

## FATE CONTROL, HARDINESS, AND WELLBEING AMONG THE PATIENTS OF MYOCARDIAL INFARCTION: THE MEDIATING ROLE OF GRATITUDE AND RESILIENCE

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### Contribution

MZK conceived the idea and collected data. SSB designed and supervised the study. Manuscript writing was done by MZK and SSB. All the authors contributed equally to the submitted manuscript.

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## ABSTRACT

**Objective:** the objective of the study was to assess the relationships between fate control, hardiness, and wellbeing among the patients of myocardial infarction, with the mediating role of gratitude and resilience.

**Methodology:** The cross-sectional research design was used to assess the relationship between the variables. The sample comprised of 150 cardiac patients included (male =111 and female =39), with the age range from 18 to 70 years. Informed consent were taken and confidentiality was ensured. The data were collected through valid and reliable indigenously translated instruments. Furthermore, data were analyzed through using SPSS-23 and AMOS-21.

**Results:** The mean age of the study participants was  $39 \pm 7.6$  years. The results showed that fate control and hardiness were significantly correlated ( $p < .05$ ) with wellbeing in cardiac patients. Furthermore, Path analysis through structure equational modeling revealed that resilience and gratitude mediated the association between fate control, hardiness, and wellbeing ( $X^2(1) = 3.01, p = .05, CFI = .96, GFI = .96$ ). However, the wellbeing of the patients in the mediational model appeared to be statistically significantly influenced by the age as a covariate.

**Conclusion:** The adaptive functions of fate control, and hardiness as a cognitive defensive mechanism, and highlight the need to incorporate this cultural belief in developing culturally sensitive intervention programs to enhance resilience and wellbeing of the patients with myocardial infarction.

**Keywords:** Myocardial Infarction, Fate Control, Hardiness, Wellbeing of Cardiac Patients.

## INTRODUCTION

Health psychology helps us in knowing the psychobiosocial causes of diseases and suggests ways to improve the quality of life after being diagnosed with a terminal illness and during its treatment based on this knowledge, a plan for prevention and further treatment can be made.<sup>1</sup> Our behavior towards health can help in improving the responses of not just one person but the whole society. It has been observed that people undergo mental breakdown and psychological suffering after being treated for chronic diseases like coronary heart diseases, cancer or kidney diseases. By improving the psychological state of the patients, we can help them to improve their quality of life thus they can easily deal with problems without having distress or suffering.<sup>2</sup>

Myocardial infarction is a severe condition that arises when blood supply to the heart is unexpectedly interrupted that caused tissues damage of the heart. It also accrues due to coronary heart diseases, the most common symptoms including heartburn, cold sweat, shortness of breath, feeling faint, nausea, and feeling tired.<sup>3</sup> Risk factors considered for myocardial infarction including severe anxiety, depression, psychological distress, aggression, hostility, family history, social isolation, lack of support, negative emotions, mood disorders, life's traumatic events and other crises.<sup>4</sup>

Indigenous researches unveiled number of deaths per year in Pakistan due to cardiac diseases, that has reached about 200,000.<sup>5</sup> Joshi et al.<sup>6</sup> identified the rate of myocardial infarction in South Asian (Pakistan, Indian, Bangladesh, Sri Lanka, and Nepal). Findings indicated that rate of myocardial infarction is high in younger individuals, however, the reason was unrevealed.

Leung et al.<sup>7</sup> reported fate control as the force which is outside of our control that makes things happen (i.e., matters of life and death, characteristics of an individual, physical appearance) and life's disastrous events determined by these forces. There are two components of fate: fate determinism (predetermined nature of fate) and fate alterability (fate can be perceived to be alterable using certain means). Fate control is a multidimensional construct, having three independent domains (i.e., inner, powerful other, and chance). Fate is a combination of those factors and powers that are beyond the power of individuals to control. The important circumstances of person's life, such as illnesses over which a person has no control, people's parentage, heredity, place of birth and social economic status of his parents, these factors are playing significant role in his/her life is called fate control.

By using meta-analysis Bartone et al.<sup>8</sup> suggested that hardiness is commonly thought of as being analogous to

psychological resilience, but although they are similar, there are a few key differences between the two. Hardiness is currently considered as personality trait, whereas resilience is more of a defense mechanism or process that one undergoes. Hardiness focuses more on the endurance when a situation is tough, and resilience focuses more on the afterthought, or the capacity to recover after difficulties.

