

Patients' Knowledge and Attitude Towards Treatment and Control of Hypertension: A Nation-wide Telephone Survey Conducted In Malaysia

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Summary

The telephone survey of 2,526 hypertensive subjects showed 94% of the respondents were aware of the importance in controlling hypertension. Among these 504 were not on anti-hypertensive medication while the majority of 2,022 were currently on anti-hypertensive medication. Of those who were not on medication, 80% (n=403) were found non-hypertensive on follow-up. The remaining 20% (n=101) were confirmed hypertensive and were offered medication. However, 38 subjects refused to take medication and 63 subjects complied with medication but subsequently gave up. The main reasons for giving up medication included lack of motivation (38%), doctors' advice (20%), side effects (19%) and concern of side effects (10%).

Of 2,022 hypertensive respondents who were currently on medication, almost half (44%, n=890) required a change of medication due to side effects (40%, n=356) or the blood pressure not controlled with the previous medication (33%, n=294). Despite the change in medication, 42% (n=150) still continued to suffer from some form of side effects. The information obtained from this survey suggested it is important to recommend some strategies to improve patient compliance. These strategies comprise of motivating the patient, improving medication with less side effects, improving potency and efficiency of medication, and reduction of cost in medication. In addition, convenient blood pressure monitoring such as home blood pressure monitoring is also encouraged.

Key Words: Hypertension, Telephone survey, Patients' attitude, Anti-hypertensive therapy, Compliance, Drug side effects

Introduction

High blood pressure is one of the most important modifiable risk factors for cardiovascular disease. It is an extremely common finding in the community and a major risk factor for myocardial infarction, stroke, congestive heart failure, end-stage renal disease and peripheral vascular disease. There is now strong evidence to suggest that anti-hypertensive drug therapy is effective in preventing both heart attacks and strokes¹

Drug therapy is now the most commonly adopted means of treating hypertension. However, of those who start, as many as 50% were reported to have dropped out within one year and only 30% of patients were under adequate control². There are many reasons for the failure of patients to comply with medication, which is needed on a long-term basis. They may be considered in accordance with:

- (a) the patient and disease characteristics and
- (b) treatment characteristics³.

It is very important that the patients should understand hypertension and its consequences, the need for treatment and the possibility of side effects of medication. On the other hand, the patients may feel well, and did not seek medical treatment due to the inconvenience of visiting a doctor or refusals of commitment to treatment. On the treatment aspect there is complicating drug regimen, related to cost and various side effects of the medications. Jones et al⁴ found that in the United Kingdom initiated new treatments for all the main classes of drugs lead to a very high level of discontinuation or changes to other classes, with discontinuation rates being similar with the thiazides, the beta blockers, the angiotensin-converting enzymes (ACE) inhibitors and the calcium antagonists.

In Malaysia, cardiovascular disease is the leading cause of death^{3,6}. Hypertension studies in Malaysia as reviewed by Liew et al⁷, showed the frequency of hypertension based on 140/90 mmHg as cut off value, varies from 10.3% - 25.6% with a mean of 16%. However, limited information is available with regards to patients' knowledge of its hypertension treatment and attitude to treatment.

This paper attempts to answer some questions associated with the profiles of hypertensive patients, types of treatments and attitudes of hypertensive patients towards treatment in Malaysia by means of telephone calls in on patients who had hypertension.

Materials and Methods

Over the period of one month (15th November till 24th December 1996), patients suffering from hypertension nation-wide (east and west Malaysia), were invited to participate in this survey known as "The Call From Your Heart" organised by the National Heart Foundation of Malaysia. The success which was widely publicised through the mass media such as the newspaper, radio and television encouraged hypertensive patients to telephone in. There were 10 toll free lines for the respondents to call in between 8 a.m. - 5 p.m. from Mondays to Saturdays. Three qualified nurses who were fluent in Malay, Chinese, Tamil and English took charge of the survey call. The respondents were asked about their family medical history, past and current treatment, regimens and their perception of their treatment of high

blood pressure. The nurses were provided with hypertension survey forms (Appendix 1) to be filled for each respondent.

Briefly, the survey form comprised three parts. The first part were questions which gave a general profile of the respondents, namely, ethnic group, sex, age, place of residence, year of diagnosis of hypertension, place and frequency of medical visits, and types of treatment advised. The second part consisted of questions targeted for those respondents who were not currently on anti-hypertension drug therapy due to doctor's advice or their own choice. The third part comprised questions for those respondents currently on medication which included the type and duration of medication, change of medication and reasons for such a change.

