

Relationship between Quality of Life and Body Image Perception in Iranian Medical Students: Structural Equation Modeling

Abstract

Background: The body image is a complex concept that influences various factors, one of these factors is the quality of life. The present study aimed to investigate the relationship between quality of life and body image perception in the medical students of Shahid Beheshti University of Medical Sciences. **Methods:** This descriptive study was carried out on 400 students of Shahid Beheshti University of Medical Sciences using a stratified random sampling method and the samples were selected from each faculty in 2017 using simple random sampling Questionnaires (PSDQ) and (SF-12) were used. Data were analyzed using mean and standard deviation and *t*-test, Mann-Whitney U, ANOVA, kelmogrouf smirnouf test and Spearman Correlation to SPSS 16 software and structural equation modeling (SEM) was to test the relationships between the three parameters (quality of life, body image, and demographic characteristics) using AMOS24 software. **Results:** The findings show Quality of life significantly correlated with two demographic variables: location and exercising of students. Body image perception significantly correlated merely with the body mass index and exercising. The Structural Equation Modeling (SEM) results confirmed a positive and direct relationship between the quality of life and body image perception. **Conclusions:** The results showed that there is a significant relationship between body image perception and quality of life. Therefore, by modifying and improving the students' quality of life in the dormitories, the level of students' self-concept can be raised in order to prevent the physical and psychological complications of this group of community.

Keywords: *Body image, quality of life, student*

Introduction

Students, presently, are considered as one of the significant groups of the society due to their key role in the future of the country's development and progress. As statistics confirm, youth is the largest population in Iran. Considering these matters, the importance of enhancing students' health increasingly becomes clear, not to mention that mental health is one of the important dimensions of well-being.^[1]

One of the effective factors that is considered as the source of stress is the individual's perception of body image.^[2] In the society, body image and beauty were recognized as the main causes of teen stress.^[3] The body image has several components subdivided into two perceptual and attitudinal dimensions. The perceptual components are related to how we see our size, shape, weight, face, movement, and actions, while the attitudinal components

are related to how we feel about these features and how these feelings affect our behaviors.^[4]

Mental health evaluation may result in positive or negative of the body image. The positive body image indicates that a person accepts himself as a person with strengths and weaknesses, leading to increase confidence in social relationships. The negative body image makes the feelings of being unworthy and hopeless and causes low self-esteem.^[5] Research has shown that body dissatisfaction is the result of a disagreement between ideal self and perceived self, which has become widespread among women.^[6]

Body image and quality of life

The body image influences various aspects of psychological, one of which is quality of life.^[7] Also, quality of life is influenced by the individuals' experiences and beliefs as well as perception of body image.^[8]

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WHO defines the quality of life as follows: an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns. It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, social relationships, and their relationship to salient features of their environment.^[9] In other hand, the health level and quality of life have significant impact on the students' learning, academic performance and achievement.^[10]

The present study was carried out with the aim of investigating the relationship between quality of life and body image perception as well as the relationships between demographic characteristics and quality of life and body image perception in medical students of Shahid Beheshti University of Medical Sciences, Tehran.

Methods

The sample included 400 students of Shahid Beheshti University of Medical Sciences in Tehran that were selected by stratified sampling method. The inclusion criterion was being student of Shahid Beheshti University of Medical Sciences in Tehran. The average age of students was 23.82 ± 5.30 and about 68% of them were women. The research population included all students of Shahid Beheshti University of Medical Sciences in Tehran. Students from different majors were studied through simple random sampling. A total of 400 students filled out questionnaire randomly with a satisfactory and consciously. Data collection tools were two standard questionnaires: Physical Self-Description Questionnaires (PSDQ) and quality of life questionnaire (SF-12). PSDQ was developed by Marsh to measure physical self-concept.^[11] The new and short form of the questionnaire consists of 47 questions with 9 specific and 2 general sub-scales. The specific factors of physical self-concept include the appearance, body fat, coordination, flexibility, strength, health, sport, endurance, and two general sub-scales of global physical self-concept and global self-esteem. The two general sub-scales were known as the concepts of physical fitness which include physical ability, physical appearances, and self-esteem; each sub-scale consists of 6 to 8 phrases, and each phrase is designed in 6-point scale.^[11] The validity and reliability of this questionnaire was evaluated in Iran in 2011 by Abdolmaleki *et al.*^[12] In the present study, the internal consistency of the questionnaire was evaluated and Cronbach's Alpha was estimated 0.78. SF-12 questionnaire includes 8 sub-scales and 36 questions and was designed in 1996 by Kazinsky and Claire. It examines the quality of life in terms of overall perception (health, physical performance, physical health, emotional problems, physical pain, social performance, vitality and vital energy and mental health). Montazeri *et al.* assessed the validity and reliability of this questionnaire in Iran.^[13]

