



LONG ABSTRACT

WEIGHT CONTROL BEHAVIORS AMONG TAIWANESE ADOLESCENTS

Li-Jung Chen¹, Po-Wen Ku²

¹Department of Exercise Health Science, National Taiwan Sport University, Taiwan

²Graduate Institute of Sports and Health, National Changhua University of Education, Taiwan

Introduction

It is well documented that the desire for thinness and fears of becoming fat are prevalent among adolescents, especially for girls (Levine & Smolak, 2002). However, the desire for thinness exists in the context of an increasing prevalence of obesity (L. J. Chen, Fox, Haase, & Wang, 2006; Lobstein, Baur, & Uauy, 2004), which makes it even harder to achieve the ideal of thinness. Studies have demonstrated that many adolescents expressed a desire to be thinner and engaged in weight control behaviors (Ricciardelli & McCabe, 2001; Ricciardelli, McCabe, Holt, & Finemore, 2003; Rinderknecht & Smith, 2002). Weight control methods range from healthier behaviors, such as exercise, to potentially harmful behaviors, such as skipping meals (Boutelle, Neumark-Sztainer, Story, & M., 2002). Researchers suggested that a focus on physical activity rather than diet might be a more appropriate strategy for adolescents, since reduced intake might endanger growth and addressing dieting seriously might increase the incidence of body dissatisfaction and eating disorders (Goran, Reynolds, & Lindquist, 1999; Neumark-Sztainer et al., 2006). However, studies showed that physical activity prevalence is low among adolescents and many of them engaged in unhealthy weight control behaviors (L.-J. Chen, Haase, & Fox, 2007; Grigg, Bowman, & Redman, 1996; US Department of Health and Human Services Centers for Disease Control and Prevention, 2008). Unhealthy weight control behaviors have been linked to various risky behaviors, such as disordered eating, vomiting and use of diet pills (Neumark-Sztainer et al., 2006). Therefore, understanding weight control behaviors and methods among adolescents and identifying subgroups who adopted unhealthy weight control behaviors are critical. The aims of this study were therefore to explore weight control behaviors and methods among Taiwanese adolescents and identify groups at risk of using unhealthy weight control methods.

Method

Data were extracted from the 2001 National Health Interview Survey conducted by the Department of Health in Taiwan. It is a periodic nationwide cross-sectional study, with a representative sample through multi-stage stratified systematic sampling (Lan, Chang, & Tai, 2006). For this study, data on 12-18 year olds were extracted, providing a sample of 2,235 adolescents in Taiwan. Respondents were asked 'Are you trying to control your weight?' The answers included 'trying to: 'lose weight', 'maintain weight', 'gain weight', and 'not controlling'. Specific types of weight control methods were asked with the following questions: 'Have you done any of the following things in order to control weight?' (Yes or No for 12 methods, one open option is also available). Weight control methods were classified into two groups: (1) Healthy methods: including doing exercise and healthy dieting (eating fewer snacks, food with fewer calories/low in fat, having more fruits/vegetables, or no supper); (2) Unhealthy methods: including skipping meals, fasting 24 hours, vomiting, taking diet foods/teas/pills, or laxatives. If participants reported one or more of the above unhealthy methods were classified as using unhealthy weight control methods (Eisenberg, Neumark-Sztainer, Story, & Perry, 2005; Grigg et al., 1996). Multivariate logistic regression analysis for predicting unhealthy methods was performed controlling for age, gender, weight status, residential location, parental education level, smoking and drinking status.

Results

Significantly more boys were overweight/obese than girls (18.6% in boys; 9.3% in girls, respectively). Around 20% of boys and 25% of girls reported physically inactive in the past two weeks. The prevalence of smoking and drinking were significantly higher among boys than among girls (smoking: 16.1% in boys and 3.7% in girls; drinking: 9.9% in boys and 2.9% in girls, respectively). Nearly 30% of adolescents were trying to control weight, with significantly more girls trying to control weight than boys (36% in girls, 22.6% in boys, respectively). Of the girls who were trying to control weight, 18.7% were trying to lose weight, 15.9% were trying to maintain weight, and 1.5% were trying to gain weight. For boys, 9.7% were trying to lose weight, 9.8% were trying to maintain weight, and 3.1% were trying to gain weight. A higher percentage of boys (37.3%) than girls (15.9%) reported that they exercised as a method to control weight. Frequencies of unhealthy weight control methods were higher for girls (24.8%) than for boys (15.6%). Girls were nearly three times more likely to engage in unhealthy weight control behaviors than boys (Adjusted Odds Ratio (AOR)=2.82, 95%CI=1.60-4.96). Adolescents living in urban areas had around two times greater odds of adopting unhealthy weight control methods than those living in rural areas (AOR=1.96, 95%CI=1.16-3.33).

