



衛生署
Department of Health

Poisoning Watch

Volume 13, Number 1
December 2020

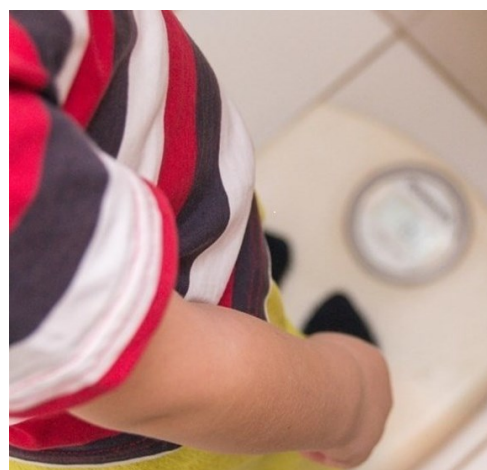
Inside This Issue

Slimming Products – A Solution or Poison?

- Introduction 1
- Local situation 2
- Two case reports 5
- What is overweight or obesity? 6
- Proper ways to achieve weight control 7
 - ✓ Eat a balanced diet
 - ✓ Avoid alcohol consumption
 - ✓ Active engagement in physical activity
- Advice to the Public 10
- References 10

Introduction

In the wake of the coronavirus disease 2019 (COVID -19) pandemic, members of the public may stay at home more than they used to, in order to adhere to the social distancing measures. Nevertheless, staying at home for prolonged periods without regular exercise may pose challenges to maintaining physical health. Indeed, some people may gain weight as a result of insufficient physical activity when staying at home. Doing exercise regularly requires long term commitment and efforts. Therefore, some people may consider a shortcut by taking slimming products to lose weight. However, taking slimming products is not without risk and sometimes poisoning may occur especially in those without obtaining medical advice. In this issue, we summarised the local situation of poisoning related to self-purchased slimming products, and provide some advice on how to achieve weight control safely.



衛生防護中心
Centre for Health Protection



Local notifications of poisoning related to consumption of slimming products

From 2016 to 2020 (up to October), the Department of Health (DH) had received a total of 72 notifications of poisoning related to consumption of slimming products (Figure 1). Most of them were females (70 females and 2 males) and their age ranged from 15 to 57 years old (median: 26 years old). Their body mass index ranged from 17.8 to 41.5 (median: 23.8). Psychiatric-related symptoms such as hallucination and abnormal behaviour (30/72, 41.7%) were most commonly reported, followed by those related to cardiovascular diseases, such as chest discomfort and palpitation (20/72, 27.8%) and gastrointestinal disorders, such as vomiting and diarrhea (12/72, 16.7%). Other symptoms included loss of consciousness, malaise, convulsions etc. (Figure 2). Majority of the cases required hospitalisation (59/72, 81.9%) but none of them died from poisoning.

