

A Comparison of Body-Image Perception, Health Outlook and Eating Behavior in Mildly Obese Versus Moderately-to-Severely Obese Adolescents

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Background: Adolescent obesity is rapidly becoming a major public health concern in Thailand. Factors that contribute to adolescent obesity are increasingly sedentary behaviors, changes in eating habits and physical activity. Body-image perception and peer influence are substantial for adolescents. As a result, knowing the obesity-related psychological impacts in adolescent will be the great benefit for health care providers in taking care of obese adolescents

Objective: The purpose of this study was to investigate the impact of obesity has on the behaviors and attitudes regarding self-perception, health outlook, and eating behavior in the mildly obese and the moderately-to-severely obese Thai adolescents.

Material and Method: Participants were obese students who were being followed at the school-based Teen Health Clinic on a regular basis. All participants were followed regularly at their respective school-based Teen Health Clinics. Each participant's percent weight for height was calculated by using Thai National Growth charts. Participants were categorized into 2 groups according to the percent weight for height (% WFH). Those with % WFH below 120% was considered not obese and excluded from the study. The two participating groups were % WFH of 120-140% who are mildly obese (M-O group) and % WFH of greater than 140% who are moderately-severely obese (M-S-O group). A 3-part questionnaire was used to assess the impact of obesity on emotional and psychosocial aspects of each participant, their eating and nutritional attitude and their level of physical activity.

Results: Of the 5,366 students, grade 7-12 who attended 2 metropolitan Bangkok schools, 678 were diagnosed as overweight or obese. There were 175 obese students who attended the clinic regularly were asked to participate in this study and there were 167 adolescents who completed the questionnaires recruited for this study. Both the M-O and M-S-O groups reported dissatisfaction with their body weight (85.9% and 91.7% respectively) and perceived their need for weight reduction. The M-S-O groups expressed more concerns to lose their weight for medical reasons than the M-O group (52.1% vs. 35.2%, p -value < 0.03). Being obese was shown to have more significant impact to their confidence in M-S-O group than the M-O group (71.9% vs. 50.7%, p < 0.005). The students in M-O group eat lunch regularly otherwise M-S-O group, few of them, skips lunch meal (100% vs. 93.8%, p < 0.032).

Conclusion: From our study, significant obese adolescents were shown to have poorer self-image with greater prevalence being shown in the significantly obese group.

Keywords: Eating behavior, Social attitude, Health outlook, Body-image, Adolescent obesity

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Adolescent obesity has become a major public health concern worldwide. The percentage of obese adolescents has increased dramatically in the past decade. According to the United States National Health and Nutrition Examination Survey (NHANES) in 1999-2000, the prevalence of obesity increased more than ten percent between 1988 to 1994 and 1999 to 2000⁽¹⁾.

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In a developing country like Thailand, prevalence of obesity has also been on the rise from 15-36% between 1996 and 2001⁽²⁾. Factors that contribute to adolescent obesity are changes in caloric intake, increasingly sedentary behaviors and low physical activity^(3,4). According to Areekul et al⁽⁵⁾ many students consume commercial snack especially salted chips, snacks from the vending machines and high sugar, caffeinated drinks at school with a subsequent decrease in milk consumption⁽⁶⁾. As a result, the

physical and social stigmata of obesity has added to the stresses of adolescent life and contributed to the increased levels of depression and anxiety⁽⁷⁻¹¹⁾. Furthermore, the association between dietary habits/lifestyle characteristics and overweight/obesity in adolescents⁽¹²⁾ is clearly shown in this study showing the increasing number of hours Thai adolescents spent watching television and playing video or computer games⁽¹³⁾. The preliminary health screening data from our Adolescent Health Promotion Network Project (AHPN project) showed that the prevalence, students with Percent Weight for Height (% WFH) of greater than 120%, was 678 (12.63%). Thus, in order to ascertain the impact of obesity to livelihood of students in our school project, a form of questionnaire has been administered with the aim of being able to identify the psychological, emotional, and social impact of obesity on these students. As well as to gain a better understanding of their personal perspective regarding diet, exercise and health knowledge so that effective interventions can be formulated that fit for their particular needs.

