



Research article








Journal of Innovative Healthcare Practices (JOINIHP) 6(1), 30-43, 2025

Received: 27-Feb-2025 Accepted: 24-Mar-2025

<https://doi.org/10.58770/joinihp.1647745>



Beyond the Stage: Investigating Body Appreciation, Eating Attitudes, and Expectancies for Thinness in Opera and Ballet Artists

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ABSTRACT

This study examines the relationships between eating attitudes, body appreciation, and interpersonal outcome expectations of thinness among opera and ballet artists. Given the aesthetic and physical demands of these performing arts, the research aims to contribute to healthier self-perceptions and the well-being of performers. A cross-sectional study was conducted among 40 opera and 32 ballet artists affiliated with the İstanbul State Opera and Ballet Directorate. Data were collected using the Eating Attitudes Test Short Form (EAT-26), the Interpersonal Outcome Expectancies for Thinness Scale (IOET), and the Body Appreciation Scale (BAS). Statistical analyses were conducted at a significance level of 0.05 with a 95% confidence interval. Ballet dancers exhibited higher body image investment ($p=0.046$) and BAS scores ($p=0.006$) than opera artists, indicating a stronger emphasis on physical aesthetics. 18% of the participants demonstrated unhealthy eating attitudes, with a notable association between income level and EAT scores ($p=0.001$). Analysis of BAS scores indicated a negative correlation with body mass index (BMI), implying that individuals with higher BMI values reported lower body satisfaction ($r=-0.346$; $p<0.01$). A significant positive correlation was observed between IOET and EAT scores ($r=0.364$; $p<0.01$), suggesting that individuals who associate thinness with social and professional benefits are more prone to disordered eating behaviors. The findings underscore the vulnerability of opera and ballet artists to body dissatisfaction and disordered eating behaviors. These results emphasize the need for healthier body perceptions and eating behaviors in performing artists.

Keywords: Eating attitudes, Body appreciation, IOET, Body image, Opera, Ballet, Performance artists.

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Cite as: Günal, A.M., Başarık, E., Çelebioğlu, G., Yamaç Uzunboy, B.S., Ötekan, N., Kaçar, M., & Sirmen, B. (2025). Beyond the Stage: Investigating Body Appreciation, Eating Attitudes, and Expectancies for Thinness in Opera and Ballet Artists. *Journal of Innovative Healthcare Practices*, 6(1), 30-43. <https://doi.org/10.58770/joinihp.1588039>

Sahne Ötesinde: Opera ve Bale Sanatçılarında Beden Memnuniyeti, Yeme Tutumları ve Zayıflık Beklentilerinin İncelenmesi

ÖZET

Bu çalışma, opera ve bale sanatçıları arasında yeme tutumları, beden takdiri ve zayıflık beklentileri arasındaki ilişkileri incelemektedir. Araştırma, sahne sanatlarının estetik ve fiziksel gereklilikleri göz önüne alındığında, sanatçıların daha sağlıklı benlik algılarına sahip olmalarına ve iyi oluşlarına katkıda bulunmayı amaçlamaktadır. Çalışma, İstanbul Devlet Opera ve Balesi Müdürlüğü'ne bağlı 40 opera sanatçısı ve 32 bale sanatçısı üzerinde kesitsel bir tasarımla gerçekleştirilmiştir. Veriler, Yeme Tutum Testi Kısa Formu (YTT-26), Kişilerarası Zayıflık Beklentileri Ölçeği (IOET-TR) ve Beden Memnuniyeti Ölçeği (BMÖ) kullanılarak toplanmıştır. İstatistiksel analizler 0,05 anlamlılık düzeyi ve %95 güven aralığında gerçekleştirilmiştir. Bale dansçıların, opera sanatçılarına kıyasla beden imajına daha fazla yatırım yaptıkları ($p=0,046$) ve BMÖ puanlarının daha yüksek olduğu ($p=0,006$) belirlenmiştir; bu durum, fiziksel estetiğe daha fazla önem verildiğini göstermektedir. Katılımcıların %18'inin sağlıksız yeme tutumları sergilediği ve gelir düzeyi ile YTT puanları arasında anlamlı bir ilişki olduğu saptanmıştır ($p=0,001$). BMÖ puanlarının beden kütle indeksi (BKİ) ile negatif bir korelasyon gösterdiği bulunmuştur; bu durum, daha yüksek BKİ değerine sahip bireylerin daha düşük beden memnuniyeti bildirdiğini göstermektedir ($r=-0,346$; $p<0,01$). IOET ve YTT puanları arasında anlamlı pozitif bir korelasyon bulunmuştur ($r=0,364$; $p<0,01$); bu da zayıflığın sosyal ve profesyonel avantajlar sağladığını düşünen bireylerin bozulmuş yeme davranışını geliştirmeye daha yatkın olabileceğini göstermektedir. Bulgular, opera ve bale sanatçıların beden memnuniyetsizliği ve bozulmuş yeme davranışları açısından hassas olduklarını ortaya koymaktadır. Bu sonuçlar, sahne sanatçıları daha sağlıklı beden algılarının ve yeme davranışlarının teşvik edilmesi gerekliliğini vurgulamaktadır.