The response from the participants were compiled and summarised. Simple statistics on sample size, frequency of each group in questions and percentages were computed and interpreted accordingly.

Results

I. Profile of Respondents

The demographic profile of the respondents is shown in Figure 1.

A total of 2,526 subjects of whom 72% were males (n=1819) and 28% were females (n=707) were surveyed. Among these, 44% (n=1,111) were Malays, 41% (n=1,036) were Chinese, 15% (n=379) comprised Indians and other nationalities.

The age distribution of the respondents showed that 6% of them were below 30 years, 40% between 30-45 years, 31% between 46-55 years, 19% between 56-70 years and 4% above 70 years. The majority of the respondents were drawn from the 30-45 years age group.

The geographic distribution of the respondents showed that all states were represented: 52% Central (Selangor, Kuala Lumpur and Negeri Sembilan), 20% North (Kedah, Penang, Perak), 14% South (Melaka, Johor, Pahang) and 8% East (Terengganu, Kelantan, East Malaysia).

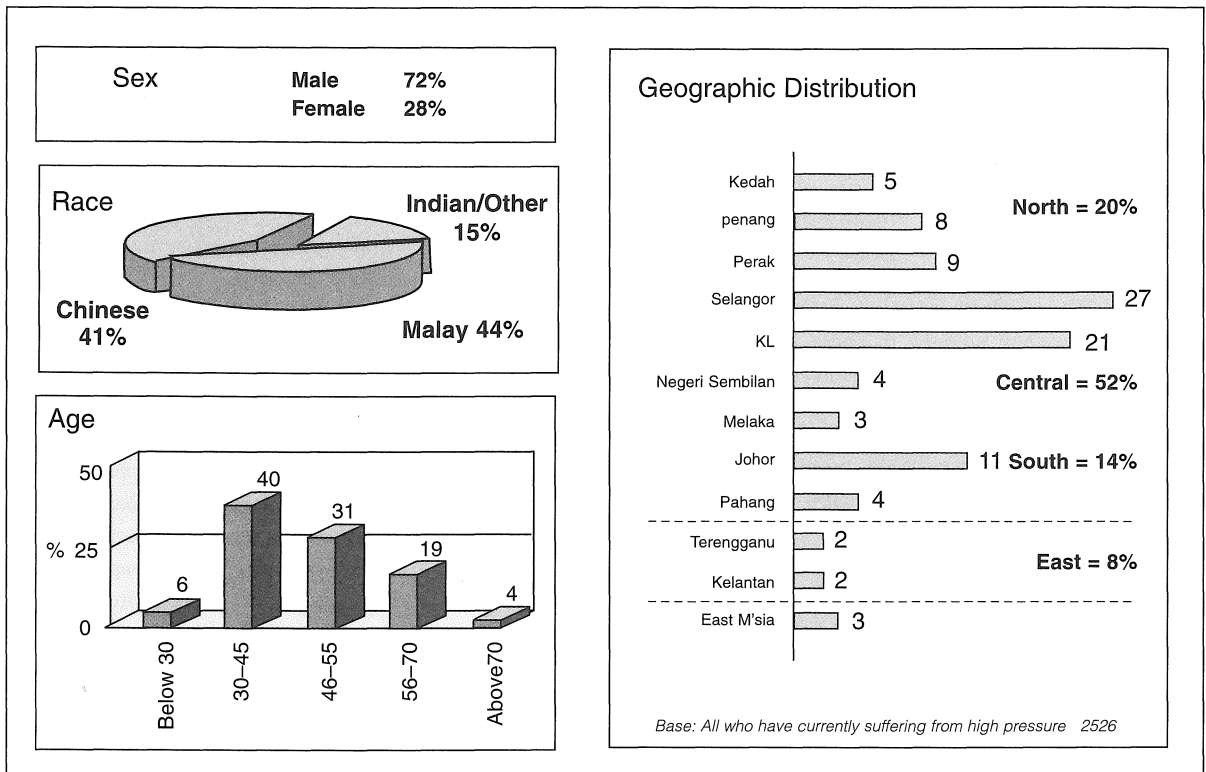


Fig 1: Demographic Profile of Respondents who responded to the "Call From Your Heart" Campaign

The medical history of the respondents (n=2,526) showed 25% of them had a history of hypercholesterolaemia in addition to hypertension. The Indians tended to have higher cholesterol as compared to other ethnic groups. 10% of the respondents also suffered from non-insulin dependant *diabetes mellitus* and 1% have insulin dependant *diabetes mellitus*.

