

Illness Perceptions as a Predictor of Depression Among Hypertension Patients: The Moderating Role of Sense of Coherence

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ABSTRACT: Depression often manifests through prolonged feelings of sadness, hopelessness, and loss of interest in daily life. Among individuals with hypertension, perceptions about their illness can strongly influence emotional well-being and the development of depressive symptoms. The present study examined how illness perception relates to depression in hypertensive patients and explored whether a sense of coherence acts as a moderating factor in this relationship. A survey research design was used to collect the data. A purposive sample of 200 young adults (aged 23–30 years; $M = 25.61$, $SD = 2.40$), including both males and females, was selected. Data were gathered using three standardized tools: the Depression subscale of the DASS (Lovibond et al., 1995), the Brief Illness Perception Questionnaire (Broadbent et al., 2006), and Antonovsky's Sense of Coherence Scale (1978). Findings revealed a significant relationship among study variables and also highlighted that sense of coherence moderated the relationship between illness perception and depression among hypertensive patients. The results highlight the importance of addressing psychosocial components within both medical and psychological interventions for hypertensive patients. Furthermore, it is recommended that healthcare training programs include education on the psychological management of chronic illnesses, while future research should explore these relationships through longitudinal approaches.

KEYWORDS: Illness Perception, Depression, Sense of Coherence

Introduction

Depression is a long-term emotional problem, which is a constant state of sadness, hopelessness, and inability to motivate oneself that may last weeks and even months. It frequently accompanies physiological and behavioral symptoms, such as sleep problems, appetite, and energy disruptions, which result in severe dysfunctional functioning. These symptoms make people unable to perform their personal, social and occupational roles effectively. Depression can be even deeper when it occurs in combination with chronic physical conditions, causing more emotional and physical suffering. Depression has been cited as a major psychosocial issue amongst patients with hypertension, which has been linked with low compliance to medical care, low quality of life, high costs of treatment, and morbidity and mortality (Eriksson & Lindström, 2006).

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Researchers have always found that individuals with hypertension have stronger depressive symptoms than their counterparts, and this is why the study needs more in-depth examination regarding this comorbidity. Depression in Pakistan has become an alarming rate- it is estimated to be around 34-percent, a high rate compared to the prevalence rate in most developed countries. Developing countries have a two-fold problem; they will have to cope with the high prevalence of high blood pressure and deal with the increased prevalence of depression that puts an additional burden on already constrained health care systems. Although the prevalence of these conditions is high in Pakistan, there has not been much systematic studies that can be found to determine the relationship between them as compared to their neighbors like Nepal where more organized studies are available. Available evidence is that hypertension and depression both independently and in combination result in a higher deterioration in physical functioning and quality of life as opposed to either of the conditions, and result in greater risks of cardiovascular complications such as myocardial infarction and stroke. Nevertheless, the limited number of local empirical studies makes the knowledge gap wide, and it should be filled to facilitate the prevention, management, and establishment of effective policies (Mehmood et al., [2017](#)).

One of the psychological factors that affects how people cope with chronic illness is illness perception-the beliefs and emotional reactions that people have concerning their sickness. Illness perception encompasses the perceptions of cause of the illness, duration, consequences, controllability, and understandability. These thoughts and emotions influence the behaviour of patients, their coping, and compliance with the treatment. As soon as people perceive their illness as something they cannot control, something which happens without the possibility to predict, something threatening, they are more likely to develop psychological distress, poor adherence to medical advice, and deteriorating health (Ross et al., [2004](#)). Such conceptualizations of their illnesses can thus be important sources of data about the psychological adaptation of people and inform more comprehensive practices to healthcare. Studies have shown that changing sickness perceptions is possibly an effective part of health interventions, with some dimensions of the perception being associated with better adherence to treatments and health outcomes (McSharry et al., [2011](#)). However, the data on the impact of sociodemographic variables on illness perception, including age, gender, income, education, family history, and duration of the illness, is not consistent (Chew et al., [2015](#)). In addition to the illness perception, there is another important construct related to the psychological well-being, which is the Sense of Coherence (SOC) developed by Antonovsky ([1987](#)).

