



# Body Image Satisfaction as a Psychological Reaction to Age-Related Developmental Changes Among Middle-Aged Women in Saudi Arabia

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**Abstract.** Middle-aged women (40–65 years old) experience several bio-psych-social changes that may impact how they feel about themselves. The desire to achieve the perfect body image may make women go through several physical and psychological problems, such as experiencing an eating disorder, having low self-esteem, and low self-confidence. This study aims to investigate body image satisfaction as a psychological reaction to age-related developmental changes among middle-aged women in Saudi Arabia. Descriptive design was used to collect responses from Saudi Arabian women between September and February 2021 using a self-report questionnaire. It consisted of the demographics section, Stunkard Figure Rating Scale, and Perceived Stress Scale. Data collection was conducted online through social media platforms. One hundred and eighteen middle-aged women completed the survey. Most participants were dissatisfied with their body image and reported moderate levels of perceived stress. The paired-sample *t*-test indicated that middle-aged women were more likely to have a perceived body image that was thinner than their actual body image ( $t = 13.581, p \leq 0.0001$ ). Years of education ( $r = -0.22, p\text{-value} = .02$ ), having a chronic disease ( $r = 0.24, p\text{-value} = .01$ ), and body image satisfaction ( $r = -0.26, p\text{-value} = .005$ ) were significantly correlated with perceived stress. Age, years of education, and perceived stress were significantly impacting body image satisfaction. The increase in age (Risk = .473), educational level (Risk = .51), and perceived stress level (Risk = .59) decrease the likelihood of body image satisfaction. Developmental changes make it essential for nurses to develop comprehensive preventive programs that consider all biopsychosocial changes that middle-aged women undergo.

**Keywords:** Body Image Satisfaction · Nursing · Perceived Stress · Middle-Aged Women

## 1 Introduction

The most frequently used definition describes middle-aged adults as being between 40–65 years old. This period of the age is a transitional period in people's life. Women experience various physiological, psychological, and social changes during this period,

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which may impact their biopsychosocial health. The most common physical changes that occur during this period are changes in physical appearance, changes in mobility, changes in reproductive system and sexuality, and changes in health status [1]. Psychosocial changes occur in conjunction with physical changes during middle adulthood. Middle-aged women fulfill multiple social roles in middle age with family and work being the most central roles. They focus their goals on their children's future and societal engagement and play an active role in making the world a better place for future generations [1]. Along with the biopsychosocial alterations, many chronic diseases such as cardiovascular diseases, diabetes, osteoporosis, obesity and cancer increase when women reach middle age. The reasons for the high prevalence of health-related problems in middle-aged women are multi-factorial and some issues are still controversial.

Body image is defined as a perception of oneself, or the change of his/her view towards self, which may impel a person to retain or alter his or her body part. Perceived body image is dynamic and ever-changing throughout the lifespan. People tend to move along a continuum of how they perceive themselves at various stages of life, such as when they age or gain or lose weight. The risk of disturbed body image affects how people feel about themselves and affects external presentation and expression. They may be prone to modification, including altering behaviors to manage their appearance. A systematic review conducted by Qureshi, Bashir, Ghayas and Ansari [2] revealed that the desire to achieve the perfect body image might make women go through several physical and psychological problems such as experiencing an eating disorder, low self-esteem, depression, and low self-confidence. Although the impact of developmental changes on middle-aged women's health perceptions and health experiences have been established in the literature, no studies published to date focused on body image satisfaction as a psychological reaction to age-related developmental changes among middle-aged women.

Therefore, this study aims to investigate body image satisfaction as a psychological reaction to age-related developmental changes among middle-aged women in Saudi Arabia. There were two main research questions: Is there a relationship between age-related developmental changes (age, years of education, employment status, family roles, menstruation status, and chronic disease, perceived stress) and body-image satisfaction among middle-aged women Saudi women? And do age-related developmental changes predict body image satisfaction among this sample?

