ORIGINAL ARTICLE

Illness perception among hypertensive patients in primary care centre UKMMC

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Abstract

Introduction: Hypertension is one of the chronic diseases with a rising trend globally, including Malaysia. Patients' own perception of their illness is a strong factor that determines their health-seeking behaviour. The objective of this study was to evaluate the illness perception of hypertensive patients and the associated factors.

Method: A cross-sectional study was conducted among 250 hypertensive patients who were randomly sampled at the Primary Care Centre of the Universiti Kebangsaan Malaysia Medical Centre (PCC UKMMC) from October 2011 to January 2012. All respondents completed a self-administered questionnaire comprising three sections: (1) Socio-demographic data, (2) Illness perception score, measured using the Malay version of Brief Illness Perception Questionnaire (BIPQ) and (3) Malay version of depression and anxiety, assessed by the Hospital Anxiety and Depression Scale (HADS). Data entry and analysis were done using Statistical Package for Social Sciences (SPSS) version 19.0.

Results: The total illness perception score was significantly higher among Malay 5.13 (95% CI: 2.21, 8.05), those with positive family history 5.43 (95% CI: 2.14, 8.72) and respondents who have anxiety 8.56 (95% CI: 4.39, 12.73).

Conclusion: Primary care providers need to identify these three significant factors that are associated with patients' illness perception when managing hypertensive patients. Steps need to be taken to screen and treat anxiety among this group of patients.

Introduction

According to the World Health Organization, cardiovascular diseases are the primary cause of death worldwide.[1] In 2004, 17.1 million people were estimated to die from cardiovascular diseases, which represent 29 % of all global deaths. By 2030, approximately 23.6 million of people will die from cardiovascular diseases.[1] In this 21st century, hypertension is an important public health problem worldwide because its significant risk for heart diseases, stroke, and kidney failures.[2]

The Third National Health and Morbidity Survey (NHMS III) in 2006 showed that the prevalence of hypertension among Malaysians was 32.2% for those more than 18 years of age and 43% for those more than 30 years of age, which is about 30% increase from 10 years earlier.[3] The report also estimated that about 4.8 million Malaysians have hypertension now. The control rate of hypertension is poor and only 26% of the hypertensive patients achieve targeted blood pressure.[4]

According to Ross et al., illness perception is an important aspect in the management of hypertension besides pharmacological intervention.[5] Illness perception is defined as patients' own implicit and common sense beliefs about their illness.[6] Illness perception is described under cognitive and emotional representations.[7] Cognitive representation includes identity, timeline, consequences, control/cure and illness coherence, whereas emotional representation incorporated negative reactions such as fear, anger and distress. According to Sharry et al., certain illness perception domains have greater associations with patient's glycaemic control. Therefore, the authors suggested that manipulation of illness perception can be the best target for health intervention.[8] From literature reviews, few studies found that illness perception was influenced by factors such as age,[9] gender,[10]

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race,[11] family history of hypertension,[12] education level,[13] income,[14] duration of illness,[13] anxiety and depression.[15]

There are few local studies on illness perception and its associated factors among patients with chronic illness such as hypertension. Despite its rising incidence, the control and outcome of illness perception among hypertensive patients are still poor, which indicates that there are other important factors determining the success of patient management such as patients' perception towards their illness. This study was conducted to evaluate illness perception among hypertensive patients in our population and the factors associated with it.

Materials and methods

A cross-sectional study was conducted to identify factors associated with illness perception among hypertensive patients in PCC UKMMC from October 2011 to January 2012. Ethical approval was obtained from the Research and Ethics Committee of Faculty of Medicine UKM and Head of Department of Family Medicine. With reference to a study by Aalto et al.[13] Using a formula by Snedecor and Cochren[16] and after considering missing data or non-response, 20% were added giving total sample size of 250 respondents with 95% confidence and 80% statistical power. A total of 250 hypertensive patients were enlisted using randomly generated numbers from the registration list of the hypertensive patients who attended the clinic. Patients who were diagnosed with essential hypertension for more than 6 months and currently on anti-hypertensive medication, those who are able to understand and read Malay language and those with no acute emergency symptoms during attendance in the clinic such as chest pain, weakness or acute dyspnoea were included in the study. However, patients who were diagnosed with secondary hypertension were excluded from the study.