Material and Method

The weight and height of students from 2 schools, one all-male and one all-female schools were screened and Body Mass Index (BMI) values were calculated by the school nurse. Those with BMI > 25 were asked to attend regular counseling sessions with a physician at the school-based Teen Health Clinic. In the clinic, a research assistant calculated each adolescent's % WFH using the formula [% WFH = (actual weight/ideal weight for actual height)*100] and classified into M-O (% WFH > 120 < 140) and M-S-O (% WFH > 140) groups. Only those students whose % WFH was > 120% and attended the school-based health clinic regularly were asked to fill out the questionnaires.

A 3-parts, 20-question questionnaire was administered that included the following questions; student's age (in years), gender and school year, body weight satisfaction, obesity results on self confidence and any desire to lose weight, meal patterns and behavior, frequency of consumption of high fat diet, carbonated beverages, vegetables and fruits, frequency of exercise and time spend on other recreational activities such as television-viewing and video games.

Statistical analysis

The questionnaire data were entered into a SPSS™ 11.0 database. Descriptive data were analyzed using mean and standard deviation. Categorical descriptive data were described as percent of total and comparison between the two groups was done using Chi-square method. P-value less than 0.05 was considered significant.

Results

The weight and height of 5,366 students were screened: 3,093 were males and 2,273 were females. Of these, 678 had BMI value of > 25 kg/m², 475 were male and 203 were female. Over a 3-year period, 175 students; 53 (30%) males and 122 (70%) females, regularly attended the clinic and were invited to participate in this study. There were 167 students who completed the questionnaire, 71 (42.52%) in the M-O group and 96 (57.48%) in the M-S-O group. The mean age was 14.49 ± 1.63 years. Detailed of demographic data for participants was shown in Table 1. The M-S-O group reported greater issues with self-confidence than the M-O group but also greater awareness of complications from obesity. A significantly larger proportion of the M-S-O group demonstrated the tendency to skip meals than their less obese counterparts.

Table 2 showed that both of M-O and M-S-O groups reported dissatisfaction with their body

Table 1. Demographic data of participants

	Number of students in each group	
	Mildly obese group (n = 71)	Moderate to severe obese group (n = 96)
Sex Male (%)	25 (35.21)	21 (21.88)
Female (%)	46 (64.79)	75 (78.12)
Age of participants (years)	14.62 ± 1.6	14.40 ± 1.6
Percent weight for height (%)	132.35 ± 4.9	156.00 ± 16.7
Body mass index (mg/m ²)	26.03 ± 1.0	30.69 ± 3.3

weight (85.9% and 91.7% respectively) and perceived their need for weight reduction. Interestingly, health concerning was found statistically significant in the M-S-O groups than the M-O group (52.1% vs. 35.2%, p-value < 0.03). Being obese was shown to have more significant impact to their confidence in M-S-O group than the M-O group (71.9% vs. 50.7%, p < 0.005). Owing to intention to lose weight neither for improving physical appearance nor having more sexual attraction, there was no significant difference in either group. In general, adolescents are the stage of life where physical growth is very important, as a result appropriate food intake is very crucial for this stage; a healthy diet and adequate daily calories intake can maximize their growth and bone health. In spite of having

nutritional education programs at school, there still were some students who skip some meals during the day, particularly breakfast, the most important daily meal. In the current study, skipping a meal was found in both groups; however, at lunch, the M-S-O group skipped meals more often than the M-O group in significant terms, (100% vs. 93.8%, p < 0.032). In addition, the majority of both groups consumed high calorie food more than twice a week. The sample of high calorie food comprised of buffet type of food, fried food, fast food and sweetened beverages. Regarding their daily lifestyle, approximately 60% of each group did not follow exercise recommendation. Physical activities were done quantitatively less than twice a week with no information of their quality. Moreover, the majority of students were