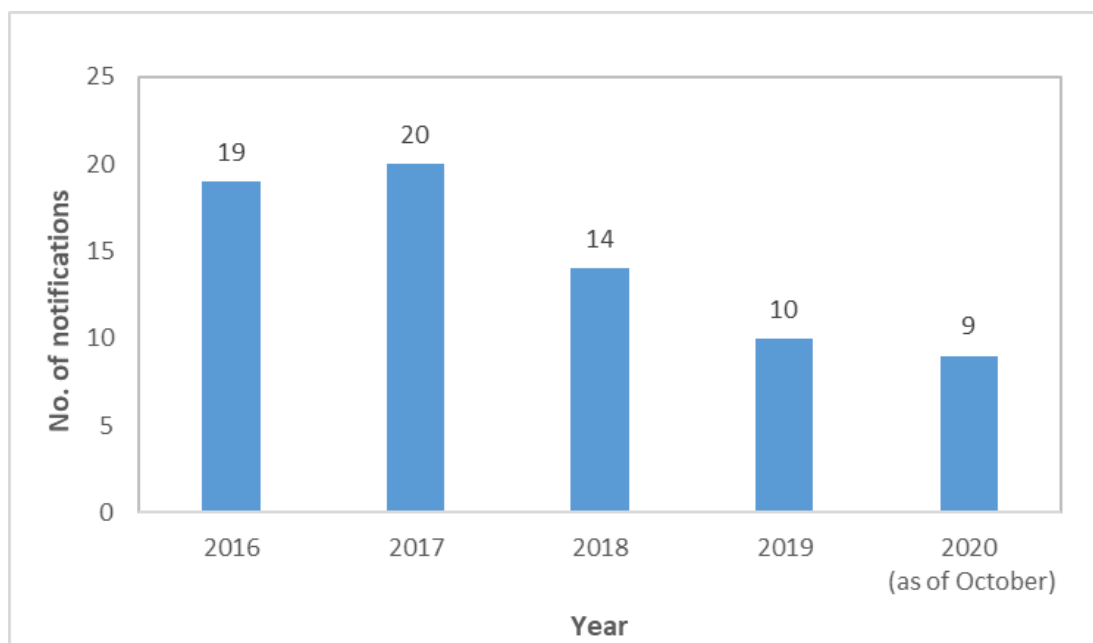


Figure 1: Number of notifications of poisoning related to consumption of slimming products received from 2016 to 2020 (as of October, 2020)

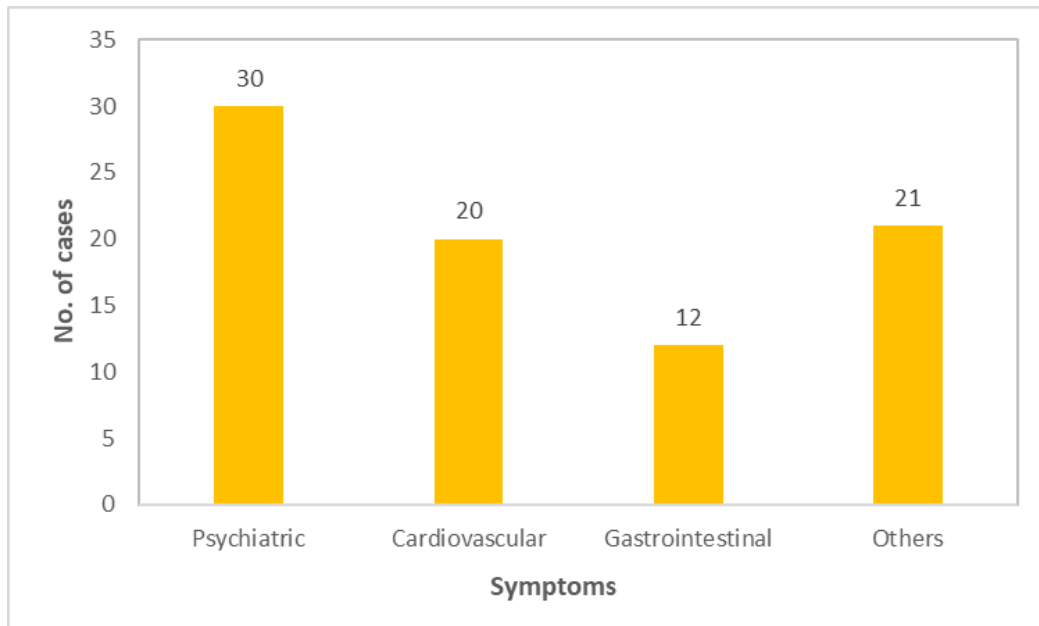


Figure 2: The most commonly reported symptoms of the 72 notified cases

Among the 72 cases, majority (51/72, 70.8%) purchased the slimming products via the internet. Some (10/72, 13.9%) obtained the products from their friends. Some purchased the products in local retail shops (7/72, 9.7%). The remaining purchased the products in areas outside Hong Kong by the patients themselves (4/72, 5.6%). (Figure 3).

