

# A pilot study exploring awareness among general public toward issues related to medication safety in the state of Penang, Malaysia

## Abstract

**Context:** A better understanding of medication safety ensures better health state among healthcare consumers.

**Aim:** The study aims to assess general public awareness toward issues related to medication safety. **Settings**

**and Design:** A cross-sectional study was conducted among general public selected conveniently in the state of

Penang, Malaysia. **Materials and methods:** A total of 500 respondents were approached and 476 consumers

participated in the survey giving a response rate of 95.2%. **Statistical analysis:** Data were analyzed by using SPSS

version 12.0 and descriptive statistics were reported where appropriate. **Results:** Majority of the respondents

(n=292, 61.3%) stated that they were well aware of the possible side effects of their current medications. A total

of 196 respondents (41.17%) believed that all medicines registered in Malaysia are safe to use as these medicines

have no side effects. About 40.33% (n=192) of the respondents claimed that they share their unused medicines

with family and friends who are having similar illness. Majority of respondents 57.7% (n=275) were satisfied with

the drug information provided by the healthcare professionals. This study also found that more than 80% of the

respondents (n=409) did report that they read the labels of their medication before using. **Conclusions:** In this

study, it was revealed that there is a moderate level of public knowledge regarding medication safety. It is evident

that public underestimates the risk of their medications. There is a general lack of awareness and understanding

among the public especially toward side effects.

### Key words:

*Awareness, assessment, general public, medication safety*

## Introduction

The use of medication for the purpose of treating or preventing illnesses is a common form of health intervention worldwide. Within this context, complexity of medication use always exposes patients to risk of unwanted effects. The Australian Council for Safety and Quality in Healthcare for example estimated that approximately 140,000 hospital admissions each year were associated with problems related to medicine use.<sup>[1]</sup> In addition, over 1.5 million Australians suffer an adverse event from medicine use each year resulting in at least 400,000 visits to general practitioners.<sup>[2]</sup>

In the United States, it was reported that more than 770,000 patients are adversely affected annually because of medication errors<sup>[3]</sup> with an estimated annual cost of \$5.6 million per hospital.<sup>[4]</sup>

The Quality Use of Medicines and Pharmacy Research Centre in Australia outlined that few interventions may benefit patients and can help in reducing medication errors.<sup>[5]</sup> These include the use of clinical decision support

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<b>Website:</b> <a href="http://www.cysonline.org">http://www.cysonline.org</a>	<b>Quick Response Code</b> 
<b>DOI:</b> 10.4103/2229-5186.98690	

system, use of adverse drug events alerts, use of bar coding for medication error prevention, individualized medication supply systems, and establishing discharge medication management services and provision of comprehensive clinical pharmacy services.<sup>[5]</sup> Although much effort has been made in educating patients regarding health-related issues, it has been estimated that one-half of prescription drugs are taken incorrectly and as many as 1 of 10 hospital admissions are caused by medications errors.<sup>[6]</sup>

Patients as an ultimate user of medications play an important role in enhancing medication safety practices. Although there are many articles written in the lay press that encourage patients to take an active role in their health, studies repeatedly demonstrate that patients do not understand or possess essential knowledge about medications.<sup>[7,8]</sup> It was also reported that on an average, patients failed to list at least one of their prescription medication.<sup>[7]</sup> In a survey conducted by the National Council on Patient Information and Education USA, 20% of the respondents admitted taking medication beyond the recommended dose believing that more is better. Approximately 36% of patients combined several over the counter medications at the same time and yet only 20% of patients knew the active ingredient of the products they consumed.<sup>[9]</sup> Assessment of general public knowledge about their medication can be an important tool in predicting success of the treatment. In Malaysia, to the best of our knowledge, no attempt has been made to explore the awareness of general public toward issues related to medication safety. Therefore, the study was undertaken to have an insight of general public beliefs toward medication safety.

## Materials and Methods

A cross-sectional study was undertaken for a period of two months (August to September 2010). Five hundred respondents were selected conveniently from areas of public interest such as shopping centers and recreational areas in the state of Penang, Malaysia. Penang is located on the northwest coast of Peninsular Malaysia by the Strait of Malacca. Penang is the second smallest Malaysian state in area after Perlis and has a population of 1.5 million. The whole of Penang State has a density of 1,450.5 people per km<sup>2</sup>. Highly urbanized and industrialized, Penang is one of the most developed and economically important states in the country.

