

The Predictive Role of Body Image on Attitude toward Fertility and Childbearing in Mothers with Two to Four Years Old Children

Abstract

Background: One of the key factors affecting attitudes toward childbearing is women's physical fitness. Dissatisfaction with body image may affect mother's and child's physical and mental health. Therefore, this study aimed to determine the predictive role of body image in shaping attitudes toward childbearing. **Materials and Methods:** This descriptive-predictive study was conducted on 265 mothers with children aged 2–4 years who visited the comprehensive healthcare centers in Kashan, Iran, in 2023–24. The sampling method was multistage clustering. A demographics questionnaire, Söderberg's Attitudes to Fertility and Childbearing Scale, and Littleton's Body Image Concern Inventory were used for data collection. The validity and reliability of the questionnaires were confirmed. Pearson's correlation coefficient and multiple linear regression analysis were used for data analysis in SPSS. The significance level was set at $p < 0.05$. **Results:** According to the results, a one-unit increase in women's body image concerns was associated with a 0.309-point decrease in their positive attitudes toward fertility and childbearing. Additionally, there were significant negative correlations between body image concern and the dimensions of attitudes toward fertility and childbearing: the child as a pillar of life ($r = -0.20$, $p < 0.001$), the child as an obstacle to a relationship ($r = -0.33$, $p < 0.001$), postponing childbearing to the future ($r = -0.33$, $p < 0.001$), and childbearing prerequisites ($r = -0.02$, $p < 0.001$). **Conclusions:** The study findings corroborated the predictive role of body image in shaping attitudes toward fertility and childbearing. Appropriate interventions should be developed to enhance women's body image during pregnancy and identify and control the factors negatively affecting it.

Keywords: Body image, fertility, reproductive behavior

Introduction

The decision to have a child is a major event in a couple's life, which can affect various aspects of life, for example, family health, economic status, and wellbeing. This decision is greatly influenced by social, political, cultural, and economic factors in addition to both men's and women's attitudes and awareness.^[1] The family structure and traits in Iranian society have undergone significant transformations over the past 50 years. These transformations include the shift from extended families to nuclear families, as well as a notable decline in fertility rates.^[2] The fertility rate in Iran has declined across all age cohorts as this country has experienced a fertility rate lower than the replacement level (*i.e.*, fewer than two children per woman) over the past 20 years. This has led to population aging and expedited the decline of the working-age population, causing significant adverse effects on economic development in Iran.^[3]

The key factors affecting the fertility rate include women's attitudes toward fertility and their power in the family structure, the family's economic status, the rising age of marriage, and women's physical fitness and educational attainment. The fertility rate in Iranian society has decreased as a result of various economic, social, cultural, psychological, and health factors influencing women's attitudes toward childbearing.^[4] Alidousti and Mobasheri identified incorrect attitude toward childbearing as a factor influencing fertility and contributing to the decline in the birth rate.^[5] An important factor affecting the fertility rate is mother's body image as the physical transformations resulting from pregnancy and childbirth deviate women from their desired physique. These changes may influence the perspectives of individuals who struggle to adjust to their new body forms and perceive their body images. These changes also have

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detrimental effects and lead to feelings of dissatisfaction with the body image.^[6] A negative self-perception can result in body dissatisfaction and unappealing feelings, ultimately leading to an excessive focus on a specific body part to the point of dysfunction. The misconception of body image can result in both physical and psychological issues. It can also cause discord in romantic partnerships and foster a widespread sense of discontentment with one's physical appearance. This is due to its correlation with different conditions such as diminished self-worth, depression, and heightened levels of stress and anxiety. In addition to a sense of dissatisfaction, it is regarded as a serious concern.^[7] Different studies have investigated the effects of body image on mothers during pregnancy and childbirth. Solgi *et al.*^[8] analyzed the relationships of the body image concern and cognitive emotion regulation strategies with the fear of childbirth in primiparous women. Their findings indicated a positive correlation between maternal body image concerns and the adoption of negative cognitive emotion regulation strategies, resulting in an intensified fear of childbearing. Garrusi *et al.*^[9] analyzed the relationships of depression and self-esteem with body image in pregnant women and found a significant relationship between these variables.

Many studies have highlighted the key role of body image in causing mental distress among individuals, particularly during and after pregnancy. The potential effect of body image on women's attitudes toward fertility and childbearing has also been examined with a focus on the effect of dissatisfaction with body image on a mother's and her child's physical and mental health.

