

A Study on the Psychosocial Predictors of Cardiovascular Diseases: The Major Role of Forgiveness

Psychosocial
Predictors of
Cardiovascular
Diseases

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ABSTRACT

Objective: to determine the dimension of forgiveness in Cardiovascular patients and compare them with the normals (without any Cardiovascular history).

Study Design: Cross-sectional comparative study

Place and Duration of Study: This study was conducted at the OPD, Department of Cardiology, Rehman Medical Institute (RMI) from Oct to Dec 2020, Peshawar and Jan to Feb 2021 from twin cities of Rawalpindi and Islamabad.

Materials and Methods: The study was done on a total sample of 163 comprising both cardiovascular heart patients and the normals. Informed consent was obtained from all the participants. A questionnaire was designed and based on translated version of Transgression Related Interpersonal Motivations Inventory (TRIM-18) as developed by McCullough, Root and Cohen in 2006¹. Data was analyzed using IBM SPSS Version 23. An independent samples t-tests was used for statistical significance.

Results: The results of the study revealed that there is statistically significant difference between the patients and the normals groups on the dimensions of forgiveness. Patients were high in the unforgiveness and low on forgiveness dimension than the normals.

Conclusion: The study concludes that for the effective management of the cardiovascular patients both psychosocial and medical factors should be carefully weighed and assessed in different patients depending on the severity of their disease.

Key Words: Cardiovascular Diseases, Unforgiveness Forgiveness dimension, Revenge, Avoidance, Benevolence

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INTRODUCTION

Cardiovascular Diseases are the leading causes of death all over the world^{1,2}. Traditionally, in order to manage and control it the focus has only been on reducing the risk factors medically associated with the illness such as elevated levels of blood pressure, cholesterol, obesity, diabetes mellitus, smoking, physical inactivity and drinking in some cases³. The medical model of Cardiology emphasizes bio-medical intervention when the patients have already suffered from severe irreversible loss of physical health whereas Primary Prevention of Cardiovascular Diseases take into account socioeconomic risk factors related to short and long term goals apart from the medical ones only⁴.

Toussaint and Cheadle (2011) found unforgiveness to be associated with higher prevalence of cardiovascular conditions such as hypertension, angina, and tachycardia in a healthy sample⁵. Forgiveness has been associated with few physical health compromises, somatic complaints, physical symptoms and stronger immune system etc. (Lawler, Younger, Piferi, Jobe, Edmondson, & Jones, 2005)⁶. Lawler and Piferi in 2006 studied 425 participants with age range of 50 to 95 established connection between forgiveness and cardiovascular disease. Their results indicated that forgiveness enhanced physiological markers of cardiovascular health⁷. Martina et al, have reviewed a large number of studies investigating “the effects of forgiveness on cardiovascular system”. They concluded “overall, it appears that forgiveness may be cardio-protective”⁸.

Other literature conceptualize forgiveness from the stress coping perspective that can promote health (Worthington and Scherer 2004)⁹. Those who forgive others tend to have stronger immune systems (Seybold, Hill, Neumann, & Chi, 2001)¹⁰, less physiological reactivity (Witvliet, Ludwig, & Vander Laan, 2001)¹¹, lower blood pressure (Lawler et al., 2005)⁶, and overall fewer physical symptoms (Toussaint, Williams, Piferi & Musick, 2001)¹². Forgiveness has also been associated with lower levels of cortisol in a number of

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studies (Berry & Worthington, 2001; Standard, 2004; Tabak & McCullough, 2011)¹³⁻¹⁴.

Unforgiveness can thus be understood as a state of chronic mind-body connection as health-endangering wear and tear of a hyper arousal stress response in which negative experiences continue over some time toward a transgressor or a transgression (Elliott, 2011; Harris & Thoresen, 2005; Lavelock, Griffin, & Worthington, 2015; Schnurr & Green, 2004; Worthington et al., 2007)¹⁵⁻¹⁹. There are protective effects of forgiveness and reactive effects of unforgiveness (Davis, 2015)²⁰.

For the present study thus an interdisciplinary multi-dimensional model as suggested by Griffin et al. (2015)²¹ is being followed. That is, unforgiveness is assumed to increase the negative affect or stress levels, which may partially or fully, directly or indirectly mediate certain cardiovascular diseases. There exists no direct evidence which links the dimension of unforgiveness / forgiveness with cardiovascular diseases (Worthington et al, 2007)²². The main purpose of the study is to determine the dimension of unforgiveness forgiveness in Cardiovascular patients and compare them with the normals (without any Cardiovascular illness history).

