



ลักษณะของผู้ป่วยจิตเภทที่น้ำหนักเกินหรืออ้วนซึ่งตอบสนองต่อโปรแกรมลดน้ำหนักที่เกี่ยวข้องกับพฤติกรรม/พุทธิปัญญา

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บทคัดย่อ

วัตถุประสงค์ เพื่อศึกษาลักษณะของผู้ป่วยจิตเภทที่น้ำหนักเกินหรืออ้วนซึ่งตอบสนองต่อโปรแกรมลดน้ำหนักชนิดสร้างเสริมแรงจูงใจร่วมกับการใช้เครื่องนับก้าว (Pedometer Walking plus Motivational Interviewing หรือโปรแกรม PWMI)

วิธีการ โปรแกรม PWMI ใช้เวลา 1 สัปดาห์ในการดำเนินการ 5 ครั้ง ครั้งละ 1 ชั่วโมง เนื้อหาประกอบด้วย การให้คำปรึกษาเพื่อสร้างเสริมแรงจูงใจ กลุ่มให้ความรู้ การกำหนดเป้าหมาย และฝึกเดินด้วยเครื่องนับก้าว ผู้วิจัยทำการศึกษาโปรแกรม PWMI แบบสุ่ม มีตัวอย่างควบคุม นาน 12 สัปดาห์ และพบว่าผู้ป่วยจิตเภทที่น้ำหนักเกินหรืออ้วน 32 รายที่ได้รับโปรแกรม PWMI สามารถลดน้ำหนักลดต้นนี้มวลกาย และลดรอบเอวได้มากกว่าผู้ป่วยในกลุ่มควบคุมอย่างมีนัยสำคัญ ผู้ป่วย 32 รายที่ได้รับโปรแกรม PWMI ถูกแบ่งออกเป็นกลุ่มที่สามารถลดน้ำหนักได้มากกว่า 1 กิโลกรัม (successful weight loss หรือกลุ่ม SWL) และที่สามารถลดน้ำหนักได้ 1 กิโลกรัมหรือน้อยกว่า (unsuccessful weight loss หรือกลุ่ม UWL) ผู้วิจัยนำลักษณะของผู้ป่วยทั้งสองกลุ่มมาเปรียบเทียบกัน

ผลการศึกษา ภายใน 12 สัปดาห์ น้ำหนักของผู้ป่วย 32 รายที่เข้าร่วมโปรแกรมลดลง โดยมีค่าเฉลี่ย (ส่วนเบี่ยงเบนมาตรฐาน) เท่ากับ 0.80 (3.58) กิโลกรัม ผู้ป่วย 17 รายจัดเป็นกลุ่ม SWL อีก 15 รายเป็น กลุ่ม UWL เมื่อเปรียบเทียบลักษณะหลายประการของผู้ป่วยทั้งสองกลุ่ม ผู้วิจัยพบว่าค่าเฉลี่ย (ค่าเบี่ยงเบนมาตรฐาน) ของ Clinical Global Impression – Severity (CGI-S) ของกลุ่ม SWL [1.41 (0.51)] ได้มีค่าสูงกว่าค่าเฉลี่ยของกลุ่ม UWL [1.07 (0.26)] อย่างมีนัยสำคัญ ($p=0.03$)

สรุป โปรแกรมลดน้ำหนักที่เกี่ยวข้องกับพฤติกรรม/พุทธิปัญญาอาจมีประสิทธิผลสำหรับผู้ป่วยจิตเภทที่น้ำหนักเกินหรืออ้วนบางรายเท่านั้น ในผู้ป่วยจิตเภทที่มีอาการน้อยซึ่งมีภาวะอ้วนหรือน้ำหนักเกิน ผู้ป่วยที่มีอาการรุนแรงมากมีโอกาสที่จะตอบสนองต่อโปรแกรมนี้นี้ได้ดีกว่า ควรมีการศึกษาเพิ่มเติมในขนาดตัวอย่างที่ใหญ่ขึ้น

