

# Psychological symptoms of hypertensive patients in Macau

Zeng Wen

**Abstract** Objectives: To identify the psychological symptoms of hypertensive patients and to examine the relationship among psychological symptoms and age, sex, family income, blood pressure level, and duration. Methods: The samples were 130 hypertensive patients at Macau Hoipong Health Center recruited by purposive sampling method. Each subject was interviewed by the investigator using the Symptom Checklist-90 (SCL-90) Chinese version. Results: The psychological symptoms found in hypertensive patients were somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, and paranoid ideation. Conclusion: Psychological symptoms are related to age, sex, and duration of the illness.

**Key words** Hypertension Psychological symptoms SCL-90

Recently, hypertension (HT) was found to be the major cause of morbidity of Macau citizens. The incidence of hypertension has been found to be increasing during the past decade from 7.7 per cent in 1980 to over 11 per cent in 1991 (Macau Social Affair & Budget Department, 1993), and to 29.5 per cent in 1996 (Leong, Pun, Lei, & Cen, 1998).

Hypertension has been considered as the most common problem among cardiovascular diseases and it is now the most common cause of stroke and coronary atherosclerosis. Furthermore, some people have to temporarily or permanently stop working which might affect their socio-economical status (National Heart, Lung, and Blood Institute, 1980). These data, when taken altogether, indicate that hypertension is a major public health problem in many city including Macau.

Since hypertension is a chronic illness, it becomes a stressor for the patients and has a negative influence on the patients, family, and society.

The information regarding psychological symptoms of hypertensive patients and those factors influencing stress response are valuable for nurses and need to be investigated. This study was conducted to obtain the information about psychological symptoms of hypertensive patients. The scientific knowledge from this study helped nursing staff and educators to be aware of hypertensive patients' psychological problems. Also, nurses can take into consideration the appropriate psychological approaches and contemporary psychological interventions for these patients, thereby, quality of care can be assured.

## Methodology

1. Research Design: a descriptive research design.

2. Population and Sample

Population in this study was patients with essential hypertension in Macau.

Sampling: 130 subjects were selected using purposive method based on the following criteria:

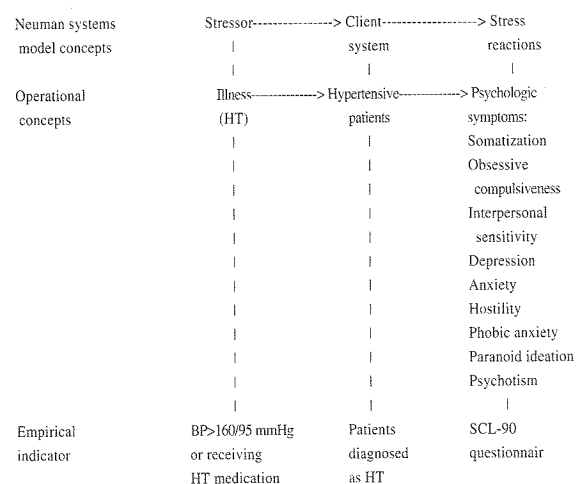
- Diagnosed as having essential hypertension stage I, II and III by physician.
- Have no other kinds of serious illness, such as diabetes, cancer etc.
- Outpatients in Macau Hoi Pong Health Centre from October 1998 to December 1998.

3. Instruments

3.1 A fundamental data recording form: The form uses for recording of: age, sex, family income, blood pressure, and duration of hypertension.

3.2 Symptom Checklist-90 (SCL-90) Chinese version: It was developed by Derogatis (1974) and back-translated into Chinese by Wang (1984).

4. The conceptual framework of the study



## 5. Data Collection Procedure

Each subject in the study was interviewed only by the investigator. The steps were taken as following:

- Permission of conducting the study was obtained from the Hoi Pong Health Centre administrators.
- Explained the purposes of the study to the subjects and assured confidentiality and obtain informed consent.
- Asked the patient to respond to instruments at one or two times (total approximately 60 minutes).

## 6. Data Analysis

6.1 Descriptive data such as frequency, percentage of the fundamental data were obtained.

6.2 The mean scores and standard deviation (SD) for each of the symptom dimensions were calculated and were compared with the norms of Chinese population (Jin, Wu & Zhang, 1986) using t-test to identify the psychological symptoms of hypertensive patients.

6.3 Multiple stepwise regression was applied to examine the relationship among age, sex, family income, severity of hypertension, duration of hypertension and each dimension of psychological symptom of hypertensive patients.

## Results

### 1. Description of the Subjects

One hundred and thirty subjects who met sampling criteria were included in the study (Table 1).

