Asian Journal of Population Sciences p-ISSN 2822-1613
(A Peer-Reviewed, Open Access Journal; Indexed in NepJOL) e-ISSN 2822-1621
Email: population@pncampus.edu.np
eJournal Site: http://ejournals.pncampus.edu.np/ejournals/ajps/

[ORIGINAL RESEARCH ARTICLE]

Body Image Perception and Weight Control Behavior among Secondary Level Students in Dharan

Salina Rai*
raisalina1629@gmail.com
Sharada Sharma*
sharada.sharma@ponc.tu.edu.np
***Institute of Medicine, Pokhara Nursing Campus, Tribhuvan University, Pokhara, Nepal
Corresponding Author & Email
Sharada Sharma; sharada.sharma@ponc.tu.edu.np

Article History
Submitted 7 October 2024; Reviewed 18 November 2024; Accepted 14 December 2024
DOI: https://doi.org/10.3126/ajps.v4i1.73908

Published by
Department of Population Studies
Prithvi Narayan Campus
Tribhuvan University
Pokhara, Nepal

Abstract

Body image perception serves as a motivation for weight control practices in adolescents. This study evaluates secondary school students' body image perception and weight control behaviors. A descriptive cross-sectional study was conducted among 280 students enrolled in classes 9 to 11 in a secondary school. The sample was selected through multi-stage random sampling. To gather data, a self-administered questionnaire, Stunkard figure rating scale for perception of body image, and Weight control strategy scale were used to measure weight control behavior. Collected data was coded and entered into SPSS version 16, then analyzed using descriptive and inferential statistics, chi-square, and Mann-Whitney U test. The study found that 30.6% of students were satisfied with their body image, while 69.4% were dissatisfied. About 59.8% had normal weight, 23.6% were underweight, 13.3% were overweight, and 3.3% were obese. Moreover, 25% of students wanted to stay the same weight, 36.2% were trying to lose weight, and 29.2% were trying to gain weight. A significant association was found between body image perception, body mass index, and age. This study concluded that most students are dissatisfied with their body image and engage in weight control behaviors despite being of normal weight. Promoting satisfaction in body image perception and healthy weight management demands that programs related to healthy lifestyle choices be conducted in schools to educate them.

Keywords: Body image perception, body mass index, weight control behaviors, school students

INTRODUCTION

Obesity and body weight-related issues have become global concerns, impacting the physical and mental well-being of individuals across various age groups (World Health Organisation, 2020). The emphasis on adolescents has increased recently due to the possible long-term effects of improper weight control practices during this crucial developmental time (Neumark-Sztainer et al., 2007). Many people, more typically women than men, are unhappy with how they look. Our behavior is frequently influenced by the level of satisfaction with our bodies; high levels of satisfaction can foster positive behaviors and habits, while low levels of satisfaction may encourage negative ones (Neumark-Sztainer et al., 2006). Therefore, those who experience low body satisfaction are more likely to engage in weight control practices such as binge eating, vomiting, fasting, taking laxatives or diet pills, eating less fruits and vegetables, getting less exercise, and smoking (Schulte & Thomas, 2013). In addition, inaccurate body image perceptions can contribute to unhealthy weight control practices, including extreme dieting, fasting, or excessive exercise (Paxton et al., 1999). Moreover, cultural influences on body image adolescent expectations may shape adolescents' perceptions of their bodies (Tiggemann & Slater, 2013).

Nepal is undergoing rapid social and economic changes in lifestyle and dietary patterns (Pokhrel et al., 2015). With the increased prevalence of processed foods and sedentary lifestyles, concerns about adolescent health, particularly related to body weight, have emerged (Sitaula et al., 2023). Furthermore, understanding body image perception and weight control behaviors can apprise targeted interventions to promote healthy attitudes toward body image and foster positive behaviors from an early age (Bearman et al., 2006).