SOC indicates the ability of a person to perceive life as understandable, controllable, and purposeful, which makes them/more responsive to stressors. In the paradigm of salutogenic, a robust SOC is a protective factor, which leads to resilience, emotional stability, and favorable health outcomes. Higher SOC also results in fewer symptoms of depression and anxiety, even when one has a chronic illness. On the other hand, a weaker SOC is associated with increased psychological vulnerability and the inability to deal with negative life events. Studies that are carried out on adolescents and young adults especially highlight that low SOC correlates with poor coping skills, a sense of lack of control, and increased vulnerability to depressive symptoms. Since hypertension and depression are prevalent in Pakistan and very little is known about the psychosocial aspects of illness perception and sense of coherence, it would be necessary to understand the interaction of these two variables. Investigating the possibility of SOC to moderate the association between the perception of illness and depression can further our knowledge of the psychological processes that

influence the well-being of patients. The insights can be used to develop more specific interventions that facilitate adaptive beliefs about illness, emotional resilience and management of chronic conditions.

Significance of the Study

Hypertension is a non-communicable disease that is one of the most prevalent throughout the world, and at the same time, a major psychological burden in terms of physiology. This twofold effect is particularly clear in developing situations like the one in Pakistan, where low health literacy, low access to healthcare, and inadequate emotional support systems are compounding the problems faced by patients. The common comorbidity of hypertension, which is depression, worsens disease management, hence contributing to poorer outcomes and reduced quality of life. The psychological determinants of depression in hypertensive people are, therefore, important in order to establish effective and culturally appropriate prevention and intervention strategies. This study, based on the biopsychosocial model, places the issue of illness perception at the centre of predicting depression. The manner in which people perceive and feel about their illness determines their feelings of control, coping mechanisms and compliance with healthcare recommendations. The beliefs of illness are negative or catastrophic and may cause helplessness and hopelessness, which are fundamental causes of depression. Moreover, a moderating variable, Sense of Coherence, is introduced in the current study, and it is hypothesised that people with a higher SOC can better handle coping with the stressor and negative impact of illness perceptions. It is anticipated that a strong SOC will cushion the psychological pain of maladaptive beliefs of illness and encourage resilience and psychological adaptation. This study is of specific concern to Pakistan, where the problem of hypertension is becoming increasingly prevalent because of the change in lifestyle, stress, and insufficient preventive health practices.

Objectives

The current research was planned with the following objectives

- ▶ To investigate the relationship between illness perception and depression among hypertensive patients.
- ▶ To explore the moderating role of sense of coherence between illness perception and depression, along with demographic differences among hypertensive patients.

Hypotheses

Based on these objectives, the following hypotheses were proposed:

1. **H1:** There will be a significant relationship in the study variables among hypertensive patients.
2. **H2:** Sense of coherence will moderate the relationship between illness perception and depression among hypertensive patients.

Methodology

Research Design

The research employed a survey research design to identify the association between illness perception and depressive symptoms in participants with a hypertension diagnosis. It also analysed how the sense of coherence (SOC) moderates this relationship. The design provided an opportunity to deeply comprehend the relationship between cognitive and emotional interpretations of their illness by the participants and its impact on their psychological well-being over a certain period of time.

Participants

A purposive sampling technique was used. The inclusion criteria were: (a) confirmed diagnosis of hypertension, (b) age between 23 and 30 years, and (c) ability to understand and complete the questionnaires.

The exclusion criteria were: (a) history of serious mental illness (like schizophrenia, bipolar disorder), (b) significant cognitive impairment, and (c) inability to complete the questionnaire due to physical or sensory limitations.

The final sample consisted of 200 hypertensive patients (122 females, 78 males), aged 23–30 years ($M = 25.61$, $SD = 2.40$). Demographic data such as gender, age, marital status, socioeconomic status, and severity of hypertension were recorded.

