

Evaluation of Knowledge, Attitude, and Perceptions of Community Pharmacists Toward Using Non-prescription Medications and Supplements to Reduce Body Weight in Kuala Lumpur, Malaysia.

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Abstract— Objectives: To look into community pharmacists' knowledge, attitudes, and perspectives about prescribing complementary supplements and/or non-prescription medications to overweight and obese patients to assist them lose weight.

Method: 207 registered pharmacists working in community pharmacies in Kuala Lumpur, Malaysia, participated in a cross-sectional, descriptive investigation with a self-administered questionnaire.

Key findings: Although 88.4% of respondents had a good level of awareness about Weight Management Products and their practices, the majority of them had mixed opinions (neutral attitude, 52.1%; answers, 59.9%) about the safety and efficacy of these items. There was a minor, negative association between knowledge and attitude ($r = -0.125$, $n = 207$, $p = 0.038$) and an intermediate, positive link between attitude and reaction. ($r = 0.347$, $n = 207$, $p = 0.000$).

Conclusions: Community pharmacists, since they can readily be found, play a crucial part in ensuring that whatever items are proposed for clients are suitable, efficient, and safe. Community pharmacists' understanding and attitudes toward the use of non-prescription drugs and supplements to lose weight must be raised and improved to ensure they are well-equipped to serve the community safely and appropriately.

Index Terms— Community pharmacist, Kuala Lumpur, OTC, supplements, weight loss products.

I. INTRODUCTION

This Obesity and overweight have emerged as worldwide health issues due to their increasing incidence and clinical consequences. They are defined as "anomalous or excessive accumulation of fat that can harm health" and are often quantified using body mass index (BMI). BMI is a fundamental weight-for-height metric extensively used to identify adults overweight and obese. The World Health Organization defines overweight as a BMI of 25 kg/m² or greater for anyone aged 18

and older., Obesity is characterized as a BMI of 30 kg/m² or above. (1). Obesity is today considered an illness, and it is a key risk factor for the development of serious secondary disorders or co-morbidities such as hypertension, type 2 diabetes mellitus, dyslipidaemia, metabolic syndrome, cardiovascular disease, and even some malignancies (1-5).

Obesity rates are increasing in both developing and established countries. proportionately. This was mostly due to the lack of physical activity, a sedentary lifestyle, and the availability of processed and fast food practically everywhere and easily available. It ranks as the sixth largest cause of death worldwide (6, 7). four centuries, there has been strong proof that the overall rate of obesity among Malaysians has risen dramatically. In 1975, around 1.4% of Malaysia's adult population was obese; however, this percentage subsequently climbed to 15.6% in 2016, with obesity prevalence increasing by more than tenfold (1). According to the National Health and Morbidity Survey (NHMS) 2019 (8), one in every two Malaysian adults was overweight or obese, with 54.7% being female, 63.9% being Indian, and 60.9% falling between the ages of 55 and 59 years.

Malaysians used complementary and alternative medicine at a rate of 71.2% (9). Dietary supplements are described as "products intended to complement the diet (i.e. add more nutritional value)" since they contain one or more dietary elements (for example, vitamins, minerals, amino acids, herbs, metabolites, extract). and are frequently taken orally (capsules, pills, powders, etc.) (10, 11). "Assessing the clinical efficacy of dietary supplements is exceedingly challenging since they are regulated differently than traditional medications. Consequently, dietary nutrients have become readily accessible as over-the-counter (OTC) products. making them more accessible to the general public. Dietary supplements are not designated as medications. There are restrictions Depending on

their clinical efficacy. are less stringent than those for traditional pharmaceuticals; hence, they can be advertised and sold independently of scientifically validated clinical evidence." (12, 13). Community pharmacists in several nations are also working to resolve this issue. Community pharmacists are now responsible for Promoting public health and preventing illnesses. Weight management might be a further benefit provided by pharmacists in communities, with potential public health repercussions. (8, 14, 15). In addition, community pharmacists are immediately available and knowledgeable about drugs, ailments, and lifestyle changes. Approximately 3000 community pharmacies operate in Malaysia. (8). As a result of the rising number of community pharmacists, the profession's practice orientation has shifted during the previous decade. Many community pharmacists utilize non-prescription medications and supplements as part of their extended offerings for weight management (16).

