

**PUBLIC PREFERENCES OF WEIGHT LOSS METHODS AND COMMUNITY PHARMACISTS' ASSISTANCE IN WEIGHT MANAGEMENT**

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ABSTRACT

Obesity is a global problem. However, few consult healthcare professionals before starting a weight loss program therefore risking the public of making uninformed decision on weight loss management. The aims of this study were to determine the public preferences of i) weight management methods and ii) community pharmacists' assistance in weight management. The instruments consisted of self-administered questionnaire on preferences and information sources of weight loss method and preferences on pharmacist assistance in weight management. A total of 272 responses were collected. Three most popular method of weight loss were exercising (47.4%), dieting (44.9%) and meal replacement (39.7%). Almost one-third of the respondents (31.7%) were "likely" to seek advice from the pharmacist on weight management. Pharmacists need to be more prominent in assisting the public in weight management. These findings can improve pharmacists' understanding of the public preferences in weight management and improve their service with regards in assisting the public in managing the risk of being overweight.

Keywords: Weight management, community pharmacist, pharmacists' assistance, weight management method, preferences

INTRODUCTION

Obesity is defined as abnormal or excessive fat accumulation that may impair health. Obesity can be calculated using body mass index (BMI), an index of weight for height and a BMI of 25 or more is considered overweight and BMI of 30 or more is considered obese.^[1] It has been estimated that the global burden of overweight and obesity is at more than 1.1 billion.^[2] Obesity is an epidemic in the US and in the Asia Pacific region obesity is also on the increase. Currently nearly 35.9% of Americans are obese^[3]. There is evidence that the risk of obesity related diseases among Asian rises from a lower BMI of 23 kg/ m². If this were adopted as a new benchmark for overweight Asians, it would require a major revision of approaches in the Asian sub-regions, where a significant proportion of the 3.6 billion populations already has a mean BMI of 23.4 kg/ m².^[4]

In Malaysia, it was reported that, 15.1% of the adult males were overweight and 2.9% obese while 17.9% of adult females were overweight and 5.7% obese. It was also reported that there was little difference between rural and urban populations and that there were more obese Malays and Indians as compared to Chinese.^[5] The Global Burden of Disease Study data suggest that excess body weight is the sixth most important risk factor contributing to the total worldwide disease burden. In the United States, due to the increasing prevalence of overweight and obesity that a recent study suggests that poor diet and physical inactivity will beat cigarette smoking as the main preventable cause of mortality.^[6] In addition, across various countries in the region, the populations attribute due to overweight and obesity ranged from 0.8% to 9.2% for coronary heart disease mortality, 0.2% to 2.9% for haemorrhagic stroke mortality, and 0.9% to 10.2% for ischaemic stroke mortality. These results indicate that consequences of overweight and

obesity for health of many of these countries are likely to increase in coming years.^[1]

The co-existing medical conditions of obesity produce financial costs to the health economy of many developed countries. Similar strain in Malaysia will enforce a huge burden on the human and economic resources and are liable to disturb priorities in the health care or other sectors. As Malaysia proceeds rapidly towards developed economy status, there is a need to develop a national strategy to tackle both dietary and activity contributors to the excess weight gain of the population.^[2]

Pharmacists are in a good position to provide interventions for tackling obesity problems in the community. Pharmacists being involved in weight loss program are due to pharmacist's position to give reliable information about diet, exercise and drug-related topics. It has been suggested that dieting and increasing physical activity should be considered as the first intervention for weight change. As a result, pharmacist should provide advice and information on managing lifestyle changes, especially on healthy eating and regular exercise. A survey of this issue among US pharmacists showed that most pharmacists reported the highest frequency of consultation on anti-obesity drugs, followed by diet and exercise.^[7] Patients who started a weight management program have reported significant improvements in quality of life, depression levels and binge eating behavior.^[8] In the UK, it has been proposed that community pharmacies are the ideal place to develop weight management services. A UK study of 96 visitors to general practice showed that more than 70% of respondents recognized the role of community pharmacists in providing healthy living advice. The study also state patients reporting satisfaction with their weight loss services.^[9] In a conclusion, evidence demonstrates that pharmacists are in a good position to tackle obesity problems through providing advice about healthy lifestyle modification and weight control products.