There is still no clear picture of people's attitudes toward childbearing in Iran. In other words, there is a gap in the domestic literature regarding the factors affecting attitudes toward childbearing, especially body image. Therefore, this study aims to analyze women's attitudes toward fertility and childbearing based on their body image.

Materials and Methods

This descriptive-predictive study was conducted on 265 mothers with children aged 2–4 years who visited the comprehensive healthcare centers in Kashan, Iran, in 2023–24. The multistage cluster sampling method was employed to select participants who met the following entry criteria: Iranian women aged 18–45 years with at least basic literacy in reading and writing, and willingness to participate in the study. Additional exclusion criteria included: pregnancy contraindications, current use of neuropsychiatric drugs, history of thromboembolism in a recent pregnancy, history of high-risk pregnancies, premature rupture of the fetal membranes, self-reported mental illnesses, conception via Assisted Reproductive Technology (ART), or underlying conditions associated with infertility. Incomplete questionnaire responses constituted an exclusion criterion for this study. A multistage cluster sampling method was employed for participant selection. Kashan city was stratified into five

districts, with the sample size distributed equally across these strata (53 participants per district). Within each district, healthcare centers were designated as clusters, and one center was randomly selected from each district. Participants were recruited consecutively from the selected centers, with approximately 30 individuals enrolled per center. The minimum required sample size was calculated as 26, based on a 95% confidence level, 90% statistical power, and an assumed minimum correlation coefficient of 0.2 between key variables (body image, quality of couples' relationships, and attitudes toward fertility). The correlation threshold ensured the detection of statistically significant relationships.

Prior to participation, individuals provided informed consent and anonymously completed the self-administered questionnaire, including a demographics form and researcher-designed measurement tools. The questionnaires consisted of two sections. The first part collected personal and demographic data, including age, educational level, marital status, occupation (both participant and spouse), self-reported height and weight, and perceived adequacy of family's monthly income for living expenses. The second section focused on obstetric history, including pregnancy and childbirth records. The mother's weight and height were measured using calibrated instruments (a standard scale and meter), and the body mass index (weight in kilograms divided by the square of height in meters) was calculated. Body image concerns and attitudes toward fertility were assessed using validated instruments: *Söderberg's Attitudes toward Fertility and Childbearing Scale (AFCS)*, *Littleton's Body Image Concern Inventory (BICI)*. Participants self-administered these tools anonymously, completing all measures within approximately 30 minutes.

The *Body Image Concern Inventory (BICI)* was developed by Littleton *et al.*^[10] with 19 items, each of which scored on a 5-point scale (from 1: never to 5: always). This tool encompasses two key elements, the first of which concerns a sense of discontentment and a feeling of self-consciousness regarding one's physical appearance leading to the evaluation and covering up of perceived flaws. The second factor measures the extent to which concern about one's appearance affects a person's social performance. The total score of this tool ranges between 19 and 95. The following data are used for interpretation: minimal to no body image concerns (19–37), mild body image concerns (38–52), moderate body image concerns (53–69), and severe body image concerns (70–95). Basak-Nejad and Ghaffari^[11] assessed the Persian version of this tool and reported a Cronbach's alpha of 0.95, indicating an acceptable level of reliability. The Persian version of the questionnaire was standardized by Basak-nejad and Ghaffari, and the English version was done by Littleton *et al.* The reliability of this test was reported as 95% and 93%, respectively, based on internal consistency using Cronbach's alpha method.

The *Attitudes toward Fertility and Childbearing Scale (AFCS)* was developed by Söderberg *et al.*^[12] in 2013. Baezzat *et al.*^[13]

developed the Persian version of AFCS that consists of 23 items in four subscales, that is, the child as a pillar of life, the child as an obstacle to a relationship, postponing childbearing to the future, and childbearing prerequisites. These items are scored on a 5-point scale, whereas items 10–21 and 25 are scored inversely. The Cronbach's alpha reported for this tool ranges between 0.80 and 0.90. This figure was obtained at 0.79 for the whole scale and ranged from 0.74 to 0.86 for its subscales. The tool is classified with a score range of 9 to 45. The higher the score of the items of this tool, the better the quality of the couples' relationship. The reliability of the whole scale was obtained using a Cronbach's alpha coefficient of 0.79. Data analysis was implemented in SPSS 24. The normal distribution of data was examined by the Kolmogorov–Smirnov test. Descriptive statistics (*i.e.*, relative frequency, mean, and standard deviation) and inferential statistics (*i.e.*, Chi-square test, independent *t*-test, Pearson and Spearman correlation coefficient, ANOVA, Scheffé test, and Fisher's exact test) were then employed for data analysis. Moreover, multiple linear regression analysis was conducted to predict attitudes toward fertility and childbearing. The significance level was considered $p < 0.05$ in all analyses.