Psychological wellbeing is an essential aspect of individual's life. The conceptual framework of psychological wellbeing includes self-acceptance, positive relationship with others, environmental mastery, autonomy, purpose in life and personal growth. Well-being, which refers to an individual's subjective evaluation of their life situation as a whole, has often been considered an important aspect of quality of life as well as an indicator of successful aging.<sup>9</sup>

Gratitude refers to as a quality to being grateful, or thankful, able to appreciate people, events, situations, and grateful to a wide variety of people. It is also defined as a "habit, moral virtue, personality trait, emotion, attitude, and coping response".<sup>10</sup> Gratefulness is the appreciation, recognition, and admiration of a gift. Gratitude is necessary or specific trait to achieve the self-actualizational tendencies, because in this situation the individual feels pleasure and conduct it in the repeating manners.<sup>11</sup>

Resilience is defined as a process of adapting well in the face of adversity, trauma, tragedy, threats or significant sources of stress, such as family and relationship problems, serious health issues and financial stressors.<sup>12</sup> According to an indigenous research conducted in Pakistan, resilience is beneficial in coping and fast healing for heart disease as resilient people had the capacity to bounce back from stressful events. Trait resilience was negatively associated with patients of myocardial infarction and resilient people tend to recover better from cardiovascular diseases than less resilient people.<sup>13</sup>

In view of the literature, the study was conducted to achieve following objectives;

1 - To assess the associations of fate control, and hardiness with wellbeing, gratitude and resilience in patients with myocardial infarction.

2 - To study the mediating role of gratitude and resilience in the relationship between fate control, hardiness and wellbeing.

Following hypotheses were tested via statistical analyses;

1 - Fate control, and hardiness are positively associated with wellbeing, gratitude and resilience in patients with myocardial infarction.

2 - Gratitude and resilience mediate the relationship between fate control, hardiness and wellbeing.

## METHODOLOGY

The cross-sectional correlational research design was used. Furthermore, for the statistical analyses and to explore the mediational effects SPSS-23 and AMOS-21 were used.

**Sampling:** A purposive sampling technique was applied to recruit the sample from the patients of the different government and private hospitals of Lahore (i.e., Punjab Institute of Cardiology, Gulab Devi Chest Hospital Cardiac Center, Jinnah Hospital Cardiac Center, Al-Umer Hospital, Army Cardiac Center, and Surgimed Hospital Lahore).

**Research Instruments:** For the understandability of the patients, to exploring the underlying construct, and to avoid any misconception, indigenously translated (Urdu) versions of the scales were used for data collection from the cardiac patients.<sup>14</sup>

**Short Hardiness Scale:** It was used to determine the patient’s capacity to bear of health-related problems in the perspective of commitment, control and challenge. The Alpha reliability of the scale was  $\alpha = 0.8315$  and Urdu

**Table 1: Reliability of the Research Instruments**

Measures (N=150)	$\alpha$
Fate Control Scale	0.90
Short Hardiness Scale	0.70
Psychological Wellbeing Scale	0.90
Gratitude Questionnaire	0.70
Brief Resilience Scale	0.71

*Note:*  $\alpha =$  Alpha Reliability. All instruments have promising alpha reliability values. translated version is  $\alpha = 0.87$ .<sup>14</sup>

**Table 2: Correlation among Fate Control, Hardiness, Gratitude, Resilience, and Wellbeing**

Variable	1	2	3	4	5
1. Fate Control	---	0.18*	0.27**	0.25**	0.20*
2. Hardiness		---	0.54**	0.27**	0.18*
3. Wellbeing			---	0.52**	0.30**
4. Gratitude				---	0.21**
5. Resilience					---
M (SD)	62.39 (15.09)	26.43 (6.319)	42.49 (8.64)	31.30 (6.30)	18.64 (4.42)

*Note:* \*\*  $p < .01$ , \*  $p < .05$ , Significant at two-tailed

**The Fate Control Scale:** It was used to measure the beliefs of the cardiac patients regarding their illness, precautionary

