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Prevalence of body image concern among schoolgirls aged 12–17 years in Iran

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Abstract:

BACKGROUND/AIM: Adolescent girls' concerns about their body images can negatively affect their social and academic performance. This study aimed to determine the prevalence of body image concern (BIC) in adolescent schoolgirls in Iran and its risk factors.

PATIENTS AND METHODS: This epidemiological study with cross-sectional design was conducted in 2018 on 396 middle schoolgirls aged 12–17 years (mean age = 14 years) living in Khorramabad, Iran. For screening BIC, the Persian version of BIC inventory (BICI) was used. Their birth order, school grade, school type, father's education, and household income were also recorded. Collected data were analyzed in SPSS v. 18 software using descriptive statistics and Chi-square test.

RESULTS: Of 396 girls, 106 (26.8%) had BIC, 89 (84%) reported moderate BIC, and 17 (16%) severe BIC. Their mean BICI score was 40.84 ± 12.93 (out of 42). Most of them reported to spend a significant amount of time checking their appearance in the mirror ($n = 81$, 20.5%) and examining flaws in their appearance ($n = 74$, 18.7%). A few of them were embarrassed to leave the house because of the appearance and avoided from looking at the appearance in the mirror ($n = 6$, 1.5%). There was no significant difference in BIC severity in terms of birth order, school grade, school type, father's education, and household income factors ($P > 0.05$).

CONCLUSION: The prevalence of BIC among schoolgirls in Iran is high. Appropriate therapeutic interventions should be carried out to improve their quality of life, mental health, and self-esteem to reduce the BIC prevalence.

Keywords:

Adolescent, body image, epidemiology, health, schools

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Introduction

Adolescence is a critical period in body image development. Changes in different cultural, social, physical, and psychological aspects that characterize adolescence have interaction with shape and body image between the ages 12 and 18 years.^[1] Demographic factors such as sex, age, and celibacy have been reported to influence body image.^[2] Body image is defined as a person's perception, feelings and thoughts about his/her body, incorporating body size estimation, the evaluation of

body attractiveness, and various emotions associated with body shape and size;^[3] therefore, it can be said that body image concern (BIC) is a multi-dimensional construct encompassing how we perceive, think, feel, and act toward our bodies in terms of size, shape, and general appearance.^[4] BIC is associated with several variables such as weight control, self-esteem, body mass index and depressive symptoms,^[2,3,5-7] eating disorders,^[8] short- and long-term maintenance of physical activity,^[9] experiential avoidance and metacognition beliefs,^[4] sociocultural factors,^[6] and mental health.^[10] Body image dissatisfaction is considered as the primary motivation for

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cosmetic surgery.^[11-13] It also causes depression and anxiety,^[14] lower quality of life,^[15] weight concerns,^[16] and alcohol abuse.^[17]

Recent studies have mostly screened the BIC prevalence in university students.^[2,3,18-21] A few of them have investigated it in school students. In one study conducted in 2010 on adolescent schoolgirls aged 10–16 years in Jordan, 21.2% of them were reported to have BICs.^[22] In another study conducted in 2013 on public school students aged 11–17 years in Brazil, it was reported that 19.5% of the adolescents had BICs, with a prevalence of 26.6% in girls and 10% in boys.^[6] Body image dissatisfaction is higher in females than in males.^[23,24] Adolescent girls' concerns about their body image, due to real or imaginary preoccupation, develop a sense of shame which makes them avoid social situations and thus negatively affects their social and academic performance. Given the physical, psychological, and social consequences of BICs, it is important to identify the factors associated with this disorder. Considering the high prevalence of this disorder in Iran,^[25] the problems that this disorder causes, and the risk factors for adolescents, especially girls, scholars should continue to investigate possible causal variables to further understand and treat BIC. To our knowledge, no epidemiological study in Iran has examined BIC prevalence among school students. Most of the recent epidemiological studies on BIC in Iran have been conducted among college students (aged ≥ 18 years). Considering this limitation and given that BIC prevalence in girls is higher than in boys, this study aimed to determine the prevalence of BIC among schoolgirls aged < 18 years in Iran and its risk factors.