II. METHODOLOGY

A. Study design

A detailed cross-sectional investigation took place. with a questionnaire that is completed by the respondent. Surveys were provided to registered pharmacists working in community pharmacies in Kuala Lumpur, Malaysia.

B. Sample size calculation

Format Kuala Lumpur had 446 neighbourhood pharmacies. According to the Rao soft sample size calculator (17), the sample size required was 207 (assuming the 95% accuracy level, with a 5% margin of error., and a 50% recruitment rate). The surveys were given to 207 community pharmacies in Kuala Lumpur. All 207 surveys were returned and completed (100 per cent response rate).

C. Study tool

The study used a reliable questionnaire (with an internal consistency of 0.787, indicating optimal reliability) from another published study in Saudi Arabia (18). To ensure content validity, five questionnaires were delivered to randomly selected community pharmacists.

The questionnaire included 29 questions divided into four domains: Domain I (10 inquiries about demographics), Domain II (7 concerns about knowledge), and Domains III as well as IV (6 questions each about community pharmacists' attitudes and perceptions of prescribing weight loss agents and supplements).

Bloom's cut-off points from three distinct KAP studies were used to assess community pharmacists' knowledge, beliefs, and views about the Use of medications that are not prescribed and supplements to lose weight (19-20). Each accurate knowledge answer will receive one mark, and each respondent's overall knowledge score will be evaluated and tallied. According to Bloom's cut-off point, a score of 0 - 4 (less than 60%) indicates poor knowledge level, followed by a score of 5 (60-79%) for intermediate knowledge level and 6 - 7 (80-100%) for high knowledge level. The pharmacists' attitudes and behaviours were evaluated using a 5-point Likert scale (1 = strongly agree,

2 = agree, 3 = neutral, 4 = disagree, and 5 = strongly disagree) to see if they agreed or disagreed with statements on weight loss medications and herbal supplements. (18)A score of 6 - 9 represents a favourable attitude where respondents agree on the use, followed by 10 - 12 for a neutral answer and 13 - 15 scores indicating that respondents disagree with the use of non-prescription drugs and supplements to lose weight. Meanwhile, a score of 6-9 suggests favourable reactions, 10-12 shows neutral responses, and 13-16 indicates negative responses. In this study, two items were added to the demographics: ethnicity and number of pharmacy hours worked each week. The pharmacy location from the modified questionnaire was replaced with the kind of pharmacy (independent or chain).

D. Inclusion criteria

The eligibility requirements are pharmacists who were lawfully qualified, enrolled, and working as community pharmacy professionals, pharmacists who had been working in the individual local pharmacies at the moment of the appointment, and chemists who agreed to participate in this study.

E. Exclusion criteria

Provisionally registered pharmacists, pharmacies that have suspended operations or relocated sites without providing a forwarding address, pharmacists residing outside of Kuala Lumpur the nation, and responsible and unlicensed pharmacists in Malaysia were also disqualified.

F. Data analysis

The social and demographic information was examined utilizing qualitative methods. Data of categories is presented in proportions & frequencies, while provided as standard deviations and mean values. The mean ratings and variances of every assertion were calculated using a Likert scale with five possible answers (strongly concur, concur, neutral, do not agree, and strongly disapprove). Following that, the Likert scale responses were divided into three distinct categories (concur, neutral, and disapprove), and the summed mean as well as standard deviation for agreement, neutral, and disagreement were analysed to better portray the responses. IBM SPSS software version 20 was applied to look at the data.

III. RESULT

Respondents' Sociodemographic Characteristics

The surveys were given to 207 community pharmacies in Kuala Lumpur, with a 100% response rate recorded. The majority of responders (82.6%) were female and aged 20-30 years old (77.8%). The majority were Bachelor of Pharmacy graduates with three to six years of job experience (91.3% and 62.3%, respectively). Chain pharmacies had the greatest rate (76.8%), with the majority of responders working more than 40 hours each week.

The sociodemographic factors are outlined in Table 1.