Ethical considerations

The research project was approved by the Faculty of Nursing and Midwifery, Iran University of Medical Sciences, and Kashan University of Medical Sciences (ethics code. IR.IUMS.REC.1402.366). Prior to the participation, all individuals were informed of the study's objectives and assured of the confidentiality of their data. Written informed consent was obtained from each participant following a detailed explanation of the research purpose and procedures. Enrolment occurred voluntarily, with adherence to ethical protocols ensuring participants' rights and autonomy throughout the study.

Results

There were 265 women in this study. The mean (SD) age of participants was 32.80 (5.27) years, and the mean (SD) body mass index (BMI) of participants was 25.39 (3.37). The data also showed that 44.50% of the participants had high-school diplomas, and 53.80% of them reported sufficient family incomes. Most participants (84.20%) had experienced unwanted pregnancy, and 72.90% of them had got pregnant only once. Table 1 presents the other demographic data.

As shown in Table 2, the subscale measuring concern about appearance interfering with daily functioning (mean [SD] of 2.33 [0.78]) demonstrated higher scores than the subscale assessing dissatisfaction and embarrassment with physical appearance (mean [SD] of 2.01 [0.67]) [Table 2].

Multiple linear regression analysis revealed that both body image concerns and couples' relationship quality significantly predicted attitudes toward fertility. According to the model, it could be concluded that every one-unit increase in body image concerns decreases the attitudes toward fertility by

Table 1 : Demographic characteristics of mothers participating in the research

	Individual profile	Percent	Abundance
Child's age (years)	3-2	34.00	90
	4-3	52.50	86
	5-4	43.60	89
	Total	100.00	265
Type of delivery	Cesarean section	50.60	134
	Natural childbirth	49.40	131
	Total	100.00	265
Mother's occupation*	Housewife.	83.40	221
	Employee.	9.10	24
	Other	7.50	20
	Total	100.00	265
Father's job**	Manual worker.	32.50	86
	Employee.	12.10	32
	Other	5.70	15
	Freelance job	49.80	132
	Total	100.00	265
Fear of Body image	Lack of fear of body image (less than 37)	38.90	103
	Low (38-52)	42.60	113
	Medium (53-69)	17.40	46
	High (above 70)	1.10	3
	Total	100.00	265
History of Breastfeeding mother	Under 6 months	8.70	23
	7-12 months	7.50	20
	13 and above	83.80	222
	Total	100.00	265

0.30 units. Conversely, a one-unit improvement in couples' relationship quality is associated with a 0.79-unit increase in positive attitudes toward fertility [Table 3].

The linear regression analysis was conducted to identify predictors of attitudes toward fertility and childbearing. The model explained 20% of the variance in these attitudes (coefficient of determination = 0.201), with body image emerging as a significant predictor ($p < 0.001$). Based on the model's coefficients, a one-unit increase in body image concerns was associated with a 0.30-unit decrease in positive attitudes toward fertility and childbearing [Table 3]. The results of Pearson's correlation coefficient revealed a significant relationship between body image and attitudes toward fertility and childbearing at a 99% confidence level. In addition, there were negative significant correlations between body image and different dimensions of women's attitude toward fertility and childbearing, that is, the child as a pillar of life ($r = -0.20$, $p < 0.001$), the child as an obstacle to a relationship ($r = -0.33$, $p < 0.001$), postponing childbearing to the future ($r = -0.33$, $p < 0.001$), and childbearing prerequisites ($r = -0.02$, $p < 0.001$). The results also demonstrated the negative significant correlations of body image and its dimensions with attitudes toward fertility and childbearing. In other words, as scores for body image concerns (and their subscales) increased, mean scores for positive attitudes toward

fertility (and their dimensions) decreased. This finding implies that a heightened preoccupation with physical appearance may correspond to diminished enthusiasm for childbearing image [Table 4].

Discussion

This study analyzed the role of body image in predicting attitudes toward fertility and childbearing. The findings suggested that improving one's body image enhanced one's attitudes toward fertility and childbearing.

