Illness Perception Among Patients With Hypertension in Nepal

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***Abstract*—Illness perception among hypertensive patients influences their coping behavior. The aim of the study was to assess illness perception among patients with hypertensive in Nepal. A descriptive cross-sectional study design was employed. We recruited 85 patients with hypertension registered at the out-patient department of Sahid Gangalal National Heart Centre, Nepal and collected data using the Extended Brief Illness Perception Questionnaire. Hypertensive patients had a moderate threatening view about their illness. Patients represented hypertension as a long-lasting illness that can be controlled with treatment. Patients believed hypertension might have serious consequences associated with heart attack, brain hemorrhage, paralysis of body and death. The overriding causes of hypertension as perceived by patients were unhealthy diet and stress. Patients favored taking medicines than lifestyle modifications for controlling their blood pressure. These illness perceptions of patients were influenced by the experiences and information inherent in Nepalese culture. Assessing illness perception helps to understand hypertensive patients' implicit views regarding their illness and contributes to their better management. The findings can be used as baseline information to understand illness perception among patients with hypertension in Nepalese community and further develop an intervention.**

Keywords-illness perception; hypertension; nurses; Nepal

I. INTRODUCTION

Hypertension is one of the most common forms of the cardiovascular disorder. The estimated global prevalence of hypertension is 40.7% of the total population [1]. In the United States of America, one out of every three adults, that is 67 million population have hypertension and more than half of them do not have their blood pressure under control [2]. The numbers of adults with uncontrolled hypertension are higher in low and middle-income countries, including Nepal [3]. A cross-sectional study [4] showed that prevalence of hypertension in Nepalese community tripled in 25 years since 1981. Reference [5] reported that the prevalence of hypertension in Nepal ranged from 18.8 % in the year 2003 to highest 33.9 % in the year 2011.

Hypertension is the major modifiable risk factor for heart failure, myocardial infarction, and other coronary vascular diseases, and accounts for nearly 45% of deaths caused by cardiovascular disease. Similarly, complications of hypertension associated with stroke alone caused an estimated 9.4 million deaths internationally in 2008 [3]. Nevertheless, with proper treatment, this vast number of associated deaths and complications can be hindered by achieving the optimal blood pressure control.

Illness perception of hypertensive patients influences their coping behavior and contribute to better management of blood pressure levels [6]. Illness perception is the implicit belief system about an illness constructed by an individual to give meaning to their illness based on the assimilated and integrated information from different sources [7]. Simply, illness perception is the conception of a person about his or her disease. Reference [7] has confirmed that the Common Sense Model (CSM) is useful in exploring the illness perception of an individual.

The CSM comprises two independently occurring parallel processing systems known as, cognitive illness representations and emotional illness representations. Cognitive illness representations are an individual's objective or knowledge-based representation of health threat reflecting how he/ she understands or conceptualizes the health threat. They are generated from an interpretation of information assimilated from his/ her past and present knowledge, experience and communication with others, and guides cognitive-focused coping. There are five dimensions of cognitive illness representations. They are: identity, cause, timeline, consequences and cure/ control. 'Identity' refers to the label or symptoms an individual associates with the disease, 'cause' refers to the individual's belief about etiology of disease, 'timeline' refers to the individual's belief about the duration of disease, 'consequences' refers to belief about the impact of the disease on the individual's life, and 'cure/ control' refers to a belief about whether something can be done to recover from the illness [8].

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Emotional representations are psychological and subjective response to the health threats and reflect their affective associations and responses to the cognitive-based illness representations and lead to emotion-focused coping. There are two dimensions of emotional representations: concern and emotion [9]. 'Concern' refers to the individual's perceived problem aroused from illness, and 'emotion' refers to the individual's affective feelings or response about the illness. Reference [10] have extended the assessments of illness perception by adding a dimension, illness coherence. 'Coherence' refers to the individual's degree of understanding or comprehension of the illness. When an individual experience an illness, cognitive representations and emotional representations of the illness, or illness perception is constructed which influence the coping procedures [7, 11].