TABLE I
RESPONDENTS' SOCIODEMOGRAPHIC CHARACTERISTICS

| Demographic characteristics (N=207) | n (%) |
|--|--------------|
| Gender | |
| Male | 36 (17.4) |
| Female | 171 (82.6) |
| Age (Years) | |
| 20 - 30 | 161 (77.8) |
| 31 - 40 | 42 (20.3) |
| 41 - 50 | 4 (1.9) |
| Race | |
| Chinese | 118 (57.0) |
| Malay | 66 (31.9) |
| Indian | 23 (11.1) |
| Types of Pharmacy | |
| Independent | 48 (23.2) |
| Chain | 159 (76.8) |
| Level of Education | |
| Bachelor of Pharmacy | 189 (91.3) |
| Master's degree | 18 (8.7) |
| Working Experience (Years) | |
| 1 - 3 years | 66 (31.9) |
| 3 - 6 years | 129 (62.3) |
| >6 years | 12 (5.8) |
| Working Hours Per Week | |
| 32 - 40 hours | 18 (8.7) |
| >40 hours | 189 (91.3) |

Table 2 presents a collection of questions posed to respondents to measure their general understanding of weight loss products. Most of them (88.9%) were unaware of which items are authorized by the United States Food and Drug Administration, as OTC weight loss treatments. The two assertions with the greatest percentage were "Common side effect of Orlistat® 120" and "Metformin is an over-the-counter appetite suppression medication. understanding ratings were produced, and 88.4% of respondents were found to have excellent comprehension of weight loss products, while 8.2% and 3.4% had intermediate and poor knowledge levels, respectively.

TABLE II
KNOWLEDGE OF WEIGHT MANAGEMENT PRODUCTS

| Knowledge Questions | Right Answer n (%) | Incorrect Answer n (%) |
|--|---------------------------|-------------------------------|
| United States Food and Drug Administration-approved OTC Agents for weight reduction. | 23 (11.1) | 184 (88.9) |
| Dosage form of Phentermine (Duromine® / Adipex Retard®). | 201 (97.1) | 6 (2.9) |
| The common side effect of Orlistat® 120. | 206 (99.5) | 1 (0.5) |
| Liraglutide (Saxenda®) is used as an adjunct for weight loss. | 196 (94.7) | 11 (5.3) |
| Liraglutide (Saxenda®) maximum daily dose. | 190 (91.8) | 17 (8.2) |
| Drug-drug/herb interaction between green tea and Coumadin/warfarin. | 204 (98.6) | 3 (1.4) |
| Metformin is an over-the-counter weight-loss medication. | 206 (99.5) | 1 (0.5) |

Table 3 shows respondents' attitudes on the use of non-prescription drugs and supplements to reduce body weight. Most responders (48.8%) believed that weight loss medications are effective and safe. Community pharmacists must be competent to counsel patients. on the safest approach to losing weight, with patient counselling being the most important aspect (49.3% and 58.0%). However, 56.5% of respondents would limit the use of weight loss medications to obese people who were unable to reduce weight with nutrition and physical activity alone. Over 50 per cent of the respondents claimed that appropriate information and ongoing instruction on weight loss items were critical and vital. Overall attitude scores were generated to assess the attitude level of community pharmacists on weight-loss products. It was shown that 26.5% of Respondents held an optimistic outlook. toward reducing the weight of goods, while the majority of people have mixed sentiments (neutral attitude, 52.1%). However, a small proportion of the people surveyed were unhappy with the use of weight loss goods (negative attitude (21.3%).

TABLE III
ATTITUDE ON WEIGHT REDUCTION PRODUCTS

| Likert-scale of perception assessment (N=207) | n (%) | | | | |
|---|---------------------|------------|-----------|------------|-----------------|
| | strongly disapprove | disapprove | Neutral | concur | Strongly concur |
| 1. Weight reducing agents are effective and safe. | 0 (0) | 3 (1.4) | 87 (42.0) | 101 (48.8) | 16 (7.7) |
| 2. Community pharmacists should be prepared to advise patients on the safest method to lose weight. | 0 (0) | 0 (0) | 4 (1.9) | 102 (49.3) | 101 (48.8) |
| 3. Advising the patient before utilizing any weight loss product is critical. | 0 (0) | 0 (0) | 0 (0) | 120 (58.0) | 87 (42.0) |
| 4. Weight loss products should be reserved for obese individuals who have been unable to lose weight with exercise and nutrition alone. | 0 (0) | 4 (1.9) | 11 (5.3) | 117 (56.5) | 75 (36.2) |
| 5. Community pharmacy employees must have extensive knowledge and ongoing education on weight loss products. | 0 (0) | 0 (0) | 2 (1.0) | 89 (43.0) | 116 (56.0) |
| 6. If I became an obese patient, I would know what products could help me lose weight safely. | 0 (0) | 12 (5.8) | 43 (20.8) | 89 (43.0) | 63 (30.4) |