Table 2. Summary of questionnaire responses

	Questions	Answer	Mildly obese (MO) group	Moderate to severely obese (MSO) group	p-value*
Body image perception	Not satisfied with his/her own body weight	Yes	61 (85.9%)	88(91.7%)	0.236
	Obesity had adverse result on self confidence	Yes	36 (50.7%)	69(71.9%)	0.005*
	Had the desire to lose weight	Yes	62 (87.3%)	91(94.8%)	0.085
	Would lose weight for cosmetic purposes	Yes	48 (67.6%)	71(74%)	0.37
	Would lose weight for medical reasons	Yes	25 (35.2%)	50(52.1%)	0.03*
	Would lose weight to be more attractive to the opposite sex	Yes	2 (2.8%)	15(15.6%)	0.07
	Eating and nutritional habits	Eat breakfast regularly	Yes	58 (81.7%)	77(80.2%)
Eat lunch regularly		Yes	71 (100%)	90(93.8%)	0.032*
Eat dinner regularly		Yes	65 (91.5%)	86(89.6%)	0.67
Consumed fast food more than 2 times per week		Yes	56 (78.9%)	74(77.1%)	0.783
Consumed soda, or sweetened carbonated beverage more than 2 times per week		Yes	62 (87.3%)	92(95.8%)	0.42
Consumed fried foods more than 2 times per week		Yes	62 (87.3%)	86(89.6%)	0.649
Consumed buffet more than 2 times per week		Yes	34 (47.9%)	50(52.1%)	0.592
Fruit consumption		Yes	68 (95.8%)	90(93.8%)	0.567
Vegetables consumption		Yes	63 (88.7%)	80(83.3%)	0.325
Sweet desert consumption		Yes	59 (83.1%)	85(88.5%)	0.313
Exercises and lifestyle	Exercised at school	≤ 2 times/wk	48 (67.6%)	62(64.6 %)	0.684
	Exercise at home	≤ 2 times/wk	45 (63.4%)	58(60.4%)	0.697
	TV viewing/videogame playing	≤ 2 hr/D	12 (16.9%)	15(15.6%)	0.825
	Sedentary lifestyle	≤ 2 times/wk	28 (39.4%)	44(45.8%)	0.409

* p-value of < 0.05 is statistically significant

spending time watching TV, playing games and at computers more than 2 hrs a day. From this study, to be obese during adolescents had some significant impact on self-confidence, in spite of knowing the consequence of obese, the majority of them continued to practice an unhealthy lifestyle composed of eating high fat food, not doing exercise or any physical activities as well as having skipped meals in a day.

Discussion

In 1999, the Department of Health, Ministry of Public Health issued a growth chart for males and females which comprised the standards for measuring normal weight and height of Thai children today, and thus made available the tool with which Ideal Weight for Height can be calculated. In contrast, the Body Mass Index with its universally accepted criteria for obesity could vary greatly between ethnic populations and age groups. Many studies⁽¹⁴⁻¹⁷⁾ stated that using BMI criteria to classify obesity should use cut-off points that depended on gender, ethnic and social environment of that population. Thus, when such standardized information was not available, % IWFH based on national weight and height statistics of the Thais provided a reasonable alternative. Mei et al⁽¹⁸⁾ showed that weight for height was as good as the age- and sex-specific body mass index at identifying overweight conditions in Asians. It was interesting to note that the proportion of girls who were willing to be followed for their obesity far exceeded that of boy's (30% vs. 70%). And in this and other regards, the results from this study largely reflected findings of other studies published by developed countries all over the world. Franklin et al⁽¹⁹⁾ stated that obesity concerns were much more prevalent in girls than boys, although both groups showed negative self-perception, decreased-self esteem and the desire to change their bodyweights^(20,21). In a study done by Adam et al⁽²²⁾, obese females overestimated their sizes more than obese males. As a result, adolescent obesity had the potential to create greater negative impact on self-perception and values of girls than boys. Furthermore, being obese is commonly associated with reduced physical attractiveness and significantly correlated with a more negative body image (attractiveness/self-confidence)⁽²³⁾. A negative body image and low self-esteem are strongly associated with poor opposite-sex peer relationships⁽²⁴⁾. Tovee et al⁽²⁵⁾ studied that BMI was the primary predictor of attractiveness. Adolescent girls chose thin body image male than obese as well as adolescent boys chose thin