Anahtar Kelimeler: Yeme tutumları, beden memnuniyeti, IOET, beden imajı, opera, bale, sahne sanatçıları.

1 Introduction

Opera and ballet are two of the most esteemed and physically demanding performing arts, requiring rigorous training, discipline, and aesthetic refinement. These art forms necessitate not only technical excellence but also adherence to specific physical standards that influence performers' career trajectories and self-perceptions. Consequently, the emphasis on body image and physical appearance places artists at an increased risk of developing body dissatisfaction and disordered eating behaviors (Koutures, 2023).

The pressure to achieve and maintain a lean physique is particularly pronounced in ballet, where industry norms often equate physical slenderness with artistic excellence. Similarly, opera artists, while not subjected to identical aesthetic standards, may also experience body image concerns due to evolving performance expectations and the physical demands of the profession. The interplay of artistic ambition, professional expectations, and societal ideals contributes to the susceptibility of these performers to unhealthy eating behaviors and psychological distress (Faria et al., 2021).

Body appreciation, a multifaceted construct encompassing cognitive, emotional, and behavioral dimensions, plays a crucial role in an artist's overall well-being. The extent to which opera and ballet performers internalize and respond to external expectations can significantly impact their psychological health, self-esteem, and career longevity. Furthermore, performance anxiety may exacerbate these issues, reinforcing maladaptive behaviors associated with body dissatisfaction and eating disorders (Chen et al., 2024; Romano et al., 2021).

This study aims to explore the intricate relationship between eating attitudes, body satisfaction, and expectations of thinness among opera and ballet artists. By examining these variables within a professional performing arts context, the research seeks to provide deeper insights into the psychological and behavioral challenges faced by these individuals. The findings may contribute to the development of targeted interventions that promote healthier self-perceptions and support the well-being of performers in these highly demanding artistic disciplines.

2 Methodology

2.1 Participants and Procedure

The study was conducted cross-sectionally, in accordance with the STROBE guidelines (Ghaferi et al., 2021), following the permission of the Turkish State Opera and Ballet Directorate General. Ethical approval was obtained from the Istanbul Okan University Ethics Committee (Date: 22.03.2023, Number: 163-23) under the Helsinki Declaration.

The participants encompassed opera and ballet artists affiliated with the İstanbul State Opera and Ballet Directorate division. During the data collection period, actively performing 81 artists represented the universe of the study. Nine of them did not volunteer to participate. The study's sample size consisted of 72 individuals deemed sufficient based on the known universe sample account, with a minimum of 67 participants needed for a confidence level of 95% and a margin of error of 5%. Data were collected face-to-face following the informed consent of the participants.