The family history revealed 65% of the respondents had either a parent or sibling suffering from hypertension. This suggests a higher likelihood of an adult to suffer from hypertension if a family member were diagnosed with the problem as well.

As for the place of care of respondents' hypertension, the majority of participants (90%) visited general practitioners (non-specialists) either in the private or government sector. There was a higher tendency for

Chinese to seek treatment from the private sector as compared to Malays who tended to go to the government clinics or hospitals.

The majority (63%) of the adult respondents were fairly recent hypertension sufferers with 22% diagnosed within the past year and 41% in the last 5 years.

The frequency of visits for check-up for hypertension revealed that 44% of the respondents visited their doctors once a month, 41% every 2-4 months and 11% more than 4 months.

Among the non-pharmacological treatments for hypertension, 96-97% of the doctors recommended reduction of salt-intake, regular exercise and weight reduction.

II. Respondents Currently NOT On Medication

The number of respondents who were thought to be hypertensive and yet were not on anti-hypertensive medication at the time of the survey was 504 (20% of total respondents). Among these, 80% (n=403) were advised that they did not require anti-hypertensive medication. They were initially told they were hypertensive but later told they did not require medication. These were probably not hypertensive as patients with borderline readings of elevated blood pressure in clinical practice are advised to come back for repeat blood pressure readings. This is to confirm that they are truly elevated as a casual single office reading especially mildly elevated may not be diagnostic for hypertension- and require repeat office blood pressure reading for confirmation. The remaining 20% (n=101) were confirmed hypertensives and recommended to take an anti-hypertensive agent. However, 38% (n=38) of those who required medication refused medication while 62%(n=63) complied with doctor's advice to have medication.

The majority of this group of respondents who agreed to take medication received beta blockers (n=46) followed by calcium antagonist (n=13), vasodilators (n=10), ACE inhibitors (n=2) and diuretics (n=2). However, these respondents discontinued medication for the following reasons:

- lack of motivation (38% of cases)
- doctors' advice (21% of cases)
- side effects (19% of cases) and
- others including concern of side effects (18% of cases) (Figure 2)

21% of the respondents subsequently stopped their medication on advice from their doctors. Probably these were mild/moderate hypertensive who had applied healthy lifestyle measures - weight reduction, low sodium diet and regular exercise. These measures have been effective and hence allowed discontinuation of medication.