A questionnaire was developed after an extensive literature review. The tool was tested for its reliability and validity before data collection and was piloted with 30 respondents. The questionnaire was found reliable with Cronbach's alpha value of 0.70. Little modification was needed after the pilot testing. Respondents included in the pilot testing were not included in the final analysis.

The questionnaire consisted of two parts. First part

comprised demographic data, which included gender, ethnicity, and age. Second part comprised eight questions focusing knowledge toward medication safety. The questionnaire was designed to address the study objectives, informed by the literature.<sup>[10,11]</sup> A three-point Likert-type scale ranging from agree, neutral, and disagree was used to measure responses. Data were analyzed by using SPSS version 12.0. Frequencies and percentage were used to describe responses and demographic profile.

## Ethical approval

The study was approved by the ethical committee of the Discipline of Social and Administrative Pharmacy, School of Pharmaceutical Sciences, USM. In addition, participants were briefed on the nature and objectives of the study. Written consent of the participants was obtained before data collection.

## Results

From the total of 500 respondents approached, 476 responded to the survey giving a response rate of 95.2%. Females dominated the cohort (n=267, 56%). Majority (n=145, 30.4%) of the respondents were categorized in the age group of 38–47 years. Majority of our survey respondents belonged to the Malay (n=212, 44.5%) ethnicity followed by Chinese (n=172, 36.1%) and Indians (n=77, 16.1%). The demographic characteristics of the respondents are shown in [Table 1].

[Table 2] highlights the respondent's awareness toward issues related to medication safety. Two hundred and ninety-two (61.3%) patients agreed to the statement that they are well aware of the side effects of their current medication. A total of 325 (68.2%) respondents agreed that they follow the instructions of healthcare professionals while taking their medications.

**Table 1: Demographic characteristics of the survey respondents**

Characteristics	Responses	
	Frequency (n)	Percentage
Age (in years)		
18-27	96	20.1
28-37	120	25.2
38-47	145	30.4
48-57	80	16.8
58 and above	35	7.35
Gender		
Male	209	43.9
Female	267	56.0
Ethnicity		
Malay	212	44.5
Chinese	172	36.1
Indian	77	16.1
Others	15	3.1

**Table 2: Public knowledge towards medication safety**

Item in questionnaire	Agree (n, %)	Neutral (n, %)	Disagree (n, %)
1	292 (61.3)	135 (28.3)	49 (10.29)
2	325 (68.2)	68 (14.2)	83 (17.4)
3	71 (14.9)	157 (32.9)	248 (52.1)
4	275 (57.7)	148 (31.0)	53 (11.3)
5	409 (85.9)	50 (10.5)	17 (3.5)
6	139 (29.2)	157 (32.9)	180 (37.8)
7	192 (40.3)	88 (18.4)	196 (41.1)
8	100 (21.0)	180 (37.8)	196 (41.1)

1. I am well versed about the side effects that can be caused by medicines that I take; 2. I follow the directions given by my doctor or pharmacist when taking my medicine; 3. A complementary medicine and traditional medicine is safe to be taken together; 4. My healthcare professional provides good information on the medicines that I need to take; 5. I always read the label of my medicines; 6. I am often confused with medicine given to me; 7. I will advise my unused medicine to others in my family if they have similar problems; 8. All the medicines registered in Malaysia are totally safe to consume without any side effects

While answering to the question that whether a conventional medicine can be taken together with a traditional medicine, 248 (52.1%) disagreed to this question. Greater proportion of the respondents (n=275, 57.73%) agreed that healthcare professionals are providing them sufficient knowledge about their current medication.

The results also show that respondents are eager to know about names and specification of their medications. Four hundred and nine respondents (85.9%) stated that they read the label of the medication every time they are using the drug. At the same time, 180 (37.8%) study participants disagreed that they have confusions regarding medication use. However, there was a mix response when respondents were asked that whether they will advise to take their unused medications to people with apparently similar illness. Almost 40% agreed and 40% disagreed with this statement and 20% remained neutral.

Respondents of our study had some reservations toward incident of side effects. About 58% of study respondents (n=275) were of the opinion that all registered medicines in Malaysia are safe to use without fear of any side effects.

