

Psychosocial and Behavioral Risk Factors of Early Onset of Ischemic Heart Disease among the Patients Presenting at a Tertiary Care Hospital

Shaheen Nazakat ,Dr Muhammad Sajid

ABSTRACT

This study investigate the psychological, behavioral, anthropometric, and social factors that may cause a possible early onset of Ischemic Heart Disease (IHD) at a tertiary care hospital. Case-control research design was used in the present study. The present study was conducted in a tertiary care hospital in Lahore city, Punjab, Pakistan. Patients in the cardiology ward of a tertiary care hospital in Lahore City aged between 35-55 years were included in the study. The study translated and tested several psychometric instruments for their reliability before they were used in the analysis. The research ran Binary logistic regression analyses models and multivariate odds ratios for the study variables while using one gender at a time as controls. Negative psychological factors were found to be directly linked with the risk of IHD. Positive psychological factors like locus of control and optimism were, on the other hand, found to be correlated with the protective factors for IHD. Social support and educational levels were the social factors that appeared to be negatively correlated with IHD. Behavioral factors like cigarette smoking and atherogenic diet were also significantly associated with the early onset of IHD. In conclusion, the study proposed the need to analyze a model for primary and secondary prevention of IHD through a focus on localized and indigenous psycho social and behavioral factors.

Index Terms: Psycho social and behavioral risk factors, Ischemic Heart Disease, Early onset of Ischemic Heart Disease

1 INTRODUCTION

IHD – also medically termed as Coronary Heart Disease (CHD) and Coronary Artery Disease (CAD) – has focused on medical investigations for several decades now [1]. Through the continuing analysis into the causation and progression of IHD, analysts have broadened the scope of research into the pathophysiological mechanisms that contribute to IHD. The condition's complex and multifactorial origin has led its investigation through the biopsychosocial perspective [1]. The reciprocity approach to the causation of IHD involves the interaction between body and mind. Thus, this approach values the link between behavior and the psychosocial factors to the causation of IHD and other chronic conditions. This disease is believed to have started in prevalence in the aftermath of industrialization and the rise of the perceptibly stressful modern society [2].

Recent research into the risk factors for IHD has continued to integrate various behavioral and psychosocial factors centrally [2]. The understanding of CHD has thereby remained in the bounds of psychological, behavioral, and

biological sciences. In the later parts of the 20th century, scientific research began to describe the psychodynamics of IHD comprehensively. Abundant clinically impressive evidence associated the psychosocial risk factors to CHD's etiology [3]. These factors have sometimes appeared to be more significant causes for the onset of IHD than demographic or clinical factors. Some researchers even claim that half of the IHD onset variance may be accounted for by the psychosocial and behavioral risk factors like obesity and smoking [3].

However, despite the abundance of research placing half the risk of causation of IHD on the psychosocial and behavioral factors, the research community still appears hesitant in unanimously recognizing these factors [1]. The authentication of these factors has remained debatable within the scientific circles. As such, the study of these factors' role in explaining the onset of IHD has yielded inconsistent findings. This present analysis aims to describe these essential factors in IHD to develop evidence on the role of psychosocial and behavioral factors on the early onset of IHD [1].

2 MATERIAL AND METHODS

The study was divided into two main parts. In the first part, the scales of measurement were translated from Urdu, and their psychometric properties were determined and validated. The second part of the study then applied the translated and validated scales of measurement to investigate the correlation of psychosocial and behavioral

• Ms. Shaheen Nazakat, MPH, MSN, Dr Muhammad Sajid, MBBS, DIPCARD, MPH, Faisalabad Institute of Cardiology, Faisalabad. E-mail: shaheennazakat1@gmail.com

factors with IHD risk. The authors of these original scales were contacted to grant permission for access and use of the scales. The translated instruments include The Perceived Stress Scale (PSS) by [4] Center for Epidemiological Studies Short Depression Scale

(CES-D 10) Radloff, L. S. (1977); State-Trait Anxiety Inventory (STAI); State-Trait Anger Expression Inventory (STAXI); Personality Deviance Scale-Revised (PDS-R); Perceived Locus of Control Scale (PLCS); and Revised Life Orientation Test (LOT-R).