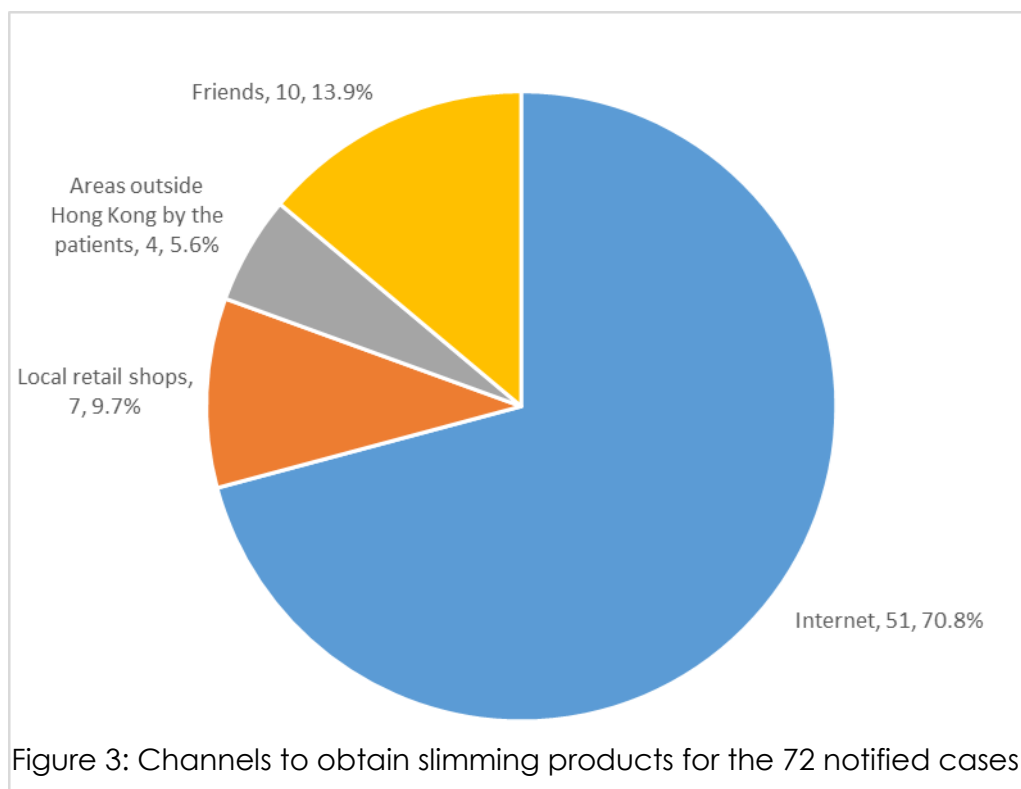


Figure 3: Channels to obtain slimming products for the 72 notified cases



Among the 72 cases, remnants of slimming products were available in 71 cases (71/72, 98.6%) for chemical analysis. Undeclared or banned ingredients were detected in all 71 cases. The most commonly found ingredient was sibutramine (49/71, 69.0%), a banned appetite suppressant because of the increased cardiovascular risk, followed by laxatives such as phenolphthalein (banned for its possible cancer-causing effect) and bisacodyl (42/71, 59.2%), diuretics (18/71, 25.4%) and animal thyroid tissue / thyroid hormone or analogue (12/71, 16.9%) (Figure 4) and the pattern is similar to that in the previous report.¹ Of note, almost one-third of the cases (23/72, 31.9%) involved the use of slimming pill cocktails - a regime consisting of multiple types of slimming products. It is alarming that 12 cases (16.7%) even involved a combination of eight or more types of slimming products at the same time. This practice is especially dangerous due to the much higher chance of experiencing side effects as well as potential interactions between different slimming products.



Figure 4: Common ingredients in the slimming products consumed by the notified cases (Remarks: One patient may consume more than one type of slimming products and therefore total number is larger than 72)

Some people may think that transient, mild side effects in exchange for rapid weight loss without doing exercise and diet control is a good deal. However, members of the public must bear in mind that claims made by the sellers are often exaggerated. Side effects of slimming products can be severe and long-lasting. Moreover, losing weight too quickly may lead to various health problems including electrolyte imbalance, malnutrition, gallstones and lethargy. Below are two case examples.