MATERIALS AND METHODS

A cross-sectional comparative study was conducted using non-probability convenient sampling of 103 Cardiac patients and 60 normals 163 in total. A patients sample was taken after consultation and permission from his cardiologist, himself and family members by a health care professional from Rehman Medical Institute (RMI), OPD, Department of Cardiology Peshawar from Oct to Dec 2020. Patients sample selection criteria included those with already existing and raised documented history of certain risk factors such as diabetes mellitus, hypertension, smoking and / or occurrence of conditions such as Post PCI (Percutaneous Intervention or those who have had stent) or Post Coronary Artery By Pass Surgery (CABG). Data from the control group (normals) was collected from Jan to Feb 2021. The control group comprised of those without any history of the above conditions. Data collection strictly adhered to the rules and ethical guidelines provided by NBC-REC Research Ethics Committee. The purpose of the study was explained to each participant, followed by their consent to participate or withdraw at any point. In both of the samples of 163 there were 101 males and 62 females i.e. 63 males in patients and 38 in normal group; and 40 females in patients and 22 in normals group respectively.

After taking approval from the patients and their cardiologist questionnaires were filled by a health care professional while interviewing the patients. The questionnaire consists of various parts such as

questions related to the demographic variables, potential risk factors and their illnesses such as Post PCI or Post CABG and lastly translated versions of Transgression Related Interpersonal Motivations Inventory (TRIM-18) as developed by McCullough, Root and Cohen in 2006²².

Transgression Related Interpersonal Motivations Inventory is the most widely used forgiveness instrument. Studies support in favor of its psychometric properties with the clinical samples such as its estimated reliabilities, construct and criterion-related validities are strong and consistent. TRIM-18 is used to assess both unforgiveness and forgiveness dimension²⁵.

RESULTS

The results section comprised of two parts the first one covers the demographic characteristics of data, second includes the inferential statistics which provide information about the tested hypotheses for the current study. A total of 163 comprised the samples of both the patients and normal, where 63.2% (n=103) were patients and 36.8% (n=60) were normal. In age range 24-54 13.6% (n=14) were patients and 88.3% (n=53) normals, in category 55-90 86.4% (89) were patients and 11.7% (n=7) normals. Gender wise 62% (n=101) were males and 38% (n=62) females in both the groups. In patients group there were 63 males, 40 females and in normals 38 males and 22 females. The majority of the participants were from the lower middle class i.e. 63.8% (n=104) with the income less than Rs. 50,000 than the rest 59 with income more than Rs, 200,000.

As far as the risk factors are concerned the cross tab data indicates that out of total 103 patients 65 were having Diabetes Mellitus (DM) and 38 patients did not have it, whereas none of the normal group (n=60) respondent has developed it. The exact same pattern was observed for hypertension risk factor too i.e. 65 patients were having hypertension (HTN) and 38 did not have it, whereas none of the normal group respondent has developed it. As far as the smoking pattern is concerned 34 out of total 103 patients were smokers and rest 69 were nonsmokers where none of the respondent from the normal group was smoker. Regarding serious Cardiac diseases are concerned out of total of 103 patients group 44 patients have had undergone the procedures of Post PCI (Percutaneous Intervention or received stunts) and 36 experienced Post Coronary Artery By Pass Surgery (CABG).

The major objective of the study was to understand and compare quantitatively the patients and the normals group on the dimensions of unforgiveness forgiveness. It was hypothesized that the patients with cardiovascular diseases will score low on forgiveness and higher on unforgiveness dimension as compared to the normals group. An independent samples t-tests was used for statistical significance. The test results showed that the differences between the two groups were

statistically significant on the sub scales revenge ($t=3.513$, $df=156$, $p < .001$), on avoidance ($t=2.79$, $df=156$,

$p < .006$), benevolence ($t=4.12$, $df=156$, $p < .000$) and forgiveness ($t=5.13$, $df=156$, $p < .000$).

Table No.1: Mean, Standard Deviation and t value for normal and patients on TRIM-18 and its sub scales (N=163)

Variables	Normals (n=60)		Patients (n=103)				95% C.L	
	M	SD	M	SD	T (156)	p		
Revenge	7.01	3.21	8.78	2.91	3.51	.001	-2.75	-0.77
Avoidance	19.19	4.87	17.34	3.39	2.79	.006	0.54	3.16
Benevolence	20.53	4.35	17.72	3.94	4.12	.000	1.46	4.15
Forgiveness	39.73	4.73	35.06	5.81	5.13	.000	2.87	6.45