A self-administered questionnaire was distributed to the respondents after the written consent was obtained. The questionnaire consisted of three sections: (1) socio-demographic data (2) illness perception and (3) psychological factors. Socio-demographic data included age, sex, race, education level, income, family history of hypertension and duration of illness.

Brief Illness Perception Questionnaire (BIPQ) consists of nine items. The first eight items assess the dimension of consequences (not affect at all to severely affects my life), timeline (a very short time to forever), personal control (absolutely no control to extreme control), treatment control (not at all to extremely helpful), identity (no symptoms at all to many severe symptoms), concern (not at all concerned to extremely concerned), understanding (don't understand at all to understand very clearly) and emotional response (not at all affected emotionally to extremely affected emotionally). Item 9 assesses the causal representation requiring patient to list three important causal factors for illness. This item was not applied in this study because investigating the perception of respondents on the cause of the disease was not the objective of this study. The response for these eight items is measured on a scale of 0 to 10

The total illness perception score was calculated by reverse score for personal control, treatment control and illness understanding and was added to the score of other items. The maximum total score is 80 and the minimum total score is 0. A higher score reflects a more threatening view of the illness, whereas a lower score reflects benign illness perception or benign view of the illness.[17]

Permission from the researcher to use the questionnaire and to translate it to Malay was obtained. The questionnaire item was forward and backward translated to Malay and English by two researchers independently. Any discrepancy was discussed and resolved between the research team members. The Malay version of the questionnaire was tested on hypertensive patients from other clinics, and minor changes were made based on the feedback obtained from them (face validation). Finally, the Malay version questionnaire was pre-tested giving Cronbach's alpha of 0.65.

Brief Illness Perception Questionnaire used in this study is a validated and reliable tool[7] to measure the illness perception on a continuous linear single item scale developed to summarise Illness Perception Questionnaire (IPQ)[18] and Illness Perception Questionnaire-Revised (IPQ-R).[24] This had facilitated researchers in conducting the study due to logistic limitations such as time. Brief Illness Perception Questionnaire can offer quick assessment of illness perception without the participants feeling burdened by the questionnaire.

Psychological factors, which include anxiety and depression, were measured using Hospital

Anxiety and Depression Scale (HADS).[20] This questionnaire is a 14-item self-reported questionnaire that incorporates both anxiety and depression sub-scales. There are seven items in the HADS-anxiety sub-scale and seven items in the HADS-depression sub-scale. Each item in the sub-scale has a score of 0 to 3. Respondents need to score 8 or more for each sub-scale to be classified as anxiety or depression. The questionnaire underwent the same process of translations, face validation and pre-testing as BIPQ. In factor analysis (principal component analysis with varimax rotation), a two-factor solution explained 41.6% of variance in HADS sub-scales. Kaiser-Meyer-Olkin (KMO) and Bartlett's test score was 0.83, chi-square 675.45 and P<0.001. All identity items loaded on the first factor (anxiety) (share of explained variance 27.54%, the factor loadings varying from 0.55 to 0.73), whereas the factor loading for second factor (depression) ranged from 0.38 to 0.66. Reliability testing showed that Cronbach's alpha of HADS-anxiety sub-scale, HADS-depression sub-scale and total scale are 0.75, 0.58 0.75, respectively.

All data were analysed using SPSS version 19.0. Mean and standard deviation (sd) or median and interquartile range (IQR) were used to describe the characteristics of the study population for continuous data, whereas percentage was used for categorical data. Simple linear regression analysis was used to determine the association between independent and dependent variables, which was the total illness perception score. Multiple linear regression analysis was applied to control for potential confounders. The level of significant was set at P value of less than 0.05.

Results

A total of 250 respondents participated in this study and the response rate was 100%. Majority were Malays, received up to primary level education, earned less than RM1200 monthly and have positive family history of hypertension. The median duration of hypertension among the respondents was 5.5 years (IQR = 3–10). A total of 33 respondents (13.3%) had anxiety and 4% had depression (Table 1).

