Original Article

Facets Predicting Quality of Life in Patients with Blood Pressure Disorders

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ABSTRACT

OBJECTIVE: To explore the predictable relationship of emotional states such as stress and aggression along with coping strategies and quality of life in patients diagnosed with either hypertension or hypotension.

METHODOLOGY: This Cross-Sectional Correlational study conducted at Department of Psychology, University of Gujrat from December 2019 to July 2020. One hundred eighty patients diagnosed with blood pressure disorders purposively selected from different hospitals in Gujrat and Lalamusa. Urdu versions of Perceived Stress Scale (PSS), Buss and Perry Aggression Questionnaire (BPAQ), Coping Styles Scale (CSS), and a shorter version of World Health Organization Quality of Life (WHOQOL-BREF) used in the study. The Cronbach's alpha reliability index (α) for these scales is 0.75, 0.83, 0.74, and 0.87 respectively on the present sample.

RESULTS: In total of 180 participants, 75% females suffered from blood pressure disorder above age of 30 years (75%), living in rural areas (54%) with primary education (49%). 86% respondents have monthly income less than 50000. 81% patients were married, living in joint family system (51%). There is a significant negative correlation of PSS and BPAQ with WHOQOL. Significant correlation coefficients had been found among perceived stress, aggression, problem solving coping style, emotional coping style and quality of life. Moreover, perceived stress, aggression, and coping strategies significantly predicted quality of life in patients with hyper- and hypotension.

CONCLUSION: The results have posited that quality of life in patients with blood pressure disorders is predictable by perceived stress, aggression, and coping strategies used.

KEY WORDS: Aggression, Hypertension, Hypotension, Quality of Life.

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INTRODUCTION

Blood pressure disorders had been found to influence the life expectancy, with upsurge in predictability for high mortality rate[1] nowadays. In Blood Pressure Disorder, the force exerted on walls of the blood vessels is persistently high, low, or intermittent. There is two types of common Blood Pressure Disorder namely, a) Hypertension (High Blood Pressure) that happens when force of blood within the arteries puts too much mechanical stress on the artery walls. This causes the heart to work harder; b) Hypotension (Low Blood Pressure) blood flow decreases and put less force on arteries[2]. In Pakistan, there is a high prevalence rate of Blood Pressure Disorders, indicating 35.1% hypertension[3] and 73% hypotension in population[4]. The chronic illnesses such as hypertension[5] and hypotension[6] detrimentally affected the quality of life in patients.

Empirical evidences have also suggested that blood pressure found to be by perceived stress[7] and negative emotional state such as aggression[8]. Stress is an external stimulus; stress as a response; stress as an individual/environmental transaction[9]. Aggression is overt or covert, often harmful, social interaction with the intention of inflicting damage or other unpleasantness upon another individual. It may occur either reactively or without provocation[10]. However, if these emotions (stress and aggression) are not coped properly, they might have detrimental impact on health of individuals, jeopardizing their quality of life.

Coping referred to person's endeavours to accomplish goals by adjusting to the environmental demands. There are two types of coping namely a) Problem-focused coping: in this, a person tries to deal or adjust the problem that made a person to face stressful condition. It related to recognizing the problem, seeking for a promising solution, evaluating the positive and negative outcome of those solutions and lastly selecting a possible solution. b) Emotion-focused coping: in this, a person tries to alter the negative affection, related with stress. These might involve ignoring, reducing or detach own self from the problem[9]. Quality of life defined as representing individual's satisfaction in all broad areas of life encompassing physical, psychological, social aspect[11].

The rationale of the study is to discover the missing link among intrapsychic variables such as perceived

stress, aggression and coping strategies with quality of life in patients with blood pressure disorders to devise implications in health setting for improvising of life excellence in these patients. The objective of the current study was not only to explore the relationship of emotional stress, aggression, coping strategies with quality of life in patients with either hypertension or hypotension. Rather it also aimed to investigate the predictability variance of the former intrapsychic variables on quality of life in these patients.

METHODOLOGY

Cross Sectional Correlational Research Design used during December 2019 to July 2020, explored the predicting effects of perceived stress, aggression and coping strategies with quality of life in patients with blood pressure disorders. The size of the sample was 180 (M_{age}= 46.39 years; SD= 16.69) selected by purposive sampling technique due to non-availability of sampling frame of patients with blood pressure disorder visiting various hospitals for their check-ups. The inclusive criteria of research were the patients diagnosed with high and low blood pressure, either as primary or secondary disease. The exclusion criteria focused on patients not having diagnosis with blood pressure problems and were either unwilling or non-corporative to participate in the study. Informed consent form is signed by the patients before the research to assure that their participation is voluntarily and confidential. Demographic sheet collected information of major variables such as age, gender, family system, monthly income, residential area, education, and marital status, and type of illness to name few.