คำสำคัญ น้ำหนัก อ้วน ผู้ป่วยจิตเภท

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Characteristics of Obese/Overweight Schizophrenic Patients Responding to a Cognitive/Behavioral, Weight Reduction Program

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ABSTRACT

Objective: To examine characteristics of obese/overweight schizophrenic patients responding to Pedometer Walking plus Motivational Interviewing or PWMI Program for weight reduction

Methods: The one-week, PWMI program consisted of five one-hour sessions of individual motivational interviewing, group education, goal setting, and practicing of pedometer walking. In a 12-week, randomized-controlled trial of PWMI, the authors found that 32 Thai schizophrenic patients with obesity or overweight could reduce their bodyweight, body mass index (BMI), and waist circumference significantly more than the 32 control patients. Thirty-two intervention patients were then divided into those who could reduce their weight more than 1 kg (successful weight loss or SWL group) and those who could reduce their bodyweight for 1 kg or less (unsuccessful weight loss or UWL group). The characteristics of both groups were compared.

Results: Within 12 weeks of the study, the bodyweight of 32 participants receiving PWMI program was reduced at the mean (SD) of 0.80 (3.58) kg. Seventeen and 15 treated participants were classified as SWL and UWL patients, respectively. Of many characteristics, only the illness severity, as measured by the Clinical Global Impression – Severity (CGI-S), was significant higher in the SWL [1.41 (0.51)], as compared to the UWL group [1.07 (0.26)] ($p=0.03$).

Conclusion: A cognitive/behavioral program for weight reduction in obese/overweight schizophrenic patients may be effective in only some patients. Among mildly ill schizophrenic patients who are obese or overweight, those with high levels of illness severity may have a better chance to respond to the program. Further studies in larger sample sizes are warranted.

Keywords: weight, obesity, schizophrenia

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Introduction

Not different from obesity in general people, obesity in schizophrenic patients is increasingly concerned. According to the analysis of three data sources, Allison and colleagues have found that schizophrenic patients have a higher BMI than do general population.¹ In Caucasians, approximate 50% of women and 41% of men with schizophrenia were obese as compared with 27% women and 20% of men without schizophrenia.² Some studies have shown that, at the same age, schizophrenic patients had an increased risk of obesity for 2.3 times higher than general population.³ In a study of 650 Taiwanese patients with schizophrenia or schizoaffective disorder, Huang and colleagues also found that 30.8% of males and 40.7% of females were obese.⁴ Some study findings have shown that obese schizophrenic patients had poorer quality of life,⁵ and weight loss in this population was associated with better quality of life.⁶ As an important risk factor for cardiovascular disease, it is likely that obesity plays an important role in increasing the mortality of this population⁷

Pharmacological management has a limited role for an obese schizophrenic patient with an optimal drug treatment regimen. Discontinuation of antipsychotic therapy is almost impossible in most cases. Changing the antipsychotic medication may be a cause of serious psychotic relapse. For the last option, only limited evidence is available to support the addition of adjunctive agents to induce weight loss. In a recent review of 9 randomized-controlled trials of pharmacological adjunctive treatments, Faulkner and colleagues have found

that no pharmacological agent is consistently superior to placebo in terms of weight loss efficacy.⁸

Some evidence has supported the use of cognitive/behavioral cognitive/behavioral program for weight reduction in obese schizophrenic patients. In a review, two randomized-controlled trials of weight gain prevention and three randomized-controlled trials of bodyweight reduction showed consistent findings of their efficacy.⁸ These findings are in concordance with the results of a review that individual therapy, group therapy, cognitive/behavioral therapy, and nutritional counseling are effective for recent-onset and chronic schizophrenic patients.⁹ It is now widely accepted that psychosocial treatment for weight gain prevention or bodyweight reduction should be included in a schizophrenic management program.^{10, 11}

While exercise has been an important part of most weight management programs, the effectiveness of this single intervention is still questionable in schizophrenia with obesity. A systematic review of three randomized-controlled trials found that exercise programs might improve negative schizophrenic symptoms and physical health but not bodyweight and body mass index (BMI).¹² It should be noted that most exercise programs included in the review mainly focused on having daily exercise sessions, such as, walking on a treadmill, brisk walking, jogging, weight training, and aerobic training.