Table 1 indicates that there is a significant difference between patients and normal group on the unforgiveness forgiveness dimension as measured by TRIM (Transgression Related Interpersonal Motivations Inventory) on the sub scale Revenge with ($M=7.01$, $SD=3.21$ and $M=8.78$, $SD=2.91$), $t(156) = 3.5$, $p < .001$, in other words normals were less revengeful than the patients in their interpersonal relationships. The subscale Avoidance with ($M=19.19$, $SD=4.87$ and $M=17.34$, $SD=3.39$), $t(156) = 2.79$, $p < .006$, that is the normal group is more inclined towards avoidance of their transgressor than the patients group, Benevolence ($M=20.53$, $SD=4.35$ and $M=17.72$, $SD=3.94$) $t(156) = 4.12$, $p < .000$, at the same time normals were more benevolent regarding a transgressor than the patients group and scores of avoidance and benevolence were combined to give total Forgiveness scores ($M=39.73$, $SD=4.73$ and $M=35.06$, $SD=5.81$) $t(156) = 5.13$, $p < .000$ i.e. Forgiveness is operationally conceptualized as a process of avoiding a transgression and increasing benevolence or good will for the transgressor. In other words, when people forgive they experience both avoiding a transgression and increasing their benevolence towards the transgressor. The normals have scored significantly higher than the patients group on both avoidance and benevolence conceptualized as forgiveness.

DISCUSSION

The present study examined the unforgiveness forgiveness dimension in Cardiovascular patients and compared them with the normals (without any cardiovascular history). No such studies have been conducted in Pakistan so far. Some of the studies have examined connection between forgiveness and cardiovascular disease (Lawler & Piferi, 2006; Martina et. al)⁶⁻⁷.

The results of the present study is in accordance with the existing literature^{4-7,8-19} and provide empirical evidence to support the hypothesis that cardiovascular patients scored significantly higher on unforgiveness (revenge) and lower on forgiveness (avoidance and benevolence) when compared to the normals. On the sub scale Revenge normals have $M=7.01$, $SD=3.21$ and patients $M=8.78$, $SD=2.91$. In other words normals were less revengeful than the patients in their

interpersonal relationships. In case of Avoidance normals have $M=19.19$, $SD=4.87$ and patients $M=17.34$, $SD=3.39$, the normal group is more inclined towards avoidance of a transgressor than the patients group. On Benevolence again normals have higher $M=20.53$, $SD=4.35$ than the patients $M=17.72$, $SD=3.94$ i.e. the normals have good will towards their transgressors than the patients. In combine Forgiveness scores normals have $M=39.73$, $SD=4.73$ and patients $M=35.06$, $SD=5.81$. This indicates more positive response set of the normals than the patients towards the transgressor whereas patients were still holding to a negative set of emotions and indicated a desire to seek revenge and not inclined to avoid the transgression neither have any good will for their transgressor.

As far as the data on demographics are concerned 62% ($n=101$) were males and 38% ($n=62$) females in both the groups. In patients group 63 males, 40 females and in normal 38 males and 22 females. As far as the age range 24-54 years 13.6% ($n=14$) were patients and 88.3% ($n=53$) normals, in category 55-90 86.4% (89) were patients and 11.7% ($n=7$) normals. This may be the increasing age in the patients group contributing towards their illness, because decline in physical health occurs naturally with increasing age.

As far as the risk factors are concerned the data indicates that out of total 103 patients 65 were having Diabetes Mellitus (DM) and 38 patients did not have it, whereas none of the normal group ($n=60$) respondent has developed it. The exact same pattern was observed for hypertension too. As far as the smoking pattern is concerned 34 out of total 103 patients were smokers and rest 69 were nonsmokers where none of the respondent from the normal group was smoker. Regarding the serious Cardiovascular conditions out of total of 103 patients group 44 patients have had undergone the procedures of Post PCI (Percutaneous Intervention or received stents) and 36 experienced Post Coronary Artery By Pass Surgery (CABG). In other words, though cardiovascular patients have scored higher on unforgiveness and low on forgiveness still they had not modified their life style patterns which might have contributed towards their ill health.

CONCLUSION

The results of our study that the cardiovascular patients were higher in the dimensions of unforgiveness than their normal counterparts, have implications for the field of Preventive Cardiology. However it should be noted that the case of each patient is unique and for their effective management an overall integrated interdisciplinary approach must be taken up where both medical and psychosocial factors should be carefully weighed and assessed depending on the condition of the patient.

Author's Contribution:

Concept & Design of Study: Iram Abraar
 Drafting: Mozzam Shazeb Abrar
 Data Analysis: Mozzam Shazeb Abrar
 Revisiting Critically: Iram Abraar, Mozzam Shazeb Abrar
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