## Discussion

Medication safety is an emergent concern both in the developed and developing nations. It is eminent that accurate information and advice from healthcare professionals ensure rational use of medications by the patients.<sup>[10]</sup> However, patients themselves act as an integral player in their health care and are an active participant in the medication safety process.

It is evident that an effective communication between

healthcare professionals and patients is imperative to attain maximum therapeutic outcomes.<sup>[11]</sup> This communication helps patients to acquire awareness and knowledge about their medications. This claim is supported by the present study findings where majority (n=275, 57.7%) agreed that they are satisfied with the information provided by their respective healthcare professionals. However, this is in contrary to what is reported by Paul *et al* (2007) in their nationwide survey in the United States where patients declared that they had been given insufficient information by the physicians.<sup>[12]</sup> One important issue that has been raised in our finding is the misapprehension about side effects. Majority of respondents stated that they are well aware of the side effects of their current medications. Interestingly, higher proportion of respondents from the same cohort were of the opinion that all registered medicines in Malaysia are safe to use without fear of side effects. This is a clear indication that there is an insufficient information and understanding of respondents about medications available in the country. Knowledge about side effects is apparently poor, which in turn can result in medication errors. Therefore, we can conclude that philosophy of the word "side effects" is not properly perceived by general public and needs further explanation. An explanation that every medicine has the possibility of producing unwanted effects should be added while discussing medication issues with the patients.

Treatment recommendations by healthcare professionals and the extent to which these recommendations are followed by the patients play a vital role in reducing medication errors. In this study, majority of the respondents agreed that they follow the instruction given by their healthcare professionals. It is now well known that such recommendations can lead people to make decisions that can go against what is best and against what they would otherwise prefer.<sup>[13]</sup> There is also some evidence that patients and health professionals often do not agree on treatment preference especially in the areas of chronic diseases. However, the magnitude and direction of these differences vary and may depend on the condition of interest.<sup>[14]</sup> Results from this study do portray that public somehow do not practice safe medication. Forty percent of our respondents agreed and 18% stayed neutral while sharing their unused medication among people with the same medical problems. Medication prescribed for an individual is not suitable to be taken by others even with the similar medical problem. Medications have different effects on different people especially in the extreme ages (infants and elderly) who are more vulnerable.<sup>[15]</sup> Therefore, patients should be advised to properly dispose medications once their illness is cured.

Upon seeking perception of public on taking complementary and traditional medicines together, majority of the respondents rejected this claim. This reflects that knowledge of respondents about drug administration and

their possible interactions with other drugs is present in the society. At the same time, majority of the respondents did agree that they read the label on their medicine. This can be one possible reason that people do not take a traditional and complementary medicine together. Budnitz and Layde suggested that as patients are not able to retain all the information, therefore it is essential for them to read the label and understand the instructions by themselves.<sup>[16]</sup> Respondents in the current study do follow safe practices that can avoid medication errors.

One third of the study respondents of the current study were confused with the medicine prescribed to them. This confusion can lead to misunderstanding of instructions and to medication errors. Hasty writing, ineffective communication while speaking and writing, and poorly attending the patient by healthcare professionals can lead to medication error.<sup>[15,17]</sup> However, properly attending the patients' needs can overcome this problem and can clarify the doubts in the patients mind regarding rational medicine use.<sup>[15]</sup>

## Conclusion

This study findings highlight that public underestimates the risk of their medications. There is a general lack of awareness and understanding among the public especially toward side effects. Healthcare professionals must address this issue on priority as these mistaken beliefs will influence public's attitude and behavior to safe medication practices. Concentration on effective communication between healthcare professionals and patients on various aspects of medication use is needed. It is also suggested that physicians should incorporate patient's preferences while writing prescriptions.

## Limitation

The study was performed in one state of Malaysia with a sample of 476 respondents. It is not wise to generalize the results with the entire country. However, results from this study can be used as reference for recommendation for further studies at the national level.

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**How to cite this article:** Hassali MA, Shafie AA, Saleem F, Al-Qazaz H, Masood I, Atif M, *et al.* A pilot study exploring awareness among general public toward issues related to medication safety in the state of Penang, Malaysia. *Chron Young Sci* 2012;3:156-9.

**Source of Support:** Nil, **Conflict of Interest:** None declared