## 2 Methods

This study employed a cross-sectional, correlational, descriptive design. Through convenience sampling, 118 middle-aged women from the Jazan region participated in this study. The sample size was determined using the G-Power software. The inclusion criteria were women aged 40–65 years living in SA. Data were collected from September 02, 2020, to February 15, 2021. A 15–25 min survey was conducted online by distributing the link through the WhatsApp social networking site and was available in Arabic.

The survey included three sections: the demographics section, Stunkard Figure Rating Scale, and the Perceived Stress Scale (PSS). Demographic data and perceived stress measure age-related developmental changes, including age, menstruation status, family

roles, job status, years of education, chronic disease, and perceived stress. These variables were measured on categorical scales, except age and years of education, which were measured using an interval scale.

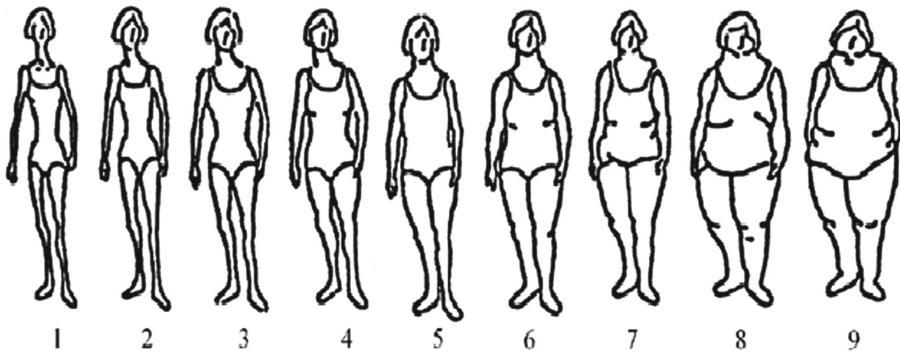
Perceived stress was measured using the PSS. It measures the personal perception of stress [3]. This scale asks participants about their feelings during the previous month. The women were asked how often they felt a certain way in each question. Total scores were calculated by reversing the responses (e.g., 0 = 4, 1 = 3, 2 = 2, 3 = 1, and 4 = 0) to the four positively stated items (items 4, 5, 7, and 8), and then summing all the scale items.

Body image satisfaction is defined as the perceived actual body size minus the perceived ideal body size [4]. The FRS was used to measure body image perception (Fig. 1). The FRS is a rating scale comprising nine silhouettes of women ranging from extremely underweight silhouettes (1) to extremely obese silhouettes (9).

Participants were asked to identify the figure representing their current body image and then identify figures they would prefer. A score of 0 or  $\pm 1$  was considered body image satisfaction and a score of  $\pm 2$  or more was considered body image dissatisfaction.

Ethical approval was obtained from Jazan University before the recruitment process began in April 2020. A brief introduction to the study was provided in the cover letter of the survey, and informed consent was required to answer the survey questions. Participation in the study was optional and anonymous.

Data analysis was conducted using IBM SPSS Statistics (V25.0). A one-sample *t*-test was used to estimate the 95% confidence interval and population means, and a paired-sample *t*-test was used to compare perceived body image and preferred body image means. The two-tailed Pearson's *r* correlation test was used at an  $\alpha$  of .05, to assess the direction of the association between age-related developmental changes variables and body image satisfaction. Chi-Square test was performed to estimate the magnitude of the association between the same variables.



**Fig. 1.** Stunkard Figure Rating Scale (FRS)

### 3 Results

#### 3.1 Sample Characteristics

The average age was 44.64 (5.12) years. Most of the women were from Jazan city (33.1%), married (70.3%), employed (55.1%), and lived in their own house (73.73%), with the average years of education being 13.52 (6.78) years. Most participants reported having children (72.9%), with an average of 4.28 (2.92) children. The average number of people in the household was 5.97 (3.54). Table 1 presents the complete description of the participants.

Most participants underwent their latest menstruation cycle within the previous three months (76.3%) and reported having a family history of chronic disease (71.2%). Less than half of the patients (44.1%) had at least one chronic disease, the most common being diabetes (16.9%), rheumatoid arthritis (12.7%), and hypertension (11.9%). Most participants were dissatisfied with their body image (74.6%) and reported moderate levels of perceived stress (mean = 17.90, SD = 6.87).