Statistical analysis

Finally, the data were analyzed using descriptive statistics in terms of percentage and frequency. The data were analyzed using SPSS version 16 software by ANOVA and T-test. Path analysis and structural equation modeling (SEM) were carried out through AMOS v20 software. About the goodness of fit index, (a) if the goodness of fit index (GFI), the comparative fit index (CFI), and the Tucker-Lewis index (TLI) were greater than 0.9, and (b) if the root mean square error estimate (RMSEA) values were less than 0.08, and (c) if the Chi-square index divided by the degree of freedom was less than 3, then, the model had a desirable goodness of fit.^[14,15]

Results

Descriptive and analytical results

Table 1 shows the demographic characteristics of the samples. The average age of students was 23.82 ± 5.30 and about 68% of them were women. Table 2 shows the average quality of life and body image perception and their dimensions. The students' average quality of life was 36.25 ± 5.54 , more than 98.5% of students had moderate and high quality of life and only 1.5% of them reported a low quality of life. Also, about 97.5% of students had a moderate and good perception of their body image, and only 2.5% of them reported a low perception of their body image.

Table 1: Demographic characteristics of the students of Shahid Beheshti University of Medical Sciences

Variable	Group	Percent	Frequency
Age	18-28	82.2	329
	29-48	17.8	71
Gender	Male	31.8	127
	Female	68.2	273
Marital status	Single	90.3	361
	Married	9.7	39
Education	Undergraduate	51.5	206
	Postgraduate	11.7	47
	PHD	20.0	80
	Professional doctorate	13.0	52
Place of residence	General doctorate	3.8	15
	Dormitory	64.5	258
Income	Outside of dormitory	35.5	142
	No income	46.3	185
exercising	Very low	21	84
	Moderate	30.4	122
	High	2.3	9
	No	20.7	83
Body mass	Little	40.2	161
	Moderate	32.3	129
	Great	6.8	27
	Below normal	10.8	43
	Normal	68.5	274
	Above normal	20.7	83

T-Test and ANOVA tests assessed the relationships between quality of life variable and body image perception with demographic variables. There were significant relationships between quality of life variable with the place of residence ($P < 0.001$) and exercising ($P < 0.001$). Also, it was observed that only BMI and exercising had significant effects on body image perception ($P < 0.001$).

Table 3 shows the correlation coefficient between body image perception and quality of life. Since the data distribution was not normal, the Spearman's correlation was used to examine the correlations between variables. Quality of life variables and body image perception had a correlation coefficient of 0.49 ($P < 0.001$), which indicates as body image perception increases the quality of life increases and vice versa. Moreover, there were direct and significant relationships between quality of life and its dimensions with the dimensions of body image perception variable such as body fat, strength, etc. ($P < 0.001$).

Path and SEM analysis

Figures 1 and 2 show results of the path analysis for assessing the relationships between quality of life and body image perception with demographic variables that had significant relationship with quality of life and body image perception.

Regarding the reported values of goodness of fit, the model in Figure 1 had good fitness indexes. In the path models, all path coefficient values were shown on the arrows. For example, the direct effect of place of residence on body image was 0.11, while the indirect effect was equal to 0.07, therefore, the total effect of place of residence on body image was equal to 0.17. Also, in Figure 2, the relationships between exercise and body mass index variables and body image perception and quality of life was generally depicted. The hypothesized model shown in Figure 2 had good fitness indexes. As results show the direct effect of body mass index on quality of life was -0.15 and its indirect and total effect were -0.1 and -0.25, respectively.

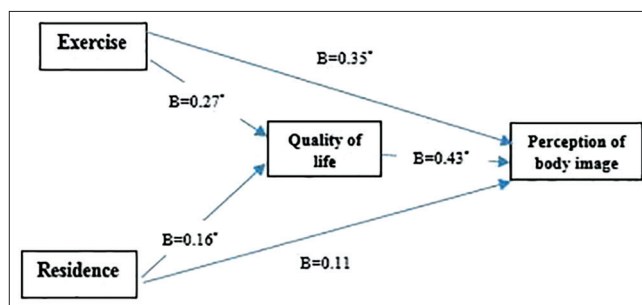


Figure 1: Hypothesized path model for relationship between quality of life and demographic variables with perception of body image * $P < 0.05$

Table 2: Descriptive statistics of quality of life and body image perception indexes