In the second part, the translated scales were used to respond to the various components of psychosocial and behavioral variables as risk factors for IHD. A four-point Likert scale was used to gauge the multiple items in the difficulty and agreement scales. The next items in the following stage involved "problematic" items that did not meet consensual agreement among the respondents. Furthermore, these respondents were grouped in panel discussion units that deliberated around the remaining items around the non-clinical causation factors for IHD. When the panel discussions were finished, a bilingual (English and Urdu) panel was formed to conduct a backward translation of Urdu's responses and group discussion results. The Urdu scale was then validated after the backward translation. Finally, the research gained qualitative feedback on the translated scales from the target population. Pearson's correlation analysis was also conducted between the pre (English) and post (Urdu) administration showed a significant positive correlation.

3 RESULTS

This section involves the reposting of inferential statistics for the behavioral and psychosocial variables. This section shows the inferential statistics, including means, standard deviations, medians, ranges, frequencies, and percentages. Information about demographics' physical health factors and anthropometric measurements are also reported in this part.

The mean ages of men and women were found to be 46 and 45 years, respectively. The control groups attained higher education levels than the experimental groups. For instance, 45.5% of the controls compared to 30% of cases achieved between 12 and 14 years of education. Furthermore, more controls (24.7%) than cases (18.9%) were employed in government sectors. A majority of women in the study were housewives, with 83% of cases and 75% of cases responding to housewives. Lastly, most respondents, irrespective of their gender, reported that they were married and with a household occupancy of between 5 and 7 people.

The mean waist and hip circumference of the cases were larger for both men (94.96 cm waist and 101.43 cm hip)

TABLE 1
PSYCHOMETRIC PROPERTIES OF THE CONTINUOUS STUDY VARIABLES and

Variables	M	SD	a
Perceived stress	15.78	6.84	0.82
Depression	8.66	5.71	0.85
Anxiety	42.23	9.83	0.87
Trait anger	20.19	6.39	0.86
Hostility	12.05	4.07	0.82
Dominance	12.28	3.03	0.66
Social support	57.38	15.6	0.93
Optimism	19.61	4.98	0.67
Perceived control	9.54	3.38	0.66

M = mean, S.D = standard deviation, a= Cronbach alpha

women (90.41 cm waist and 101.54 cm hip) than for the controls (90.81 cm waist; 97.67 cm hip for male controls and 83.54 cm waist and 98.76 cm hip for female controls). The differences between the weights of the male cases and controls were insignificant. However, the women had significantly different weight averages between cases (69.03 kg) and control (65.57 kg). WHR and BMI were found to be higher in the cases than controls for both men and women.

On the behavioral risk factors, the research started with the smoking trends for both men and women. It was observed that larger men cases (35.29 %) and women cases (12.67%) reported being current smokers compared to their controls, 30.67% men, and 5.36 % women. More controls (20.5 %) as compared to men cases (19.3 %) reported being alcoholics. Also, more men controls (36.13%) than men cases (9.24%) reported being involved in psychical activities. Women controls also engaged more in exercises than the cases; 21.83% versus 16.90%.

On the psychosocial risk factors, women reported more stressful life events than men. Psychosocial variables like perceived control, depression, anxiety, social support, perceived stress, hostility, and optimism were different between males and females. Furthermore, the cases reported more stressful events than the controls. Major illnesses, familial conflicts, and deaths were the most common stressful variables indicated by men and women.

TABLE 2
INTER-CORRELATIONS AMONG CONTINUOUS STUDY VARIABLES

	1	2	3	4	5	6	7	8	9
1. PSS		.73"	.67"	.45"	.41"	-.049"	-.47"	-.38"	-0.008
2. CES-D			.75"	.46"	.46"	-.1KM	-.53"	-.41"	0.084
3. STAI (trait)				.52"	.46"	-0.039	-.49"	-.37"	.12"
4. STAXI (trait)					.64"	0.007	-.30"	-.35"	.10*
5. PDS (hostility)						-0.07	-.34"	-.31"	0.041
6. PDS (dominance)							0.024	0.063	-0.017
7. MPSS								.44"	-0.035
8. LOT-R									0.036
9. LC									