The study results indicated that wanted pregnancy could infuse a positive attitude toward childbearing. This finding is consistent with the results reported by Khadivzadeh *et al.*,^[14] who showed that wanted pregnancy would foster a positive attitude toward pregnancy among mothers. According to these results, when parents actively desire to have a child, they can take proactive measures to address potential factors that can be modified, for example, managing the mother's health status before conception. Additionally, factors like employment and financial stability can be better prepared for, alleviating stress during pregnancy and improving attitudes among mothers.

The study results showed no significant relationship between monthly income adequacy and attitudes toward fertility and childbearing ($p = 0.296$). Previous studies have reported contradictory results regarding the effects of demographic variables, especially economic status, on attitudes toward fertility and childbearing because there are challenges and disagreements about the effects of socioeconomic status on attitudes toward fertility and childbearing. In this regard, the results of this study are not consistent with the findings reported by some previous researchers, for example, Ghaffari *et al.* (2020),^[15] but consistent with some other studies, for example, the findings reported by Piltan *et al.*^[16] This result aligns with Becker's perspective, which posits that increasing women's wages can exert a detrimental effect on their desire for childbearing.^[17] Additionally, the normative theory of Cleland and Wilson holds that in countries where fertility has declined, the attitudes and practices that result in fertility limitation are initially adopted by urban populations that are more prosperous, educated, and successful.^[18] This phenomenon subsequently spreads to middle-class groups with lower status and rural areas.^[16] In other words, economic factors are not the sole determinants of attitudes toward fertility and childbearing. However, there

Table 2: Numerical indicators of body image in mothers with 2- to 4-year-old children

Body image and its dimensions	Minimal	Maximum	Mean (SD)	Based on 1 to 5		
				Mean (SD)	Maximum	Minimal
Dissatisfaction and embarrassment of one's appearance (11-55)	11	41	22.07 (7/39)	2.01 (0/67)	3.73	1
Interference level of worry about appearance (40-8)	8	36	18.70 (6/28)	2.33 (0/78)	4.5	1
body image (19-95)	19	73	40.77 (12/81)	2.14 (0.67)	3.84	1

Table 3: The results of linear regression of predicting attitude towards fertility based on body image in mothers with two- to four-year-old children

Independent variables	Model coefficient	Standard coefficient	p	Confidence interval	R ² *
Constant	63.40	-	<0.001	(76.66,50.13)	0.201
body image	0.30-	0.26-	<0.001	(0.17-,0.43-)	

*Modification coefficient

Table 4: Correlation of attitude towards having children and its dimensions with body image and its dimensions in mothers with two to four year old children

Attitude towards fertility and having children and its dimensions	Body image and its dimensions		
	Body image	Dissatisfaction and embarrassment of one's appearance.	Dissatisfaction and embarrassment of one's appearance
A child as a pillar of life.	$r=-0.20$ $p=0.001$	$r=0.21$ - $p=0.001$	$r=0.16$ - $p=0.006$
A child as an obstacle.	$r=-0.33$ $p<0.001$	$r=-0.35$ $p<0.001$	$r=-0.32$ $p<0.001$
Postponing fertility to the future	$r=-0.33$ $p<0.001$	$r=-0.31$ $p<0.001$	$r=-0.30$ $p<0.001$
Fertility requires the achievement of prerequisites	$r=-0.20$ $p=0.001$	$r=-0.22$ $p<0.001$	$r=-0.10$ $p=0.10$
Attitude towards fertility and having children	$r=-0.34$ $p<0.001$	$r=-0.33$ $p<0.001$	* $r=-0.31$ ** $p<0.001$

*=Pearson's correlation coefficient. **=significant level

is a need for further comprehensive studies to address this factor in conjunction with other influential factors.

In this study, the mean (SD) body image score among participants was 40.77 (12.80). This finding aligns closely with the results reported by Abadi *et al.*,^[19] who examined the impact of acceptance and commitment therapy (ACT) on depression, self-esteem, and body image concerns in primiparous women living in Kashan, Iran. Their study reported a mean (SD) body image score of 41.38 (4.33) in the control group and 34.07 (4.46) in the test group. In another study, Solgi *et al.*^[8] analyzed the relationship between fear of body image and cognitive emotion regulation strategies, and fear of childbirth in primiparous women. Their findings demonstrated a higher mean (SD) body image score of 51.78 (3.46) compared to the value observed in the current study. This discrepancy can be attributed to the distinct target populations. In pregnant women, physical changes associated with childbirth and breastfeeding emerge after giving birth, resulting in a higher mean score of body image compared to postpartum women and mothers with children.