The 12th ISSP WORLD CONGRESS OF SPORT PSYCHOLOGY
Marrakesh - June 17- 21, 2009

Adolescents who smoke or drink were more likely to use unhealthy weight control methods than those who never smoke or drink (AOR=2.88, 95%CI=1.40-5.93 and AOR=2.45, 95%CI=1.15-5.20, respectively) (Table 1).

Table 1: Multivariate logistic regression analysis of unhealthy weight control methods

Variable	N	Multivariate Model		
		AOR ^a	CI 95%	p
Age group			.90-2.52	.121
Age15-18	356	1.50		
Age12-14	164	1		
Gender			1.60-4.96	<.000
Girls	326	2.82		
Boys	194	1		
Residential location				.012
Urban	355	1.96	1.16-3.33	
Rural	165	1		
Parental education level				.77
Low	66	.83	.37-1.88	.65
Middle	357	.82	.47-1.43	.48
High	97	1		
Weight status				.30
Overweight/obese	134	1.35	.76-2.39	
Normal weight	386	1		
Physical activity			.44-1.54	.54
Yes	453	.82		
No	67	1		
Smoke			1.40-5.93	.004
Yes	48	2.88		
No	472	1		
Drink			1.15-5.20	.020
Yes	42	2.45		
No	478	1		

^a: Adjust Odds Ratio

Discussion / Conclusions

This study found that a considerable proportion of Taiwanese adolescents engaged in weight control behavior. Of those who tried to control weight, most tried to control weight by doing exercise and changing eating behavior, such as decreasing snacks, eating food with fewer calories and low in fat. Girls tend to prefer dieting than exercising as a means of weight control methods, whereas research suggested that using exercise for weight control is associated with a pattern of healthy behaviours (Lowry, Galuska, Fulton, Wechsler, & Kann, 2002). Page and Fox (1997) pointed out that girls generally view desirable body shape as something to be achieved through fat reduction, which is perceived to be most easily accomplished through dietary restriction. Therefore, the role of exercise with respect to adolescent weight management is potentially conflicting.

Moreover, smoking is found to be one of the weight control strategies among adolescent girls in western countries (Camp, Klesges, & Relyea, 1993; Fulkerson & French, 2003; Lowry et al., 2002), while very few girls smoked regularly and none reported smoking as a weight control method in this study. It seems that smoking is not practiced to control weight in Taiwan, which is also in accord with previous research among Taiwanese college students (Wong & Huang, 1999). However, around 20% of adolescents using at least one unhealthy method to control weight, with significantly more girls engaging in unhealthy weight control behaviors than boys, consistent with previous studies conducted in Western countries (Lowry et al., 2002; US Department of Health and Human Services Centers for Disease Control and Prevention, 2008). It is concerning that the use of unhealthy weight control methods has been linked to various high-risk behaviors (Neumark-Sztainer & Hannan, 2000; Neumark-Sztainer, Story, & French, 1996; Neumark-Sztainer et al., 2006; Shisslak et al., 2006) and if adolescents invest in and experiment with unhealthy weight control behaviors due to the strong motive of a need to shape and control appearance rather than to stay healthy (Page & Fox, 1997).

This study provides a baseline for future studies and preliminary identification of subgroups at higher risk of unhealthy weight control methods. The findings highlight that there is scope for interventions to educate Taiwanese youth about the healthy way to approach weight management where it is needed. It is also important to educate the high risk subgroups of adopting unhealthy weight control behaviors particularly about the potential health risks related to these harmful methods.

The 12th ISSP WORLD CONGRESS OF SPORT PSYCHOLOGY

Marrakesh - June 17- 21, 2009

Acknowledgement

This study is based on the original data set provided by the Department of Health in Taiwan. The authors would like to thank the Department of Health for allowing the team to access the data set. The interpretation and conclusions contained herein do not represent the Department of Health.