Table 4 highlights community pharmacists' answers regarding the use of non-prescription drugs and supplements to lose weight. The majority of respondents (51.2%) did not dispute or agree with the statement that pharmacists commonly provide weight loss products without a prescription. However, they felt that the administered medications were effective in terms of weight loss (51.7%). 58.0% and 53.6% of respondents agreed that pharmacists should have enough time to educate patients on distributed weight loss products and that they should routinely Explore reducing weight goods with other healthcare experts. Furthermore, respondents stated that pharmacists should be worried Regarding the protection of those who take medicines for weight loss and Always eager to learn more about the most successful approaches for weight loss with weight loss products or other methods (63.8% and 72.9%, respectively). Overall response ratings were created, and it was shown that just 18.8% of respondents had favourable reactions to weight

loss items, with the majority (59.9%) having neutral reactions. There were also a few respondents who had negative attitudes toward the use of weight loss products (21.3%).

TABLE IV
RESPONSES TOWARD WEIGHT REDUCTION PRODUCTS

| Likert-scale of perception assessment (N=207) | n (%) | | | | |
|--|-------------------|-----------|------------|------------|----------------|
| | Strongly Disagree | Disagree | Neutral | Agree | Strongly Agree |
| 1. Pharmacist regularly dispenses weight reduction products without prescription. | 10 (4.8) | 28 (13.5) | 106 (51.2) | 57 (27.5) | 6 (2.9) |
| 2. The provided medications indicate effectiveness in weight loss. | 0 (0) | 1 (0.5) | 73 (35.3) | 107 (51.7) | 26 (12.6) |
| 3. Pharmacists should have ample time to inform patients about the weight loss products that have been dispensed. | 0 (0) | 0 (0) | 0 (0) | 120 (58.0) | 87 (42.0) |
| 4. Pharmacists should periodically consult alongside other medical professionals on calorie-burning products. | 0 (0) | 3 (1.4) | 8 (3.9) | 111 (53.6) | 85 (41.1) |
| 5. Pharmacists have concerns about the safety of patients who take medications for weight loss. | 1 (0.5) | 1 (0.5) | 7 (3.4) | 66 (31.9) | 132 (63.8) |
| 6. Willingness to learn more about optimal practices for weight loss through the use of weight loss products or other methods. | 0 (0) | 0 (0) | 1 (0.5) | 55 (26.6) | 151 (72.9) |

The mean (SD) for overall knowledge, attitude, and reaction scores were 5.92 (0.561), 10.68 (2.077), and 11.07 (1.922), respectively. A Pearson correlation was used to assess the association between knowledge and attitude regarding weight loss products. There was a modest statistically important

negative relationship between understanding and mindset ($r = -0.125$, $n = 207$, $p = 0.038$). However, there was no relationship observed between knowledge score and their perception or responses to the application of weight. Lowering products. Additionally, there was a statistically important link among attitude as well as response ($r = 0.347$, $n = 207$, $p < 0.001$).

A t-test for independent samples was conducted. used towards compare the level of knowledge, attitude, and response of community pharmacists in independent pharmacies (IP) and chain pharmacies (CP) regarding the use of Non-prescription drugs and additional supplements to reduce weight in overweight and obese patients. There were no significant differences in the knowledge score (IP, $M=5.79$ $SD=0.849$; CP, $M=5.96$ $SD=0.434$), attitude score (IP, $M=10.77$ $SD=2.15$; CP,

$M=10.65$ $SD=2.06$), and response score (IP, $M=11.13$ $SD=2.45$; CP, $M=11.05$ $SD=1.74$) between independent and chain pharmacies, with $t(54.6) = -1.34$ $p=0.186$, $t(205)=0.34$ $p=0.734$, and $t(62.06)=0.197$, $p=0.844$, respectively.