However, only a few studies addressed illness perception in hypertensive patients and most of these scientific studies were conducted in the western and/ or developed countries, such as Taiwan [12, 13] and the United States of America [14, 15]. There is no record of any such studies in Nepal yet. Lifestyle (salty, spicy and oily diet), culture (their belief in traditional and herbal medicines), health care accessibility, education system, and living standards in Nepal are largely different from other countries. The culture, traditions and religious rituals in Nepal strongly influence the lifestyle of people in Nepal and their belief about illness [16]. Therefore, the findings from previous studies might not be generalized with the hypertensive patients in Nepal, suggesting that illness perception in hypertensive patients are yet to be explored in Nepal. Thus, the aim of the study was to assess illness perception among patients with hypertension in Nepal.

II. Methodology

A. Design

A descriptive cross-sectional study was conducted.

B. Participants

The sample for this study consisted of 85 adult patients with a diagnosis of hypertension and registered at the out-patient department of the Shahid Gangalal National Heart Centre, Nepal. Purposive sampling was used to recruit subjects for the study.

C. Measures

Data was collected between the months of February and March, 2016 using the questionnaire, the Extended Brief Illness Perception Questionnaire.

The Extended Brief Illness Perception Questionnaire (EBIPQ)

In this study, the Brief Illness Perception Questionnaire (BIPQ) was modified to assess illness perception in patients with hypertension [9]. The questionnaire was extended and divided into two parts, Part I and Part II. The Part I encompasses the original BIPQ which is comprised of 9 items altogether, namely, item 1 (consequences), item 2 (timeline), item 3 (personal control), item 4 (treatment control), item 5 (identity), item 6 (concern), item 7 (coherence), item 8 (emotion) and item 9 (cause). The first eight items (item 1 to item 8) were measured in a continuous linear scale ranging from 0 to 10, and the 9th item (cause) was assessed by open-ended question as in the original questionnaire. The possible scores range from 0 to 80. Higher scores indicated the more threatening view of illness perception. The answers obtained from the 9th item were grouped into categories and was analyzed with simple content analysis method.

The Part II encompasses the Open Ended Questionnaire (OEQ), adapted from the previous study [17]. The purpose of designing the OEQ was to capture the patient's perception of illness in depth and to aid the information obtained from the BIPQ. The OEQ consists of total 10 items, namely identity (item 1), cause (item 2), timeline (item 3), consequences (item 4) and cure/ control (item 5-7), concern (item 8), coherence (item 9) and emotion (item 10). The qualitative data obtained from the OEQ was analyzed using the content analysis method [18].

The researcher obtained permission to modify and translate the questionnaire. Back translation method was employed for the translation of instrument to the Nepalese language. A panel of three experts analyzed the content validity and a pre-testing was conducted among 20 hypertensive patients to calculate the reliability of the instruments. The patients were recruited from another hospital with similar setting. The Cronbach's alpha for the EBIPQ was .72 which is regarded as acceptable value [19].

D. Ethical Considerations

The researcher obtained permission from the Institutional Research Board of the Faculty of Nursing, Prince of Songkla University, Thailand and National Health Research Council, Nepal to protect the human right of participants. The study included only those patients who agreed to participate. The researcher started the procedure after well explaining the purpose, procedure, risk, comfort and benefit of study. They were also explained that they have right to withdraw at any time during the study. All of the information from the subjects and the identity of them were kept confidential. The anonymity of the participants was maintained by using coding system.

E. Data Analysis

Descriptive statistics was used to analyze and describe the demographic characteristics, and illness perception of the patients. The mean, standard deviation, frequencies and percentage were calculated wherever possible. The simple content analysis method was used to analyze qualitative data from the OEQ to describe the phenomena of illness perception. The content analysis consisted of following steps: breaking down whole data into smaller coherent parts, organizing the parts according to the content they represent and finally categorizing them based on shared concepts [18].