**Psychological Wellbeing Scale:** This scale was used to

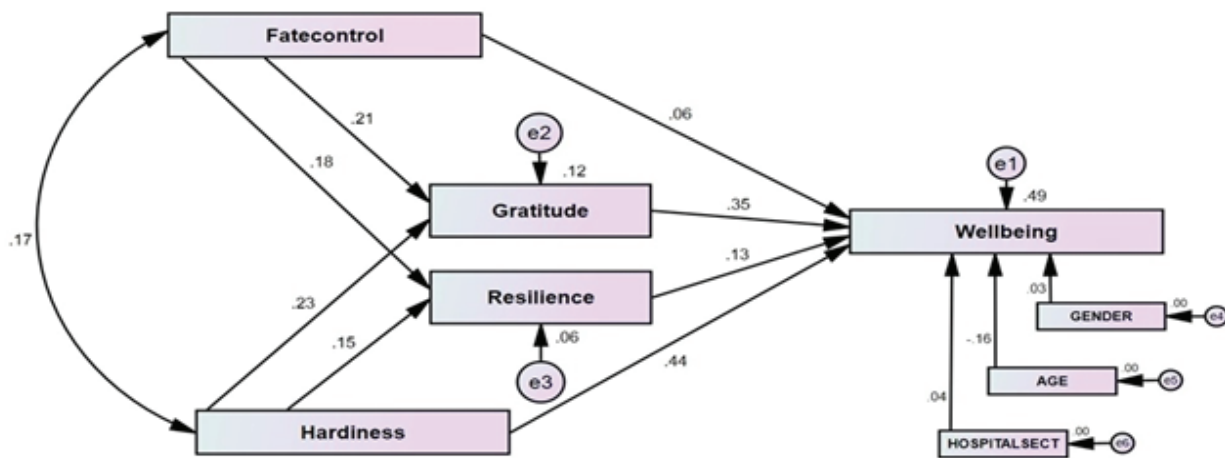


Figure 1. Standardized Two-way Mediation Model Gratitude and Resilience as Mediators between the Relationship of Fate Control, Hardiness, and Wellbeing Under the Influence of Covariates

measures against diseases and treatments. The overall reliability of the scale is  $\alpha = 0.847$  and translated version is  $\alpha = 0.65$ .<sup>14</sup>

measures the complete state of wellbeing and different aspects of life such as relationship, self-esteem, purpose in life and optimism level in patients. Moreover, reliability of the

**Table 3: Standardized Mediation Effect of Gratitude and Resilience between Fate Control and Wellbeing, Hardiness and Wellbeing**

X to Y	Mediator	Indirect effect	$\beta$	95% CI	
				LL	UL
Fate Control → Wellbeing	Gratitude	(.21**, .35**)	.06 <sup>ns</sup>	.08	.18
Fate Control → Wellbeing	Resilience	(.18*, .13*)	.06 <sup>ns</sup>	.10	.20
Hardiness → Wellbeing	Gratitude	(.23**, .35**)	.44**	.08	.18
Hardiness → Wellbeing	Resilience	(.15 <sup>ns</sup> , .13*)	.44**	--	--

Note: \*\*  $p < .01$ , \*  $p < .05$ , ns = Non-Significant; Bootstrap sample size = 2000.  $\beta$  = Regression Coefficient (Standardized direct effect). 95% CI for Indirect effect (all significant at .01).

scale ranging from  $\alpha = 0.78$  to  $0.95$  respectively<sup>16</sup> and Urdu translated version is  $\alpha = 0.80$ .<sup>26</sup>

**The Gratitude Questionnaire:** A self-report questionnaire was designed to measure cardiac patients' differences in the proneness to experience gratitude in daily life. Alpha coefficients of this scale were ranging from  $\alpha = 0.76$  to  $\alpha = 0.84$  respectively<sup>17</sup> and for Urdu translated version is  $\alpha = 0.61$ .<sup>14</sup>

**Brief Resilience Scale:** Scale was used to determine the resilience capacity of the patients during chronic illness. Alpha coefficients ranging from  $\alpha = 0.80$  to  $\alpha = 0.91$  respectively<sup>18</sup> and for Urdu translated version is  $\alpha = 0.60$ .<sup>14</sup>

## RESULTS

Cronbach's alpha reliability coefficients of the research instruments on the present sample of 150 cardiac patients is presented in Table 1.

Table 2 shows the significant positive correlation among fate control, hardiness, wellbeing, gratitude and resilience in the patients of myocardial infarction.