Recently, My Weight My Health (MWMH), an accredited community service by Malaysian Pharmaceutical Society was developed as an effort to heed the Health Ministry's call to combat the rising obesity rate among Malaysians. A call centre where a team comprising of pharmacists, nutritionists and dieticians will provide counseling and assistance to overweight and obese people. It is open from 8.30am to 5.30pm on weekdays. The program will cover three parts which is information on nutrition, proper dieting and fitness through physical activities or exercises. The society is working with pharmacies to

assist the public to seek assistance in calculating their body mass index before getting in touch with the call centre to register. Once registered, a food diary would be mailed to the participant and the team would keep track on the participant's progress on a weekly basis through telephone calls for a period of four months.^[10] However, the success rate of this service has yet to be determined.

This study provides exposure on the public preferences toward weight management methods, sources of information on weight management and community pharmacist role in weight management thus helps to determine the type of support that pharmacist can offer the public in terms of weight management.

The objectives of the study were to determine the i) public preferences of weight management methods ii) sources of information on weight management and iii) preferences of community pharmacists' role and assistance in weight management.

MATERIALS AND METHODS

The research was conducted in Taiping, a town located in northern Perak, Malaysia. The instruments consisted of self-administered questionnaire on demographics, attempts on losing weight, preferences of weight loss method, information sources of weight loss methods and public preferences for pharmacist assistance in weight management.

The questionnaire was adapted from Kong, Dunn and Suzana^[5, 11, 12] and included new questions relevant to the study. Responses varied with different segments. Responses included open-ended questions, multiple answers, yes or no and five-point Likert scale where (1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 = strongly agree). A pilot study was executed and the data excluded in the final sample.

The questionnaire was disseminated to two hospitals, two health centres, and two community pharmacies. Respondents were selected based on convenient sampling. Respondents' BMI were calculated based on weight (kg)/height² (m²) and were further classified as underweight, normal weight, overweight, obese I and obese 2 under WHO category. Respondents below 18 years old were excluded in the study. Respondents were briefly explained by the researcher on the purpose of the study. Respondents were assured of the confidentiality of their answers. Only those willing to participate were given the questionnaire. Written

consent was obtained from each subject. Estimated time to answer the questionnaire is about 15 minutes. The questionnaires were collected by the researcher after respondents completed the questionnaire. The data was analyzed using Statistical Package for the Social Sciences (SPSS) version 20.

RESULTS

A total of 272 questionnaires were collected. The majority of the respondents are female (61.8%), 31-50 years old (42.6%), Malay (52.6%), married (54.8%), self-employed (31.6%) and with SPM (O-Level equivalent) qualification (25.4%) as in Table 1. (Insert Table 1 here). From Table 1, respondents age 50 and below mostly preferred exercise followed by dieting and meal replacement but majority of respondent age 51-70 prefers meal replacement followed by dieting and exercising as a preferred weight management method. Men (66.3%) tend to favour exercise compared to women (35.7) while a higher percentage of women (47.0%) preferred meal replacement compared to men (27.9%). Exercise was chosen by two-third (64.7%) of the students as their choice of weight loss method. Slightly more than a third of the respondents (35.9%) had incorrectly categorized their own BMI.

Out of 272 respondents, three quarter (75.00%) admitted that they have tried to lose weight before, and almost a third (32.4%) reported 'trying at the moment'. Only a quarter (25.0%) had never tried to lose weight - Table 2. (Insert Table 2 here). From Table 3, exercising (47.4%) and dieting (44.9%) were the most preferred weight reduction methods followed by meal replacement (39.7%), alternative medicine (38.2%), slimming cream (36.8%), slimming tea (34.2%), laxative (24.3%), apple cider vinegar (22.1%), weight reduction programme (20.6%), recommended medicine by doctor or pharmacist (8.5%), slimming soap (7.4%) and others (9.2%). (Insert Table 3 here)

Most of the respondents were introduced to the method of weight loss through television (48.9%), followed by their friends (41.2%), internet (34.2) and magazine (32%). Comparing among the health care professionals, respondents mostly received advice on weight loss method from pharmacist (15.8%), followed by doctor (12.5%), nurse (5.9%) and dietician (5.9%). – Table 4. (Insert Table 4 here)