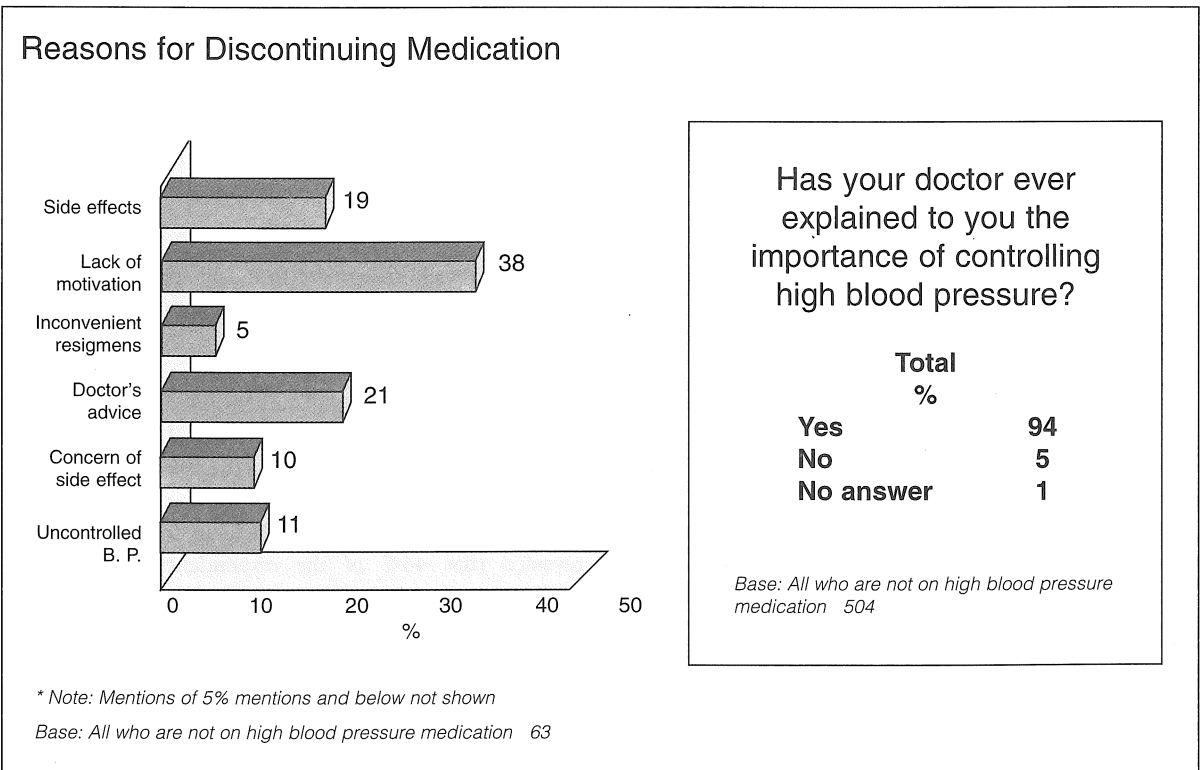


Fig 2: Reasons for Respondents who discontinued their antihypertensive medication

Among the respondents who did not take anti-hypertensive medication, 94% of them had doctors' advice on the importance of controlling high blood pressure. This implies that these respondents were fully informed on the needs of controlling hypertension.

III. Respondents on Anti-Hypertensive Medication

80% of the respondents (n=2022), who were hypertensive, were currently on anti-hypertensive medication.

The anti-hypertensive drugs prescribed were beta blockers which were most widely used (40%) followed

by calcium antagonists(26%), ACE inhibitors(12%) and vasodilators/others(6%) (Table I).

The majority (75%) of the respondents (n=2,022) had been on medication for less than five years; 11% had 5-10 years and 10% more than 10 years. Medication duration corresponded with the age of respondents (Table II).

44% of the respondents (n=881) who were currently on medication had a history of changing medication. The reasons given for such a change included side effects of

Table I
Types and frequency of Hypertensive Drugs used by Respondents who are currently on Antihypertensive Medication

Brands		%
Hydrochlorohiazide	Generic	8
Moduretic - amiloride 5mg, IICTZ 50mg	MSD	1
Natrilix - indapamide	Servier	2
Betaloc - metoprolol	Astra	21
Inderal - propranolol	Zeneca	6
Ternormin - atenolol	Zeneca	13
Adalat - nifedipine	Bayer	20
Norvase - amlodipine	Pfizer	4
Plendil - felodipine	Astra	1
Capoten - captopril	BMS	2
Coversyl - perindopril	Servier	2
Renitec - enalapril	MSD	5
Zestril - lisinopril	Zeneca	2
Aldomat - methyldopa	MSD	1
Prazosin	Pfizer	5
Others/Unknown		15

DIURETICS	4%
BETA BLOCKS	40%
CALCIUM ANTAGONIST	26%
ACE INHIBITORS	12%
VASODILATORS	6%
OTHERS	12%

Base: All who are currently on high blood pressure medication 2022

Table II
Duration of Medication for the Respondents who are currently on Antihypertensive Medication

DEMOGRAPHICS	< 1 yr %	1-5 yrs %	5-10 yrs %	> 10yrs %
Race				
Malay	39	38	10	13
Chinese	35	39	11	15
Indian/Others	37	43	10	10
Age				
Below 30	67	26	5	2
30-45	44	41	8	7
46-55	34	40	12	14
Above 55	25	37	14	24
Base:	734 (38%)	795 (41%)	214 (11%)	207 (11%)

anti-hypertensive drugs (40%), blood pressure not well controlled (33%), change of doctor (16%) and other health problems (3%) (Table III).

42% of respondents (n=351) who discontinued their previous anti-hypertensive medication due to side effects still continued to suffer from some form of side effects from their current medication. Some of the side effects experienced by the respondents included headache (14%), tiredness (13%), male impotence (11%), dizziness(8%), muscle weakness (6%), palpitations (4%), sleep disturbance (4%), swollen ankles (3%), dry cough (3%), diarrhoea or constipation (1%) and others which were not specified. (Figure 3).

Discussion and Conclusion

The "Call From Your Heart" Hypertension, nation-wide telephone (toll free) survey was unique in that hypertensive patients drawn from the whole nation were invited to participate in this survey. It is fairly close to a questionnaire postal survey or a questionnaire face-to-face survey with the respondents. This survey, however, possessed certain advantages over the other forms of surveys in that it reached a large number of people and was convenient to the respondents in that they could phone in toll free and the questionnaires were filled by trained nurses who were multi-lingual. This telephone survey was by no means complete or comprehensive. It is biased in that it came from a small group of hypertensive patients who wished to respond to the survey.