III. Results

A. Demographic Characteristics

The mean age of the patients was 51.81 (S.D = 11.38). The highest percentage of the patients (32.9%) belonged to the age group of 41 to 50. About 34.1% of the patients were the

Brahmins (ethnicity of Nepal). The majority of the patients' (87.1%) religion was Hindu, and most of the patients (90.6%) were married. More than half of the patients (54.1%) had a family income of approx. 100 to 300 US dollar (Table I).

TABLE I. DEMOGRAPHIC CHARACTERISTICS (N = 85)

Characteristics	*n*	*%*
Age, years		
19 - 30	1	1.2
31 - 40	12	14.1
41 - 50	28	32.9
51 - 60	27	31.8
> 60	17	20
Ethnicity		
Brahmins	29	34.1
Kshatriyas	21	24.7
Newars	19	22.4
Others	16	18.8
Gender		
Male	53	62.4
Female	32	37.6
Marital status		
Married	77	90.6
Widow/widower	8	9.4
Religion		
Hindu	74	87.1
Other	11	12.9
Family type		
Extended/ Joint	41	48.2
Nuclear	44	51.8
Monthly family income		
< USD[a] 100	17	20
USD 100 - USD 300	46	54.1
USD 300 - USD 500	16	18.8
> USD 500	6	7.1

a.USD, United States Dollars

B. Health-related Characteristics.

TABLE II. HEALTH-RELATED CHARACTERISTICS (N = 85)

Characteristics	*n*	*%*
Duration of hypertension (months)		
< 12	13	15.3
12 to 24	7	8.2
> 24	65	76.5
Blood pressure (systolic)		
< 140 mmHg	55	64.7
≥ 140 mmHg	30	35.3
Blood pressure (diastolic)		
< 90 mmHg	55	64.7
≥ 90 mmHg	30	35.3
Number of drugs per day		
Only one	70	82.4
More than one	15	17.6
Time of medication		
Morning	40	47.1
Evening	26	30.6
Morning and evening	19	22.4

The duration of hypertension was more than two years for the majority of the patients (76.5%). The systolic and diastolic blood pressures were under control for more than half of the patients (64.7%). Approximately half of the patients (45.9%) did not have any comorbidity whereas 40% of the patients had other comorbidities, particularly gastritis. Regarding current use of medicines, the majority of the patients were taking one drug per day (82.4%) and about half of them (47.1%) took medicine in the morning (Table II).

C. Illness Perception

The illness perception was assessed with the Extended Brief Illness Perception Questionnaire (EBIPQ) consisting two parts. The scores obtained from the first part of the EBIPQ (8 items of the BIPQ) are summarized in Table III. It depicts that two-thirds of patients (61.2 %) had a moderate threatening illness perception and just below one-quarter perceived hypertension as a low threatening illness.

TABLE III. ILLNESS PERCEPTION (N = 85)

Level of illness perception	*n*	*%*
Low	18	21.2
Moderate	52	61.2
High	15	17.6

The 9th item of the questionnaire assessed patients' belief regarding the three most important causes of hypertension. The causes of hypertension as perceived by the patients could be categorized as modifiable and non-modifiable causes as shown in Table IV. The majority of patients believed that the prime cause of hypertension is modifiable.

TABLE IV. PERCEIVED CAUSES OF HYPERTENSION (N = 85)

Cause (n^a = 176)	n^a	*%*
Nonmodifiable cause	35	19.89
Heredity	22	62.85
Age	13	37.14
Modifiable cause	141	80.11
Unmanaged diet (consuming salty diet, fatty diet, spicy diet, unhealthy diet, unhygienic or adulterated food, overeating)	59	41.84
Stress (mental tension, fear, family-related stress, job -related stress, culture- related stress)	52	36.87

a. Total items for perceived cause received from patients

D. Open Ended Questions

Furthermore, the second part of EBIPQ, the OEQ explored the illness perception among 30 patients in depth. The results obtained are summarized below:

Consequences

Hypertension was perceived as a life threatening condition bringing devastating consequences to their life. Most of the patients perceived that hypertension had more than one consequence. They answered that hypertension led to paralysis of a body, heart attack, brain hemorrhage, death, renal failure or blindness. Minority mentioned being handicapped, diabetes mellitus and bleeding as the consequences of hypertension. A patient stated:

"It can make our life difficult. I have seen people rushed to the hospital due to bleeding in brain or heart attack caused by hypertension. It can affect my kidney. People with hypertension also have diabetes mellitus. I might die anytime if my blood pressure increases suddenly."