Over a quarter (27.4%) of the respondents chose 'unlikely' to take a blood pressure screening services if provided by the pharmacist and a similar number (26.7%) chose 'very likely' as in Table 5. In

assessing respondent's preferences toward pharmacist monitoring blood pressure, screening for obesity, monitoring for obesity, screening for cholesterol level and monitoring for cholesterol level, majority of respondents chose 'neither likely or unlikely' for all four statements. On the statement, 'how likely is that you would seek advice from the pharmacist on how to take the medicine for weight management', almost a third of the respondents (31.7%) chose 'likely'. (Insert Table 5 here)

DISCUSSION

About a third of the respondents had under or overestimated their BMI category. This is similar to the results of studies done towards undergraduates in Malaysia.^[13, 14] In the previous study, the extent of overestimation in height is greater in older men and women, shorter men and heavier women, while underestimation of weight were greater in heavier men and women.^[15] In practice, it would be a good idea for pharmacists to use a measured height and weight before giving advice on weight management. From this study, three-quarter admitted they have tried to lose weight before with almost one-third trying to lose weight at the moment. This result was higher than reported previously in a study done in Kuala Lumpur.^[5] The top preferences of weight loss methods were exercise, diet, meal replacement, alternative medicine and slimming creams, which were almost similar to the previous study.^[5, 16] This suggests that respondents do have preferences of certain weight loss methods over others. A focus on these weight management methods by community pharmacists might be beneficial to the public.

This research showed a low percentage of the respondents requested information from the pharmacists on the methods in losing weight preferring instead to rely on television and friends. In a study done in Australia, similar results were found where 88% had never discussed diet or exercise with their pharmacists.^[17] This showed that pharmacists were underutilized in terms of delivering health information. Although the pharmacists' role is primarily supportive, their medication knowledge brings a unique perspective that can assist with decision making, improve compliance to a chosen regimen, and help prevent potentially dangerous impact from improper use of self prescribed products. Moreover, the results from a pilot study of weight control program in an Irish community pharmacy showed that patients participating in this program achieved a significant amount of weight loss after three month.^[18] However, it is not realistic to expect all that are interested to lose weight to discuss it with

their pharmacists due to personal preferences.^[16] In this study, there were mixed views from the public on whether they will utilize services on screening and monitoring of blood pressure, cholesterol level and obesity. This is similar to a review where mixed feelings were reported.^[19] This could possibly be because the general public views the pharmacists more as a drug expert and less of a health service provider.^[19] A limitation of this study would be self-reported nature of the respondents' weight and height. However, self-reported height and weight has been shown to be valid in epidemiological studies.^[15]

CONCLUSION

Exercise, diet and meal replacement was the preferred method of losing weight. Pharmacists need to be more prominent in assisting the public in weight

management. Findings from this study can improve pharmacists' understanding of the public preferences in weight management and improve their service with regards in assisting the public in managing the risk of overweight and obesity. Future research need to investigate on ways to offer health services more proactively which is likely to have a positive effects on the pharmacists' assistance in weight management.

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Table 1: Demographic data and top preferences of weight loss methods.

Demographic data		Frequency	Percentage (%)	Exercise (%)	Diet (%)	Meal replacement (%)
Age N=272	18-30	97	35.7	50.5	40.2	29.9
	31-50	116	42.6	61.2	56.9	42.2
	51-55	59	21.7	15.3	28.8	50.8
Gender N=272	Male	104	38.2	66.3	50.0	27.9
	Female	168	61.8	35.7	41.7	47.0
Ethnic group N=272	Malay	143	52.6	37.8	43.4	49.0
	Chinese	82	30.1	56.1	40.2	24.4
	Indian	43	15.8	58.1	55.8	37.2
	Others	4	1.5	100.0	75.0	50.0
Marital status N=272	Single	105	38.6	63.8	47.6	23.8
	Married	149	54.8	38.2	45.0	53.7
	Divorced	11	4.0	0	9.1	18.2
	In a relationship	7	2.6	71.4	57.1	14.3
Highest education level N =272	Read & write only	40	14.7	5.0	7.5	60.0
	PMR	44	16.2	43.2	36.4	43.2
	SPM	69	25.4	40.6	52.2	40.6
	A-level equivalent	20	7.4	75.0	55.0	25.0
	Certificate	15	5.5	60.0	53.3	26.7
	Diploma	31	11.4	61.3	54.8	32.3
	Degree	51	18.8	68.6	58.8	35.3
Occupation N=272	Master	2	0.7	100	50.0	0
	Student	51	18.8	64.7	49.0	21.6
	Government employee	53	19.5	43.4	58.5	43.4
	Self-employed	86	31.6	36.0	39.5	44.2
	Employed by private company	61	22.4	52.5	37.7	47.5
BMI classification N=270	Unemployed	21	7.7	47.6	42.9	33.3
	Underweight (<18.5)	38	14	52.6	39.5	13.2
	Normal (18.5-22.9)	122	44.9	47.5	47.5	35.2
Overweight (23.0-	61	22.4	49.2	47.5	50.8	