	Mean (SD)	Low number (%)	Moderate number (%)	High number (%)
Quality of life				
Physical health	16.6 (2.23)	6 (1.5)	102 (25.5)	292 (73)
Mental health	16.6 (4.07)	47 (11.8)	216 (54)	137 (34.2)
Quality of life	36.2 (5.54)	6 (1.5)	200 (50)	194 (48.5)
Body image perception				
Body Fat	26.5 (7.47)	87 (11)	176 (36.5)	137 (52.5)
Strength	11.2 (3.98)	87 (21.8)	176 (36.5)	137 (34.3)
Coordination	21.6 (5.48)	21 (5.3)	184 (46)	195 (48.8)
Sports Deserve	11.2 (3.93)	85 (21.3)	181 (45.3)	134 (33.5)
Physical activity	7.6 (4.27)	234 (58.5)	115 (28.7)	51 (12.8)
Self-esteem	18. (3.85)	12 (3)	189 (47.3)	199 (49.8)
Flexibility	10.4 (3.84)	99 (24.8)	212 (53)	89 (22.3)
Health	15.1 (3.29)	20 (5)	64 (16)	316 (79)
Appearance	13.1 (3.55)	26 (6.5)	176 (44)	198 (49.5)
Endurance	9.4 (4.11)	10 (2.5)	282 (70.5)	108 (27)
Body image perception	144.4 (27.58)	10 (2.5)	282 (70.5)	108 (27)

Table 3: Correlation between quality of life and body image perception

Variable	Body image perception	Body fat	Strength	Coordination	Sports deserve	Physical activity	Self-esteem	Flexibility	Health	Appearance	endurance
Quality of life	0.49	0.27	0.33	0.36	0.29	0.26	0.49	0.29	0.39	0.28	0.29
<i>P</i>	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Physical health	0.46	0.31	0.31	0.29	0.26	0.19	0.43	0.23	0.38	0.26	0.29
<i>P</i>	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Mental health	0.42	0.20	0.29	0.34	0.25	0.24	0.44	0.26	0.32	0.25	0.24
<i>P</i>	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001

The results of path analysis showed the positive and direct effect of body image perception on the students' quality of life. By SEM the relationship between the latent variables of quality of life and body image perception was modeled. The fitted model was shown in Figure 3. This model had good fitness indexes. The path coefficient of quality of life and body image perception was 0.68. It confirmed a relatively positive and direct relationship between body image perception and quality of life.

Discussion

The results of the present study showed that the quality of life of those people living outside the dormitory was higher. Since dormitory students reported lower quality of life, it could be stated that, in accordance with family social support, the positive effects of support made by living with the family and the side-effects of lack of support caused by being away from family directly affect people's health. According to a study by Mansour *et al.*, students have

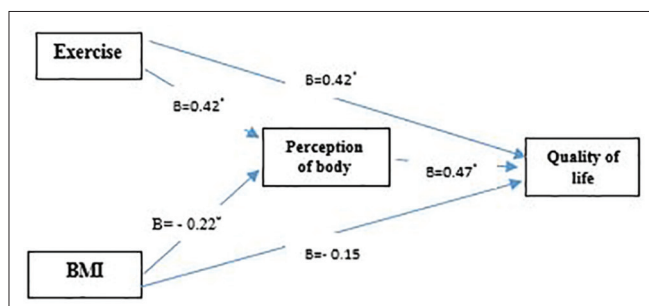


Figure 2: Hypothesized path model for relationship between body image perception and demographic variables with quality of life. * $P < 0.05$

with higher level of income and well-being have a good quality of life.^[16] Also, in present study, it was observed that increasing students' physical activity increased their quality of life. In a study by Hartmann *et al.*, a significant correlation was observed between increased physical activity and psychosocial score of quality of life.^[17] In addition, in the studies by Wu XY, Ohinmaa *et al.* and Sánchez-López *et al.*, a significant relationship was observed between physical activity and quality of life.^[18,19]

Also, in this study, no significant difference was observed between male and female in terms of quality of life. This result was consistent with studies by Berman *et al.* and Spangler *et al.*^[20,21] But, in a study by Baumann *et al.*, it was reported that the quality of life of female students was higher than their male counterparts.^[22]

In the present study, the highest score of quality of life was related to the aspect of physical health. In a study by Demont-Heinrich, it was shown that physical health has a positive role in improving the quality of life.^[23] In a study by Wang *et al.*, the results showed that in the psychological dimension, quality of life score is lower as compared to the physical dimension.^[24]

The present study showed those people who take exercises had higher body image perception. Longitudinal studies have shown that body image perception is of long-term physical effects, so the greater body mass index in adolescence predicts physical dissatisfaction in adulthood.^[25] Also, in a study by Gillen *et al.*, it is shown that there was a significant relationship between high body image perception and lower BMI among men and women.^[26] In addition, in a