Patients and Methods

This is an epidemiological study with a cross-sectional design. The study population consisted of all middle schoolgirls in Khorramabad, Iran, in 2018. Of these, 396 were selected using a multi-stage stratified cluster random sampling method. For sampling, first, the city was divided into two regions and all girls' middle schools were considered as clusters. Then, from each region, six schools (three nonprivate and three private) were randomly selected, and in each school, one classroom was selected from each grade. From each class ($n = 36$), 11 students aged 12–17 years who had given informed consent to participate in the study were selected randomly and using the random number table. Unwillingness to continue participating in the study and returning incomplete questionnaires were the exclusion criteria. Participants were screened for BIC using the Persian version of BIC inventory (BICI) as well as a demographic form for surveying age, birth order, grade, type of school, father's education, and household income. The BICI is a 19-item, reliable, valid, and user-friendly

tool for assessing dysmorphic concern developed by Littleton *et al.*^[26] It consisted of two factors: the first with 12 items is about dysmorphic appearance concern and the second factor with 7 items is about interference in social functioning due to appearance concerns. Littleton *et al.* reported Cronbach's alpha of 0.92 and 0.76 for these two factors, respectively (total $\alpha = 0.93$). For each item, respondents were asked to rate how often they had the described feeling on 5-point Likert type scale ranged from 1 = Never to 5 = Always. The measure is scored by summing the scores of all items. The total score ranges from 19 to 95 where higher scores represent higher levels of dysmorphic concerns.^[27] The cutoff point for considering BIC as positive was 42. The psychometric properties of this tool have been reported to be satisfactory in the Iranian society.^[11] The BICI was first translated to Persian by Bassak Nejad.^[28] They reported acceptable validity and internal consistency (Cronbach's alpha = 0.73) of its Persian version. Ghadakzadeh *et al.*^[11] also tested the validity and reliability of the Persian BICI items and reported a validity of 85% and Cronbach's alpha of 0.90. Questionnaires were completed by the researcher through interviewing students. Before collecting data, necessary permissions were obtained from related organizations and the study was approved by the Research Ethics Committee of Lorestan University of Medical Sciences (code: IR.LUMS.REC.1397.056). After explaining the study method and objectives, they all signed an informed consent form. They were assured of the confidentiality of their information. Collected data were analyzed in Statistical Package for the Social Sciences (SPSS) v.18 (SPSS Inc., Chicago, IL, USA) software using descriptive statistics (frequency and percentage) and Chi-squared test. The significance level was set at 0.05 ($P < 0.05$).

Results

Participants had a mean age of 14.1 ± 0.99 years (ranged 12–17 years). Most of them (51.5%) were first-born children and first-grade students (34.1%) studying in public schools (51%); most of them had fathers with high school diploma and lower level (49.3%), and household income of most of them was > 30 million Rials (51.8%). Table 1 presents more information about their demographic characteristics. Of the 396 participants, 106 had BIC (26.8%) where 89 (84%) had moderate and 17 (16%) severe BIC. None of them had mild BICs. Their mean score from the BICI was obtained as 40.84 ± 12.93 . Table 2 presents the prevalence of BIC based on the BICI items. As can be seen, most of the participants answered "always" to the question no. 2 ($n = 81, 20.5%$) stating: "I spend a significant amount of time checking my appearance in the mirror" and the question no. 12 ($n = 74, 18.7%$) stating: "I examine flaws in my appearance", while only a few of them responded

Table 1: Characteristics of participants (n=396)

Characteristics	n (%)
Birth order	
1 th	204 (51.5)
2 th	108 (27.3)
3 th	63 (15.9)
4 th and higher	21 (5.3)
Total	396 (100)
Father's education	
High school diploma and lower	195 (49.3)
Bachelor degree	126 (31.8)
Master degree	75 (18.9)
Total	396 (100)
Household income (Rials)	
<20 million	48 (12.1)
20-30 million	143 (36.1)
>30 million	205 (51.8)
Total	396 (100)
Grade	
1 th	135 (34.1)
2 th	127 (32.1)
3 th	134 (33.8)
Total	396 (100)
Type of school	
Public	202 (51)
Private	194 (49)
Total	396 (100)

“always” to the items no. 17 and 19 ($n = 6,1.5\%$) which were related to the embarrassment to leave the house because of the appearance and avoiding from looking at the appearance in the mirror. Over 80% of them had responded “Never” to these two questions.

Table 3 presents statistics of the participants with BIC based on risk factors of birth order, school grade, school type, father's education, and household income. Most of those with severe BIC were first-born child children (14.6%); third-grade students (22.5%) studying at private schools (19%), with household income >30 million rials (20.3%), and their father had high school diploma and lower degree (15.4%). Furthermore, the Chi-square test results presented in Table 2 showed no statistically significant difference in BIC severity between students in terms of birth order ($P = 0.903$), school grade ($P = 0.356$), school type ($P = 0.367$), father's education ($P = 0.976$), and household income ($P = 0.07$). This indicates that these factors have no association with the BIC prevalence ($P > 0.05$).