Regarding family roles, less than one-third of the participants (30.5%) had stressful family roles, most of which were homemakers (57.6%). This was followed by caregiving for their children (37.3%). Most participants were dissatisfied with their body image

**Table 1.** Sample characteristics (N = 118)

Variable	Mean (SD)
Age	44.64 (5.12)
Years of Education	13.52 (6.78)
Number of people in the household	5.97 (3.54)
Number of children	4.28 (2.92)
Variable	Frequency (Percent)
Have Children	86 (72.9)
Have used any medical contraceptives	61 (51.7)
Marital Status:	
Single	17 (14.4)
Married	83 (70.3)
Separated	4 (3.4)
Divorced	9 (7.6)
Widow	5 (4.2)
Employment status	
Yes	65 (55.1)
No	53 (44.9)
Monthly Income:	
Under 5,000 SAR	27 (22.9)
5,000–9,999 SAR	23 (19.5)
10,000–14,999 SAR	24 (20.3)
15,000–19,999 SAR	16 (13.6)
≥20,000 SAR	5 (4.2)
Prefer not to answer	23 (19.5)
Housing	
Owning	87 (73.73)
Renting	26 (22.03)
Other	5 (4.24)

(74.6%) and reported moderate levels of perceived stress (mean = 17.90, SD = 6.87). Additionally, the paired-sample *t*-test indicated that middle-aged women in this study were more likely to have a perceived body image that was thinner than their actual body image ( $t = 13.581, p \leq 0.0001$ ).

Tables 2 and 3 provide more detailed information on age-related developmental changes, perceived stress, and body image satisfaction.

**Table 2.** Age-related developmental changes ( $N = 118$ )

Variables	Frequency	Percent
Have a family history of chronic disease	84	71.2
Have been diagnosed with a chronic disease	52	44.1
Have a previous medical history of:		
Pregnancy loss, stillbirth, or miscarriage	52	44.1
Diabetes	20	16.9
Rheumatoid arthritis	15	12.7
Gestational diabetes	15	12.7
Gestational hypertension	15	12.7
Hypertension	14	11.9
High cholesterol level	8	6.8
Depression or anxiety	8	6.8
Sickle cell anemia	7	5.9
Violence or abuse (physical, sexual, or emotional)	5	4.2
Thyroid disorder	4	3.4
Thalassemia	3	2.5
Preeclampsia	3	2.5
Gastrointestinal disorder	2	1.7
Renal or liver disease	2	1.7
Any cancer	1	0.8
Chronic pulmonary disease	1	0.8
Last Menstrual Period:		
This month, last month, or within the last three months	90	76.3
More than three months ago, last year, last year, or they don't remember	13	11.0
Menstrual regularity before the age of 40:		
Regular cycle	71	60.2
Irregular cycle	26	22.0
Don't remember	21	17.8

(continued)

**Table 2.** (continued)

Variables	Frequency	Percent
Body-image dissatisfaction	88	74.6
<b>Roles within the family:</b>		
A housewife	68	57.6
A breadwinner	29	24.6
Taking care of their own children	44	37.3
Taking care of their grownup children	37	31.4
Taking care of their parents, parents in law, or elderly relative.	22	18.6
Taking care of their grandchildren.	6	5.1
Taking care of sick family member	12	10.2
Have 3 or more family roles and/or provide care for two different generations	36	30.5

**Table 3.** Descriptive statistics for perceived stress, perceived body image, and preferred body image ( $N = 118$ )

Variable	Actual Range					Possible Range	
	Minimum	Maximum	Mean	SD	95% CI	Minimum	Maximum
<b>Perceived stress level</b>	0	39	17.90	6.87	(16.65–19.165)	0	40
<b>Body image</b>							
Perceived body image	1	9	5.42	1.60	(5.13–5.72)	1	9
Preferred body image	1	7	3.49	1.16	(3.28–3.70)	1	9