Table 1. Socio-demographic characteristics and psychological factors of hypertensive patients (n = 250)

Factors	Frequency (n)	Percent (%)
Socio-demographic characteristics		
Age (years)		
Mean (sd)		
58.68 (10.68)		
Min = 27 Max = 82		
Gender		
Male	147	58.8
Female	103	41.2
Race		
Malay	145	58.0
Chinese	82	32.8
Indian	21	8.4
Others	2	0.8
Education level[a]		
None	17	6.8
Primary	56	22.4
Secondary	124	49.5
Tertiary	52	20.8
Income (RM)		
Less than RM 1200	138	55.2
RM 1200-3499	85	34.0
RM 3500 or more	27	10.8
Family history of hypertension		
Yes	184	73.6
No	66	26.4

Factors	Frequency (n)	Percent (%)
Duration of illness (years)[b]		
Median (IQR)		
5.5 (3-10)		
Min = 0.5 Max = 43		
Psychological factors		
Anxiety		
Yes	33	13.2
No	217	86.8
Depression		
Yes	10	4.0
No	240	96.0

[a]n = 249 [b]n = 248.

Table 2 shows that our respondents had a lower score on items such as consequence (less affects on life), identity (less symptoms), concern (less concern) and emotional response (less affected emotionally) with identity having the lowest score of 4.01 (2.83). There was a higher score for items such as timeline (longer time), personal control (more amount of control) and treatment control (treatment is more helpful) and understanding (more illness understanding) with treatment control having the highest score of 7.95 (2.11). After reversing the score for personal control, treatment control and illness understanding, the total illness perception score was 33.71 (12.02).

Table 2. Descriptive statistics of illness perception (8 items)

Illness perception item	Score Mean (sd)
Consequences	4.88 (3.08)
Timeline	6.97 (3.19)
Personal control	6.61 (2.64)
Treatment control	7.95 (2.11)
Identity	4.01 (2.83)
Concern	5.64 (3.41)
Understanding	7.53 (2.45)
Emotional response	4.29 (3.18)

Table 3 shows simple and multiple linear regression analysis of the factors that are associated with illness perception. Only three variables remained significantly associated with illness perception. Malay respondents compared to non-Malay and those with positive family history had a higher total illness perception score, which is 5.13 (95% CI: 2.21, 8.05) and 5.43 (95% CI: 2.14, 8.72), respectively. The total illness perception score was also noted to be higher among respondents with anxiety compared to those without anxiety [8.56 (95% CI: 4.39, 12.73)]. With these three significant factors, the linear regression model explained 12.0% of variation of illness perception in this study sample ($R^2 = 0.12$)

Table 3. Factors associated with illness perception among hypertensive patients (n = 250)

	SLR[a]				MLR[b]			
Factors	Crude b[c]	95% CI	t	P value	Adjusted b[d]	95% CI	t	P value
Malay	4.46	1.45, 7.48	2.92	0.004	5.13	2.21, 8.05	3.46	0.001
Family history of hypertension	4.54	1.16, 7.93	2.65	0.009	5.43	2.14, 8.72	3.25	0.001
Anxiety	8.59	4.29, 12.90	3.93	<0.001	8.56	4.39, 12.73	4.05	<0.001
Age	0.19	0.33, 0.05	2.66	0.008				

[a] Simple linear regression.
[b] Multiple linear regression (R2 = 0.12) and no multicollinearity problem.
[c] Crude regression coefficient.
[d] Adjusted regression coefficient.

Discussion

The current study aimed to evaluate the factors that may be associated with illness perception among hypertensive patients. Among all the factors that have been examined, being Malay, having family members with hypertension and anxiety showed significant linear association with the total illness perception score. We were unable to compare these finding with the local population as local studies on illness perception are still scarce. Nevertheless, a few studies demonstrated that different races did have significantly different levels of illness perception.[11,21,22] A study in the United States noted that the African Americans tend to be more optimistic than whites even after adjusting for faith/religion.[11] Malaysia is a multi-racial, multi-religions country. However religion was not one of the factors included in this study. Therefore, the findings must be interpreted with caution. It is important for primary care providers to be aware of these differences so that better communication could be made with patients who come from different backgrounds and ethnic groups.