This study showed a negative significant correlation between attitudes toward fertility and childbearing and body image, which is consistent with the findings reported by Taghvayi *et al.*,^[20] who emphasized the role of body image in predicting attitudes toward fertility and childbearing and body image.

The study results are also consistent with the findings reported by Kaur *et al.*,^[21] who found a significant relationship between attitudes toward body image and planned pregnancy ($p < 0.05$). The majority of participants exhibited a pessimistic attitude toward their body image during the postpartum period. The key determinants that significantly impacted women's attitudes toward their body image during this period were their occupational status, BMI, planned pregnancy, and breastfeeding status. In the postpartum period, more than half of the women (63.30%) exhibited a negative attitude toward their bodies, whereas 36.70% of the women had a positive attitude.

Studies have shown that reproductive behavior has been greatly influenced by body image management. There is an inverse relationship between women's attention to their appearance and their fertility; the women who focus on their appearance more experience smaller rates of fertility and vice versa. These findings are consistent with the results reported by Mahmoudian *et al.*,^[22] who reported that body image and body appearance management negatively affect reproductive behavior.

Mahmudian *et al.*^[23] (2012) analyzed the relationship between women and low fertility behavior. The results indicated that body management, body appearance, and body image management had significant impacts on reproductive behavior. However, body fitness management did not show a significant effect. The results indicate that individuals who prioritize their physical appearance have

less desire for childbearing than those who prioritize their health and fitness. Additionally, women's perspectives regarding fertility are influenced by their body image and fitness management. If women prioritize their fitness higher, their fertility will decline. By contrast, women's inattention to fitness will increase their fertility. The results of these two studies were comparable to those of the most recent study as they were conducted on women of reproductive age in the same research community.

The findings of the reviewed studies indicate that women's attitudes toward fertility, childbearing, and breastfeeding are correlated with their body image. In other words, women's fertility declines when they pay further attention to their bodies. By contrast, women's inattention to their bodies will increase their fertility.

Giddens argues that women are particularly scrutinized for their physical and esthetic attributes, and their feelings of shame regarding their bodies are directly correlated with societal norms. The main reasons for this were enumerated by him as follows. Initially, societal expectations for women prioritize physical attractiveness to a greater extent. Furthermore, the prevailing societal perception of an ideal woman emphasizes thinness over muscularity. Additionally, despite women's increased participation in the social sphere compared to previous times, they continue to be evaluated based on their accomplishments.^[9,14]

The findings reported by Dorahaki *et al.* and Ruth Zielinski *et al.*^[24,25] are not consistent with the results of this study. This can be attributed to the specific questionnaires employed in assessing body image changes and religious matters.

Attitudes toward fertility and childbearing are influenced by various factors, for example, political, economic, social, and personal factors. Therefore, it is not easy to address all the factors affecting attitudes toward fertility and childbearing. The sampling method used to select participants may result in a study sample that does not accurately represent the entire population. Furthermore, the participants allocated their time to the researchers based on their level of busyness and willingness to partake in the interview. Occasionally, due to their hectic schedules, they did not disclose all the relevant information regarding the factors that influence their attitudes toward childbearing. Occasionally, the mother's attention was diverted by the presence of the child, leading to a lack of focus when answering questions at the health center. Therefore, the participants were sometimes allowed to complete the questionnaires at home or in a tranquil room inside the healthcare center. Moreover, the scarcity of studies on body satisfaction and body image in Iran, particularly among postpartum women, hindered the comparison of the study findings with existing literature. As a result, both descriptive and analytical studies must be conducted on various cohorts.

Conclusion

Ultimately, while the fertility rate in Iran is not currently

at a critically high level like in certain European countries, strategic and sustainable measures must be developed to sustain the fertility rate. This includes implementing effective economic social and cultural policies that promote balanced childbearing. These policies should encompass both micro- and macroeconomic levels, as well as cultural and social actions. Conversely, contemporary factors such as societal attitudes toward body image and fitness, as well as broader cultural and social effects at a global scale, play pivotal roles in shaping the motivations and choices surrounding parenthood in modern times. One of the most challenging aspects of planning may be the modification and manipulation of this space and its common and influential ideas and concepts. Therefore, educating families on the advantages and disadvantages of having the right number of children could be really effective.

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Conflicts of interest

Nothing to declare.

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