\* $p < 0.0001$

### 3.2 Research Question Results

Pearson's  $r$  correlation coefficient was computed to examine the association between age-related developmental changes variables and body-image satisfaction (Question 1). Table 4 presents the correlations between key variables. Among these variables, only perceived stress was associated with body image satisfaction. Body-image satisfaction was significantly negatively associated with perceived stress level ( $p$ -value = .005), implying that the increase in stress level was associated with decreased body-image satisfaction. Additionally, only years of education ( $p$ -value = .02), and having a chronic

disease ( $p$ -value = .01) was significantly correlated with perceived stress. This indicates that women with lower educational levels and those diagnosed with at least one chronic disease were more likely to report higher stress levels.

Chi-square test was performed to estimate the magnitude of the association among the variables and indicate the likelihood of developing body image satisfaction in this sample (Question 2). Table 5 provides details for the likelihood of body image satisfaction based on age-related developmental changes variables. Age, education years, and perceived stress significantly impacted body image satisfaction. The increase in age (Risk = .473), educational level (Risk = .51), and perceived stress level (Risk = .59) decrease the likelihood of body image satisfaction. In Other words, a younger woman has a 32% higher probability of experiencing body image satisfaction compared to an older woman; a woman with a higher educational level has a 33% lower probability of experiencing body image satisfaction compared to a woman with a lower educational level, and a woman with lower stress level has 37% higher probability of experiencing body image satisfaction compared to a woman with higher perceived stress level.

**Table 4.** Correlations between key variables ( $N = 118$ )

		1	2	3	4	5	6	7	8	9
1. Age	<i>r</i>	1								
	<i>p</i>									
2. Years of education	<i>r</i>	-0.09	1							
	<i>p</i>	0.32								
3. Employment status	<i>r</i>	-0.07	<b>0.48**</b>	1						
	<i>p</i>	0.44	<b>0.000</b>							
4. Stressful family roles	<i>r</i>	0.047	0.004	-0.07	1					
	<i>p</i>	0.61	0.97	-0.47						
5. Last menstrual cycle	<i>r</i>	<b>-0.40**</b>	<b>0.29**</b>	0.16	-0.16	1				
	<i>p</i>	<b>0.000</b>	<b>0.002</b>	0.08	0.09					
6. PSS	<i>r</i>	-0.12	<b>-0.22*</b>	-0.17	-0.03	0.37	1			
	<i>p</i>	0.18	<b>0.02</b>	0.06	0.79	-0.08				
7. Body image satisfaction	<i>r</i>	0.11	0.12	0.14	0.08	-0.002	<b>-0.26**</b>	1		
	<i>p</i>	0.25	0.21	0.14	0.40	0.98	<b>0.005</b>			
8. Chronic disease	<i>r</i>	0.15	0.04	-0.06	<b>0.41**</b>	<b>-0.2*</b>	<b>0.24*</b>	0.11	1	
	<i>p</i>	0.10	0.68	0.54	<b>0.000</b>	<b>0.03</b>	<b>0.01</b>	0.24		
9. Perceived body-image	<i>r</i>	0.15	-0.07	-0.10	0.04	-0.11	0.13	<b>-0.50**</b>	0.06	1
	<i>p</i>	0.10	0.46	0.27	0.64	0.26	0.15	<b>0.000</b>	0.49	

**Table 5.** Likelihood of body image satisfaction based on the age-related developmental changes

Variables	Chi-Square	<i>df</i>	<i>p</i> -value	<i>Risk</i>
Age	30.11	18	<b>.036</b>	.473
Years of education	38.71	21	<b>.011</b>	.51
Employment status	2.18	1	.140	1.9
Menstruation status	1.36	2	.508	.11
Chronic disease	1.40	1	.237	1.7
Family roles	.720	1	.396	1.5
Perceived stress	47.98	26	<b>.005</b>	.59

## 4 Discussion

Although previous studies have investigated body image satisfaction among women, no research has investigated body image satisfaction as a psychological reaction to age-related developmental changes among middle-aged women. Thus, this study examined the impact of age-related developmental changes on body-image satisfaction among middle-aged Saudi women.

