Inappropriate Weight Management among Thai Women Consuming Anorectics Prescribed by Private Clinics in Bangkok

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This cross-sectional survey was conducted by a 2-stage sampling design. A total of 250 women, aged ≥ 18 years, were recruited from 10 randomly chosen private clinics located around Bangkok with a license for possession and utilization of anorectic drugs, the psychotropic substances in category II. Body mass index was calculated at the time of survey. The prevalence of obesity, based on the proposed classification by body mass index in Asian adults, among the participants was 23.2% (95% CI: 18.0%-28.4%). Only 79 (31.6%) and 72 (28.8%) reported having low-calorie diets and increasing physical activities, respectively, both of which were recommended as the main part of comprehensive weight control. Cosmetic purpose was the main reason given by most participants (84.0%) to enter current weight-control treatments. Interestingly, most of the non-obese individuals (82.8%) misperceived themselves as being obese. These findings suggested that the inappropriate use of anorectic drugs among Thai women was a significant public health concern. Misperception of bodyweight status may contribute to the misuse of such anorectic drugs. The result would alarm the Food and Drug Administration, Ministry of Public Health to evaluate and revise the measures of the anorectic drug disposal. Further qualitative methods are recommended to investigate for body-image misconception, weight-control behavior among various populations.

Keywords : *Anorectic drugs, Bangkok, Private clinic*

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Obesity is a condition of excess accumulation of adipose tissue in the body. Obese individuals have a higher risk for several comorbid conditions such as diabetes mellitus, hypertension, dyslipidemia, and psychosocial problems[1]. Weight-control strategies mainly include dietary therapy and increased physical activity. Pharmacotherapy may be needed as an adjunct in adults with a body mass index (BMI) of 30 kg/m^2 or higher or a body mass index of at least 27 kg/m^2 with an obesity-related comorbid condition suggested in the National Heart, Lung, and Blood Institute guidelines[2]. In Thailand, most anti-obesity drugs prescribed by physicians are phentermine and amfepramone, both of which are anorectic drugs acting at satiety center through central catecholaminergic pathways. Because of public awareness of the potential abuse, anorectic drugs were classified as psychotropic substances in category II, according to the Notification of the Ministry of Public Health No. 97 B.E. 2539 (1996), Thailand[3]. Anorectics must be prescribed only by a physician obtaining a license for possession or utilization of psychotropic substances[3].

Obesity is now epidemic in developed nations and is rapidly becoming so in many developing countries[4]. Weight-control behavior as well as use of weight loss pills has become a public health concern. In the United States, one eighth of men and more than one fourth of women who used prescribed weight loss pills had a pre-pill body mass index less than the minimum body mass index of 27 kg/m^2 [5]. Weight loss pills have been reported as figure management commonly used

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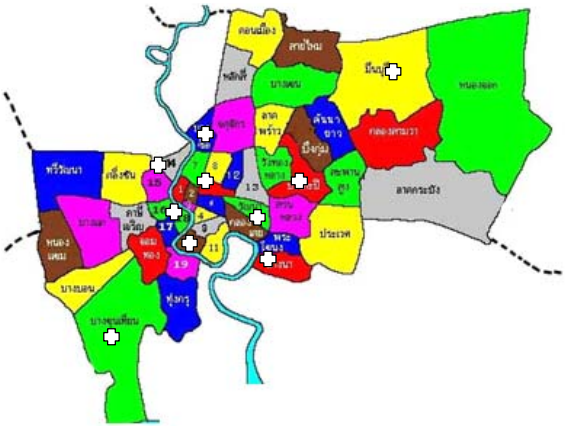
especially among Thai female teenagers[6]. Statistics also showed a dramatic increase of importing phentermine in Thailand for over a decade[7-9]. These extraordinary findings raised a question of inappropriate use of prescription anorectic drugs among Thai population. Data on weight management strategies among Thai population were also minimal. Thus, the objective of the present study was to investigate weight management among Thai women consuming anorectic drugs prescribed by private clinics in Bangkok.

Material and Method

This cross-sectional survey was conducted among a total of 250 women, aged more than 18 years, attending private clinics for anti-obesity treatments with prescriptions of anorectic drugs between May 2002 and July 2002 in Bangkok, Thailand. The target population in the present study was women who were prescribed anorectic drugs from a total of 469 private clinics located in Bangkok with issued licenses to dispose of or possess anorectic drugs, the psychotropic substances category II. A two-stage sampling was used to obtain representative population. The first stage of sampling with probability proportional to size was used to select 10 private clinics from those of 469 private clinics. The selected clinics are located around the Bangkok area as shown in Fig. 1. In the second stage, twenty-five participants per selected clinic were randomly recruited into the present study.