Measures

Depression Anxiety Stress Scales

The subscale (Depression) of the Depression Anxiety Stress Scales was used in the present research to measure Depression. It was developed by Lovibond & Lovibond (1995). This subscale has seven items and has a four-point Likert format in which 0 represents not at all and three means most of the time. This scale has satisfactory reliability and validity with a Cronbach's alpha of .74

Brief Illness Perception Questionnaire

The Brief Illness Perception Questionnaire was used to measure the level of illness perception. This Scale was developed by Broadbent et al. (2006), which has eight items. It has a ten-point response format, which ranges from 0 (indicates no effect) to 10 (severe effect). The scale has high reliability, with a .94 Cronbach's alpha value.

Sense of Coherence Scale

The Sense of Coherence scale was employed to check the level of Sense of Coherence. It was developed by Antonovsky (1987), which has 13 items with a five-point Likert format, which range from 1(not at all) to 5 (very true). It has very good reliability, its Cronbach's alpha value is .88.

Procedure

Formal approval for data collection was obtained from the Department of Psychology, the University's Ethical Review Committee, and the administrations of the respective hospitals where the study was conducted. In addition, prior permission was sought and obtained from the original authors of the standardised questionnaires for their use in the present research. Participants were recruited from various hospitals and clinics located in Punjab. Before participation, they were provided with a comprehensive briefing about the objectives and procedures of the study. They were assured of both the confidentiality and anonymity of their responses and were made aware that they could drop out of the study at any point without any form of negative consequences. All participants signed informed consent before the process of data collection.

The data were gathered at a personal level in a comfortable and conducive setting. The questionnaires were filled out by all the participants in the presence of the researcher and lasted about 25-30 minutes. The researcher revised the answers to ascertain completeness and gave clarification where necessary. After

completing the research, participants received heartfelt gratitude for their participation, time, and important input.

Data Analysis

Statistical analyses were carried out using the SPSS program. Both the psychometric properties of the measuring tools and the demographic traits of the individuals were described using descriptive statistics. The scales' internal consistency reliability was assessed using Cronbach's alpha coefficients. To ascertain the correlations between the research variables, a Pearson correlation analysis was performed. Additionally, the moderating influence of a sense of coherence on the relationship between depression and illness perception was investigated using moderation analysis using the PROCESS macro.

Results

Table 1

Socio-Demographic Characteristics of Hypertensive Patients (N = 200)

Demographic variables	F	%
Gender		
Male	78	39.0
Female	122	61.0
Hypertensive severity		
Mild	86	43.0
Moderate	100	50.0
Severe	14	7.0
Year of diagnosis		
>1 year	64	32.0
>5 years	116	58.0
>10 years	20	10.0

Table 1 presents the frequency and corresponding percentage based on gender, family system and education. Results indicated that females are greater in number (n=122, 61%) as compared to males (n=78, 39%). More participants are at the moderate level (n=100, 50%) as compared to the mild (n=86, 43%) and high level (n=14, 7%). Patients who were diagnosed with hypertension spanning below 5 years (n = 116, 58%) are more than those whose diagnosis spanned below 1 year (n = 64, 32%), but more than those whose duration of diagnosis spanned below 10 years (n 20, 10%).

Table 2

Psychometric Properties of Study Variables (N = 200)

Scale	M	SD	Range	Cronbach's α
Illness Perception	40.47	14.52	7-70	.75
Depression	8.82	3.47	0-17	.81
Comprehensibility	16.43	4.26	5-25	.64
Manageability	12.87	3.56	4-20	.59
Meaningfulness	12.79	3.85	4-20	.73
Total Sense of Coherence	42.09	10.02	13-61	.84

Table 2 shows the mean, SD, range and reliability of the scale used in the current study. The reliability analysis indicated that the Brief Illness Perception Scale demonstrated a reliability coefficient of 0.75, while the Depression subscale of the Depression Anxiety Stress Scales showed a coefficient of 0.81. For the Sense of Coherence Scale, the subscales yielded reliability coefficients of 0.64 (comprehensibility), 0.59 (manageability), and 0.73 (meaningfulness), with an overall coefficient of 0.84 for the total scale. These results indicate that all measures exhibit satisfactory internal consistency.

