



Public Knowledge about Herbal Beverages in Penang, Malaysia

Mohamed A. Hassali*¹,

Tahir M Khan ^{2, 3},

Asrul A Shafie ¹,

Munaver Nazir ¹

¹Discipline of Social and Administrative Pharmacy, School of Pharmaceutical Sciences, Universiti Sains Malaysia, 11800 Penang, Malaysia;

²School of Pharmaceutical Sciences, Universiti Sains Malaysia, 11800 Penang, Malaysia;

³Department of Pharmacy, Island College Of Technology, Balik Pulau 11000 Penang, Malaysia

CORRESPONDING AUTHOR

Tahir M Khan

tahir.pks@gmail.com

Please cite this paper as:Hassali MA, Khan TM, Shafie AA, Nazir M. Public Knowledge about Herbal Beverages in Penang, Malaysia. AMJ 2009, 1,6, 1-12. Doi. 10.4066/AMJ.2009. 71



Abstract

AIM OF STUDY:

To explore public knowledge and perceptions of the efficacy, safety and reason to consume herbal beverages including ginseng tea, ginkgo biloba tea and tongka ali tea.

METHOD:

This study was conducted in the state of Penang in June 2007. Participants were recruited at random; respondents were interviewed using a 19 item questionnaire. Non- parametric statistics was applied to analyse the data.

RESULTS:

Four hundred participants were recruited. Most of the respondents 228(57.0%) were habitual consumers of herbal beverages. 249(62.25%) respondents believed that herbal beverages improved their health status. 193(48.25%) believed that herbal beverages boost the energy level of user and 120(30.0%) used them to prevent diseases. 300(75%) respondents agreed with the statement that herbal beverages are safe to use and that they have less side effect than conventional medicines available on the market. Female respondents were more likely to report using herbal beverages for slimming 78(19.5%) and for cosmetic purposes 74(18.5%). However, the use of herbal beverages to boost energy levels was more frequent among male respondents. Respondents aged 18 – 25 years were significantly more likely to report the use of herbal beverages to prevent coughs and flu.

CONCLUSION:

This potentially ill advised and dangerous consumption of herbal beverages may delay appropriate help seeking for various medical illnesses. In addition lack of knowledge about the side effects of herbal beverages may put users at risk of side effects.

Keywords: herbal beverages, knowledge, beliefs, safety.



Introduction

Technological advances have led to the development of a plethora of treatments for common ailments however about one third of world population cannot access essential medicines^[1]. World Health Organization (WHO) estimates that 80 % of the world's population still rely on traditional or herbal medicine and the majority of people in those countries believe that it is safe to use herbal medicine^[2]. In addition to this; availability, affordability and culture influence the use of herbal medicine as an alternative to pharmaceutical drugs.

Recently a new trend has emerged with various herbal 'medicines' available in the form of beverages. The public are not reported to be aware of the adverse effects associated with the use of herbal beverages such as high blood pressure^[4] renal toxicity, hepatic-toxicity and carcinogenic effects^[3]. Research has not encompassed an exploration of the knowledge and perceptions of lay respondents about the use of herbal beverages^[5,6,7].

The Malaysian media is promoting the relaxing and rejuvenating effects of herbal beverages like ginseng tea, ginkgo biloba tea and tongka ali tea. The strong influence of Chinese culture may be a reason for the widespread availability of herbal medicines and beverages. Most of the Chinese food stalls selling variety of herbal beverages making a wide list of claims.

As far as we are aware no study reported the attitudes and knowledge of lay respondents about the use of herbal medicine. The aims of this study were to explore public knowledge and perceptions of the efficacy, safety and reason to consume herbal beverages including ginseng tea, ginkgo biloba tea and tongka ali tea.



Methods

A researcher administered survey was undertaken in June 2007 in the state of Penang. Penang is one of the thirteen states of Malaysia, comprises of two parts, i.e Penang Island and Penang mainland, with a population of 1.5 million. Population of Penang comprises of Malays (42.5%), Chinese (46.5%), Indians (10.6%) and minorities (0.4%)^[8].