However, one of the patients was unaware about the complications of hypertension as stated:

"I don't know. I have never thought if it would ever bring dangerous complications. I have not experienced anything like that until now."

Timeline

The perceived timeline of hypertension varied from long-term to short-term course. Half of the patients described that hypertension was lifelong and it had long term course. A patient stated:

"Doctor said it could be controlled but not treated which means my illness lasts lifelong. I have to eat medicine all my life because it will not leave me until I die."

The remaining half of patients believed that hypertension was short-term, such as from one to three years. A patient perceived that hypertension was acute lasting less than a month. She believed that taking medicines would cure her hypertension as stated:

"I will be normal after taking medicines. Doctors can cure my disease, and that's why I came to hospitals. It will not last longer than a month."

Cure/ control

Regarding the dimension cure/ control, three open-ended questions were asked to assess personal control and treatment control (medicine and lifestyle modifications). For the personal control, the majority of the patients believed that they had control over their hypertension. One patient stated:

"My blood pressure is under good control now because I have modified my diet and performing exercise daily."

Minority (five out of thirty) answered of having no control over the illness. One patient commented:

"I don't have any control over my blood pressure. It keeps on increasing regardless of whatever I do, and sometimes it comes to normal when I do nothing."

For the treatment control, patients were asked about the use of drug and lifestyle modifications to control hypertension. More than half of the patients were positive for the medication. Patients regarded medication as a way to feel safe because it helped to control blood pressure. One patient specified:

"*Medicines are better. I have been taking my medicines for ten years as the doctor advised and I am healthy. I feel safe after taking medicine."*

However, some of the patients had negative responses regarding medication such as they had to take it daily and for lifelong which was tiring. Regardless of dislike for medication concerning about side effects, they didn't stop taking it.

"I am worried that eating lots of medicines will make me weak and affect my body. I am scared it might decrease my blood pressure more than required. Though, I take it regularly because doctors prescribe me every time I come here. I couldn't deny when they gave me medicine."

Most of the patients regarded lifestyle modifications as helpful and important in controlling blood pressure but difficult and overwhelming. Diet and exercise were the major components of lifestyle modification. For example, one patient stated:

"Changing lifestyle is advantageous as it controlled my blood pressure. We have to stop eating lots of salt, meat, and fats. We need to jog around every day. It makes me feel good at times, but it's tiring."

Patients complained about difficulty to adopt all the required lifestyle modifications due to time constraints, culture, and traditions. One patient commented:

"We cannot follow all the rules of lifestyle modifications because of our traditions, such as, lots of festivals, our eating habits and types of food. Hence, we fail sometimes and it might affect our blood pressure."

Identity

The patients with hypertension reported headache and dizziness as the common identity of hypertension. The other symptoms experienced by patients were a warm body, weakness, pain (neck, chest, back, eye, and ear), anger, tingling sensation, and palpitation. They reported, when they experienced these symptoms, they got worried and went for a health check-up and preferred to follow instructions from doctors or nurses. A patient described of facing lots of symptoms as:

"When I have a headache, backache, neck pain, feel dizzy and weak, then I know that my blood pressure has risen. I go to the hospital to check it. I listen to what nurses ask me to do. It makes me feel safe and less worried."