References

- Boutelle, K., Neumark-Sztainer, D., Story, M., & M., R. (2002). Weight control behaviors among obese, overweight, and non-overweight adolescents. *Journal of Pediatric Psychology, 27*(6), 531-540.
- Camp, D. E., Klesges, R. C., & Relyea, G. (1993). The relationship between body weight concerns and adolescent smoking. *Health Psychology, 12*(1), 24-32.
- Chen, L.-J., Haase, A. M., & Fox, K. R. (2007). Physical activity among adolescents in Taiwan. *Asia Pacific Journal of Clinical Nutrition, 16*(2), 354-361.
- Chen, L. J., Fox, K. R., Haase, A. M., & Wang, J. M. (2006). Obesity, fitness and health in Taiwanese children and adolescents. *European Journal of Clinical Nutrition, 60*(12), 1367-1375.
- Eisenberg, M. E., Neumark-Sztainer, D., Story, M., & Perry, C. (2005). The role of social norms and friends' influences on unhealthy weight-control behaviors among adolescent girls. *Social Science and Medicine, 60*(6), 1165-1173.
- Fulkerson, J. A., & French, S. A. (2003). Cigarette smoking for weight loss or control among adolescents: gender and racial/ethnic differences. *Journal of Adolescent Health, 32*(4), 306-313.
- Goran, M. I., Reynolds, K. D., & Lindquist, C. H. (1999). Role of physical activity in the prevention of obesity in children. *International Journal of Obesity and Related Metabolic Disorders 23*(suppl 3), S18-S33.
- Grigg, M., Bowman, J., & Redman, S. (1996). Disordered eating and unhealthy weight reduction practices among adolescent females. *Preventive Medicine, 25*(6), 748-756.
- Lan, T.-Y., Chang, H.-Y., & Tai, T.-Y. (2006). Relationship between components of leisure physical activity and mortality in Taiwanese older adults. *Preventive Medicine, 43*(1), 36-41.
- Levine, M. P., & Smolak, L. (2002). Body image development in adolescent. In T. F. Cash & T. Pruzinsky (Eds.), *Body image: a handbook of theory, research, and clinical practice* (pp. 74-82). New York: The Guilford Press.
- Lobstein, T., Baur, L., & Uauy, R. (2004). Obesity in children and young people: a crisis in public health. *Obesity Reviews, 5*(Suppl: 1), 4-85.
- Lowry, R., Galuska, D. A., Fulton, J. E., Wechsler, H., & Kann, L. (2002). Weight management goals and practices among U.S. high school students: associations with physical activity, diet, and smoking. *Journal of Adolescent Health, 31*, 133-144.
- Neumark-Sztainer, D., & Hannan, P. J. (2000). Weight-related behaviors among adolescent girls and boys: results from a national survey. *Archives of Pediatrics and Adolescent Medicine, 154*(6), 569-577.
- Neumark-Sztainer, D., Story, M., & French, S. A. (1996). Covariations of unhealthy weight loss behaviors and other high-risk behaviors among adolescents. *Archives of Pediatrics and Adolescent Medicine, 150*(3), 304-308.
- Neumark-Sztainer, D., Wall, M., Guo, J., Story, M., Haines, J., & Eisenberg, M. (2006). Obesity, disordered eating, and eating disorders in a longitudinal study of adolescents: How do dieters fare 5 years later? *Journal of the American Dietetic Association, 106*(4), 559-568.
- Page, A., & Fox, K. R. (1997). Adolescent weight management and the physical self. In K. R. Fox (Ed.), *The physical self: from motivation to well-being* (pp. 229-256). Champaign: Human Kinetics.
- Ricciardelli, L. A., & McCabe, M. P. (2001). Self-esteem and negative affect as moderators of sociocultural influences on body dissatisfaction, strategies to decrease weight, and strategies to increase muscles among adolescent boys and girls *Sex Roles, 44*(3/4), 189-207.
- Ricciardelli, L. A., McCabe, M. P., Holt, K. E., & Finemore, J. (2003). A biopsychosocial model for understanding body image and body change strategies among children. *Applied Developmental Psychology, 24*, 475-495.
- Rinderknecht, K., & Smith, C. (2002). Body image perceptions among urban Native American youth. *Obesity Research, 10*(5), 315-327.
- Shisslak, C. M., Mays, M. Z., Crago, M., Jirsak, J. K., Taitano, K., & Cagno, C. (2006). Eating and weight control behaviors among middle school girls in relationship to body weight and ethnicity. *Journal of Adolescent Health, 38*(5), 631-633.
- US Department of Health and Human Services Centers for Disease Control and Prevention. (2008). *Youth Risk Behavior Surveillance-United States, 2007*: US Department of Health and Human Services: Centers for Disease Control and Prevention, Morbidity and Mortality Weekly Report.
- Wong, Y., & Huang, Y. C. (1999). Obesity concerns, weight satisfaction and characteristics of female dieters: a study on female Taiwanese college students. *Journal of the American College of Nutrition, 18*(2), 194-200.