feminine which is more attractive than obese body image. Our study also showed that adolescents were aware of health implication of obesity and the more obese adolescents were indeed concerned with the potential for medical complications. Hankey et al⁽²⁶⁾ stated that the main factor for attempting weight loss is to improve health and well-being as well. The findings regarding meal patterns were also typical of this patient population. The fact that the more obese adolescents reported skipping lunch much more frequently than their less obese counterparts was affirmed by findings by Savige et al⁽²⁷⁾ who mentioned that adolescents who skipped meals tended to snack more frequently and consumed a greater number of calories⁽²⁸⁾. Regarding exercise and lifestyle, our study did not demonstrate significant difference between the two groups of population, but showed that one-quarter to one-third of either population exercised on a regular basis. Burke et al⁽²⁹⁾ stated that sedentary behaviors significantly associated with risks of obesity were television viewing as well as Marshall et al⁽³⁰⁾ showed a statistically significant relationship exists between TV viewing and body fatness among youths.

Conclusion

Overall, the results of our study had shown remarkable consistency with those results published in the world literature. From our study, significantly obese adolescents were shown to have poorer self-image, with greater prevalence being identified in the significantly obese group. This knowledge could be used to guide school-based obesity follow-up programs which would target the significantly obese. By focusing on individual counseling and improvement of body image, personal and nutritional habits, the ultimate goal of sustainable life-long healthful habits could be attained. We conclude factors associated with obesity in adolescents such as psychosocial attitude, eating habits and sedentary behaviors were the same in Thailand as they were in many parts of the world. And the challenges that obese adolescents in Thailand had in maintaining self-image, managing peer pressure and moderating eating habits with physical activity seemed to be a universal theme.

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การศึกษาเปรียบเทียบการมองภาพลักษณ์ของตน และมุมมองทางด้านสุขภาพรวมถึงพฤติกรรม การบริโภคอาหารระหว่างวัยรุ่นที่อ้วนน้อย และอ้วนปานกลางถึงมาก

สุภิญญา อินอิว, บุญยิ่ง มานะบริบูรณ์, จุฬิธา โฉมฉาย

ภูมิหลัง: ภาวะอ้วนในวัยรุ่นเป็นปัญหาที่สำคัญทางสาธารณสุขในประเทศไทย ปัจจัยที่มีผลทำให้มีการเพิ่มขึ้นของ ภาวะอ้วนในวัยรุ่นได้แก่การดำเนินชีวิตประจำวันที่ใช้พลังงานน้อย การเปลี่ยนแปลงของพฤติกรรมกรรมการบริโภค และการลดกิจกรรมที่ใช้พลังงานในชีวิตประจำวัน การมองภาพลักษณ์ของตนเอง และอิทธิพลจากเพื่อนเป็นสิ่งสำคัญของ วัยรุ่น ดังนั้นการศึกษาผลกระทบทางด้านจิตใจที่มีต่อวัยรุ่นที่อ้วนจึงเป็นสิ่งที่บุคลากรทางการแพทย์ควรให้ความสำคัญ เพื่อเป็นประโยชน์ในการดูแลและให้การช่วยเหลืออย่างองค์รวม

วัตถุประสงค์: เพื่อศึกษาผลของภาวะอ้วนผ่านการมองภาพลักษณ์ของตน ทศนคติที่เกี่ยวข้องกับสุขภาพของตน และพฤติกรรมกรรมการบริโภค ในวัยรุ่นที่มีภาวะอ้วนระดับน้อย ปานกลาง และมากในประเทศไทย