Urdu version[12] of PSS is used to assess the degree to which people perceive their lives as stressful. It comprised of four items. Urdu version[13] of BPAQ contained 29 statements along a 5-point continuum from extremely uncharacteristic of me to extremely characteristic of me. CSS[14] in Urdu is a self-report measure, consists of 22 items, and have two subscales namely Problem focused coping and Emotion focused coping. The problem focused coping involved rational steps acquired by the individual to deal with is problematic situation. Emotional focused coping intricate individual's relational aspects with God and other people. Urdu version[15] of World Health Organization Quality of Life: Brief (WHOQOL-BREF) assesses the individual's perceptions in the context of their culture and value systems, and their personal goals, standards and concerns. It comprises of 26 items, which measure the following broad domains: physical health, psychological health, social relationships, and environment.

The permission was taken for conducting the research from Convener (Head of Department of Psychology) of Research Committee, University of Gujrat, Hafiz Hayat Campus. The formal permission was taken from the hospitals namely Aziz Bhatti hospital, Gujrat, Gujrat hospital, Abdullah hospital, Lalamusa. Different standardized instruments used for the collection of the data. Permission for the use of research instruments were taken from their authors. After the collection of the data, Statistical Package of social sciences (SPSS) version 21 was used for the analyses and computation of the data. Screening of the data was done to find out any missing value in the reported data and no missing value was found. Descriptive and correlational statistics were used for the analysis of data, which were obtained from the sampled population. Multiple linear regression analysis was carried out to investigate predicting effect of perceive stress, aggression, and coping strategies on quality of life in patients.

RESULTS

Mostly females (75%) suffered from blood pressure disorder above age of 30 years (75%), living in rural areas (54%) with primary education (49%). 86% respondents have monthly income less than 50000. 81% patients were married, living in joint family system (51%) and 75% respondents suffered from blood pressure disorders as primary illness (Table I). There is a significant negative correlation of PSS (r= -0.29, p<0.01) and BPAQ (r= -0.27, p<0.01) with WHOQOL. Problem focused coping has a significant positive correlation with WHOQOL (r= 0.26, p <0.01) and significant negative correlation (r= -0.28, p<0.01) with PSS. Emotional coping strategies have significant positive correlations with perceive stress (r= 0.17, p<0.01) and aggression (r= 0.22, p<0.01) (Table II).

Moreover, multiple regression analysis for emotional states of perceived stress and aggression (R^2= 0.12, F (2, 177) = 11.92, p < 0.01) significantly predicted quality of life in patients with hyper- and hypotension, with 12% variance explained in the later variable. It was found that stress (β = -.23, p=.002) and aggression (β = -.19, p=.012) significantly predicted quality of life with inverse relationship. It implied that the greater the state of stress and aggression in patients with blood pressure disorders, the lower quality of life is experienced and vice versa (Table III).

Moreover, multiple regression analysis for coping strategies (R^2= 0.099, F (2, 177) = 9.75, p < 0.01) significantly predicted quality of life in patients with hyper- and hypotension, with 9.9% variance explained in the later variable. It was found that problem focused coping (β = .35, p<0.001) significantly predicted quality of life with positive relationship. It implied that the higher use of problem focused coping strategies yielded good quality of life experience in these patients. However, emotion focused coping (β = -.21, p=0.011) significantly predicted quality of life with negative relationship. Therefore, less use of emotion focused coping yielded high quality of life experienced

among patients with blood pressure disorders (Table IV).

TABLE I: DEMOGRAPHIC VARIABLES

Variable	Categories	n (%)
Age	Less than 30	45 (25%)
	More than 30	135 (75%)
Gender	Male	45 (25%)
	Female	135 (75%)
Residence	Urban	82 (46%)
	Rural	98 (54%)
Education	Uneducated	42 (23%)
	Primary-intermediate	88 (49%)
	Graduation-doctorate	50 (28%)
Monthly income	Less than 50,000	154 (86%)
	More than 50,000	26 (14%)
Marital status	Married	146 (81%)
	Unmarried	34 (19%)
Family status	Joint	91 (51%)
	Nuclear	89 (49%)
Nature of illness	primary illness	135 (75%)
	secondary illness	45 (25%)

DISCUSSION

Hypertension has profound deleterious impact on the quality of life of individuals suffering from it[16]. However, hypotension could also not be ignored in this realm because the condition had been found to hold risky consequences in the mortality related health predictability outcomes[17]. The findings of our research have shown that perceived stress and aggression significantly correlates in negative proportion with quality of life in patients with blood pressure disorders (Table II). The Regression Model explains that these variables also significantly predicted the quality of life in patients with either hypotension or hypertension (see Table III). These findings are consistent with the studies conducted in other parts of the world such as India, China and Balgaria. Emotional aspects have been found to affect the quality of life of patients with hypertension[18].