Recently, the authors designed a cognitive/behavioral program for the weight reduction in schizophrenia with obesity or overweight, which was called 'Pedometer Walking plus Motivational

Interviewing or PWMI' program. The PWMI program consisted of five one-hour sessions. Individual motivational interviewing with a focus on obesity/ overweight and motivation to have adequate daily walking was given in the first session. Group education on nutrition, exercise, and pedometer were implemented in the second session. In addition the SMART (specific, measurable, acceptable, realistic, and timed) criteria were used to set an individual goal. However, the daily walking was set at a minimum of 3,000 steps per day. Group practicing of pedometer walking under the supervision was done in the fourth session. Between sessions four and five, the intervention participant was encouraged to do walk and wear his/her pedometer all day long, except bedtime. In the last (fifth) session, the therapist gave feedback on the patient's practice, gave information about self-regulation principles to cope with laps and relapse, and answered any question that the patients might have. In this last session, for the one who could achieve the goals of 3,000 steps per day, the therapist would encourage him/her to increase to a minimum of 5,000 steps per day. In a 12-week, randomized, parallel, open-label, controlled trial of the PWMI program in obese/ overweight schizophrenic patients, we found that participants receiving the PWMI could reduce their weight, body mass index, and waist circumference more than the control group.¹³

Little has been known about the characteristics of those who are likely to respond to a weight reduction program. In general people, it was found that several hormones but not psychobehavioral factors could predict the weight loss in obese women responding to a short-term weight reduction

program.¹⁴ Independent baseline predictors of success at 16 months were more moderate weight outcome evaluations, lower level of previous dieting, higher exercise self-efficacy, and smaller waist-to-hip ratio.¹⁵ In a recent review of a weight reduction program for general population, few previous weight loss attempts and an autonomous, self-motivated cognitive style were the best prospective predictors of successful weight management.¹⁶ So far, there has been no study of characteristics or predictors of response to weight reduction program in obese schizophrenic patients. We, therefore, proposed to examine the characteristics of patients likely to respond to the PWMI program.

Methods

The study of 12-week, randomized-controlled trial of PWMI program was approved by Ethics Committee for Research in Human Subjects, Faculty of Associated Medical Sciences, Chiang Mai University and the Ethical Review Committee for Research on Human Subjects, Suanprung Psychiatric Hospital, Chiang Mai. All participants gave written informed consent prior to the participation in the study.

Participants of the study were schizophrenic patients hospitalized in Suanprung Psychiatric Hospital. The inclusion criteria included: i) aged 18-65 years old; ii) DSM-IV diagnosis of schizophrenia; iii) BMI of 23.0 kg/m² or more, iv) mild degree of illness, as indicated by a Clinical Global Impression – Severity (CGI-S) score of 3 or less (mild severity or less);¹⁷ and v) no plan for pregnancy in the next 6 months. The exclusion criteria were as follows: i) an unstable medical condition; ii) a medical condition

contraindicated for weight reduction or exercise; iii) cognitive impairment, as indicated by the Mini-Mental State Examination - Thai version (MMSE-Thai) score of 22 or less;¹⁸ iv) participating in another clinical trial; and v) pregnancy or breastfeeding.

