (Sheelagh et al. 1998).

A critical issue in current health promotion is non-adherence and sedentary lifestyle which has been linked with various health problems. Multiple factors such as motivation and encouragement from the health care providers to adhere to the prescribed regimen on medication, diet and exercise, aided by effective health education which the present study findings revealed could have played a role in progressing the subjects to the action stage of readiness to change.

**The third objective of the study was to determine the relationship between illness perception and readiness to change in post myocardial infarction patients**

In this study the Pearson correlation coefficient was used to find the relationship between illness perception and readiness to change. Table 4 reveals that there is a statistically significant negative correlation between illness perception and readiness to change with  $r = -0.391$  and  $p$  value less than 0.001. In other words, the lower the BIPQ score, the lesser the negative illness perception is, which in turn relates to greater readiness to change. Therefore, the patients who had less illness perception scores were ready to change their behaviour towards adherence to medications, diet and exercise recommendations.

Thus, the present study findings supported the first research hypothesis (H1). Conversely, the results are comparable with previous studies done on alcohol dependence and illness perception by Stewart (2007) which similarly found that higher illness perception scores were associated with decreased readiness to change.

**The fourth objective of the study was to compare illness perception and readiness to change in post myocardial infarction patients based on demographic and clinical variables.**

The comparison of illness perception and readiness to change with demographic and clinical variables were established using Chi square, independent t test and ANOVA. The study reveals that there is no statistical evidence of a significant difference between illness perception and readiness to change with the selected demographic and clinical variables. The present study findings rejected the second hypothesis (H2).

### **VIII. CONCLUSION**

The illness perception and readiness to change are important indicators that determine the patient's clinical outcomes. It is evident from the study findings that low negative illness perception relates with increased readiness to change. Nurses need to be aware that the illness perceptions of patients are significantly influential in determining the outcomes and their steps towards change, therefore identifying at an early stage and intervening appropriately is a need which should be done on a daily bases. And with this added knowledge of research, the nurses can educate the post MI patients, support them on necessary lifestyle changes, clarify misconceptions and intervene appropriately as needed to promote readiness to change. The study also fills the gap in the paucity of research on knowing the relationship between the illness perception and readiness to change in post MI patients.

### **IX. RECOMMENDATIONS**

Similar study can be done in larger samples at various points of treatment course.

### **X. CONFLICT OF INTEREST**

The authors have declared no conflict of interest

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