2.2 Measures

The data collection instrument used was a questionnaire consisting of four sections. The first section comprises inquiries aimed at obtaining participants' socio-demographic characteristics (age, gender, educational status, career information) and anthropometric measurements (height, body weight). The participant's body mass indexes (BMI) were derived from the provided height and body weight information, calculated by the researcher. The second section of the questionnaire includes the Eating Attitudes Test Short Form (EAT-26) to assess eating attitudes. In the third section, the Interpersonal Expectations of Thinness Scale (IEOT-TR) is included to evaluate thinness expectations. Lastly, the fourth section includes the Body Appreciation Scale (BAS) to evaluate participants' levels of body satisfaction.

2.2.1 Eating Attitudes Test Short Form (EAT-26):

The Eating Attitudes Test (EAT-40), originally developed by Garner, Olmstad, Bohr, and Garfinkel in 1982 for assessing susceptibility to eating disorders, has been widely used worldwide (Garner et al., 1982). The short form of the EAT-40 was adapted into Turkish by Ergüney Okumuş and Sertel Berk in 2020 with a Cronbach's Alpha value of 0.84 (Ergüney-Okumuş & Sertel-Berk, 2020). The short form of the Eating Attitudes Test comprises 26 questions aimed at gaining insight into attitudes and behaviors related to eating. The EAT-26 is particularly utilized as a rapid and practical screening tool for identifying susceptibility to eating disorders in non-clinical groups. Scores of 20 and above obtained from the scale indicate a disturbance in eating attitudes. The Cronbach's Alpha value of the Turkish scale was .84

2.2.2 Interpersonal Outcome Expectancies for Thinness Scale (IOET):

The Interpersonal Expectations of Thinness Scale (IOET) was developed by Li et al. in 2019 (Li et al., 2019). In the same year, it was adapted to Turkish by Alim et al. with a Cronbach's Alpha value of 0.93 as IOET-TR (Alim et al., 2019). This scale, comprising 8 questions, was designed to assess situations such as expectations in susceptibility to eating disorders and the belief that thinness would bring benefits. Evaluation of the Interpersonal Expectations of Thinness Scale: The IOET-TR scale employs a 7-point Likert scale ranging from "strongly agree" (7) to "strongly disagree" (1). There are no reverse-scored items in the scale. With a minimum score of 8 and a maximum score of 56, the resulting score on the scale reflects the proportional evaluation of participants' belief that interpersonal advantages are associated with being thin.

2.2.3 Body Appreciation Scale (BAS):

The Body Appreciation Scale (BAS), developed by Avalos et al. in 2005, aims to assess body satisfaction (Avalos et al., 2005). The scale was adapted into Turkish by Bakalım and Taşdelen-Karçkay in 2016 with a Cronbach's Alpha value of 0.87 (Bakalım & Taşdelen-Karçkay, 2016). BAS is a 9-item scale that measures how much an individual values and accepts their own body, and how they perceive their body despite the ideal body standards presented by the media and society. Scores on the scale range from a minimum of 9 to a maximum of 45, and the total score reflects individuals' level of body appreciation in direct proportion.

2.3 Statistical Analysis

The data were analyzed using SPSS 22.0. The assumption of normality was assessed based on skewness and kurtosis values within the range of ± 1.5 (Tabachnick & Fidell, 2001). In the analytical evaluations, the independent samples t-test, Mann-Whitney U test, one-way analysis of variance (ANOVA), Kruskal-Wallis H test, Pearson correlation, Spearman correlation, Pearson chi-square test, Fisher's exact test, and likelihood ratio test were utilized. Tukey's HSD test was applied for post-hoc comparisons. Statistical analyses were conducted at a significance level of 0.05 with a 95% confidence interval.

3 Results

Among the participants, 44 (61.1%) were female, 36 (50%) were single, 40 (55.6%) were opera singers, and 32 (44.4%) were ballet dancers. In terms of income levels, 31 participants (43.1%) reported having an income lower than their expenses, 31 (43.1%) had an income equal to their expenses, and 10 (13.9%) had an income exceeding their expenses. Regarding health status, 21 participants (29.2%) had a chronic disease, and 15 participants (20.8%) reported regular medication use. The participants' mean age was 40.34 ± 10.21 years; their mean duration of professional experience was 17.29 ± 9.38 years; their mean active stage time was 3.72 ± 2.63 hours per session; and their mean weekly rehearsal time was 18.27 ± 9.70 hours (Table 1).