Discussion

In today's societies where the main beauty goals of adolescent and young people, especially girls, are to be fit and lean, changes caused by puberty put more pressure on them to meet these goals. They spend a lot of time (and money) thinking and concerning about

their body shape. BIC is one's wrong perception, feelings and thoughts of appearance and body which leads to significant distress and/or impairment,^[29] depression and anxiety,^[14] lower quality of life,^[15] weight concerns,^[16] and eating disorders.^[8] So far, various studies have been conducted to determine the prevalence of BIC in adolescents. Its prevalence has been reported differently in various studies. There is no official estimate of the prevalence of BIC, and it is difficult to obtain these estimates since people usually try to hide this disorder. In this epidemiological study, we attempted to estimate the prevalence of BIC among schoolgirls in Iran. The prevalence rate was reported 26.8%, where 89 (84%) had moderate and 17 (16%) severe BIC. This indicates that more than one-fifth of the adolescent girls had BIC which is considerable. In Iran, a few of epidemiological studies have investigated its prevalence among school students. Esnaashari *et al.*^[30] reported body dysmorphic disorder prevalence in high school female students in Yazd city as 7.1%. Safarzade *et al.*^[31] showed that 23.4% of secondary schoolgirls in Gonabad County had body dysmorphic disorder. As can be seen, the reported rate in our study is higher compared to their studies. This can be due to differences in place of residence, study population, educational level, and the awareness level. In our study, participants had 12–17 years old with a mean age of 14 years, while in the studies of Esnaashari *et al.* and Safarzade *et al.*, the mean age of schoolgirls with body image dissatisfaction was 17 and 16 years, respectively. According to the American Psychiatric Association,^[32] the average age at the onset of body shape concerns is 12–13 years. Early onset is related to severity of symptoms, a history of attempted suicide and greater comorbidity, substance abuse, and anxiety and personality disorders.^[33] Most of the recent epidemiological studies on BIC prevalence in Iran have been conducted among university students (aged ≥ 18 years); in the study of Asgari and Amini^[2] on 151 college students (male and female) using the BICI tool for screening in Abhar county, 27.3% had severe BIC. In Moghimian *et al.*'s study,^[19] 34.4% of 360 female university students in Isfahan city had moderate-to-severe BIC. Momeni *et al.*^[20] reported that among 394 medical students in Qazvin city, 27.8% had moderate-to-severe BIC where girls had higher dissatisfaction. In both the studies, students had been evaluated by the Body Shape Questionnaire. Accordingly, it can be said that college students have higher BIC compared to school students which is also consistent with other studies conducted in foreign countries. For example, the results of Thomas *et al.*^[21] in the United Arab Emirates and El Ansari *et al.*^[3] in Egypt support this claim. They indicated that 74.8% and 40% of female university students were dissatisfied with their current estimated body image, respectively. Ferrari *et al.*^[18] in a study in Brazil also reported a high prevalence of body image dissatisfaction among university students (69.5%).

Table 2: Prevalence of body image concern among the schoolgirls based on the body image concern inventory items

<i>n</i>	Item	Never, <i>n</i> (%)	Rarely, <i>n</i> (%)	Sometimes, <i>n</i> (%)	Often, <i>n</i> (%)	Always, <i>n</i> (%)
1	I am dissatisfied with some aspect of my appearance	142 (35.9)	96 (24.2)	78 (19.7)	42 (10.6)	38 (9.6)
2	I spend a significant amount of time checking my appearance in the mirror	65 (16.5)	67 (17)	105 (26.5)	78 (19.8)	81 (20.5)
3	I feel others are speaking negatively of my appearance	182 (46)	93 (23.5)	67 (16.9)	26 (6.6)	28 (7.1)
4	I am reluctant to engage in social activities when my appearance does not meet my satisfaction	163 (41.2)	64 (16.2)	58 (14.6)	45 (11.4)	66 (16.7)
5	I feel there are certain aspects of my appearance that are extremely unattractive	180 (45.5)	101 (25.5)	55 (13.8)	36 (9.1)	24 (6.1)
6	I buy cosmetic products to try to improve my appearance	174 (43.9)	76 (19.2)	67 (16.9)	31 (7.8)	48 (12.2)
7	I seek reassurance from others about my appearance	159 (40.3)	75 (18.9)	56 (14.1)	56 (14.1)	50 (12.6)
8	I feel there are certain aspects of my appearance I would like to change	142 (35.9)	93 (23.5)	67 (16.9)	44 (11.1)	50 (12.6)
9	I am ashamed of some part of my body	250 (63.1)	63 (15.9)	32 (8.1)	22 (5.6)	29 (7.3)
10	I compare my appearance to that of fashion models or others	119 (30)	97 (24.5)	60 (15.2)	54 (13.6)	66 (16.7)
11	I try to camouflage certain flaws in my appearance	123 (31.1)	99 (25)	65 (16.4)	42 (10.6)	67 (16.9)
12	I examine flaws in my appearance	102 (25.8)	105 (26.4)	60 (15.2)	55 (13.9)	74 (18.7)
13	I have bought clothing to hide a certain aspect of my Appearance	154 (38.9)	82 (20.7)	49 (12.4)	48 (12.1)	63 (15.9)
14	I feel others are more physically attractive than me	166 (41.9)	98 (24.7)	69 (17.5)	30 (7.6)	33 (8.3)
15	I have considered consulting/consulted some sort of medical expert regarding flaws in my appearance	239 (60.3)	70 (17.7)	40 (10.1)	22 (5.6)	25 (6.3)
16	I have missed social activities because of my appearance	329 (83.2)	29 (7.3)	18 (4.5)	10 (2.5)	10 (2.5)
17	I have been embarrassed to leave the house because of my appearance	338 (85.4)	31 (7.8)	13 (3.3)	8 (2)	6 (1.5)
18	I fear that others will discover my flaws in appearance	208 (52.5)	108 (27.2)	30 (7.6)	20 (5.1)	30 (7.6)
19	I have avoided looking at my appearance in the mirror	353 (89.1)	20 (5.1)	12 (3.0)	5 (1.3)	6 (1.5)