Weight control practices are widespread and range from possibly healthful to harmful. Numerous studies indicate that the primary risk factors for harmful weight management behaviors include obesity, low self-esteem, and unhappiness with one's weight. These factors can be impacted by peers, parents, the media, and fashion trends. Unhealthy diets among adolescents increase their chances of developing eating disorders, binge eating, low self-esteem, and other medical and psychological issues. The rising problem of inaccurate body image perception resulting in unhealthy weight control behavior is causing a substantial public health threat. Therefore, the study is vital to address a significant gap in the existing literature by focusing on the secondary-level student population in Nepal to assess how students perceive their body image and identify their weight control behaviors. Additionally, the study seeks to determine any association in body image perception with the selected variables.

DATA AND METHODS

A descriptive cross-sectional design was used to identify body image perception and weight control behavior among secondary-level students. The study area was in Dharan sub-metropolitan city in Sunsari District, Koshi Province. A multi-stage random sampling technique was employed. From Dharan's 20 wards, Dharan-01 was randomly selected using the lottery method. A total of 271 among 280 students studying in classes 9 to 11 willing to participate and present on the day of data collection after signing the consent form were included in the study.

Physiological measurements were used to calculate body mass index, and a self-administered questionnaire was administered for body image perception and weight control behavior. Physiological measurements: The height and weight of each student were measured with a stadiometer and a digital weighing machine, respectively. BMI was calculated and analyzed according to WHO standards. To assess body image perception, the Stunkard Figure Rating Scale is used to evaluate the perception of self and ideal body sizes. It consists of nine Silhouette figures ranging from (1) very thin to (9) very obese(Stunkard et al., 1983). Self-body size is the number of figures students selected in response to the prompt 'Choose the figure that reflects how you think you look'. Ideal body size is the number of figures chosen in responding to the prompt "Choose your ideal figure". The Silhouette series was divided into four categories (underweight, normal weight, overweight, and obese (Tejoyuwono & Riedha, 2015). The body image perception was measured by subtracting the number of the figure indicated as the ideal body size from the number of the figure selected as the self-body size. The degree of dissatisfaction with the existing body image was calculated as the difference between the perceived and desired body images. Values other than zero indicate body image dissatisfaction, while zero indicates body image satisfaction. If the value is positive, that means the students wish to be thinner than their perceived existing size; if it is negative, that means the students wish to be heavier than their perceived current size. Students who wish to be thinner and wish to be heavier were categorized as body image dissatisfaction.

For the weight control behavior, the Weight Control Strategy Scale (WCSS) a five-point scale with thirty items (0) Never, (1) Occasionally, (2) About half the time, (3) Most of the time, and (4) Always was used. The subscales include dietary control (10 items): 2, 6, 7,10,13,17,19,21,27 and 30, self-monitoring strategies (7 items): 1, 3, 12, 15, 16, 23, and 28, physical activity (6 items): 4, 8, 11, 22, 24 and 26, and psychological coping (7 items): 5, 9, 14, 18, 20, 25, and 29. To calculate the total scores, sum up all item scores and divide by 30. The dietary control, self-monitoring, physical activity, and psychological coping subscales of the WCSS showed good internal consistency, with Cronbach's alpha coefficients of 0.87, 0.89, 0.88, and 0.79 (Pinto et al., 2013). Pretesting of the instrument was done among twenty-seven students of Carmel High School.

Approval was obtained from the research committee Pokhara Nursing Campus. Additionally, the Principal of the school was formally asked for approval. Before data collection, each student's parental consent was obtained by sending a consent form to the student the day before the data was collected. Confidentiality was maintained by not disclosing the information to others, and it was made clear that collected data was used only for research purposes. After measuring each student's height and weight and providing a full explanation of the questionnaire was given to them. The collected data was entered and analyzed in SPSS version 16. Descriptive statistics were used to measure frequency, percentage, mean, and standard deviation, while the chi-square and Mann-Whitney U test were used for an inferential statistical procedure.

RESULTS

A total of 271 out of 280 students studying at the secondary level were included in this study. The paper aims to assess how students perceive their body image and identify their weight control behaviors.