Because no previous data were available in Bangkok, the sample size was calculated based on the prevalence of inappropriate pill use among women who were using weight loss pills from the Behavioral Risk Factor Surveillance System (BRFSS) survey in the United States, which was 25%[5]. The design effect value was estimated to be equal to two. The calculated sample size was 250, based on these estimates, with a 95% confidence interval (CI) of $\pm$ 8% error.



The selected clinics in Bangkok

Fig. 1 Location of 10 selected clinics in the study

Height and weight at the time of survey were measured. Body mass index was calculated from the weight in kilograms divided by height in meters squared. Based on the proposed classification of weight by body mass index in Asian adults, the participants were categorized in five groups: underweight (<18.5 kg/ m^2); normal weight (18.5 to 22.9 kg/ m^2); pre-obese (23 to 24.9 kg/ m^2); obese grade I (25 to 29.9 kg/ m^2); and obese grade II ($\geq$30 kg/ m^2). The participants were interviewed with a questionnaire to obtain information on their characteristics, current anti-obesity treatments, main reason to enter current weight-control treatments and body-image perception. This study was conducted with permission of both the physicians in the private clinics and the participants.

All data were analyzed using the Epi-info version 6 statistical package. Descriptive statistics were used for the characteristics among the participants. The prevalence of obesity with 95% confidence interval among the participants was calculated. Accuracy of self-perception of bodyweight status related to actual bodyweight for obesity was presented by sensitivity and specificity. Positive predictive value and negative predictive value were also calculated.

Results

A total of 250 women were studied with a mean age of 28 years (SD = 8 years) and a range of 18-57 years. Their characteristics are described in Table 1. Of the 250 participants, 139 (55.6%) were single and 172 (66.8%) were currently studying. Concerning obesity-related comorbid conditions obtained from history taking, there were two cases of hypertension, two cases of hyperthyroidism and one case of diabetes mellitus. At the time of survey, the participants' weights were between 40 to 97 kilograms with a mean weight of 57 kilograms (SD = 10 kilograms). Their heights were between 1.45 to 1.76 meters with a mean height of 158 centimeters (SD = 6 centimeters). Their mean body mass index was 22.9 kg/m^2 (SD = 3.9 kg/m^2) with a range of 16.2-39.7 kg/m^2. According to the proposed weight classification by body mass index in Asian adults, the prevalences of overweight and obesity among the participants were 40.4% (95% CI: 34.3%-46.5%) and 23.2% (95% CI: 18.0%-28.4%), respectively, as shown in Table 2. According to current weight-control treatments, all of them were using anorectic drugs, whereas

a reduced-calorie diet and increased physical activity were concurrently used in only 79 (31.6%) and 72 (28.8%), respectively. There were 31 (12.4%) using commercial package diets or commercial slimming regimens.

The participants were asked for the main reason to enter current weight-control treatments. 0Cosmetic purposes were noted in 220 (84.0%) but health-related concerns were noted in 40 (16.0%). The participants were also asked whether they considered themselves as obese, underweight or normal weight individuals. The results showed that 216 (86.4%) considered themselves as obese, none as underweight and 34 (13.6%) considered themselves to be of normal weights. The participants' perception of bodyweight status was then compared to their actual bodyweight presented in Table 3. Only a few obese participants (1.7%) considered themselves as having normal weights. In contrast, most of the non-obese participants (82.8%) perceived themselves as being obese. The sensitivity and specificity of self-perception of bodyweight status related to actual bodyweight for obesity was 98.3% and 17.2%, respectively. Of the 22 underweight individuals, 18 (81.8%) considered themselves as having normal weights and 4 (18.2%) as being obese, respectively.