STUDY TOOL

A 19-item questionnaire was used to evaluate the public knowledge and perceptions towards efficacy safety and reason to use herbal beverages. The content and face validity of the questionnaire was done by the professionals at the disciplines of; social and administrative pharmacy at University Sains Malaysia. The reliability scale was applied in order to estimate the internal consistency of the knowledge domain. The internal consistency of the tool was estimated on the basis of Cronbach's Alpha ($\alpha = 0.70$). All the interviews were conducted by the researchers with the excellent proficiency in Malay, Indian and Chinese languages to accommodate a wide variety of participants.

CONTENTS OF THE QUESTIONNAIRE

The questionnaire comprised of two parts; demographic details including race, age, gender, employment status and occupation. And part two relating to efficacy, safety and indications for herbal beverages

DATA COLLECTION

Face to face interviews were conducted. The respondents were approached to participate in the study by adopting a random sampling method. Main focus was given to the people coming to the food courts in the shopping malls. The minimum required sample was calculated with a confidence interval of 95%, using Rao Soft® online sample size calculator^[11]. Rao Soft® calculates the sample size on the basis of population. For the



population of Penang (1.5 million) the minimum required sample size was 377. An additional 20% was recruited to overcome the refusal. A total of N=452 respondents were approached, of whom 400 were willing to participate in the study.

Ethical approval from the research ethics committee of University Sains Malaysia and clinical research committee ministry of health Malaysia was taken for this study. Moreover, respondents were asked for verbal consent and assured of confidentiality.

DATA ANALYSIS

For Data analysis Statistical package for social sciences (SPSS13.0®) was used. The Chi Square (χ^2) test was used to test the difference between proportions. However, in some cases the expected cell count was less than 5, Fischer exact test was applied to calculate the exact the significance. A p-value of 0.05 and less was considered significant. Some of the questions were in multiple choices format; therefore the sum total of percentages does not always total 100%.

Results

A total of 400 respondents have participated in this study with a response rate of 88.5%; the majority were Malay 207(51.8%), with a significant percentage Chinese 147(36.8%) and some Indians 34(8.5%). The majority 214(53.5%) were female. Details about the demographic of respondents are presented in table 1. Majority 254 (63.5%) claimed that they have heard about the benefits of herbal beverages from their family members and were in favour of their use because of the favourable views of older family members. Details about the source of information regarding the use and benefits of herbal beverages are presented in figure 1.

Most respondents 228(57.0%) were habitual users of herbal beverages. The majority of respondents 249(62.25%) believed that herbal beverages improved the health status. Moreover 193(48.25%) believed that



herbal beverages boost the energy level of user and 120(30.0%) use them because of the perceived preventive properties against diseases. Details are presented in table 2.

With respect to the safety and efficacy of herbal beverages about 300(75%) of respondents agreed with the statement that herbal beverages are safe to use and they have less side effect than pharmacological medicines available on the market. Almost same number stated that herbal beverages can be used regardless of age and recommend them for use by pregnant women.

Discussion

For centuries, man has self medicated for common ailments, and continues to use them along side modern medicines even today. Despite the advances in modern medicine, traditional medicine has always been practiced. Traditional medicine refers to health practices, approaches, knowledge and beliefs incorporating plant-, animal- and mineral-based medicines as well as spiritual therapies applied singly or in combination to treat, diagnose and prevent illnesses or maintain well-being ^[9]. In past the use of traditional medicine was common among most of the current developed countries. However, food and beverages manufacturers have introduced a new line of herbal teas that are often available in supermarkets and grocery stores ^[10]. In recent years the use of herbal beverages has increased in Malaysia. This is the first Malaysian study exploring public knowledge about the use of herbal beverages. The findings of the study offer evidence that the use of herbal beverages is believed to boost energy and as a preventive measure for various medical conditions. These practices were found significantly associated with respondents who categorised themselves as un-employed and those from lower socio-economic classes. However, surprisingly the use of herbal beverages to improve the health status was also associated with respondents who classified themselves as Chinese and with a high income level. Female respondents reported greater use of herbal beverages for slimming 78(19.5%) and cosmetic purposes 74(18.5%) On the other hand the use of herbal beverages to boost the energy was more common among male respondents.