Regarding eating behaviors, the mean preoccupation with eating score was 5.76 ± 6.51 , mean restriction score was 4.63 ± 4.6 , mean social pressure score was 1.88 ± 2.63 , and mean eating attitude test total score was 12.26 ± 12.29 . In terms of body image perceptions, the mean general body appreciation score was 27.14 ± 5.54 , the mean body image investment score was 7.51 ± 1.85 , and the mean body appreciation scale total score was 34.65 ± 7 . Lastly, the mean interpersonal outcome expectancies for thinness score was 24.18 ± 14.21 (Table 1).

Table 1: Characteristics of Participants

	n	%
Gender		
Female	44	61.1
Male	28	38.9
Marital Status		
Married	36	50
Single	36	50
Profession		
Opera Artist	40	55.6
Ballet Artist	32	44.4
Income Status		
Income less than expenses	31	43.1
Income equals expenses	31	43.1
Income more than expenses	10	13.9
Chronic Disease		
Yes	21	29.2
No	51	70.8
Regular Medication Use		
Yes	15	20.8
No	57	79.2
<i>Total</i>	72	100.0
	Min-Max	$\bar{x}\pm s$
Age (year)	22-68	40.34±10.21
Occupation Seniority (year)	0.5-42	17.29±9.38
Active Stage Time (h/week)	1-20	3.72±2.63
Rehearsal Time (h/week)	2-56	18.27±9.70
Scores from the Scales	Min-Max	$\bar{x}\pm s$
<i>Preoccupation with Eating (PE)</i>	0-28	5.76±6.51
<i>Restriction (RES)</i>	0-21	4.63±4.6
<i>Social Pressure (SP)</i>	0-12	1.88±2.63
Eating Attitude Test (EAT)	0-59	12.26±12.29
<i>General Body Appreciation (GBA)</i>	7-35	27.14±5.54
<i>Body Image Investment (BII)</i>	2-10	7.51±1.85
Body Appreciation Scale (BAS)	9-45	34.65±7
Interpersonal Outcome Expectancies for Thinness (IOET)	8-56	24.18±14.21

The mean height of the participants was 170.67±8.9 cm (female: 165.52±5.76; male: 178.75±6.69), their mean body weight was 68.21±18.24 kg (female: 58.88±13.02; male: 82.88±15.5), and their mean Body Mass Index (BMI) was 23.2±5.05 kg/m² (female: 21.48±4.64; male: 25.9±4.51). There were significant differences between males and females in terms of height, weight, and BMI, with males having higher values across all three variables. BMI classification revealed that 15 participants (20.8%) were underweight, 40 (55.6%) had a normal BMI, 9 (12.5%) were overweight, and 8 (11.1%) were classified as obese. A significant difference was observed in BMI distribution between sexes; the prevalence of overweight and obesity was higher among males, whereas the proportion of underweight individuals was notably higher among females. Notably, there were no male participants classified as underweight (Table 2).

When sociodemographic characteristics were compared based on BMI classification, significant differences were observed in terms of profession and presence of chronic illness. Ballet dancers had a higher prevalence of underweight status compared to opera singers. Regarding health conditions, the prevalence of chronic disease was higher among participants with obesity (Table 2).