Findings of this study indicate that age, educational level, perceived stress, and the presence of chronic diseases could directly or indirectly impact body-image satisfaction in middle-aged women. Body image dissatisfaction was highly prevalent among middle-aged women compared with younger women as reported in several studies [5–8]. The physiological and sociopsychological changes accompanying this transitional age could be attributed to the lower body image satisfaction during middle-age. In addition to age, the impact of educational level on middle-aged women's health was noted in this study. The increase in educational level was associated with an increase in perceived stress level. This finding is consistent with Barradas, Lucumi, Agudelo and Mentz [9] indicating that a higher educational level is associated with a higher perception of stress. This might be related to the fact that higher education could be associated with high-level job demands and responsibilities, which can increase distress. However, a higher educational level was associated with lower body-image satisfaction, which is also consistent with previous research [10]. This could be attributed to the fact that a higher educational level is associated with higher information and knowledge regarding to the risk and benefits of a healthy body appearance.

Moreover, the findings of this study support the direct impact of perceived stress on body-image satisfaction among middle-aged women. Middle-aged Saudi women in this study reported moderate level of perceived stress. Previous studies have noted similar results among middle-aged women of various ethnicities and nationalities. Cho, Jae, Choo and Choo [11] showed a higher level of perceived stress among middle-aged women, indicating that middle-aged women face unique stressors and challenges in their lives. These stressors could be due to work demands, parenting, or other family-related



roles [12]. In this study, women with higher stress levels were at greater risk for body-image dissatisfaction. This finding is consistent with previous research indicating that chronic stress impacts people's physical and mental health [13].

In contrast to age, educational level, and perceived stress which directly impacted body-image satisfaction, the presence of chronic disease could indirectly impact body-image satisfaction. The presence of chronic disease among middle-aged women, considered one of the main physiological changes during this age period, was highly prevalent in this sample. About 44.1% of the participants reported having at least one chronic disease. This finding is consistent with previous research, which indicated that Saudi women are potentially at a greater risk than a decade ago of developing cardiovascular diseases, diabetes mellitus, obesity, and other chronic diseases [14]. Although the presence of chronic disease was not significantly associated with body-image satisfaction, it was associated with perceived stress level, which indirectly impacts body-image satisfaction.

#### **4.1 Strengths and Limitations**

These findings should be considered with respect to the following limitations: First, the use of cross-sectional data collection and convenience sampling may have limited the generalizability of the findings to other middle-aged women in SA. Additionally, a paucity of studies examining body-image satisfaction among adults in SA has limited the authors' ability to compare these findings. However, the reliability of this dataset was examined and shown to be acceptable. Irrespective of the limitations, these findings provide several important insights for promoting body-image satisfaction in middle-aged women in SA.

#### **4.2 Recommendations for Future Research**

Future longitudinal studies are highly recommended to gain a comprehensive understanding. Comparing body-image satisfaction and health of middle-aged women with younger and older women would provide more understanding of the impact of this transitional age period on women's health. Moreover, further work should consider other personal factors, such as body mass index and genetic predispositions to understand body-image satisfaction among middle-aged women.

#### **4.3 Clinical Implication**

The findings of this study have implications for health promotion programs and initiatives. Developmental changes during this period of age make it essential for nurses to develop comprehensive preventive programs that consider all biopsychosocial changes they undergo. Therefore, stress levels assessment and management should be incorporated into individual-based or population-based health promotion programs. There is also a need to perform periodic checks for body image satisfaction for middle-aged women through primary care centers for early detection and prevention.

## 5 Conclusion

To the best of the authors' knowledge, this is the first study to examine the impact of age-related developmental changes on body-image satisfaction among middle-aged women in SA. The study findings revealed that among the age-related developmental changes that occur during this transitional period, age, educational level, and perceived stress level were significantly and directly correlated with body-image satisfaction. These findings can guide healthcare providers in developing and implementing health programs to enhance body-image satisfaction among middle-aged women in SA.

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