Table 1

Background Characteristics of Students

n=271

Variables	Number	Percent
Age in Years		
14-16	106	39.1
17-19	163	60.2
20-22	2	0.7
Mean ± SD 16.73±1.057		
Gender		
Male	156	57.6
Female	115	42.4
Religion		
Hindu	147	54.2
Kirant	70	25.8
Buddhist	43	15.9
Christian	9	3.3
Muslim	2	0.8
Ethnicity		
Janajati	153	56.5
Brahmin/Chhetri	76	28.0
Madhesi	24	8.9
Dalit	17	6.3
Muslim	1	0.3
Body Mass Index		
Normal Weight	162	59.8
Underweight	64	23.6
Overweight	36	13.3
Obese	9	3.3

Table 1 illustrates that 60.2 percent students were within the 17-19 age range, with a mean age of 16±1.057. Of those surveyed, 57.6 percent were male, 59.8 percent had a healthy body mass index, and 23.6 percent were underweight.

Table 2

Body Image Perception of the Students

n=271

Variables	Number	Percent
Body Weight Description		
About the right weight	120	44.3
Slightly overweight	61	22.5
Slightly Underweight	56	20.7
Very overweight	19	7.0
Very Underweight	15	5.5
Trying to do about Weight		
Lose weight	98	36.2
Gain weight	79	29.2
Stay the same weight	67	24.6
Not trying to do anything	27	10.0
Stressed due to Body Weight		
Never	98	36.2
Sometimes	76	28.0
Rarely	66	24.4
Often	31	11.4
Image that represents the current figure		
Normal weight	149	55.0
Overweight / Obese	88	32.5
Underweight	34	12.5
Image that represents the ideal figure		
Normal weight	160	59.0
Overweight / Obese	82	30.3
Underweight	29	10.7
Body Image Perception		
Satisfied	83	30.6
Dissatisfied	188	69.4

Table 2 shows that 44.3 percent of students considered their body weight to be about right, while 5.5 percent identified themselves as underweight. Similarly, 36.2 percent of students are trying to lose weight, while 10 percent are not actively trying to manage their weight. Furthermore, 36.2 percent of students reported never experiencing stress related to their body weight, while 11.4 percent frequently experienced such stress. Likewise, 55 percent of students selected images 3-4 (indicating normal weight) as their current figure, with 59 percent considering it their ideal figure. Additionally, 30.6 percent of students are satisfied with their current body weight, while 69.4 percent dissatisfied with their body image.

Table 3

Weight Control Behavior Employed by the Students

n=271

Strategy	Number	Percent
Dietary Control	97	35.8
Self-monitoring	4	1.4
Physical Activity	85	31.4
Psychological Coping	85	31.4

Table 3 shows that 35.8 percent of the students use dietary control as weight control behavior, and only 1.4 percent use a self-monitoring strategy.

Table 4

Association Between Body Image Perception and Selected Variables

Variables	Body Image Perception		χ^2	*p*-value
	Satisfaction No. (%)	Dissatisfaction No. (%)		
Age				
≤17 Years	59(27.3)	157(72.7)	5.496	0.019*
>17 Years	24(43.6)	31(56.4)		
Gender				
Male	52(33.3)	104(66.7)	1.267	0.260
Female	31(27.0)	84(73.0)		
Religion				
Hindu	47(31.8)	101(68.2)	0.196	0.658
Others	36(29.3)	87(70.7)		
Ethnicity				
Janajati	43(28.1)	110(71.9)	1.053	0.305
Others	40(33.9)	78(66.1)		
Body Mass Index				
Normal Weight	61(37.7)	101(62.3)	9.361	0.002*
Malnourished	22(20.2)	87(79.8)		

*Test Statistics χ^2: chi-square; *significant at p < 0.05*

Table 4 indicates a statistically significant association between students' age and body mass index with their perception of body image.

Table 5

Difference in Weight Control Behavior with Selected Variables

Variables	Number	Median	Quartile Q1-Q3	*p*-value
Age				
≤17	216	66	51.2-82.7	0.884
>17	55	69	53.0-81.0	
Gender				
Male	156	70	51.0-86.0	0.100
Female	115	64	53.0-75.0	
Religion				
Hindu	148	66	52.25-82.5	0.996
Others	123	66	51.0-82.0	
Ethnicity				
Janajati	153	70	51.7-87.0	0.137
Others	118	64	52.0-78.5	

Test Statistics Mann Whitney U test; significant at p < 0.05

Table 5 shows no significant difference in weight control behavior with the socio-demographic variables.