Concern

Patients were concerned about the negative consequences brought upon by hypertension. The majority of patients reported they were worried about the sudden rise of blood pressure, death or stroke. Patients also stated family as one of their concern. They were worried about being a burden to their family whereas some of them were worried that there would be nobody to take care of their family if they could not work. Similarly, patients had concerns related to their treatment, such as the possibility of being cured and lifelong medications. A patient commented:

"*I am worried a lot. If I suddenly collapse from high blood pressure, my family will be devastated."*

The minority of the patients, on the other hand, mentioned they had no worries regarding hypertension at the moment. As a patient said below:

"Worrying doesn't improve my illness. So I don't take any stress related to it, and I am fine."

Coherence

Regarding the dimension coherence, more than half of the patients believed that they understood everything that they need to know about hypertension. Their understanding was

based on the information they received from health care providers, friends, media and their experiences of hypertension. A patient informed:

"I think I know all about high blood pressure. I had read about it in the newspaper and received the information booklets from the hospital. I read it from time to time and learned many things from it."

However, the minority of the patients perceived that their knowledge about hypertension is superficial and limited to the list of things they need to modify in their lifestyle. They felt the need for more information regarding the cause and treatment of hypertension. As a patient said below:

"I have some idea about the things to follow after we have high blood pressure, but I don't understand about what causes high blood pressure."

Emotion

The emotions of hypertensive patients varied from nothing to feelings of fear, anger, and sadness. The majority of the patients' emotions were unaffected from having hypertension. Patients reported that their emotions fluctuated from fear and sadness to anger. As a patient stated below:

"At times I feel angry to have this illness. Then, sometimes I have this sad feeling that God cursed me with this disease and at times I had this fear what if I cannot live long because of high blood pressure."

Cause

The majority of patients perceived that hypertension came from the food they ate. They described it was customary to attend festivals and feasts where they had to eat food that could increase blood pressure. About half of them assumed stress as the cause of their hypertension. Other causes mentioned by patients were age, heredity, lack of sleep, obesity, getting angry frequently and fear of an earthquake. Patients predominantly assumed that their food habit adopted from their culture, and stress were the cause of their hypertension as reflected in the following statements:

"We, Nepalese have festivals or feasts or rituals every month, sometimes twice a month. It is difficult to avoid them as they (friends and relatives) might be disappointed if I don't attend those ceremonies. Even though I know that it is harmful to my health, I end up eating salty and fatty foods there. I am worried about it."

Another patient quoted:

"I have mental stress when these festivals arrive. I know this increases my blood pressure. Preparing for feasts means buying lots of food and alcohol for guests. We have to spend lots of money but it is hard to earn money. "

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IV. Discussion

Patients had a moderate threatening perception about hypertension. Former studies on illness perception among patients with hypertension showed similar results [20, 21]. In this study, patients believed their cultural practice impacted their hypertension. Nepal has a large number of festivals and rituals accompanied by the intake of high-calorie foods [16]. Patients perceived that their blood pressure level worsened because of consumption of salty, spicy foods and alcohol in these cultural and religious rituals and believed they were prone to devastating consequences of hypertension all the time. Hence, there might be a predisposition to the moderate threatening view of hypertension.

The majority of the patients perceived that hypertension has devastating consequences in their life. Patients believed hypertension might lead to serious complications such as paralysis of the body, a heart attack, stroke, or death. Though, patients were unsure about the progression of these complications. They assumed that these consequences might appear at any time point which made them anxious and impacted their daily life. Patients with hypertension, regardless of ethnicity, culture or geographical area believed that high blood pressure led to serious consequence [22]. Reference [23] stated that patients believed that hypertension could lead to severe consequences such as stroke, paralysis, and heart attack. Similarly, reference [24] reported that patients listed heart disease, kidney disease, diabetes mellitus and stroke as the consequences of hypertension.

The majority of the patients perceived hypertension as a permanent illness. They believed hypertension stays with them forever and could bring numerous complications if they don't adhere to treatment. Also, in a study conducted in different countries of Asia, the majority of the patients believed the timeline of hypertension to be chronic in nature [23]. The majority of the patients recalled that doctors and nurses in the hospital instructed them to follow the treatment (medicine and lifestyle modifications) for lifelong which assimilated their perception of hypertension being a permanent condition.