Weight, height, BMI, waist circumference, and quality of life were assessed at baseline, week 4, week 8, and week 12. Body weight was measured digitally with the subject wearing light cloth and no shoes. Waist circumference was measured in a horizontal plane, midpoint between the inferior margin of the ribs and the superior border of the iliac crest. The quality of life was evaluated by using WHOQOL-BREF, a 26-items assessing four dimensions of quality of life, namely, physical health, mental health, social relationships, and environment.¹⁹ A 5-item, 4-point scale (1-4, very uncertain to very certain) was used to measure the patient's self-efficacy for exercise.²⁰

Of 64 participants, 32 each were randomly allocated to intervention and control groups. All participants completed the 12-week study. Most baseline demographic and clinical characteristics were similar between groups. Percentages of male patients of the intervention (23 patients or 71.88%) and control groups (18 patients or 56.25%) were not significant different ($p=0.30$). In addition, means (SDs) of age at the onset were also not different between groups [28.47 (10.34) years old for the intervention group vs. 26.12 (9.76) years old for the control group] ($p=0.36$). However, the intervention group was significantly older (43.2 vs. 37.6 years old) ($p=0.03$), tended to be less severely ill (CGI-S of 1.3 vs. 1.6) ($p=0.05$), and had larger waist circumferences (95.0 vs. 90.6 cm) ($p=0.05$). Approximately 14 participants of each group (43.8%) were taking clozapine or olanzapine.

The outcome data were analyzed on an intention-to-treat basis. The bodyweight of the intervention group decreased more than that of the control group at week 4, week 8, and week 12. However, only the means of decreased bodyweight at week 12 were significantly different between groups ($p=0.03$). While the intervention group could decrease their bodyweight at a mean (SD) of 0.80 kg (3.58), the bodyweight of the control group increased at a mean of 1.41 kg (4.08). The intervention patients were divided into those who could reduce their weight more than 1 kg (successful weight loss or SWL group) and those who could reduce their bodyweight for 1 kg or less (unsuccessful weight loss or UWL group).

Statistical analysis

The characteristics of both groups were compared. For dichotomous, ordinal, and scale data, the differences between groups were assessed by using Chi-square (χ^2), Mann-Whitney U (Z), and Student-t (t) tests, respectively. A value of $p<0.05$ (two-tailed) was used to determine the statistical significance. All analyses were performed using SPSS software, version 17 (SPSS Inc., Chicago, Ill).

Results

Of 32 intervention participants, 17 and 15 patients were classified as SWL and UWL groups, respectively. Baseline demographic and clinical characteristics of both groups were not significant differences, except the CGI-S score ($p=0.03$) (see Table 1). The means (SDs) of CGI-S scores of the SWL and UWL groups were 1.41 (0.51) and 1.07 (0.26), respectively.

Table 1 Differences of baseline demographic and clinical characteristics of obese/overweight schizophrenic patients responding and not responding to the in PWMI program ^a

Item	Successful weight loss group (n=17)	Unsuccessful weight loss group (n=15)	Significant difference ^b
Sex (male, %)	13 (76.47%)	10 (66.67%)	$\chi^2=0.38$, p=0.70
Age (years)	42.47 (7.76)	43.93 (10.96)	t=0.44, p=0.66
Education (years)	12.35 (4.42)	13.60 (7.42)	t=0.58, p=0.56
Age at onset (years)	26.06 (10.00)	31.12 (10.36)	t=1.43, p=0.16
No. of hospitalizations (times)	4.65 (4.86)	4.20 (4.80)	t=-0.26, p=0.80
No. of patients receiving clozapine/olanzapine	9 (52.94%)	5 (33.33%)	$\chi^2=1.25$, p=0.31
Clinical global impression, severity (CGI-S)	1.41 (0.51)	1.07 (0.26)	Z=-2.21; p=0.03
MMSE - Thai	25.88 (5.98)	27.60 (1.72)	Z=-0.65; p=0.52
Bodyweight (kg)	76.27 (10.81)	73.70 (12.31)	t=1.22, p=0.23
Body mass index (kg/m ²)	28.40 (3.14)	28.18 (4.43)	t=1.39, p=0.18
Waist circumference (cm)	94.96 (7.98)	90.58 (9.32)	t=1.22, p=0.23
WHOQOL-BREF			
Physical health score	22.70 (4.15)	24.60 (3.29)	Z=-1.27; p=0.20
Mental health score	20.06 (4.24)	21.31 (3.82)	Z=-0.80; p=0.43
Social relationships score	10.41 (2.15)	11.67 (2.19)	Z=-1.24; p=0.21
Environment score	26.94 (4.28)	28.60 (6.01)	Z=-1.06; p=0.29
Total score	80.12 (11.95)	86.00 (12.44)	Z=-1.36; p=0.18
Physical exercise self-efficacy score	10.59 (3.86)	11.73 (4.22)	Z=-1.03; p=0.31