Table 2: Participants' characteristics according to anthropometric measurements

	Underweight		Normal		Overweight		Obese		p
	n	%	n	%	n	%	n	%	
Sex									
Female	15	34.1	24	54.5	1	2.3	4	9.1	<0.001**
Male	0	0.0	16	57.1	8	28.6	4	14.3	
Marriage Status									
Single	7	46.7	20	50.0	5	55.6	4	50.0	0.981
Married	8	53.3	20	50.0	4	44.4	4	50.0	
Profession									
Opera Artist	2	13.3	21	52.5	9	100.0	8	100.0	<0.001**
Ballet Artist	13	86.7	19	47.5	0	0.0	0	0.0	
Income Status									
Income less than expense	6	40.0	17	42.5	5	55.6	3	37.5	0.909
Income equal expense	7	46.7	18	45.0	2	22.2	4	50.0	
Income more than expense	2	13.3	5	12.5	2	22.2	1	12.5	
Chronic Disease									
Presence	2	13.3	12	30.0	1	11.1	6	75.0	0.012*
Absence	13	86.7	28	70.0	8	88.9	2	25.0	
Regular Medication Use									
Yes	2	13.3	10	25.0	1	11.1	2	25.0	0.649
No	13	86.7	30	75.0	8	88.9	6	75.0	
	Female				Male				
	Min-Max		$\bar{x}\pm s$		Min-Max		$\bar{x}\pm s$		
Height	154-178		165.52±5.76		165-191		178.75±6.69		<0.001** _t
Weight	44-98		58.88±13.02		58-115		82.88±15.5		<0.001** _t
BMI	16.16-34.31		21.48±4.64		21.3-37.98		25.9±4.51		<0.001** _t

Likelihood ratio; t: Independent samples t-test; *:p<0.05; **:p<0.001

A significant difference was observed in income level when comparing participants' sociodemographic characteristics and BMI classifications based on the presence of eating disorder risk (p<0.05). Participants with eating disorder risk had a higher proportion of those whose income exceeded their expenses, while the proportion of those with income equal to expenses was lower (Table 3).

Table 3: Participants' characteristics and BMI classifications according to eating disorder risk

	Absence of Risk		Presence of Risk		p
	n	%	n	%	
Sex					
Female	37	62.7	7	53.8	0.553 _a
Male	22	37.3	6	46.2	
Marriage Status					
Single	29	49.2	7	53.8	0.759 _a
Married	30	50.8	6	46.2	
Profession					
Opera Artist	32	54.2	8	61.5	0.632 _a
Ballet Artist	27	45.8	5	38.5	
Income Status					
Income less than expense	26	44.1	5	38.5	0.001* _a
Income equal expense	29	49.2	2	15.4	
Income more than expense	4	6.8	6	46.2	
Chronic Diseases					
Absence	15	25.4	6	46.2	0.180 _b
Presence	44	74.6	7	53.8	
Regular Medication Use					
Yes	15	25.4	6	46.2	0.649 _a
No	44	74.6	7	53.8	
BMI Classification					
Underweight	13	22.0	2	15.4	0.610 _c
Normal	33	55.9	7	53.8	
Overweight	6	10.2	3	23.1	
Obese	7	11.9	1	7.7	

a: Pearson chi-square; b: Fisher Exact Test; c: Likelihood ratio; *:p<0.01

A moderate negative correlation was found between participants' age and BMI values and their General Body Appreciation and BAS scores (Table 4).

Table 4: *The relationship between the scales with participants' age, BMI, occupation seniority, active stage time, and rehearsal times*

	Age	BMI	Occupation Seniority	Active Stage Time	Rehearsal Time
	r	r	r	r	r
PE	0.164	0.195	0.127	0.007	-0.067
RES	0.087	-0.073	0.123	-0.098	0.046
SP	0.073	-0.169	0.053	-0.063	0.039
EAT	0.177	0.072	0.155	0.026	0.078
IOET	-0.017	-0.121	0.118	0.125	0.001
GBA	-0.384*	-0.367*	-0.120	0.135	0.229
BII	-0.207	-0.210	-0.025	0.153	0.153
BAS	-0.358*	-0.346*	-0.101	0.159	0.226