Stress is attributable for increased risk in patients with hypertension. Empirical data obtained on 17,410

TABLE III: MULTIPLE REGRESSION ANALYSIS OF STRESS AND AGGRESSION AS THE PREDICTORS OF QUALITY OF LIFE

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	β		
(Constant)	109.41	4.76		22.96	<0.001
PSS	-1.22	.39	-.23	-3.08	.002
BPAQ	-.148	.05	-.19	-2.53	.012
R	.34	-	-	-	-
R^2	.12	-	-	-	-
F	11.92**	-	-	-	-

***p< 0.01*

TABLE IV: MULTIPLE REGRESSION ANALYSIS OF COPING STRATEGIES AS THE PREDICTORS OF QUALITY OF LIFE

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	β		
(Constant)	82.30	6.09		13.50	<0.001
PFC	.86	.19	.35	4.38	<0.001
EFC	-.39	.15	-.21	-2.58	.011
R	.31	-	-	-	-
R^2	.099	-	-	-	-
F	9.75**	-	-	-	-

**p< 0.01

TABLE II: PEARSON PRODUCT MOMENT CORRELATION COEFFICIENT OF VARIABLES OF STUDY

Variables	Mean ± SD	α	PSS	BPAQ	PFC	EFC
WHOQOL	88.66±14.46	0.87	-.294**	-.267**	.256**	-.039
PSS	7.06±2.72	0.75	-	.335**	-.281**	.165*
BPAQ	81.63±18.53	0.83		-	-.047	.219**
PFC	26.30±5.93	0.70			-	.479**
EFC	41.33±7.60	0.71				-

***p< 0.01; *p<0.05; α= Cronbach's Alpha*

individuals between age range 20 years to 67 years in a longitudinal study confirmed that emotional stress such as depression and anxiety are found to be linked with decreased blood pressure[19.] Tilov B 2016[20] conducted a study that explored aggression as a predictor of high blood pressure in 52 participants. It is because the higher the arousal of aggression, the lower will be the satisfaction with the life thereby contributed to undermining the quality of living is psychological, social, and ecological in life. Our findings suggested that blood pressure patients burdened themselves with psychological stresses of daily life issues such as those concerning education, career, employment, and marriages to name few. Hurdles in obtaining these lively aims might cause aggression, thereby pressurizing their nerves, aggravating their blood pressures, resulting in unhappiness with the quality of life in general.

Coping strategies used to manage blood pressure were found to influence the later thereby indirectly effecting cardiovascular health status of the individuals[21]. Our findings suggested that coping strategies particularly problem focused coping positive predicted the quality of life in patients suffering with blood pressure disorders. However, emotion focused coping negatively predicted the later in these ailed people (Table IV). These findings were confirmed by the results of the other researchers as well. An experimental study showed that emotion-focused coping strategies, problem-focused coping strategies, diastolic blood pressure, and systolic blood pressure were significantly different between the intervention and control groups after the intervention[22].

Task oriented coping or in other words problem oriented coping predicted hypertension in the sample of 158 adults[23] thus effecting quality of life in patients with hypertension[24]. The findings of our study suggested that problem oriented coping strategies have positive impact in quality of life. The more patients with blood pressure disorders solve their life problems with reasoning, the better they are adjusted to the demands of the either hypertension or hypotension.

It further indicated by results that in Pakistan, emotional coping strategies have significant negative impact on their perceived quality of life because it does not imply use of rationality and cognitive processes in effectively dealing with problems pertaining to the mandatory life. Mere blind faith in Supreme Power and mock support of significant others, as indicated in emotional coping without active use of cognitive reasoning, has unfavourable impact on quality of life in patients. The findings therefore posited engagement in problem solving approach that uses reasoning and rationality as proposed by Supreme Power in dealing with various aspects of life to cope with them effectively. However, further empirical researches are required to be conducted in future to validate the plausible explanation posited.