Table 3: Prevalence of body image concern among the schoolgirls based on the severity level categorized by risk factors

Variable	BIC		Total	Test results ^a
	Moderate	Severe		
Birth order, <i>n</i> (%)				
1 th	41 (85.4)	7 (14.6)	48 (100)	<i>R</i> =0.571, <i>df</i> =3, Sig.=0.903
2 th	32 (84.2)	6 (15.8)	38 (100)	
3 th	10 (76.9)	3 (23.1)	13 (100)	
4 th and higher	6 (85.7)	1 (14.3)	7 (100)	
Type of school				
Nonprivate	42 (87.5)	6 (12.5)	48 (100)	<i>R</i> =0.815, <i>df</i> =1, Sig.=0.367
Private	47 (81)	11 (19)	58 (100)	
Grade				
1 th	33 (86.8)	5 (13.2)	38 (100)	<i>R</i> =2.064, <i>df</i> =2, Sig.=0.356
2 th	25 (89.3)	3 (10.7)	28 (100)	
3 th	31 (77.5)	9 (22.5)	40 (100)	
Household income				
<20 million	13 (76.5)	4 (23.5)	17 (100)	<i>R</i> =5.115, <i>df</i> =2, Sig.=0.077
20-30 million	29 (96.7)	1 (3.3)	30 (100)	
>30 million	47 (79.7)	12 (20.3)	59 (100)	
Father's education				
High school diploma and lower	44 (84.6)	8 (15.4)	52 (100)	<i>R</i> =0.048, <i>df</i> =2, Sig.=0.976
Bachelor degree	24 (82.8)	5 (17.2)	29 (100)	
Master degree	21 (84)	4 (16)	25 (100)	

^aChi-square test, *R*=Pearson Chi-square. BIC=Body image concern

Among studies conducted on school students in other countries, Mousa *et al.*^[22] evaluated adolescent schoolgirls aged 10–16 years in Jordan and reported that 21.2% of them had BIC. In the study of Santana *et al.*,^[6] 26.6% of public schoolgirls aged 11–17 years in Brazil had BIC.

Both the studies used the Body Shape Questionnaire for screening. Compared to our study where schoolgirls were assessed by the BICI tool, it can be said that BIC prevalence among schoolgirls in Iran is higher than in these countries. This can be because of differences in the

study population, screening tool, living environment, and sociocultural factors. Our results revealed that a father's education and household income, birth order, school grade, and school type had no significant association with having BIC. This is consistent with the results of Brito *et al.*^[24] In their study in Brazil on the prevalence and severity of body dysmorphic disorder symptoms in patients seeking abdominoplasty (mean age = 38 years), no statistically significant difference was found between groups with respect to their sociodemographic characteristics including educational level. Regarding household income, birth order, school grade, and school type, no similar study was found to compare them with our results. Concerns over body image among school students who are human capital of a society indicate a challenge to their mental and physical health. Since they play a vital and undeniable role in the future development of a country, their physical and mental health should be taken into account. Adolescents with body image dissatisfaction should be identified and treated properly to improve their social, occupational, and academic status. Based on the results of this study, there is a need for future studies on preventive measures to reduce the BIC of school students, especially girls.

There were some limitations in conducting this study. For example, we used a self-report tool for assessing samples. Samples were only adolescent girls and there were some difficulties in the diagnosis of their BIC. Psychological state of samples during the completion of the questionnaires was another limitation that can affect the responses. Furthermore, no comparison was conducted between those with and without BIC. Further studies are recommended to use different tools for screening, on other gender groups (boys), and in other cities of Iran and compare the patients with controls.

Conclusion

It was found out that BIC prevalence was high among schoolgirls aged 12–17 years in Iran. It is recommended that appropriate therapeutic interventions such as metacognitive interventions, individual therapies, or cognitive-behavioral therapies should be designed for them to improve their self-esteem. It is also recommended that the cultural factors involved in the diversity of the results should be identified.

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Conflicts of interest

There are no conflicts of interest.

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