Positivity and Stress among Adults with Coronary Heart Diseases in Faisalabad

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Abstract

Objectives: Primary objective was to assess the level of and relationship between stress and positivity in illness among adults with coronary heart diseases (CHD). Secondary objective was to predict Stress from Positivity in illness by controlling demographic characteristics (age, gender, and marital status) among adults with CHD.

Method: This was a Cross sectional survey research conduct during March-May 2017 in Public Hospitals of Faisalabad. Study sample was 278 (155 men, 123 women) CHD inpatients and outpatients with mean age 41.53 ± 14.53 range from 18-80 years. Perceived Stress scale Urdu 10 items (PSS-10) and Silver lining Questionnaire (SLQ) Urdu 38 used to measure stress and positivity in illness respectively. SPSS 21 used for statistical analysis.

Results: Adults with CHD have a high level of stress as compare to positivity. A significant relationship exists between age, marital status, Stress and positivity among adults with CHD. Additionally Demographic characteristics and positivity in illness are significant predictors of stress among adults with CHD.

Conclusion: Adults with CHD have a higher level of stress and positivity. Stress and positivity are interlinked among adults with CHD, and Stress significantly predicted by age, gender, and marital status and positivity among CHD adult patients.

Key Words: Stress (MeSH), Coronary Heart Disease (MeSH), Adult (MeSH), Positivity (Non MeSH)

Introduction

Coronary Heart Disease (CHD) is the foremost cause of more than 45% of deaths attributable to cardiovascular ailments in the US, it accounts for 1 in 7 expiries in the US, killing above 360,000 individuals annually.[1] In United Kingdom CHD triggered 15% of all deaths in men and 7% in women during 2015.[2,3] It is alarming in modern decade that one in five middle-aged individuals in metropolitan Pakistan may have primary CHD and women are at greater threat than men.[4] On average 50% risk rises for CHD among adults when they face stress i.e. predominantly a physical reaction.[5] Long-lasting stress predicts the manifestation of CHD.[6] Adults who face stress are at increased risk to experience CHD than normal population.[7] On the other side core subclinical CHD might increase the likelihood of participants experiencing stress.[8] Stress mediate the relationship between positive psychological capacities and well-being.[9] Positivity in illness is the magnitude to which individuals believe their sickness has had a positive advantage notwithstanding the negative costs of being ill.[10] Positivity was not linked to duration of diagnosis with different health problems such as Asthema, Chronic respiratory disease, lung Cancer, Sleep apnoea syndrome, Tuberculosis, and other life threatening.[11] However data directly addressing Positivity and CHD is missing from the existing literature yet the myocardial infarction patients can perceive improvement in life condition after the diagnosis.[12] Positivity increased after rehabilitation for cardiac patients appealing that rehabilitation leads to an increase in perceived positive consequences of illness.[13] It is clear that stress, positivity and CHD are interlinked phenomenon. This study focused to identify the relationship between stress and positivity among adults with CHD, further to assess the level of stress and positivity among adults with CHD in Faisalabad. Another objective was to discover the predictors of stress among adults with CHD.

Method

This was a Cross sectional survey research conducted during March-May 2017 in Public Hospitals of Faisalabad (Allied Hospital & Faisalabad Institute of Cardiology). Total sample of 278 (155 men, 123 women) diagnosed CHD inpatients and outpatients selected with mean age 41.53±14.53, age ranged from18-80 years. This age group was selected because The Heart Disease and Stroke Statistics 2016 update of the American Heart Association (AHA) had reported that about 16 million person's above 20 years old in the United States of America have CHD.[14] Sample was calculated using G power software. Post hoc power analysis run for F-test with input parameters with alpha err prob=0.05, effect size f^2=0.15, total sample size= 278, number of test predictors =3, and total number of predictors=4. Based on the above-mentioned assumptions, the preferred sample size has a statistical power of 0.99.

Perceived Stress scale Urdu 10 items (PSS-10) Translated by Mariam et al., used to measure stress.[15] It was a five point rating scale with scoring categories of 0=not at all and 4=frequently. Score may range from 0-40 in PSS-10 Urdu. Silver lining Questionnaire (SLQ) 38 items originally developed by Sodergren and Hyland (1997),[16] and translated by the researchers in Urdu to measure positivity in illness among adults with CHD. Scoring Method for SLQ-Urdu was same as in English version i.e. responses on agree and completely agree will score as "1", while responses on undecided, disagree and completely disagree will score as "0", so score can range between 0-38. On PSS-10 a high score indicates high level of stress and on SQL-38 a high score indicates high level of positivity about illness.