Table 1 The analysis of the fundamental data

Variable	Mean	SD
Age (year)	60.5	9.7
Systolic BP (mmHg)	150.9	20.9
Diastolic BP (mmHg)	89.9	11.5
Duration (year)	12.8	9.0
F. Income (MOP/Mon)	5708.0	556.0

Sixty-eight of the subjects were male, 62 were female. Forty-nine (72.1%) of the males were over 60 years old, forty-one (66.1%) of the females were over 55 years old and they were all retired. There were 104 patients (80.0%) that their duration of hypertension were over 5 years. All the subjects were paid by the government for almost all the fee of treatment for hypertension and there were 112 patients (86.2%) whose family income were over 5000 MOP/Month.

These patients took anti-hypertension medications and there were 63 patients (48.5%) whose systolic blood pressure had returned to less than 160 mmHg and diastolic less than 95 mmHg.

### 2. Presentation of the Findings

To identify the psychological symptoms of hypertensive patients, tests for significant differences in the scores from each symptom dimension of SCL-90 in the hypertensive patients group and the norms were done using the t-test (Table 2).

Table 2 The t-test for significant difference in dimension score

Symptom dimension	Hypertension (N=130)		Norm (N=1388)		t	p
	Mean	SD	Mean	SD		
Somatization	2.08	0.45	1.37	0.48	17.11	< 0.001
Obsessive-compulsive	2.14	0.45	1.62	0.58	12.26	< 0.001
Interpersonal sensitivity	1.88	0.36	1.65	0.61	6.46	< 0.001
Depression	2.03	0.44	1.50	0.59	12.71	< 0.001
Anxiety	1.86	0.32	1.39	0.43	15.51	< 0.001
Hostility	1.74	0.46	1.46	0.55	6.51	< 0.001
Phobic anxiety	1.84	0.49	1.23	0.41	13.73	< 0.001
Paranoid ideation	1.84	0.35	1.43	0.57	11.95	< 0.001
Psychotism	1.33	0.25	1.29	0.42	1.62	> 0.05

The t value indicated that mean scores for the hypertensive patients group were significantly higher for the symptom dimensions of somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, and paranoid ideation ( $p < 0.001$ ). The two groups did not differ significantly on the symptom dimension of psychotism ( $p > 0.05$ ).

### 3. The results of multiple stepwise regression

Each symptom dimension was subjected to multiple stepwise regression as the dependent variable, with fundamental data, sex (male = 0, female = 1), age (year), systolic blood pressure (mmHg), diastolic blood pressure (mmHg), duration of hypertension (year), and family income (Mop/month), as the independent variables. This analysis tried to examine the relationships among age, sex, severity of hypertension, duration of hypertension, family income and each dimension of psychological symptoms of hypertensive patients (Table 3).

Table 3 Symptom Dimension of Hypertension and Fundamental Data

Symptom dimension	variable in the equation	B	Beta	T	Sig T
Somatization	Duration	0.013006	0.260336	3.089	0.0025
	Age	0.010916	0.235830	2.799	0.0059
	(Constant)	1.253895		5.413	0.0000
Obsessive-compulsive	Duration	0.020655	0.411442	5.107	0.0000
	(Constant)	1.880930		29.840	0.0000
Interpersonal sensitivity	Duration	0.009469	0.238164	2.774	0.0064
	(Constant)	1.761014		33.103	0.0000
Depression	Duration	0.015011	0.305694	3.756	0.0003
	Age	0.012504	0.274854	3.377	0.0010
	(Constant)	1.078716		4.906	0.0000
Anxiety	Duration	0.007074	0.195690	2.258	0.0257
	(Constant)	1.769250		36.220	0.0000
Hostility	Duration	0.016018	0.309971	3.691	0.0003
	Sex	-0.179797	-0.194937	-2.321	0.0219
	(Constant)	1.623971		22.109	0.0000
Phobic anxiety	Duration	0.012229	0.225146	2.678	0.0084
	Sex	0.266020	0.274404	3.357	0.0010
	Age	0.008826	0.175395	2.095	0.0382
Paranoid ideation	(Constant)	1.020161		3.994	0.0001
	Duration	0.012709	0.329239	3.945	0.0001
	(Constant)	1.675910		33.377	0.0000

### Discussion

There was strong support to indicate that hypertensive patients had many dimensions of psychological symptoms. Hypertensive patients reported significantly more somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, and paranoid ideation than the norms. These results are consistent with the conceptual framework of the study. Neuman (1989) viewed man as a composite of variables. Hypertension is intrapersonal stressor to client system. Reactions to stressor (hypertension) are psychological symptoms.

Hypertension causes the heart to pump against greater than normal resistance, thereby increasing its workload (Scherer and Timby, 1995). Extra work and the greater mass increase the heart's need for oxygen. Therefore, hypertensive patients have significantly higher symptoms dimension of somatization than the norm. From the results of multiple regression, there are positive relationships among duration of hypertension, age and symptom dimension of somatization. It indicates that high blood pressure will cause more damage to the body over a longer duration and with older age. Therefore, hypertensive patients may have more symptoms of somatization because of their longer duration and/or older age.