Among all ethnic groups Malays knowledge about the side effects of herbal beverages was poor. Findings demonstrated strong beliefs toward the use of herbal beverages, majority 300(75%) appear to believe that it is safe to use herbal beverages instead of pharmaceutical medicines and the use of the herbal beverages was considered safe even in pregnancy. The use of herbal beverages as prevention for cough and flu was significantly more among those aged 18 – 25 years

LIMITATIONS

Population of Penang is not representative of the population of Malaysia. Population of Malaysia main comprises of 65% Malays and other Bumiputera (Javanese, Bugis, Minang and other indigenous ethnic groups, such as the Orang Asli in Peninsular Malaysia, and the tribal peoples in Sabah and Sarawak), Chinese 26%, Indians 8% and other unlisted ethnic groups 1%. As in Penang majority are Chinese. However, findings of the study demonstrate a higher participation of Malays which may address this limitation to some extent.

Conclusions

This potentially ill advised and dangerous of use herbal beverages may delay appropriate help seeking for various medical illness. In addition lack of knowledge about the side effects of herbal beverages may put users at risk of side effects.

References

1. World Health Organization. WHO Traditional Medicine Strategy 2002-2005. Geneva, World Health Organization, 2002 (document reference WHO/EDM/TRM/2002.1).
2. Dasgupta A. Handbook of drug monitoring methods: drug-herb and drug food interactions: impact on therapeutic drug monitoring. Humana Press Inc., Totowa, NJ; 235-261
3. Dasgupta A. Handbook of drug monitoring methods: drug-herb and drug food interactions: impact on therapeutic drug monitoring. Humana Press Inc., Totowa, NJ; 235-261
4. Heneman K, Cherr SZ. Nutrition and health info sheet: energy drink, department of nutrition University



of California. April 2007

5. Al-Safi S, Ayoub NM, Ayoub AM, Al-Momany E, Al-Doghim I, Al-Balas M, et al, editors. Public awareness of the abuse of herbs and drugs to decrease body weight: a novel national survey in Jordan. *Public Health* 2008 16:205–213
6. Freymann H, Rennie, Bates I, Nebel S, Heinrich M. Knowledge and use of complementary and alternative medicine among British undergraduate pharmacy students. *Pharm World Sci* 2006 28:13–18
7. Ashar BH, Miller RG, Pichard CP, Levine R, Wright S.M. Patients' understanding of the regulation of dietary supplements. *J Community Health* 2008 33:22–30
8. Socio-Economic & Environmental Research Institute (SERI). (2007) Penang Statistics, 2007 Quarter 2 page 3. [Online] accessed on 20th march 2008. available from World Wide Web <http://www2.seri.com.my/Penang%20Statistics/2007/Q2-April-June-2007-1.pdf>
9. World Health Organization. Traditional Medicine, Fact Sheet No. 134, September 1996, URL. <http://www.who.int/mediacentre/factsheets/fs134/en/> [accessed on 6/12/2004].
10. Wilson, Ted; Temple, Norman J. (Eds.) *Beverages in Nutrition and Health* Humana Press; 1 edition (November 5, 2003), **ISBN-13:** 978-1588291738, pages 180-202.
11. Raosoft, Online sample size calculator. Accessed 10 June 2007, retrieved from [online] <http://www.raosoft.com/samplesize.html>.