Table III
Reasons for Shifting Medication and Current Medication Prescribed for Respondents who are Currently on Medication

HAS MEDICATION BEEN CHANGED BEFORE CURRENT ONE

Yes **44%**
No **54%**
No answer **2%**

Base: All who are currently on high blood pressure medication 2022

REASONS		%
Side effects (any)		40
Blood pressure not well controlled		33
Changed doctor		16
Other health problems (any)		11

Base: All who have changed medication before 881

As far as we are aware, a similar telephone survey of this nature had been conducted in Singapore⁸ but involving a smaller number of respondents (n=867).

In Portugal, telephone interviews on selected patients (n=1,000) had been carried out to measure the patients' perception of the side effects of anti-hypertensive therapy⁹. A more extensive postal questionnaire-based survey (REACH STUDY) on hypertensive patients by general practitioners, nurses and pharmacists was reported in England¹⁰. In addition, a few studies on similar nature were reported in USA^{11,12} and in Italy¹³. These surveys gave useful information regarding patients' perception to hypertension, anti-hypertensive drugs used, non-compliance of hypertensive patients and reasons for change in anti-hypertensive medications.

The present survey, conducted over a one month period received a good response from 2,526 respondents. There was a higher response from males (72%) and adults within the 30-55 years age group. In terms of ethnic groups, the proportion of Chinese (41%) and Malays (44%) surveyed was about the same. The Campaign

generated the most interest within the central region with more than half (52%) of the call-ins coming from Selangor (27%) and Kuala Lumpur (21%).

25% of adults who suffered from hypertension had a history of elevated cholesterol and 10% had a history of *diabetes mellitus*. All hypertensive patients should therefore follow-up with lipid profile and blood sugar examinations.

About 65% of the adults interviewed had either a parent or sibling suffering from hypertension, suggesting a higher likelihood of an adult suffering from hypertension if a family member was diagnosed with the problem as well. Family members (parents and siblings) should therefore be checked by their family doctor for hypertension if an adult is found to have hypertension.

Sixty three respondents discontinued their anti-hypertensive medication. The major reasons for the discontinuation were a lack of motivation (38%), doctors' advice (21%) and side-effects experienced (19%). The REACH Study⁹, however, reported that side effects and poor effi-