To the bright side, though patients had a threatening view about hypertension, they believed that they could control their blood pressure level and prevent consequences. Reference [15] also reported hypertension as a long-term condition which can be controlled. Patients perceived that treatment could effectively control blood pressure level, prevent symptoms and reduce their anxiety about complications. Patients were found to be more inclined towards taking medicines than lifestyle modifications for the management of hypertension. Patients complained that adopting lifestyle modification on a daily basis for lifelong overwhelm them. Patients in this study possibly had the lower self-confidence to adopt the lifestyle modifications due to cultural reasons. Reference [23] also stated that patients with hypertension perceived that treatment would help them to recover but lifestyle modifications were tiring and difficult to follow. There is need for nurses to be aware about patients' difficulties in maintaining lifestyle modifications and develop strategies to help them.

Patients perceived a headache and dizziness as the symptoms of hypertension. They believed that presence or absence of symptoms was associated with higher or controlled level of blood pressure respectively. The biomedical perspective of hypertension considers hypertension as being asymptomatic [25]. However, the previous studies on hypertension also reported similar findings as this study. Reference [22, 24] stated that patients experienced symptoms such as a headache, palpitations and dizziness which they

related with presence of high blood pressure level. They believed their blood pressure level to be normal when the severity of those symptoms subsided. Therefore, enforcing that hypertension is asymptomatic might result in confused patients.

The concerns of the patients were related to the perceived consequences of hypertension. In the Nepalese community, the family and society play an important role in shaping emotions. The perceived consequences of hypertension, in particular, paralysis of the body caused by stroke, might have implanted the fear of being neglected by the family and society in patients with hypertension. Reference [14] reported that patients would have greater concerns about treatment if they have a greater perception of illness consequences. Reference [26] stated that perceived consequences could generate negative emotions in patients that affected emotional adjustment in patients with chronic illness.

The cause of hypertension is unknown according to biomedical perspectives of hypertension [27]. However, there are risk factors that may attribute to high blood pressure. The perceived causes of hypertension in this study could be comparable to these risk factors. About two-thirds of the patients endorsed the causes of hypertension as modifiable, specifically diet and stress. Nepal is rich in cultural festivals, feasts and religious rituals which influence the way people live. Patients stated that in the majority of these occasions, it is customary to follow the food customs and spend money lavishly adding to the economic burden. Moreover, the staple foods of Nepal include salty, spicy and oily foods. Hence, patients might have perceived diet and stress to be the overriding cause of their hypertension. Reference [23, 28] also reported diet and stress as the risk factors of hypertension.

V. Conclusion

This study revealed that patients in Nepalese community perceived hypertension as a moderately threatening illness. Patients believed that hypertension was a permanent illness lasting lifelong but appropriate treatment could control it. The majority of patients perceived it might have serious consequences if not controlled. As a result, the patient's emotional aspects were moderately impacted from hypertension. Patients thought the major causes of hypertension were an unhealthy diet and stress. The patients labeled the occurrence of moderate symptoms such as a headache and dizziness as an indicator of hypertension. Taking medication was emphasized than lifestyle modification for controlling their blood pressure.

This study is the first to explore illness perception among patients with hypertension in developing country like Nepal. The findings of the study can be useful for nurses to understand the perception of hypertension in the context of the Nepalese community as illness perception comes from information inherent in the culture. Nurses can design illness perception based interventions for the better management of hypertension and thereby prevent the burden of complications caused by uncontrolled hypertension in developing countries. The use of open-ended questionnaire to capture perceptions of a patient's illness in-depth facilitated in the attainment of a clearer picture regarding illness perception of patients with hypertension in this study. However, as purposive sampling was endorsed to enroll participants from only one hospital in the urban area, the generalizability of the findings could be limited. Further studies in the community setting and rural areas are recommended to attain clearer picture.

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