Table 3

Correlation among Study Variables (N = 200)

Variables	1	2	3	4	5	6
1. Illness Perception	-					
2. Depression	.16*	-				
3. Comprehensibility	.23**	-.18**	-			
4. Manageability	.15*	-.16*	.62**	-		
5. Meaningful	.22**	-.09	.61**	.56**	-	
6. Total Sense of Coherence	.24**	-.17*	.88**	.83**	.84**	-

*p<.05 **p<.01

Table 3 demonstrates the Pearson correlation coefficients between the study's variables. According to the results, there is a significant positive correlation between depression and the perception of illness ($r = .16$, $p < .05$). Manageability ($r = -.16$, $p < .05$) and comprehension ($r = -.18$, $p < .01$), subscales of SOC, have a significant correlation with depression. There is a significant correlation between overall sense of coherence and both depression ($r = -.17$, $p < .05$) and the perception of illness ($r = .24$, $p < .01$).

Table 4

Sense of Coherence as Moderator between Illness Perception and Depression (N=200)

Outcome: Depression					
				95 % CI	
Predictors	B	S.E	p	LL	UL
Constant	10.03	.24	.03	9.55	10.50
Illness perception	.04	.01	.07	.03	.06
Sense of coherence (SOC)	-.06	.02	.06	-.02	-.09
SOC × illness perception	-.011	.001	.05	-.02	-.05
R ²	.10				
F	4.17				

Note. N = 200, B = Unstandardized coefficient, LL = Lower limit, UL = Upper limit, CI = Confidence interval.

*p<.05.

Table 4 shows the moderating influence of sense of coherence in the relationship between depression and the perception of illness, $F(2, 197) = 4.17$, $p < .05$. The value of $R^2 = .10$ indicates that the predictor accounts for 10% of the variance in the outcome variable. The findings shows that there is significant relationship

between depression and the perception of illness ($B = .04, p < .05$), sense of coherence ($B = -.06, p < .05$), or $SOC \times$ illness perception ($B = -.011, p < .05$). The findings show that the relationship between depression and the perception of illness is moderated by sense of coherence.

Discussion

The current paper sought to examine predictors of depression in hypertensive patients with special emphasis on whether Sense of Coherence (SOC) plays a modifying role or not. In the study of the interaction between illness perception and SOC, this study aimed to gain more insight into the effect of the psychological constructs on the depressive symptoms in persons with chronic illness. The following discussion will interpret the findings based on the current evidence and expound on the theoretical implications, possible explanations, and future research directions. The results obtained indicated a strong positive relationship between illness perception and depression, indicating that those who perceived their illness as more threatening or uncontrollable were likely to report greater levels of depressive symptoms. This result is in line with the earlier literature that highlights that maladaptive illness beliefs, including the perception that the condition is serious, unpredictable, and uncontrollable by the person, have the potential to intensify the level of psychological distress and are known to cause emotional distress (Ross et al., 2004). Patients internalising negative beliefs about the illness will have greater chances of feeling hopeless and desperate, and this will make them more susceptible to depression. Sense of Coherence, on the other hand, had a negative correlation with depression, especially in the comprehensibility dimension. It means that those people who are not able to make sense of the events in their lives, or who see their experiences as chaotic and meaningless, are more likely to develop the symptoms of depression.

Conversely, individuals who have a more powerful SOC have a more coherent view of their conditions and are more confident in their ability to cope with them, which is why they are more emotionally regulated. The findings are aligned with the salutogenic framework described by Antonovsky (1978) that puts SOC in the role of the primary resilience determinant that helps individuals better manage stressors and stay psychologically healthy. This has been the case in other studies that have associated increased SOC and reduced levels of psychological distress in people who experience chronic health conditions (Eriksson & Lindstrom, 2006; Flensburg-Madsen et al., 2006). The current research examined the moderating effect of SOC on the relationship between illness perception and depression. The moderation analysis showed that SOC has a buffering effect on this relationship. Even though the interplay was used to explain a small part of the variability in depression, it offers a valuable understanding of the way people deal with stress levels as a result of illness. Namely, individuals with a less favourable perception of their illness and with lower SOC are more likely to experience greater rates of depression, and individuals with a stronger SOC are in a better position to cope with the emotional implications of their perceptions about illness. This is in line with Antonovsky's (1987) understanding of SOC as a psychological source which enables individuals to attribute meaning to events that happen to them and enables them to interpret these incidents as being meaningful, manageable and understandable. In line with the previous evidence (Flensburg-Madsen et al., 2006), the current research confirms the hypothesis that SOC may alleviate the emotional weight of negative illness beliefs. That is, patients who have a strong SOC can put their illness experience in a more meaningful manner that helps lessen the occurrence or development of depression symptoms.