Hypertensive patients must face long-term treatment. Maybe they have to take medications all the rest of their life. Most of them are elderly. Retirement from work, separation from family and society, hopelessness, lack of motivation and illness all make them feel depressed. Also, from the results of the multiple stepwise regression, hypertensive patients may have more symptoms of depression according to their longer duration and/or older age.

In analyzing the psychological symptoms of hostility, result showed the longer the duration, the more hostility felt by patients. Males were found to have more symptoms of hostility than females and this seems to be in contrast to the result of previous investigators. Tolksdorf (1984) found that female patients had higher degree of preoperative emotional stress than male patients. Gold (1995) reported that female patients had more psychological symptoms than male patients among patients with lung cancer. According to Chinese traditional culture, the man always plays a leading role. He must take responsibility for his family and business, and has to fight for everything. Maybe this makes him tend to have aggression, irritability and resentment after being diagnosed as having hypertension. Therefore, males tend to have more symptom of hostility than females.

The results of multiple stepwise regression indicated that hypertensive patients might have more symptom of phobic anxiety according to their longer duration of hypertension, female, and older age. This study also found that hypertensive patients had other symptom dimensions of obsessive-compulsive, interpersonal sensitivity, anxiety, paranoid ideation. There are positive relationships between duration and these dimensions. These results were consistent with previous researches.

In this study, it seems that there are not any relationships among severity of hypertension, family income and each dimension of psychological symptoms of hypertensive patients. These seem in contrast with the review of researches. Hubbell, et al. (1990) found that patients with financial barriers scored significantly worse than control subjects on the psychological status. Nakagawa, et al. (1988) reported that patients with lower systolic blood pressure had

lower scores on the SCL-90 in a study of 34 hypertensive patients. This finding raises the question of whether these two factors do not influence patients' stress responses. Macau is a modern and one of the richest cities. People's income and the infra-structure of the health care provision of the community are enough. The most important point to highlight is that in the subjects of this study, almost all the fee of treatment for hypertension was paid by the government. The patients did not need to worry too much about the fee of treatment and there were no significant financial barriers during their hospitalization. In this study, hypertensive blood pressure was controlled by anti-hypertension medications, and in some patients the blood pressure had returned to within normal limits. The blood pressure level cannot truly reflect the severity of hypertension. Therefore, in this study, patients' blood pressure level and family income did not influence their stress responses.

### Conclusion

This study demonstrated that hypertension, a chronic illness, was an intrapersonal stressor for patients and hypertensive patients' reactions to stressor were psychological symptoms. This study found that hypertensive patients had psychological symptom dimensions of somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, and paranoid ideation. There are relationships among duration of hypertension, age, sex and the psychological symptoms of hypertensive patients. And as we have known, psychological symptoms, no matter what the cause, will reversely affect hypertension. Therefore, it is necessary to identify psychological symptoms of hypertensive patients and influencing factors for development of nursing interventions to facilitate the recovery of hypertensive patients.

### References

- Derogatis, L. R. (1977). *SCL-90 version manual*. Baltimore: Johns Hopkins University.
- Hubbell, F. A., Waitzkin, H., & Rodriguez, F. I. (1990). Functional status and financial barriers to medical care among the poor. *South Medicine Journal*, 83(5), 548-50.
- Jin, H., Wu, W. Y., & Zhang, M. Y. (1986). The norms of symptoms checklist-90 (SCL-90)-Chinese version on Chinese. *Journal of Chinese Neuropsychiatric Medicine*, 12(5), 260-263.
- Leong, H.C., Pun, W.H., Lei, S.M., & Cen, R.C. (1998). A survey on prevalence of hypertension in Macau area. *Journal of Kiang Wu Hospital*, 98, 18-20.
- Macau Socail Affair & Budget Department (1998). *Macau health system: diagnosis and suggestion*. Macau: Macau Government.
- National Heart, Lung, and Blood Institute (1980). National high blood pressure education program.
- High blood pressure fact sheet. Bethesda: Maryland.
- Neuman, B. (1989). *The Neuman systems model (2nd ed.)*. Norwalk, CT: Appleton & Lange.
- Scherer, J. C., & Timby, B. K. (1995). *Introductory medical-surgical nursing (6th ed.)*. Philadelphia: J.B. Lippincott
- Wang, Z. Y. (1984). Symptoms Checklist-90 (SCL-90) Chinese version. *Shanghai Psychiatric Medicine*, 2, 68-70.

### 澳門地區高血壓患者的心理症狀及其相關因素

曾文

**摘要** 目的：對澳門地區130例原發性高血壓患者的心理症狀及有關因素進行調查，為改進高血壓患者的護理措施提供依據。方法：用SCL-90量表收集資料以鑑別患者的心理症狀及其相關因素。結果：高血壓患者存在軀體症狀、強迫症、人際關係緊張、抑鬱症、焦慮、敵意、恐怖、偏執等心理症狀。結論：患者的年齡、性別、病程等因素與其心理症狀相關。

**關鍵詞** 高血壓 心理症狀 SCL-90