r: Pearson correlation or Spearman correlation coefficient; *: $p < 0.01$

Comparing scale scores based on participants' characteristics, significant differences were identified with profession, presence of chronic illness, and regular medication use. Specifically, ballet dancers had higher General Body Appreciation, Body Image Investment, and BAS scores compared to opera singers. Participants with chronic diseases exhibited higher Preoccupation with Eating and Eating Attitude Test total scores, while those without chronic illnesses had higher General Body Appreciation and BAS scores. Participants who regularly used medication had significantly higher Eating Attitude Test total scores compared to those who did not. Additionally, participants classified as underweight or normal weight had higher mean scores in General Body Appreciation and BAS compared to individuals with obesity. Regarding participants' eating disorder risk, significant differences were found in Preoccupation with Eating, Restriction, Social Pressure, and EAT scores, with higher scores among those at risk. A significant difference was also observed in Body Image Investment scores, with higher scores in those without eating disorder risk (Table 5).

Table 5: Participants' scores from the scales according to the characteristics, BMI classifications and eating disorder risk

	n	PE	RES	SP	EAT	IOET	GBA	BII	BAS
		Q ₂ (Q ₁ -Q ₃)	Q ₂ (Q ₁ -Q ₃)	Q ₂ (Q ₁ -Q ₃)	Q ₂ (Q ₁ -Q ₃)	$\bar{x}\pm s$	$\bar{x}\pm s$	$\bar{x}\pm s$	$\bar{x}\pm s$
Sex									
Female	44	4 (0.25-8)	4 (2-6)	1 (0-3)	9.5 (5-14)	24.11±13.26	27.59±5.14	7.48±1.76	35.07±6.43
Male	28	3 (0.25-10)	2 (0.25-7.5)	1 (0-3)	7 (2.25-14.75)	24.29±15.83	26.43±6.14	7.57±2.03	34±7.89
	<i>t/z</i>	-0.093	-1.338	-0.049	-0.741	-0.050	0.866	-0.209	0.629
	<i>p</i>	0.926	0.181	0.961	0.459	0.960	0.389	0.835	0.532
Marital Status									
Single	36	3 (0-9)	2.5 (1-6)	1 (0-2.75)	9.5 (4-14)	25.25±13.78	27.14±6.18	7.44±1.95	34.58±7.81
Married	36	4 (1-6.75)	3 (1.25-6)	1 (0-3)	9 (4.25-14.75)	23.11±14.74	27.14±4.91	7.58±1.78	34.72±6.19
	<i>t/z</i>	-0.460	-0.573	-0.764	-0.485	0.636	-	-0.316	-0.084
	<i>p</i>	0.645	0.567	0.445	0.628	0.527	1.000	0.753	0.934
Profession									
Opera Artist	40	5 (1.25-8.75)	4.5 (1-7)	1 (0-2.75)	10 (5.25-15.75)	22.65±12.59	25.55±5.43	7.13±1.96	32.68±7.01
Ballet Artist	32	2.5 (0-6)	2 (1-6)	1 (0-3.75)	6.5 (2.25-13.75)	26.09±16	29.13±5.08	8±1.61	37.13±6.25
	<i>t/z</i>	-1.258	-1.027	-0.852	-1.561	-1.022	-2.855	-2.034	-2.808
	<i>p</i>	0.208	0.304	0.394	0.119	0.310	0.006**	0.046*	0.006**
Income Status									
Income less than expense	31	4 (1-7)	3 (1-8)	1 (0-3)	10 (6-14)	23.29±13.64	28.1±4.41	7.74±1.75	35.84±5.53
Income equals expense	31	3 (0-6)	2 (1-5)	1 (0-2)	7 (4-11)	23.42±13.12	27.03±5.31	7.52±1.67	34.55±6.66
Income more than expense	10	11 (0.75-21)	6.5 (0-11.25)	3.5 (0-8.5)	21.5 (3.25-37.5)	29.3±19.08	24.5±8.51	6.8±2.62	31.3±10.91