MMSE – Thai = Mini-Mental State Examination - Thai version

^a Except sex and no. of patients receiving clozapine/olanzapine, data presented as mean and standard deviation

^b χ^2 = Chi-square test, t = Student-t test, and Z = Mann-Whitney U test

Discussion

To our knowledge, this is the first study examining the characteristics of obese/overweight schizophrenic patients who are likely to respond to a cognitive/behavioral program for weight reduction. It can be seen that, among mildly ill schizophrenic patients who are obese or overweight, those with high levels of illness severity have a better chance to respond to the PWMI, a cognitive/behavioral program of weight reduction for obese/overweight schizophrenia.

In comparison to previous predictors of completing and responding to weight reduction programs in general population, this present study

did not find any general characteristic significantly different between SWL and UWL groups. The lower level of schizophrenia severity is a characteristic that cannot be compared with any characteristic of general obese people participating in a weight reduction program. While high self-efficacy which was found to be a predictor of completing a weight reduction program in a study¹⁵ and successful weight reduction in a review¹⁶, these findings were not evident in this study. However, these dissimilar results may be caused by the different self-efficacy measures and participants. The 10-item rating scale for assessing the self-efficacy on exercise in the previous study may be more comprehensive

than the 5-item questionnaire applied in the PWMI study. In addition, both diet and exercise were included in the self-efficacy measures found in the review. Regarding the participants, it is likely that self-efficacy for exercise of obese/overweight schizophrenic patients may be lower than that of obese people without schizophrenia.

The effectiveness of the PWMI program appears to be modest. By average, obese/overweight schizophrenic patients could decrease their bodyweight only for an average of 0.8 kg in 12 weeks. This small figure may suggest that a sizable proportion of patients did not respond well to this program, and, therefore, cognitive/behavioral programs of weight reduction may not be useful for all obese/overweight schizophrenic patients. The present study results may suggest that obese/overweight schizophrenic patients with high levels of illness severity are likely to respond to these programs. It is relatively difficult to explain these findings. In this study, we hypothesize that the more severe patients might receive lower doses of antipsychotic medications. Therefore, they were more likely to control their weight better than the less severe group. Because we did not collect the data on antipsychotic doses, we could not test this hypothesis.

There are some limitations of the present study. Firstly, the sample size was relatively small. A nonsignificant difference found in this study might be caused by a type II error. In addition, this problem is a barrier to conduct a logistic regression analysis, which is a more accurate statistic technique for prediction. Secondly, due to the short duration of the PWMI study, the findings in this analysis may be applicable to patients in short-term follow-up

only. Thirdly, the generalizability of the present findings may be limited to Asian patients with schizophrenia only. The BMI cutoff point of 23 kg/m² applied in this study was chosen because this cutoff point appears to be appropriate for Asian population, although the cutoff point appropriate for Caucasians is 25 kg/m²²¹. Lastly, diet, which is an important factor for a weight reduction program, was not taken into account in the study.

In conclusions, a cognitive/behavioral program for weight reduction in obese/overweight schizophrenic patients may be effective in only some patients. Among mildly ill schizophrenic patients who are obese or overweight, those with high levels of illness severity may have a better chance to respond to the program. Further studies in larger sample sizes are warranted.

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