DISCUSSION

This study was conducted to identify body image perception and weight control behavior among secondary-level students. In this study, the mean age of the students was 16.73±1.05 years. 23.6 percent were underweight, 13.3 percent overweight, 3.3 percent obese, and 59.8 percent had a normal weight based on their body mass index. These findings differ from the study conducted by (Dhungel & Bhattarai, 2020), where 11.5 percent were underweight and 6 percent were obese. In addition, 69.4% of students were found dissatisfied with their body image, and 28 percent sometimes feel stressed due to body weight in this study. This finding is similar to the studies conducted in Kathmandu, Nepal, and Nigeria (Malla et al., 2021; Olatona et al., 2023).

The current study findings suggest that more than half (59.2%) of students were normal weight, and 36 percent attempted to lose weight. Similarly, 29 percent tried to gain weight, 25 percent maintained the same weight, and only 10 percent did nothing for weight management goals. Likewise, in the study conducted in the USA, the majority of adolescents perceived their weight as "about right", 25% reported trying to gain weight, and 25% reported trying to lose weight, which was similar to this study (Deierlein et al., 2019).

According to the perception of students' current and ideal body shape preference according to the nine-figure silhouette for males and females, 12.5 percent of students choose an underweight silhouette to represent their current figure. Similarly, 55 percent chose the standard weight silhouette, 32.5 percent chose an overweight silhouette, and 10.7 percent chose an underweight silhouette to represent their ideal size. The finding was slightly higher than the study by Brener et al., 2004, which showed that 42.9% of students chose the standard weight silhouette.

As a weight management strategy, 35.8 percent of students in this study used dietary control, while only 1.4 percent used self-monitoring. The study finding was similar to a study by Olatona et al. (2023) that showed 39 percent used dietary control as a weight management strategy. Among the dietary controls, the most commonly used weight loss measures were eating high-fiber foods. In a study conducted by Bhurtun & Jeewon (2013); the most commonly employed weight loss strategies included reducing fat intake (84.6%), exercising (80.8%), and taking more fruits and vegetables (66.7%).

Regarding the body image perception of secondary-level students in this study, 69.4% were found dissatisfied with their body image. This finding is supported by a study conducted in Kathmandu, Nepal (75%), and Nigeria (63.5%). Respondents were dissatisfied with their body image (Malla et al., 2021; Olatona et al., 2023). This might be because most adolescents are more sensitive to their perception of their body image. Furthermore, there was a significant association between body image perception with the age of respondents (*p-value* 0.019) and body mass index (*p-value* 0.002). The study finding was similar to a study conducted in Nigeria (Olatona et al., 2023) that showed a significant association between body image perception with the age of students and body mass index. In the late adolescence period, students are more concerned about their body weight than in the early adolescence period. There was no significant difference between weight control behaviors with age, gender, religion, or ethnicity of the students. Many of the studies have not considered these variables.

CONCLUSION

The study concluded that most students are dissatisfied with their body image and engage in weight control behaviors even though they have a normal weight. It also revealed a significant association between body image perception, age, and body mass index. Raising awareness among adolescents about proper nutrition and healthy weight management is important to promote satisfaction in body image perception and healthy weight management. This study helps to plan an awareness program related to healthy lifestyle choices in schools to educate adolescents.

REFERENCES

Bearman, S. K., Presnell, K., Martinez, E., & Stice, E. (2006). The Skinny on Body Dissatisfaction: A Longitudinal Study of Adolescent Girls and Boys. *Journal of Youth and Adolescence, 35*(2), 217–229. https://doi.org/10.1007/s10964-005-9010-9

Bhurtun, D. D., & Jeewon, R. (2013). Body Weight Perception and Weight Control Practices among Teenagers. *ISRN Nutrition, 2013*, 1–6. https://doi.org/10.5402/2013/395125

Brener, N. D., Eaton, D. K., Lowry, R., & McManus, T. (2004). The Association between Weight Perception and BMI among High School Students. *Obesity Research, 12*(11), 1866–1874. https://doi.org/10.1038/oby.2004.232

Deierlein, A., Malkan, A., Litvak, J., & Parekh, N. (2019). Weight Perception, Weight Control Intentions, and Dietary Intakes among Adolescents Ages 10–15 Years in the United States. *International Journal of Environmental Research and Public Health, 16*(6), 990. https://doi.org/10.3390/ijerph16060990