PSS = Perceived Stress Scale, STAXI = State Trait Anger Expression Inventory, PDS = Personality Deviance Scales, PLC = Perceived Locus of Control Scale, MPSS = Multidimensional Scale of Perceived Social Support

4 DISCUSSION

Research shows that IHD incidences are on the rise in countries like Pakistan [5]. People in these countries report the disease onset averagely ten years earlier than the international average age for IHD onset. While the disease continues to rise in Pakistan, various localized studies continue to point to traditional risk factors for its causation. The studies that attempt to analyze the psychosocial and behavioral factors are predominantly foreign and non-contextual. Researchers in Pakistan have thereby failed to investigate the multifactorial etiology of IHD [5].

In the present study, the analyst revealed the behavioral and psychosocial causation of IHD in the Pakistani context. The research appears to agree with similar analyses around the role of stress in the onset of IHD among middle-aged individuals [6]. Stress, behavior, psychological and social factors have continuously led to IHD and other heart conditions. Hostility appeared to be a serious causative factor of IHD, especially among men [7]. This study also revealed that anger is a psychological factor causing the onset of IHD among native women. This finding is, however, inconsistent with available empirical findings. However, suppressed anger among women has been linked with the increased mortality from IHD morbidity [6], [5].

Overall, however, the study did not find perceived stress, anxiety, and depression as significant risk factors for IHD. Furthermore, social and familial engagement have

been determined as protective psychosocial factors that may protect against IHD. The presence of protective social factors such as cohesiveness and higher education level allow the natives to shield themselves from the onset of the cardiac conditions.

5 CONCLUSION

The present study explores the new and mostly unexplored factors in IHD causation. Stress, social and family factors are determined as essential factors in the onset of the cardiac condition. In further analyses, researchers may explore the empirical inconsistencies in the role of behavioral and psychosocial factors in IHD. The findings in this study expose such inconsistencies and prompt the need for follow-up contextualized studies in the various social, psychological, and behavioral factors as causes of IHD.

REFERENCES

- [1] Rafique, R., & Amjad, N. (2013). Psychological correlates of early onset of ischemic heart disease in a sample drawn from a Pakistani population. *International Journal of Psychology*, 48(4), 616-624. <https://doi.org/10.1080/00207594.2012.691976>
- [2] Pogossova, N., Kotseva, K., De Bacquer, D., von Känel, R., De Smedt, D., Bruthans, J., & Dolzhenko, M. (2017). Psychosocial risk factors in relation to other cardiovascular risk factors in coronary heart disease: Results from the EUROASPIRE IV survey. A registry from the European Society of Cardiology. *European journal of preventive cardiology*, 24(13), 1371-1380.
- [3] Williams, E. D., Nazroo, J. Y., Kooner, J. S., & Steptoe, A. (2010). Subgroup differences in psychosocial factors relating to coronary heart disease in the UK South Asian population. *Journal of psychosomatic research*, 69(4), 379-387. <https://doi.org/10.1016/j.jpsychores.2010.03.015>
- [4] Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A global measure of perceived stress. *Journal of health and social behavior*, 385-396. <https://doi.org/10.2307/2136404>
- [5] Zahid, F. M., Ramzan, S., Faisal, S., & Hussain, I. (2019). Gender based survival prediction models for heart failure patients: A case study in Pakistan. *PLoS one*, 14(2), e0210602. <https://doi.org/10.1371/journal.pone.0210602>
- [6] Netto, G., McCloughan, L., & Bhatnagar, A. (2007). Effective heart disease prevention: lessons from a qualitative study of user perspectives in Bangladeshi, Indian and Pakistani communities. *Public health*, 121(3), 177-186. <https://doi.org/10.1016/j.puhe.2006.11.001>
- [7] Rafique, R., & Anjum, A. (2015). Positive and negative psychological correlates, gender specific and traditional factors for first onset angina in a sample of Pakistani women. *Journal of Ayub Medical College Abbottabad*, 27(4), 801-806.