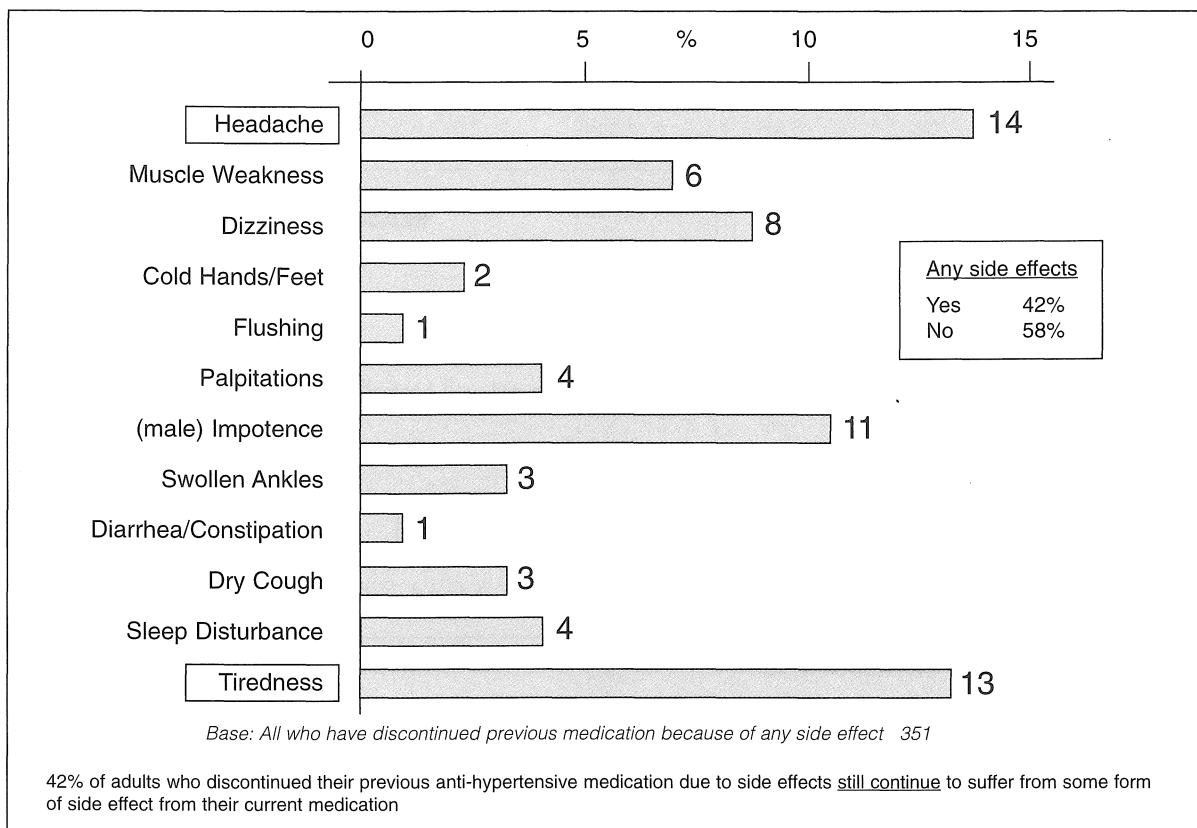


Fig 3: Side-effects of antihypertensive medication experienced by respondents who are currently on medication

cacy as major reasons for discontinuation of anti-hypertensive therapy. In Malaysia, motivating the patient seems to be our major task in order to reduce the non-compliance. The doctor, nurses and health personnel could explain to the patient the nature of the disease and the risk of untreated hypertension. The following approaches such as reducing the waiting time at the follow-up clinic and reducing the frequency of the follow-up by doctor to once every 3 months may be helpful.

Meanwhile the patients were advised to follow suggestions made by the Joint National Committee on detection, evaluation and treatment of high blood pressure¹⁴. The patients should be encouraged to monitor their blood pressure weekly through blood pressure record cards and home blood pressure recordings. Should there be a change in the blood pressure,

the patients were advised to visit their doctors early. The drug regimen prescribed should be simple preferably once a day. The medication should be affordable preferably free from side effects. Parallel to the above, patients' health education and Heart Week Health campaigns could also help to improve the patients' attitude towards their health conditions and knowledge on hypertension. This would hopefully reduce the frequency of non-compliance.

2022 respondents (80%) were still on anti-hypertensive medication. The medication they were on were Beta Blocker (40%), Calcium Antagonist (26%), ACE Inhibitors (12%), Diuretics (4%), Vasodilators and others (6%). Almost half (n=890; 44%) had their medication changed either because of side effects (n=356; 40%) or blood pressure not controlled with the

previous medication (n=29; 33%). It is interesting to note that 42% of these 356 respondents who suffered from side effects from the previous medications still continue to suffer from side effects from their current medications. These side effects were experienced by all groups of subjects.

The remedial steps recommended to reduce the side effects of drugs would be:

- start with a low dose and gradually increase the dose.
- combination drug therapy would be useful to reduce drug side effects. Calcium antagonist and a Beta Blocker would be such a combination. One increases the heart rate and the other reduces the heart rate.
- keep up with the development of new anti-hypertensive with less side-effects and greater potency.

The welfare health agency such as National Heart Foundation of Malaysia could help to educate the public with regard to the awareness, consequence, treatment and control of hypertension. Some proposed actions which can be taken by the Heart Foundation are:-

- reminding patients to stay on medication and to go back to tell their doctors of their problems. The patient and doctor should work together to find a

suitable therapeutic agent with a minimal or no side effect.

- updating patients of new drugs in the market.
- advice on how to lead a healthy lifestyle.
- reaching out to schools; in addition to the annual four state-level health screening campaigns organised by the National Heart Foundation.
- producing patients' leaflets and literature and blood pressure record card.
- publishing newspaper columns specifically on hypertension on a fortnightly basis.

The information obtained from this nation-wide telephone survey of hypertensives should provide the necessary background for health planners and voluntary health agencies in the planning of future public campaigns aimed at the prevention and control of hypertension which is now regarded as a major risk factor of cardiovascular diseases.

Acknowledgements

The authors wish to thank the participants for responding to the "Call From Your Heart" hypertension telephone survey organised by the Heart Foundation of Malaysia. They are also grateful to the nurses and volunteers who helped in the survey, to Merck Sharp & Dohme (MSD) for sponsoring the survey and to Dr Chong H. Y. for helpful comments and suggestions.

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