**A case of psychotic disorder related to slimming products**

A 26-year-old woman with good past health attended the Accident & Emergency Department (AED) of a public hospital with unstable emotion, confused speech, persecutory idea and hallucination for around a month. Physical examination showed her blood pressure was 137/84 mmHg and her pulse was 117 beats per minute. Electrocardiogram was abnormal with T wave inversion. Computed tomography of brain was unremarkable. She reported recent history of taking “dietary supplements” for slimming purposes for around a month. Sibutramine metabolites and sibutramine were detected in patient’s urine and “dietary supplements” submitted by the patient respectively. The principal diagnosis was stimulant induced psychotic disorder.

According to the patient, the dietary supplements were purported to be made from “plant milk” and purchased online via a social media account. However, please note that it is a common way for sellers to market slimming products using various false claims, as in this case, the product was claimed to be made from natural ingredient “plant milk”, but actually contained banned western drug. In the past, there were other poisoning cases in which the slimming products’ ingredients were claimed to be purely herbs, coffee powder or natural enzymes with slimming effects, but ultimately found to contain western drugs including those banned ones. In addition, severe side effects can occur after consumption of slimming products, as in this case, the patient developed acute psychosis, requiring admission to a psychiatric hospital and treatment by antipsychotics.

A case of headache and blurred vision related to slimming products

A 15-year-old girl with good past health presented to the AED of a public hospital for vomiting, headache, blurred vision, vertigo and tinnitus. Physical examination revealed dilated pupils and fast heartbeat. Blood tests were unremarkable. The patient reported history of taking 20 capsules of a slimming product for weight reduction in one go. Sibutramine metabolites were detected in the patient's urine specimen and sibutramine was detected in samples of the slimming product. In this case, patient obtained the slimming product from a seller via social media. The seller advertised that the product could achieve weight loss of 7kg in just 7 days, and fat burn at any troubled



areas. She initially took one to three capsules per day. Yearning for quick and substantial weight loss, she took 20 capsules in one go before this hospital admission.

People who want to lose weight want to have a quick result. However, weight loss takes time as your body takes time to burn fat. Overdose of slimming products will not result in instant weight loss, but only put your health at stake. Members of the public must also be careful with claims made by sellers of slimming products, especially those that sound too good to be true. These claims often lack scientific evidence, and slimming products with such claims may be adulterated with western drug ingredients and harmful substances. Moreover, studies show that people will regain weight after discontinuation of pharmacological therapy.^{2,3} Weight loss should be aimed at a safe and healthy speed of 0.5 to 1 kg (1 to 2 pounds) each week.⁴

What is overweight or obesity?

It is noted that among the 72 notified cases of poisoning related to consumption of slimming products, some of them are actually underweight and the lowest body mass index (BMI) is 17.8. It is important to know the definition of "underweight", "normal range", "overweight" and "obese".

BMI is a simple index of weight-for-height that is commonly used to classify overweight and obesity in adults. BMI is calculated by dividing a person's body weight (in kilograms, kg) by the square of height (in metres, m), i.e. kg/m^2 . According to the World Health Organization (WHO)'s standard for Asian adults, a BMI of less than 18.5 kg/m^2 is underweight, between 18.5 and 22.9 kg/m^2 is normal range, 23.0 to less than 25.0 kg/m^2 is classified as overweight and a BMI of 25.0 kg/m^2 or above is classified as obese.

Moreover, waist circumference is another common indicator used for indicating central obesity. A waist circumference of over 90 centimetres (cm) or about 36 inches for males, or over 80 cm or about 32 inches for females, is considered central obesity.