On the whole, these findings point to the beneficial effect of SOC in preserving the psychological health of people with health issues. The second strategy to increase strengths in SOC by counselling or psychoeducating patients may be effective to assist them in gaining adaptive coping strategies and becoming less vulnerable to depression.

Conclusion

The objective of the current research was to investigate the predictors of depression in hypertensive patients with more emphasis on the moderating effect of Sense of Coherence (SOC). This study aimed to examine the interactions between illness perception and SOC to gain a better understanding of how the two psychological constructs affect depressive symptoms in chronic illness management. The results showed that there was a strong positive relationship between illness perception and depression; therefore, people who perceived their illness to be more threatening or uncontrollable were more likely to report higher levels of depressive symptoms. Sense of Coherence, on the other hand, showed a negative correlation with depression, which means that people who find difficulties in the meaning of events in their lives, or who consider their lives to be chaotic and meaningless, are more susceptible to the symptoms of depression. Conversely, individuals who have a stronger SOC have a more accurate definition of their situation and are more confident that they can handle it; hence, they show improved emotional adjustment. These data comply with the salutogenic model proposed by Antonovsky (1978), which makes SOC one of the primary resilience sources to allow people to deal with stressors more efficiently and stay psychologically healthy.

Limitations

Although the current research provides valuable information about the psychological correlates of depression in hypertensive patients, one should note some shortcomings. First, the cross-sectional study limits the capability of making inferences of causality between the illness perception, sense of coherence and depression. Future research taking either longitudinal or experimental designs might help determine the directional and long-term effects of these relationships. Second, the research used the self-report questionnaires only, which could be subject to the bias of responses, like social desirability, false recall, or subjective interpretation. The validity of the future results would be improved with the use of various sources of information, such as clinician ratings or physiological data. Third, the sample was restricted to patients with hypertension in Sargodha, which may minimise the extrapolation of the findings to other geographical areas or clinical groups. The psychosocial interactions associated with it may be better understood using diverse samples of cultural and healthcare contexts.

Lastly, the present model did not investigate other potentially relevant factors of psychosocial and behavioural implications, such as medication compliance, coping mechanisms, and social support. It would be interesting to include these variables in future studies, as they would provide a more holistic picture of the way in which psychological and contextual determinants work together to increase depression in chronic illness.

To enhance the work in the future, the researchers should employ bigger and more heterogeneous samples, employ multi-method assessment methods, and use longitudinal designs to prove and extend the already obtained results.

Implications

The results of the present research have both theoretical and practical implications. Theoretically, those findings highlight the significance of combining cognitive theories like the illness perception and resilience based theories like the Sense of Coherence (SOC) in explaining depression among people living with chronic illnesses. It is precisely through this integration that the multifaceted nature of psychological adjustment in medical populations is emphasized.

Practically, the results point to the necessity of psychosocial interventions that would increase the patient knowledge regarding their disease and their ability to cope better with the diagnosis. Psychoeducation, cognitive restructuring, meaning-making can be oriented in specific programs created by health psychologists and counselors to acquire a greater sense of coherence and eliminate depressive symptoms in patients.

In addition, the research supports the importance of such a study as a biopsychosocial model in the management of hypertension. Doctors ought to be sensitized on the psychological nature of chronic disease and be trained on how to detect emotional distress at an early stage. The implemented change of integrating mental health assistance into regular clinical practice can substantially enhance the psychological state and the levels of treatment compliance in hypertensive patients.

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