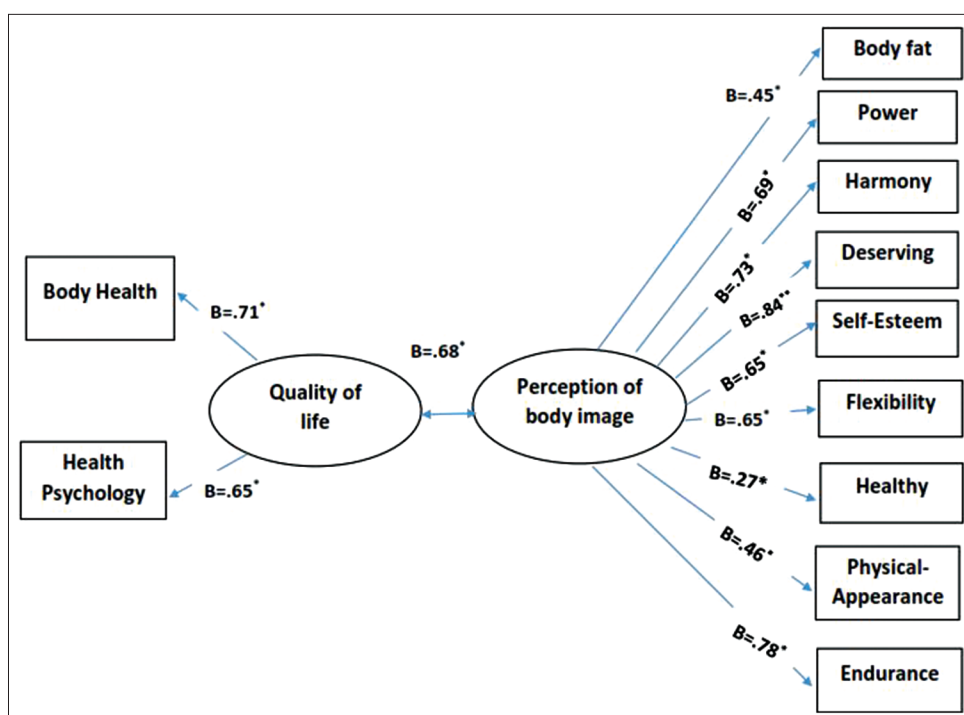


Figure 3: Hypothesized path model for correlation between the latent variables of quality of life and body image perception. * $P < 0.05$, ** $P < 0.001$

study by Duarte *et al.*, it was reported that there is a strong positive relationship between body mass index and physical dissatisfaction.^[27] Taylor *et al.*, in their study, reported that the group who had physical fitness exercises had higher self-worth, self-concept, and self-esteem than the control group.^[28] It was concluded that informing students of their current status can be one of the most important steps to encouraging them to physical activity. Moreover, in the present study which was consistent with the studies conducted by Grossbard *et al.* and Sira *et al.*, there was no significant relationship between male and female in terms of body image perception.^[29,30]

In the present study, the majority of students reported a moderate and good body image perception and also of body fat, coordination, self-esteem, health, appearance, and endurance. In a study by Chen *et al.*, only 20% of the girls were satisfied with their body image, and the average score of satisfaction with body image in assessment of appearance was low.^[31] Self-esteem was a general self-assessment relating to dissatisfaction with appearance (body or face). Those who had high self-esteem evaluated their body positively. This result was consistent with the result of a study by Swami *et al.*^[32] In a study by Dorak, the results showed that there is a significant relationship between self-esteem and body image in athletic teenage girls compared to non-athlete girls.^[33] The stability of this relationship showed that regardless of age or gender, people with lower self-esteem are likely to report their dissatisfaction with their body shape or size. Given that body image seemed to show a vital part of an individual's self-concept, it was not surprising that self-esteem was related to dissatisfaction with the body image; however, as to physical dissatisfaction and self-esteem, the results of longitudinal studies predicted that the teenagers' physical dissatisfaction creates lower self-esteem in a few years later.^[34]

Our result was in agreement with the results of the studies by Harrington *et al.*, Jager *et al.*^[35,36] But, Cash *et al.*, in their study, showed that there was a more significant relationship between quality of life and body image in men compared to women.^[37] In a study by Duarte *et al.*, it was reported that there was a negative and poor correlation between psychological dimension of quality of life and physical dissatisfaction.^[27]

The limitation of present study is the use of questionnaire (SF-12) for quality of life assessment. In this questionnaire, only two physical and psychological aspects of quality of life are investigated and it lacks in social aspects of quality of life. It is better to study the relationship between social aspect of quality of life and body image perception in future studies.

Conclusions

According to the results of present study, satisfaction and dissatisfaction with the body image can be one of the

reasons of having a good and moderate perception of life. In this regard, the mass media can play a major role and be effective in the society. Through advertising, the media impose an unrealistic standard of ideal weight and beauty to the community. It causes teens and young people to feel embarrassed and incompetent about their appearance and weight and consequently, they dissatisfy with their bodies. Therefore, it is possible to increase the students' self-esteem through education to prevent physical impairment in body image, enhance physical satisfaction and promote their mental health, leading to improved quality of life of this important group of society.

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Conflicts of interest

There are no conflicts of interest.

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