The fundamental cause of obesity or being overweight is an imbalance between calories intake from foods and beverages, and energy expenditure through normal body functions along with daily activities.⁵



It is well known that obesity can contribute poor health e.g. increasing risk of cardiovascular diseases, diabetes mellitus, certain cancers etc. With the emergence of COVID-19, obesity is also a prominent determinant for severe COVID-19 and death.^{6,7} Among patients with COVID-19, patients with obesity were 74% more likely to be admitted to intensive care unit and 48% more likely to die compared with those who were not obese.^{8,9}

Proper ways to achieve weight control

Knowing all the harmful effects of obesity, people may feel compelled to lose weight quickly. While it may be tempting to try various fad diets and slimming products that claim to attain rapid weight loss, these methods often come at a high price in terms of health.

Members of the public are reminded that healthy weight management can only be achieved by adopting an ongoing healthy lifestyle which includes having a balanced diet, doing adequate level of physical activity and refraining from alcohol consumption.

Eat a balance diet and avoid alcohol consumption

In order to control and achieve an optimal body weight, members of the public should eat according to the “Healthy Eating Food Pyramid” guide (Figure 5) and observe the basic principles of healthy eating: limit fats, salt and sugars intake; eat more fruits and vegetables; consume enough dietary fibre, drink enough water and avoid alcohol.¹⁰

In the COVID-19 pandemic, staying at home and avoiding eating out will increase your chance of cooking at home and you can select fresh food and products for healthy cooking. Long-lasting fresh or frozen fruits and vegetables, dried and canned pulses, whole grains and starchy roots, eggs and reduced-fat, shelf-stable milk are some great options for home cooking. Besides, members of the public are also reminded to be aware of portion sizes of their meals, as staying at home for prolonged periods, especially without company or with limited activities can lead to overeating.¹¹



Alcohol is not a necessary part of diet and members of the public should refrain from drinking for better health. A gram of alcohol (7 calories) contains more calories than a gram of sugar (4 calories) and almost as many calories as a gram of fat (9 calories). Moreover, an alcoholic beverage is often a mixed drink of spirit(s) and other high caloric ingredients such as fruit juices, syrup, cream and soft drinks, which offer additional calories. Not only is alcohol an obstacle in the journey of weight loss, it is also harmful to the physical and mental health. Alcohol can also weaken the immune system and makes the drinker more susceptible to infections.¹²



Figure 5: Healthy Eating Food Pyramid for Adults

(For the Healthy Eating Food Pyramids for children, adolescents and elderly,
please visit the Change for Health website at

https://www.change4health.gov.hk/en/healthy_diet/guidelines/food_pyramid/index.html)



Active engagement in physical activity

The WHO recommends adults to engage in at least 150 minutes a week of moderate-intensity aerobic physical activity, or at least 75 minutes a week of vigorous-intensity aerobic physical activity, or an equivalent combination of moderate- and vigorous-intensity activity, as well as muscle-strengthening activities involving major muscle groups on two or more days a week.

While at home in the wake of the COVID-19 pandemic, members of the public are encouraged to do home-based exercises to increase their physical activity level. WHO has developed a guidance with some home-based exercise examples to help people integrate simple, safe ways to stay active in limited space.¹³

Members of the public can also dance with music, practice Tai Ji Quan, step over obstacles (such as low stool or pile of books), carry or lift groceries with moderate weights (such as plastic water bottles containing about 500 ml of water or a 5 kg bag of rice), use a towel for resistance training, or even just walk (on the toes or heels) inside the house.¹⁴

For more information about healthy lifestyle, members of public can refer to <https://www.change4health.gov.hk/>.



 家居健體操 Household Fitness Dance	
 日常伸展操 Stretching Dance	
 活力操 Lively Dance	



Advice to the Public

- Not to buy or consume slimming products or products claimed to lose weight of doubtful composition or from unknown sources. If you consider taking slimming product for weight control, you should consult healthcare professionals before making decision.
- Be alert of products with false and/or exaggerated weight loss claims.
- Weight control should be achieved gradually and through a combination of balanced diet and appropriate exercise that will be sustainable and healthy.

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