A one-way ANOVA test was employed to compare community pharmacists' consciousness and perceptions about the use of complementary supplements and/or possibly non-prescription drugs to reduce weight in overweight and obese patients based on their years of professional experience. There were no significant differences in the knowledge score. ($F(2,204) = 2.677$, $p = 0.071$), attitude score ($F(2,204) = 2.908$, $p = 0.057$), or reaction score ($F(2,204) = 1.249$, $p = 0.289$) based on their job experiences.

An independent sample t-test was performed to examine their degree of knowledge, attitude, and responsiveness to the utilization of supplementary supplements and/or non-prescription drugs to reduce weight in overweight and obese patients based on education levels. There were no significant differences in the knowledge score (Bachelor, $M=5.90$ $SD=0.52$; Master, $M=6.17$ $SD=0.86$) or attitude score (Bachelor, $M=10.74$ $SD=2.07$; Master, $M=10.06$ $SD=2.10$) between bachelor's and master's holders, with $t(18.216)=-1.299$ $p=0.210$ and $t(205)=1.340$, $p=0.182$, respectively. However, answer scores between bachelor's ($M=11.21$ $SD=1.81$) and master's ($M=9.56$ $SD=2.45$) holders were shown to be statistically significant, with $t(18.79) = 2.79$ $p=0.012$.

DISCUSSION

The primary goal of examining community pharmacists' knowledge, attitudes, and perceptions of the usage of non-prescription medications and supplements to reduce body weight was to eliminate unclear understandings about its practice and prescribing pattern. At the same time, patients' safety must be ensured if they seek guidance and advice on weight reduction products from competent and experienced community pharmacists. Such information would be useful in assuring correct use of weight loss products to avoid undesirable and harmful side effects.

This survey revealed that the majority of community pharmacists were competent and aware of the practices and products available on the market. Community pharmacists must be properly prepared with disease-specific information, attitudes, and abilities to help the community. (22), . In contrast

to research conducted in Asser, Saudi Arabia (18), the authors found that community pharmacists lacked expertise and experience with weight reduction products and their applications. Tang et al. (23) uncovered opposite findings from this investigation, concluding that most community pharmacists were employing resources that were not evidence-based and lacked appropriate information and competence on herbal/nutrient weight reduction supplementary medicine.

Despite having a thorough understanding of the weight loss solutions available on the market, only 26.5% of respondents had a favourable attitude toward weight loss products, while the majority have mixed sentiments (neutral attitude, 52.1%) about their use and efficacy. Alshahrani(18) reached a different conclusion, stating that the majority of participating pharmacists were enthusiastic about The reliability along efficacy of weight-loss products. There was a correlation discovered between attitude and answers to the use of non-prescription drugs and supplements to reduce body weight ($r = 0.347$, $n = 207$, $p = 0.000$), with both being found to be somewhat intermediate. Respondents feel that Community pharmacy workers must authorized to provide guidance and counsel patients on the safest approach to lose weight. Community pharmacists should also be cautious concerning the healthiness of patients who use weight loss products and limit their usage to obese patients who could not drop excess pounds through physical activity, nutrition or those who would benefit from weight reduction. (Risk factors for co-morbidities). Knowledge and regular learning about slimming products. are critical to ensuring that community pharmacists are well-prepared to serve the community and deliver safe and effective treatments to the public. Malik et al. (24) discovered that training and courses for all healthcare workers are beneficial in increasing awareness, Understanding, abilities, and self-efficacy in employing an ecological strategy to prevent and cure obesity. (24-26)

CONCLUSION

Because a wide selection of weight reduction treatments are available on the market, proper usage and prescription patterns are critical to avoiding undesired side effects for customers. Community pharmacists, who are easily available to the public, play an important role in ensuring that the products recommended to patients are appropriate, effective, and safe. Community pharmacists' understanding and attitudes toward the use of non-prescription drugs and supplements to lose weight must be raised and improved to ensure they are well-equipped to serve the community safely and appropriately.

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