Ethical Considerations

In order to collect data ethical considerations were former. A provisional letter was presented to hospital authorities before approaching the patients. On the approval of concerned authorities informed consent was obtained from patients then they were presented PSS-10, SLQ-38 and a Demographic sheet in Urdu.

Statistics

SPSS 21 was used for data analysis. Descriptive statistics used to obtain frequencies and percentages of demographic characteristics of study sample (See Table 1). Pearson Product moment Correlation used to find out the existing relationship between variables at $p < 0.01$ and level of Positivity and stress (See Table 2). Linear regression used to predict the relationship among variables at $*p < 0.01$ (See Table 3).

Results

In current study Perceived Stress scale Urdu 10 items Translated by Mariam et al. has Chronbac Alpha reliability .70 and SLQ-Urdu has Chronbac Alpha reliability .84 indicating high internal consistency of the SLQ-Urdu.

Table 1 gives a brief overview regarding level of and relationship between age, marital status, stress and positivity. A significant negative mild relationship exists between stress and marital status. Stress and positivity in illness had mild negative link at $\alpha=0.05$ level of significance. Age and stress were positively mildly linked at $\alpha=0.01$. However age and marital status had strong negative relationship at $\alpha=0.01$. Last column of Table 1 declares that adults with coronary heart diseases have high level of stress as compared to positivity in illness. If the mean score considered on a fifty percent margin on each scale than these adults face stress about 60% and positivity in illness less than 50% of the total score.

Result in hierarchal regression analysis tabulated in Table 3. In first step the demographic variables (gender, age, and marital status) were entered into the equation and controlled. These variables explained 3% variance to Stress. In second step the variables of interest added which explained 2% variance to Stress claiming that demographic variables and positivity are unique predictors of stress among adults with coronary heart diseases at ($\beta= -.13$, $*p< .01$).

Discussion

Stress has a vice versa role with CHD, it can cause CHD[6] or individuals can face stress due to CHD.[8] Stress was predicted as a psychosocial risk factor of CHD.[17] In general population Perceived stress was negatively associated with age in men smokers.[18] Stress mediate the relationship between positive psychological capacities and well-being.[13] A previous study on individuals with multiple sclerosis stated that Gender and age were distinct from adversarial progress in illness yet it is linked with positivity.[19] Another study stated that older age, inducible ischemia on stress echocardiography, and smoking were Independent predictors of cardiac mortality.[20] CHD may have a role in the development of long-lasting psychological distress from midlife to old age.[21] While summing up It is necessary to pay attention on psychological factors, as independent risk factors for CHD.[22] In Pakistani population physical activity or Exercise suggested for CHD patients to release stress and avoid mortality as Physical inactivity had significant contribution to the excess CHD mortality in the South Asian inhabitants in the UK.[23] Data addressing positivity in CHD in Pakistani reference is missing in literature, this study may contribute a significant piece of knowledge in local context. It is suggested that to increase the generalizability of findings future research may focus other regions across country as well instead of considering one locality.

Acknowledgement

References

Table 1: Frequencies and percentage of demographic characteristics of study sample (N=278)

Variable	Frequency	Percentage

Age Group	Early Adults (19 to 40 Years)	139	50
	Late adults (41-69)	139	50
Gender	Male	155	56
	Female	123	44
Marital status	Married	210	76
	Unmarried	68	24

Table 2: Mean, Standard deviation, and Relationship between study variables (N=278)

Variable	Marital Status	Age	Silver Lining	Stress	$Mean \pm SD$ (%)

Marital Status	1	-.64**	.04	-.15*	-----
Age		1	-.06	.17**	41.53 ± 14.53
Positivity			1	-.14*	17.40 ± 7.10 (46)
Stress				1	23.41 ± 5.76 (59)

**$p < 0.001$, *$p < 0.01$

Table 3: Hierarchical Regression Analysis to Predict Stress from Demographic variables and Positivity

Predictors	Positivity in illness		
	ΔR^2	B	
Step 1	.03*		
Control variables			
Step 2	.02*		
Positivity		-.13*	
Total R^2	.047		
N	278		

*p< 0.01, *Note*. Control variables included age, gender, and marital status

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