Figure 1 with covariates illustrates well-adjusted data fit on the model by adding demographic variables (gender, age, and hospital sector) CIM/DF = 1.28; GFI=0.96; CFI = 0.96; RMSEA = 0.05. It gives a wholesome picture of mediatory effects on dependent variables.

To test the significance of indirect effects parametric bootstrapping was used. In bootstrapping, Monte Carlo method by using 95% bias-corrected confidence intervals was examined ( $\chi^2(1) = 3.01$ ,  $p = 0.05$ , CFI = 0.96, GFI = 0.96). Results indicates that there is mediation of gratitude and resilience between fate control and wellbeing, partial mediation of gratitude and resilience between the relationship of hardiness and wellbeing.

## DISCUSSION

The research presents the innovative findings about the protective role of fate control, and hardiness, in the wellbeing of the cardiac patients.

The results of correlation analysis indicated that the study variables have significant correlations with each other (see table 2). The results are consistent with the study of Yu et al<sup>19</sup> fate control is an internal control state that works as cognitive defense mechanism, it reduces self-blaming by increasing rationalization about the disease in the patients that increase wellbeing. Furthermore, a significant association was examined between hardiness, resilience and wellbeing, because hardiness focuses more on endurance in a critical health situation, whereas resilience is the capacity to recover after the adverse situation the results of present study coincides with the existing literature in the west.<sup>20</sup> Hardiness is positively correlated with wellbeing in the patients. Bartone et al<sup>15</sup> also recommended the similar model of hardy-resilient styles along with several other researches that demonstrated a strong positive relationship between hardiness, resilience and wellbeing. In the present study a strong correlation was explored among gratitude and resilience with wellbeing in the patients. Mary and Patra<sup>21</sup> reported that the association of these variables strengthens the patient's capability to carry out regular activities.

The indirect path coefficients found between fate control, hardiness, gratitude, resilience and wellbeing. The total effect of mediation model was significant (see table 3). The finding consistent with prior literature the indirect effect of fate control on wellbeing with the mediation of resilience and

gratitude is significant whereas the direct effect was not significant. Ruini et al.<sup>22</sup> reported that both gratitude and resilience are important components of coping mechanism these components enable patients to cope better with the illness by improving their wellbeing. Further, Sansone and Sansone<sup>23</sup> emphasized the significant mediational role of resilience and gratitude between the relationship of hardiness and wellbeing, findings indicated the ability to bounce back and quality to be thankful for everything in any situation motivate patients and increase their wellbeing. Moreover, demographic variables such as gender, age and hospital sector have an influence on the standardized

two-way mediation model. Whereas, the age has an inverse correlation with the wellbeing of the patients, as increase in the age decrease the wellbeing of the patients. Steptoe et al<sup>24</sup> research findings supported that psychological wellbeing is a protective factor against chronic heart diseases and associated with the age of the patients, as the increase in age the happiness of the patients will decline as well as they have certain mood swings, that become the major cause of decrease in their wellbeing. It has also been reported that sociodemographic variables such as gender, wealth, and hospital sectors have an influence on patient's wellbeing too. Although there are mixed results regarding the relationship between gender & wellbeing, the results of this research were supported preceding literature, who stated that gender differences are non-existent in countries with underprivileged economy.<sup>25</sup>

The findings of this study have wide implications in the field of health psychology, medical and therapeutic professions. The contemporary research paper contributes to the existing literature pertinent to cardiac patients and their wellbeing in indigenous perspective and provides the enrich sketch of the specific personality traits of the cardiac patients. Apart from assessment it would be helpful for psychiatrists and clinical psychologists to develop and design therapeutic intervention plans for patients to improve their wellbeing through hardiness, gratitude, and resilience thus they can become a productive part of the society.

## CONCLUSION

The patients with heart diseases are continuously increasing expeditiously, and they are dealing with several physical and psychological issues that are directly affecting their wellbeing. This research enables us to identify the psychological issues, and draw special attention to improving their wellbeing. Moreover, findings also accentuating on the adaptive functions of fate control, and hardiness as a cognitive defensive mechanism and highlight the need to incorporate this cultural belief in developing culturally sensitive intervention programs to enhance resilience and wellbeing of the patients with myocardial infarction.

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