It is expected that having a family history of hypertension is a factor associated with a higher total illness perception score. This finding concurs with a study in four major hospitals in Guangzhou, China.[23] This association is possibly because these respondents obtained some information about hypertension from their own family members as they are knowledgeable about the disease.[24] This is important as illness perception has been associated with adherence to treatment among hypertensive patients.[25,26]

In the current study, depression was not significantly associated with illness perception. This is contrary to other studies that reported higher depression score were associated with more threatening illness perception.[27-29] The possible reason behind this difference is depression was analysed as categorical data in the current study, either having or not having depression, whereas Husain et al.[27] analysed depression on a continuous scale. The cut-off point used might have influenced the findings. Recommended cut-off scores for each sub-scale are ≥8 for doubtful cases and ≥11 for definite cases.[20] Meanwhile, recommended cut-off scores for HADS-total are ≥15 for doubtful cases and ≥19 for definite cases.[20] The role of determining the appropriate cut-off point is also highlighted in a study of dialysis patients, which stated that HADS-depression sub-scale showed acceptable performance as screening tools for depression at 7 or more for HADS-depression sub-scale and 14 or more for HADS-total.[30]

Moreover, HADS was used to screen depression in this study instead of Beck Depression Inventory (BDI). Floersch et al.[28] used BDI to conduct the study among adolescents, whereas Ibrahim et al.[29] used the same tool in end-stage renal disease patients. The difference in the cut-off point used and different study populations may influence the findings of the current study. Our study and that by Husain et al.[29] demonstrate that anxiety is one of the important factors associated with illness perception. A higher anxiety score was found to be associated with more threatening illness perception, which could lead to lower personal control over the illness.[27] Subsequently, a person may lose the ability to control the illness, leading to difficulty in adhering to the treatment.[27]

The result from this study indicates that age was not significantly associated with illness perception. This finding concurred with a few other studies that concluded that demographic factors, especially age, did not influence a person's illness perception.[12,31] However, other studies did show an association between age and illness perception[5,32] in which younger patients have more threatening illness perception, probably due to the lack of experience in handling their own illness.[5] On the other hand, another study found that younger patients with hypertension have more benign illness perception.[32]

The illness perception was not noted to be significantly different between men and women. Nevertheless, previous studies had shown contradicting data. Studies done by Aalto et al.[13] and Mitkovic et al.[33] demonstrated that women tend to perceive illness as a threat to their well-being. In contrast to our study, this study has a larger sample size (>2500 respondents) and unequal gender distribution.

Findings of the current and Ford et al.'s[11] studies suggest no association of illness perception with different educational levels. On the other hand, previous reports here mentioned that respondents with lower education levels appeared to have weaker illness control and more severe perceived consequences.[34,35] The difference in the results was probably due to the difference in the method used to analyse

illness perception, that is, the other two studies analysed illness perception according to the individual item, whereas in this study, the total illness perception was analysed by a total score.

According to Kim et al.,[22] respondents with lower income had a more threatening illness perception, predominantly a personal control item. This study, however, found that there was no significant association between income and illness perception. The difference in the finding may be due to the difference in the sampling population.

In this study, it was also noted that there was no association between illness perception and duration of illness, and a similar finding was reported by Giri et al.[36] However, Broadbent et al.[7] concluded that the duration of illness was significantly associated with illness perception because those who have longer duration of illness were more likely to realise the real threat of the disease and knew better ways to control their illness. The difference in the results can be due to the difference in sampling population where the authors chose respondents from six different illness groups compared to the current study that is only based on hypertensive population.[7]

This study was limited by sampling of the study population, which rendered the results not to generalisable to the general population. Furthermore, due to the cross-sectional nature of the study design, causal inference cannot be made. The duration of illness experienced by respondents was relatively short and illness perception may change over time. These changes maybe relevant, especially in a disease such as hypertension. However, the result can be used as baseline data for future research, especially looking into the factors associated with each dimension of illness perception.

Conclusion

Illness perception is an important aspect in managing patients with chronic diseases including hypertension. Certain socio-demographic characteristics such as race, family history and psychological factors, namely anxiety, need to be considered when managing these patients. In addition to pharmacological intervention, health care providers should give more emphasis on improving illness perception in order to achieve a better outcome of an illness.

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Conflict of interest

None

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