Dhungel, K. U., & Bhattarai, B. (2020). Relationships between Body Weight Perception and Weight Management: Practices among Adolescents. *Janaki Medical College Journal of Medical Science, 8*(1), 40–49. https://doi.org/10.3126/jmcjms.v8i1.31555

Malla, G., (Pradhan) Joshi, S., & Thapa, A. (2021). Body Image Dissatisfaction among Adolescent Girls of a Municipality in Kathmandu: A Cross-sectional Survey. *Journal of Nepal Medical Association, 59*(241), 902–905. https://doi.org/10.31729/jnma.5378

Neumark-Sztainer, D., Paxton, S. J., Hannan, P. J., Haines, J., & Story, M. (2006). Does Body Satisfaction Matter? Five-year Longitudinal Associations between Body Satisfaction and Health Behaviors in Adolescent Females and Males. *Journal of Adolescent Health, 39*(2), 244–251. https://doi.org/10.1016/j.jadohealth.2005.12.001

Neumark-Sztainer, D. R., Wall, M. M., Haines, J. I., Story, M. T., Sherwood, N. E., & Van Den Berg, P. A. (2007). Shared Risk and Protective Factors for Overweight and Disordered Eating in Adolescents. *American Journal of Preventive Medicine, 33*(5), 359-369.e3. https://doi.org/10.1016/j.amepre.2007.07.031

Olatona, F. A., Aladelokun, B. F., Adisa, O. O., Ogunyemi, A. O., & Goodman, O. O. (2023). Body image dissatisfaction, nutritional status and weight control strategies among university undergraduates in Lagos: A descriptive cross- sectional study. *Pan African Medical Journal, 45*. https://doi.org/10.11604/pamj.2023.45.112.27382

Paxton, S. J., Schutz, H. K., Wertheim, E. H., & Muir, S. L. (1999). Friendship clique and peer influences on body image concerns, dietary restraint, extreme weight-loss behaviors, and binge eating in adolescent girls. *Journal of Abnormal Psychology, 108*(2), 255–266. https://doi.org/10.1037/0021-843X.108.2.255

Pinto, A. M., Fava, J. L., Raynor, H. A., LaRose, J. G., & Wing, R. R. (2013). Development and validation of the weight control strategies scale. *Obesity, 21*(12), 2429–2436. https://doi.org/10.1002/oby.20368

Pokhrel, S., Acharya, B., & Adhikari, C. (2015). Nutritional Status and Body Image Dissatisfaction among Adolescent Girls in Kaski District, Nepal. *International Journal of Health Sciences and Research, 5*(6), 462–469.

Schulte, S. J., & Thomas, J. (2013). Relationship between eating pathology, body dissatisfaction and depressive symptoms among male and female adolescents in the United Arab Emirates. *Eating Behaviors*, *14*(2), 157–160. https://doi.org/10.1016/j.eatbeh.2013.01.015

Sitaula, D., Dhakal, A., Lageju, N., Silwal, A., Basnet, S. K., Shrestha, N., Anup Bikram, B. C., & Phoju, N. (2023). Prevalence and Associated Factors of Adolescent Obesity among Rural School Adolescents in Nepal: A Cross-Sectional Study. *Global Health*, *2023*, 1–8. https://doi.org/10.1155/2023/2957278

Stunkard, A., Sørensen, T., & Schulsinger, F. (1983). Use of the Danish Adoption Register for the study of obesity and thinness. *Association for Research in Nervous and Mental Disease*, 115–120.

Tejoyuwono, A. A. T., & Riedha, M. (2015). Medical Students Perception about Doctor's Body Image Using Stunkard Figure Rating Scale (FRS) Method. *International Journal of Public Health Science (IJPHS)*, *4*(4), 294. https://doi.org/10.11591/.v4i4.4749

Tiggemann, M., & Slater, A. (2013). NetGirls: The Internet, Facebook, and body image concern in adolescent girls. *International Journal of Eating Disorders*, *46*(6), 630–633. https://doi.org/10.1002/eat.22141

World Health Organisation. (2020). *Obesity*. https://www.who.int