The data obtained from one thousand, nine hundred, and nineteen adults suggested that stronger God-mediated control beliefs moderated the blood pressure[25]. In addition to Divine beliefs, significant others also play role producing health related quality of life outcomes. Religious coping and social support were recognized as the significant mediators for quality of life in patients diagnosed with chronic illness[26]. Individuals who were socially isolated had a 60% increased risk of limitation in emotional regulatory functioning, hence effecting health related quality of life[27]. Cross-sectional results showed that emotion coping was negatively related to global quality of life in hypertension diagnosed individuals[28]. Our findings indicated less use of emotion focused coping predicted high quality of life in patients. Perhaps the reason might be interpreted as the blind faith devoid of reasoning and empty relational belonging with others resulted in low perceived quality of life. High reliance on emotion focused coping strategies has been found to contribute to blood pressure disorder, decreasing their quality of life in both the cultures unanimously. Another explanation might be that patients have overly loaded themselves with struggle for achieving life goals that are actually acts of Divine protocols, thus neglected easy task of discovering means towards achievement of Truth. Hence, they suffered from stress, aggression, and poor quality of life, aggravating symptoms of blood pressure abnormal fluctuation as they make more use of emotion focused coping.

The present study has investigated role of religious/ spiritual orientation and presence of significant others in the broad spectrum of emotion focused coping strategies. It is suggested that these variables must be delved deep with separate standardized instruments as Krägeloh CU 2012[29], pointed that investigating the role of religious coping required more complex models and research designs rather than assigning these crucial factors under domains of problem- or emotion-focused coping. The findings of our study implied that different interventions based on psychoeducation and counselling services launched at health care units could be used to improve the quality of life of the individual with chronic illness. Hence, placing psychologists in hospital setting for catering psychological problems of patients is a need of an hour, to enhance their quality-of-life precepts.

CONCLUSIONS

Conclusively, the present study posited that the quality of life in patients diagnosed with blood pressure disorders either hypertension or hypotension is significantly predictable by perceived stress, aggression, and coping strategies used. Higher the level of stress and aggression due to physical and psychological hassles of daily life, lower is the aspects

of excellence experienced in ones' life particularly when suffered from chronic blood pressure related issues. Further, problem focused coping strategies when used to deal with blood pressure management, yielded high-perceived quality of life. Contrarily, high emotion focused coping with blind belief in Divine and lack of genuine belongingness among relatives or others resulted in low quality of life in patients with low and high blood pressures.

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AUTHOR CONTRIBUTIONS

Shafiq S: Idea & concept of topic, manuscript writing
Farooq A: Data collection, data entry
Muhammad Q: statistical analysis, article drafting