วัสดุและวิธีการ: ผู้เข้าร่วมการศึกษาได้แก่นักเรียนที่มีภาวะอ้วน และได้รับการตรวจติดตามที่คลินิกวัยรุ่นในโรงเรียน อย่างสม่ำเสมอตามตารางนัด โดยค่าร้อยละของน้ำหนักตัวจริงต่อน้ำหนักที่ส่วนสูงที่เปอร์เซ็นต์ไทล์ที่ 50 (percentage of weight for height) ของแต่ละคนคำนวณโดยใช้กราฟการเจริญเติบโตของเด็กไทย กระทรวงสาธารณสุข ปี พ.ศ. 2542 เป็นเกณฑ์ โดยนักเรียนที่มีค่าร้อยละของน้ำหนักตัวจริงต่อน้ำหนักที่ส่วนสูง ณ เปอร์เซ็นต์ไทล์ที่ 50 มากกว่า หรือเท่ากับ 120 จัดว่ามีภาวะอ้วน โดยนักเรียนที่มีค่าร้อยละของน้ำหนักตัวจริงต่อน้ำหนักที่ส่วนสูง ณ เปอร์เซ็นต์ไทล์ ที่ 50 อยู่ในช่วง 120 ถึง 140 ถือว่ามีภาวะอ้วนระดับน้อย และนักเรียนที่มีค่าร้อยละของน้ำหนักตัวจริงต่อน้ำหนัก ที่ส่วนสูง ณ เปอร์เซ็นต์ไทล์ที่ 50 มากกว่าหรือเท่ากับ 140 ถือว่ามีภาวะอ้วนระดับปานกลางถึงมาก นักเรียนทั้งสองกลุ่ม ให้ความยินยอมทำแบบสอบถามเพื่อประเมินผลกระทบของภาวะอ้วนต่ออารมณ์ และจิตใจในด้านต่าง ๆ รวมถึง พฤติกรรมการบริโภค ทศนคติของการบริโภค และการใช้พลังงานในชีวิตประจำวัน

ผลการศึกษา: นักเรียนชั้นมัธยมศึกษาปีที่ 1 ถึง 6 ของโรงเรียน 2 แห่งในเขตกรุงเทพมหานคร จำนวนทั้งหมด 5,366 คน มี 678 คน ได้รับการวินิจฉัยว่ามีภาวะอ้วน มีนักเรียนจำนวน 167 คน ที่มีภาวะอ้วนสมัครใจเข้าร่วมการศึกษานี้ จากจำนวน 175 คน ที่ได้รับคำแนะนำให้เข้าร่วมการศึกษา ผลการศึกษาพบว่านักเรียนที่มีภาวะอ้วนทั้งระดับน้อย และระดับกลางถึงมากส่วนใหญ่รู้สึกไม่พอใจต่อน้ำหนักของตนเอง (ร้อยละ 85.9 และ 91.7 ตามลำดับ) นักเรียนที่มี ภาวะอ้วนระดับปานกลางถึงมาก แสดงออกถึงความกังวลใจต่อน้ำหนักของตนเองโดยมีความต้องการที่จะลดน้ำหนัก เพื่อเหตุผลทางด้านสุขภาพมากกว่านักเรียนที่อ้วนระดับน้อย (ร้อยละ 52.1 เทียบกับ 35.2 ตามลำดับ, ค่า p-value < 0.03) ภาวะอ้วนมีผลต่อความมั่นใจของตนเองในกลุ่มที่มีภาวะอ้วนระดับปานกลางถึงมาก เมื่อเทียบกับนักเรียน ที่มีภาวะอ้วนระดับน้อย (ร้อยละ 71.9 เทียบกับ 50.7 ตามลำดับ, ค่า p < 0.005) และพบว่านักเรียนที่มีภาวะอ้วน ระดับน้อยรับประทานอาหารกลางวันทุกคน ในขณะที่นักเรียนในกลุ่มที่มีภาวะอ้วนระดับปานกลางถึงมาก มีบางคน ที่ไม่รับประทานอาหารกลางวัน (ร้อยละ 100 เทียบกับ ร้อยละ 93.8 ตามลำดับ, ค่า p-value < 0.032)

สรุป: จากการศึกษาพบว่าภาวะอ้วนมีผลกระทบทางด้านจิตใจต่อเด็กวัยรุ่น โดยมีผลต่อการมองภาพลักษณ์ของตนเอง ในเชิงลบ นักเรียนมีความรู้สึกขาดความมั่นใจในตนเองซึ่งส่งผลให้เกิดพฤติกรรมกรรมการบริโภคที่ไม่ถูกสุขลักษณะได้