Tables and Figures

Figure 1 Knowledge source about the use and benefits of herbal beverages

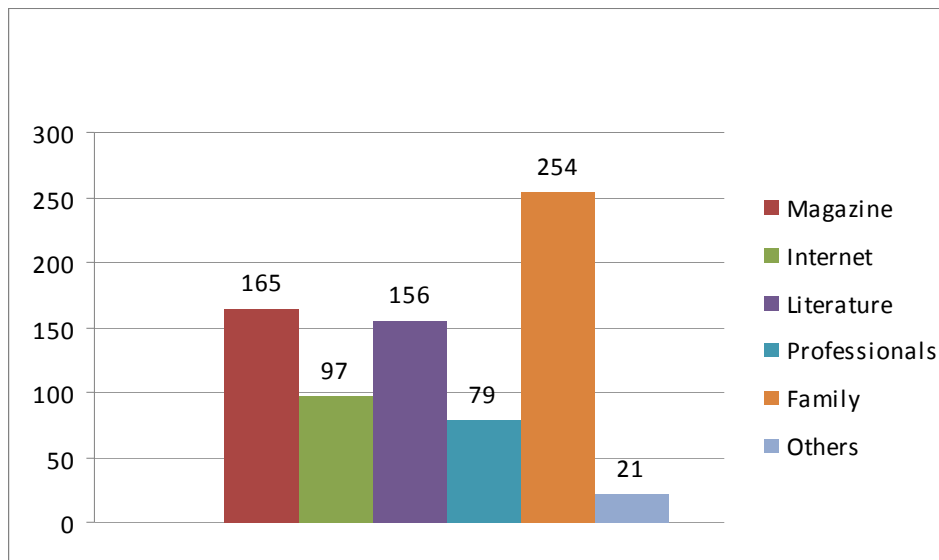




Table 1 Demographics of respondents

Characteristics	N	%
Total participants	400	26.6%
Race		
Malay	207	51.8%
Chinese	147	36.8%
Indian	34	8.5%
Other	12	3.0%
Gender (Mean=26±5.3 SD)		
Male	186	46.5%
Female	214	53.5%
Age		
18-25	202	50.5%
26-35	98	24.5%
36-45	50	12.5%
>45	50	12.5%
Education Level		
Primary	16	4.0%
Secondary	119	29.8%
Tertiary	236	59.0%
Others	29	7.3%
Income level		
No income	152	38.0%
<RM1000	66	16.5%
RM1000-2000	80	20.0%
RM2000-4000	71	17.8%
>RM4000	31	7.8%



Table 2 Respondents perceptions towards the use of herbal beverages

	For Sliming	For Preventive Purposes	To boost Energy	For Curative Purposes	To improve the Health Status	For Cosmetic Purposes
Gender						
Male	16	56	103	33	119	16
Female	62	64	90	41	130	46
	$\chi^2=26.303$ $p<0.001$ †*	$\chi^2=0.002$ $p=0.526$ †	$\chi^2=7.071$ $p=0.005$ †*	$\chi^2=0.133$ $p=0.408$ †	$\chi^2=0.422$ $p=0.506$ †	$\chi^2=12.630$ $p<0.001$ †*
Race						
Malay	47	69	112	40	128	35
Chinese	23	36	57	30	95	25
Indians	6	11	16	2	22	1
Others	2	4	8	2	4	1
	$\chi^2=2.881$ $p=0.410$ □	$\chi^2=3.374$ $p=0.338$ □	$\chi^2=9.777$ $p=0.021$ □ *	$\chi^2=4.065$ $p=0.255$ □	$\chi^2=4.725$ $p=0.196$ □	$\chi^2=5.133$ $p=0.157$ □
Age						
18-25	47	56	99	39	122	32
26-35	17	31	41	15	67	16
36-45	8	16	27	10	27	10
>45	6	17	26	10	33	4
	$\chi^2=4.298$ $p=0.231$ †	$\chi^2=1.099$ $p=0.777$ †	$\chi^2=2.605$ $p=0.457$ †	$\chi^2=0.899$ $p=0.826$ †	$\chi^2=3.603$ $p=0.308$ †	$\chi^2=2.990$ $p=0.393$ †
Income						
No income	32	32	72	21	91	27
<RM1000	15	22	36	19	44	12
RM1000-2000	14	22	32	11	46	6
RM2000-4000	14	30	35	16	46	12
>RM4000	3	8	18	7	22	5
	$\chi^2=2.783$ $p=0.595$ †	$\chi^2=7.733$ $p=0.102$ †	$\chi^2=3.227$ $p=0.521$ †	$\chi^2=9.151$ $p=0.050$ †*	$\chi^2=2.880$ $p=0.578$ □	$\chi^2=4.982$ $p=0.291$ †

†Chi-square, □ Fischer exact, * Significant