REFERENCES

1. Banegas JR, Ruilope LM, de la Sierra A, Vinyoles E, Gorostidi M, de la Cruz JJ, et al. Relationship between clinic and ambulatory blood-pressure measurements and mortality. N Engl J Med. 2018; 378(16): 1509-1520. doi: 10.1056/NEJMoa1712231.
2. MultiCare Pulse Heart Institute. Conditions We Treat: Blood Pressure Disorders. 2020. [internet]. Available from: https://www.pulseheartinstitute.org/for-patients/conditions-we-treat/blood-pressure-disorders/
3. Shafi S, Shafi T. A survey of hypertension prevalence, awareness, treatment, and control in health screening camps of rural central Punjab, Pakistan. J Epidemiol Glob Health. 2017; 7(2): 135-140.
4. Qidwai W, Chand BT. Low blood pressure syndrome: a myth or a reality? Results of a patient's survey at a teaching hospital in Karachi. Pak J Med Sci. 2006; 22(4): 373-8.
5. Zhang L, Guo X, Zhang J, Chen X, Zhou C, Ge D, et al. Health-related quality of life among adults with and without hypertension: A population-based survey using EQ-5D in Shandong, China. Sci Rep. 2017; 7(1): 14960. doi:10.1038/s41598-017-15083-4.
6. Kim N, Park J, Hong H, Kong ID, Kang H. Orthostatic hypotension and health-related quality of life among community-living older people in Korea. Qual Life Res. 2020; 29(1): 303-312. doi: 10.1007/s11136-019-02295-6.
7. El Sayed K, Macefield VG, Hissen SL, Joyner MJ, Taylor CE. Rate of rise in diastolic blood pressure influences vascular sympathetic response to mental stress. J Physiol. 2016; 594(24): 7465-82. doi: 10.1113/JP272963.
8. Jennings JR, Pardini DA, Matthews KA. Heart rate, health, and hurtful behavior. Psychophysiol. 2017; 54(3): 399-408. doi: 10.1111/psyp.12802.
9. Folkman S, Lazarus RS. If it changes it must be a process: Study of emotion and coping during three stages of a college examination. J Person Soc Psychol. 1985; 48(1); 150–170. doi:10.1037/0022-3514.48.1.150
10. De Almeida RM, Cabral JC, Narvaes R. Behavioural, hormonal and neurobiological mechanisms of aggressive behaviour in human and nonhuman primates. Physiol Behav. 2015; 143: 121–135. doi:10.1016/j.physbeh.2015.02.053.
11. Bredow T, Peterson S, Sandau K. Health-related quality of life. In: Peterson S (ed.). Middle-Range Theory: Application to Nursing Research, 2nd edn. Philadelphia, PA: Lippincott Williams & Wilkins; 2008.
12. Cohen S. Urdu PSS (10 Item). Carnegie Mellon University; 2020. Available from:https://www.cmu.edu/dietrich/psychology/stress-immunity-disease-lab/scales/html/ pss.html.
13. Iftikhar R, Malik F. Translation and Validation of Aggression Questionnaire in a Pakistani Children Cohort. Pak J Soc Clin Psychol. 2014; 12 (1): 39-45.
14. Zaman NI, Ali U. Validity Assessment of Coping Styles Scale (CSS) Urdu. Pak J Psychol. 2015; 46 (1): 53-64.
15. Lodhi FS, Raza O, Montazeri A, Nedjat S, Yaseri M, Holakouie-Naieni K. Psychometric properties of the Urdu version of the World Health Organization's quality of life questionnaire (WHOQOL-BREF). Med J Islam Repub Iran. 2017; 31: 129-131.
16. Damanti S, Consonni D, Valentini A, Cerasoli B, Biotto M, Conti F, et al. Orthostatic hypotension, an often-neglected problem in community-dwelling older people: discrepancies between studies and real life. J Geriatric Cardiol. 2018; 15(10): 644-6. doi:10.11909/j.issn.1671-5411.2018. 10.005.
17. Kaliyaperumal S, Hari SB, Siddela PK, Yadala S. Assessment of quality of life in hypertensive patients. J Appl Pharmaceut Sci. 2016;6(5):143-7.
18. Liu MY, Li N, Li WA, Khan H. Association between psychosocial stress and hypertension: a systematic review and meta-analysis. Neurol Res. 2017; 39(6): 573-80.
19. Casagrande M, Favieri F, Langher V, Guarino A, Di Pace E, Germanò G, et al. The Night Side of Blood Pressure: Nocturnal Blood Pressure Dipping and Emotional (dys) Regulation. Int J Environ Res Pub Health. 2020; 17(23): 8892.
20. Tilov B, Semerdzhieva M, Bakova D, Tornyova B, Stoyanov D. Study of the relationship between aggression and chronic diseases (diabetes and hypertension). J Eval Clin Pract. 2016;22(3):421-4.

21. Nejati S, Zahiroddin A, Afrookhteh G, Rahmani S, Hoveida S. Effect of group mindfulness-based stress-reduction program and conscious yoga on lifestyle, coping strategies, and systolic and diastolic blood pressures in patients with hypertension. J Tehran Heart Cent. 2015; 10(3): 140-148.
22. Lindquist TL, Beilin LJ, Knuiman MW. Influence of lifestyle, coping, and job stress on blood pressure in men and women. Hypertension. 1997;29(1):1-7.
23. Casagrande M, Boncompagni I, Mingarelli A, Favieri F, Forte G, Germanò R, et al. Coping styles in individuals with hypertension of varying severity. Stress Health. 2019; 35(4): 560-568.
24. Jabbarifard F, Sharifi T, Rezaee AM, Hafshejani FS. Lifestyle and coping styles among hypertension patients and normal individuals. Int J Appl Psychol. 2015; 5(6): 178-182.
25. Krause N, Ironson G, Pargament K, Hill P. Neighborhood conditions, religious coping, and uncontrolled hypertension. Soc Sci Res. 2017; 62: 161-174.
26. Saffari M, Lin CY, Chen H, Pakpour AH. The role of religious coping and social support on medication adherence and quality of life among the elderly with type 2 diabetes. Qual Life Res. 2019; 28(8): 2183-2193. doi: 10.1007/s11136-019-02183-z.
27. Achat H, Kawachi I, Levine S, Berkey C, Coakley E, Colditz G. Social networks, stress and health-related quality of life. Qual Life Res. 1998; 7(8): 735-750.
28. Rueda B, Perez-Garcia AM. Coping strategies, depressive symptoms and quality of life in hypertensive patients: mediational and prospective relations. Psychol Health. 2013; 28 (10): 1152-70.
29. Krägeloh CU, Chai PP, Shepherd D, Billington R. How religious coping is used relative to other coping strategies depends on the individual's level of religiosity and spirituality. J Relig Health. 2012; 51(4): 1137-51. doi: 10.1007/s10943-010-9416-x.

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