	27.4)					
	Obese 1 (27.5-34.9)	47	17.3	36.2	38.3	59.6
	Obese 2 (35.0-39.9)	2	0.7	100.0	50.0	0
Smoking history N=272	Current smoker	88	32.4	44.3	38.6	43.2
	Former smoker	2	0.7	50.0	50.0	0
	Never smoke	182	66.9	48.9	47.8	38.5
BMI (self category vs exact)N=270	Correct self- category	173	64.1			
	Incorrect self- category	97	35.9			

Table 2: Time of the last attempt to lose weight

Time of attempt	Frequency (n = 272)	Percentage (%)
Trying at the moment	88	32.4
Within the previous 14 days	34	12.5
Within the previous month	9	3.3
Within the previous 3 month	20	7.4
Within the previous 6 months	7	2.6
More than 6 months ago	46	16.9
Never tried to lose weight	68	25.0

Table 3: Preferred type of weight loss methods

Preferred weight loss methods	Frequency	Percentage (%)
Exercise	129	47.4
Diet	122	44.9
Meal replacement	108	39.7
Alternative medicine	104	38.2
Slimming cream	100	36.8
Slimming tea	93	34.2
Laxative	66	24.3
Apple cider vinegar	60	22.1
Weight reduction programme	56	20.6
Recommended medicine by doctor or pharmacist	23	8.5
Slimming soap	20	7.4
Others	25	9.2

Table 4: Source of information on the weight loss methods

Source of information on weight loss methods	Frequency	Percentage (%)
Television	133	48.9
Friends	112	41.2
Internet	93	34.2
Magazine	87	32
Family	76	27.9
Pharmacist	43	15.8
Newspaper	42	15.4
Doctor	34	12.5
Teacher/lecturer	24	8.8
Nurse	16	5.9
Dietician	16	5.9
Radio	13	4.8
Can't remember	7	2.6

Table 5: Public preferences on pharmacist assistance in weight management

Perception item Responses	Very unlikely	Unlikely	Neither	Likely	Very likely	Mean	Median	Standard deviation
How likely is that you would take a blood pressure screening services if provided by the pharmacist?	4 (1.4%)	77 (27.4%)	62 (22.1%)	54 (19.2%)	75 (26.7%)	3.44	3	1.207
How likely is that you would use a blood pressure monitoring services if provided by the pharmacist?	20 (7.1%)	53 (18.9%)	72 (25.6%)	69 (24.6%)	58 (20.6%)	3.34	3	1.219
How likely is that you would use a screening service for obesity if provided by the pharmacist?	4 (1.4%)	80 (28.5%)	102 (36.3%)	41 (14.6%)	45 (16.0%)	3.16	3	1.070
How likely is that you would use a monitoring service for obesity if provided by the pharmacist?	6 (2.1%)	55 (19.6%)	100 (35.6%)	68 (24.2)	43 (15.3)	3.32	3	1.037
How likely is that you would use a screening service for cholesterol level if provided by the pharmacist?	4 (1.4%)	67 (23.8%)	94 (33.5%)	55 (19.6%)	52 (18.5%)	3.31	3	1.087
How likely is that you would use a monitoring service for cholesterol level if provided by the pharmacist?	6 (2.1%)	64 (22.8%)	85 (30.2%)	71 (25.3%)	46 (16.4%)	3.32	3	1.078
How likely is that you would seek advice from the pharmacist regarding weight management?	4 (1.4%)	67 (23.8%)	40 (14.2%)	89 (31.7%)	72 (25.6%)	3.58	4	1.166

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