Discussion

In the present study, classification of bodyweight status among the participants was based on the classification of weight by body mass index used in Asian populations proposed by the Regional Office for the Western Pacific of the World Health Organization (WPRO), the International Association for the Study of Obesity and the International Obesity Task Force in 2000. The proposed classification had lower BMI cut-offs compared to those in the current WHO criteria since the health risks associated with obesity occurred in people with lower body mass index in Asian populations[10]. Nevertheless, more than half of the Thai women (59.6%) who were using prescribed anorectic drugs were not overweight, according to the proposed classification. Moreover, 22 (8.8%) were even underweight individuals. This figure suggested that prescription of anorectic drugs for weight loss was quite substantial among Thai women who were not obese. Khan LK, et al[5] also reported that one quarter of US adults who used weight loss pills were not overweight when the pills were prescribed. Most of the participants (87.6%) who were consuming anorectics did not meet the conservative definition of appropriate

Table 1. Characteristics among 250 participants

Characteristics	No.	Percentage
Age		
18-29 years	47	18.8
30-39 years	176	70.4
≥ 40 years	27	10.8
Mean = 28 years*, SD = 8 years		
Education		
Fundamental level (12 years)	98	39.2
Graduated degree	143	57.2
Post-graduated degree	9	3.6
Employed status		
Studying	172	68.8
Employed	71	28.4
Unemployed	7	2.8
Family income (Baht per month)		
≤ 5,000	60	24.0
5,001-10,000	94	37.6
10,001-15,000	50	20.0
> 15,001	46	18.4
Marital status		
Single	139	55.6
Married	97	38.8
Divorced	14	5.6
Obesity-related comorbid conditions		
Hypertension	2	0.8
Hyperthyroidism	2	0.8
Diabetes mellitus	1	0.4

* ranged 18-57 years

Table 2. The prevalence of underweight, normal weight and obesity at the time of survey among 250 participants

Bodyweight status	No.	Prevalence	
		Percent	95% CI
Underweight (BMI < 18.5 kg/m^2)	22	8.8	5.3-12.3
Normal weight (BMI 18.5-22.9 kg/m^2)	127	50.8	44.6-57.0
Overweight (BMI ≥ 23.0 kg/m^2)			
Pre-obese (BMI 23.0-24.9 kg/m^2)	43	17.2	12.5-21.9
Obese grade I (BMI 25.0-29.9 kg/m^2)	47	18.8	14.0-23.6
Obese grade II (BMI ≥ 30 kg/m^2)	11	4.4	1.9-6.9

Table 3. Self-perception of bodyweight status as related to actual bodyweight status among 250 participants

Self-percieved bodyweight status*	Actual bodyweight status		Total
	Obese (BMI≥25.0 kg/m^2)	Non-obese (BMI<25.0 kg/m^2)	
Obese	57	159	216
Non-obese	1	33	34
Total	58	192	250

* Sensitivity = 98.3%, specificity = 17.2%

* Positive predictive value = 26.4%, negative predictive value = 97.1%

pill use, a body mass index of 27 kg/m^2 or greater[2]. In addition, they also neglected the standard treatments including increased physical activity and dietary therapy since a reduced-calorie diet and increased physical activity were concurrently used in only 79 (31.6%) and 72 (28.8%), respectively. Furthermore, 31 (12.4%) were using commercial slimming regimens or commercial package diets, most of which were not scientifically proven as effective treatments. These findings suggested a significant problem of inappropriate weight management among women currently prescribed anorectics. Lack of knowledge and inadequate concern of appropriate weight-control behavior may contribute to such the problem. Seruda MK, et al[11] reported that most US persons trying to lose weight were not using the recommended combination of reducing calorie intake and engaging in leisure-time physical activity 150 minutes or more per week. In addition, fewer than half of the physicians counseled overweight persons about weight control[12]. Rational prescription of anorectics as well as appropriate counseling of weight-control strategies should be emphasized among physicians during their prescription practices.

In the present study, most of the obese participants (98.3%) perceived themselves as obese but quite a high percentage of non-obese participants (82.8%) also perceived themselves as obese. The obese individuals tended to perceive their bodyweight status more correctly than the non-obese individuals[13,14]. Interestingly, cosmetic purpose, not health-related concern, was the main reason among the presented participants (84.0%) to enter current weight-control treatments. This implied that body image was a more important motivating factor for entering treatment than were health concerns[15]. Thus, non-obese individuals who might not be satisfied with their body image, reflected by their misperception on their bodyweight status, might result in attempting to lose weight[6,13]. Misperception of body image should be a factor contributing to the misuse of the anorectics.

In the present study, quite a high proportion of non-obese individuals (82.8%) misperceived themselves as being obese compared to those (33%-36%) in other studies[13,14]. Similarly, a large number of the presented participants who were not obese (76.8%) used prescription weight loss pills compared to those (43.9%) reported by Khan LK, et al[5]. The reason could be that the present survey focused on only women. Several studies showed that women tended to overestimate their body size[6,13] and also used weight loss pills more than men[5]. Generalization of the present results to other population groups in different areas should be cautious and may not be valid. However, the authors concluded that inappropriate weight management as well as misuse of anorectics was a public health problem among Thai women being prescribed anorectic drugs. The results would alarm the Food and Drug Administration, Ministry of Public Health to evaluate and revise the measures of the anorectic drug disposal. Further investigations of body-image misconception, weight-control behavior and prescription practice among various groups in different areas are also recommended.

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การรักษาภาวะอ้วนอย่างไม่เหมาะสม ของหญิงไทยที่รับยาลดความอยากอาหารซึ่งขายโดยสถานพยาบาลเอกชนในเขตกรุงเทพมหานคร

ภาสกร ศรีทิพย์สุโข, นัยนา พัชรไพศาล

เป็นการศึกษาภาคตัดขวางในประชากรหญิงจำนวน 250 รายที่มีอายุตั้งแต่ 18 ปี ซึ่งเข้ารับบริการรักษาลดน้ำหนักในสถานพยาบาลเอกชนที่ใช้ยากลุ่มลดความอยากอาหาร ซึ่งจัดเป็นวัตถุออกฤทธิ์ในประเภท 2 ในเขตกรุงเทพมหานครด้วยวิธีการสุ่มตัวอย่าง 2 ขั้นตอน โดยสุ่มตัวอย่างสถานพยาบาลเอกชนซึ่งตั้งอยู่ในเขตกรุงเทพมหานครซึ่งมีแพทย์ที่ได้รับใบอนุญาตให้มีไว้ครอบครองหรือใช้ประโยชน์ซึ่งวัตถุออกฤทธิ์เป็นจำนวน 10 แห่ง และสุ่มเลือกตัวอย่างหญิงที่มารับบริการจากสถานพยาบาลดังกล่าวแห่งละ 25 ราย โดยหญิงในการศึกษานี้ได้รับการชั่งน้ำหนักวัดส่วนสูงและสัมภาษณ์ตามแบบสอบถาม ระหว่างเดือนพฤษภาคมถึงเดือนกรกฎาคม พ.ศ. 2545 ผลการศึกษาพบว่าความชุกของภาวะอ้วนในกลุ่มประชากรหญิงที่ศึกษาเป็นร้อยละ 23.2 (95% CI: 18.0%-28.4%) โดยประเมินจากค่าดัชนีมวลกายด้วยเกณฑ์ที่ใช้กับประชากรในทวีปเอเชีย หญิงเพียงร้อยละ 31.6 และ 28.8 ใช้วิธีการควบคุมอาหารและการออกกำลังกายร่วมด้วยตามลำดับ หญิงร้อยละ 84.0 รับการรักษาลดน้ำหนักเพื่อความสวยงามเป็นหลัก นอกจากนี้ ร้อยละ 82.8 ของหญิงที่มีค่าดัชนีมวลกายไม่อยู่ในเกณฑ์ภาวะอ้วนรับรู้ขนาดรูปร่างของตนเองผิดไปว่ามีภาวะอ้วน ผลการศึกษานี้บ่งชี้ถึงปัญหาการลดน้ำหนัก โดยเฉพาะการจ่ายยากลุ่มลดความอยากอาหารอย่างไม่เหมาะสม ตลอดจนการรับรู้ขนาดรูปร่างของตนเองที่ผิดเพี้ยนไปของหญิงไทยที่รับบริการลดน้ำหนักในสถานพยาบาลเอกชนซึ่งจัดเป็นกลุ่มเสี่ยง ผลการศึกษานี้ นอกจากจะเป็นประโยชน์ต่อส่วนราชการ สำนักงานอาหารและยา กระทรวงสาธารณสุข เพื่อใช้ในการประเมินและพิจารณาปรับมาตรการควบคุมการจ่ายยากลุ่มลดความอยากอาหารซึ่งเป็นวัตถุออกฤทธิ์ประเภท 2 ให้เหมาะสมแล้ว ยังเป็นข้อมูลพื้นฐานสำหรับการวิจัยเชิงคุณภาพเพิ่มเติมเกี่ยวกับการรับรู้ขนาดรูปร่างของตนเองตลอดจนพฤติกรรมการลดน้ำหนักในกลุ่มประชากรเป้าหมายที่กว้างขึ้นเพื่อนำไปสู่การวางแผนแก้ไขปัญหาอย่างครบวงจรต่อไป