	<i>F/χ²</i>	4.597	3.643	5.087	4.739	0.749	1.633	0.975	1.624
	<i>p</i>	0.100	0.162	0.079	0.094	0.476	0.203	0.382	0.205
Chronic Disease									
Presence	21	6 (3-12.5)	5 (1-6.5)	1 (0-4)	12 (8-21.5)	24.57±13.18	24.76±6.21	7±1.95	31.76±7.94
Absence	51	3 (0-7)	2 (1-6)	1 (0-3)	7 (4-13)	24.02±14.73	28.12±4.98	7.73±1.79	35.84±6.27
	<i>t/z</i>	-2.432	-0.874	-0.567	-2.128	0.149	-2.415	-1.523	-2.317
	<i>p</i>	0.015*	0.382	0.571	0.033*	0.882	0.018*	0.132	0.023*
Regular Medication Use									
Yes	15	7 (1-11)	5 (1-6)	2 (0-4)	14 (10-16)	28.13±15.21	27.67±4.64	8±1.6	35.67±6
No	57	3 (0-7)	3 (1-6)	1 (0-3)	7 (4-12.5)	23.14±13.88	27±5.78	7.39±1.91	34.39±7.26
	<i>t/z</i>	-1.413	-0.754	-1.633	-2.076	1.215	0.412	1.144	0.628
	<i>p</i>	0.158	0.451	0.103	0.038*	0.228	0.681	0.257	0.532
BMI Classification									
Underweight	31	2 (0-5)	2 (1-6)	2 (0-3)	7 (4-11)	22.47±11.84	27.93±5.44	7.33±1.35	35.27±6.46
Normal	31	3 (0-8)	4 (1.25-7.75)	1 (0-3)	9 (4-14.75)	26.18±15.61	28.2±4.9	7.88±1.91	36.08±6.3
Overweight	5	3 (3-14.5)	3 (1-7)	1 (0-3)	10 (4.5-27)	22.56±13.94	26.56±3.21	7.33±1.58	33.89±4.57
Obese	10	6 (4-10.25)	1.5 (1-5.75)	0.5 (0-1.75)	10 (7.5-14.5)	19.25±11.29	21±7.43	6.25±2.31	27.25±9.62
	<i>F/χ²</i>	4.686	1.522	0.866	1.181	0.687	4.473	1.890	4.077
	<i>p</i>	0.196	0.667	0.834	0.758	0.563	0.006**	0.140	0.010*
	<i>Post-hoc</i>	-	-	-	-	-	1.2>4	-	1.2>4
Eating Disorder Risk									
Absence	59	3 (0-5)	2 (1-5)	0 (0-2)	7 (4-11)	23.19±14.19	27.64±5.58	7.76±1.76	35.41±7
Presence	13	17 (12.5-22)	11 (7-15)	4 (3-9)	33 (22.5-42)	28.69±13.93	24.85±4.9	6.38±1.94	31.23±6.14
	<i>t/z</i>	-5.630	-5.028	-4.343	-5.624	-1.270	1.669	2.516	1.987
	<i>p</i>	<0.001***	<0.001***	<0.001***	<0.001***	0.208	0.100	0.014*	0.051

t: Independent samples *t*-test; *z*: Mann Whitney *U* test; *F*: One-way ANOVA; χ^2 : Kruskal Wallis *H* test value; *Q*₁: 25. percentile; *Q*₂: 50. percentile; *Q*₃: 75. percentile; *: *p*<0.05; **: *p*<0.01; ***: *p*<0.001

Regarding the interrelationships between participants' scores from scales and subscales, Preoccupation with Eating scores exhibited several significant relationships. Specifically, there was a moderate positive correlation with Restriction, Social Pressure, and IOET scores, a strong positive correlation with EAT scores, and a moderate negative correlation with General Body Appreciation and Body Image Investment scores. Regarding Restriction scores, a moderate positive correlation was found with Social Pressure scores, while a strong positive correlation was observed with EAT scores. Participants' Social Pressure scores exhibited moderate positive correlations with both EAT and IOET scores. A moderate positive correlation was detected between EAT and IOET scores, whereas a weak negative correlation was found between EAT and Body Image Investment scores. The General Body Appreciation score demonstrated a strong positive correlation with both Body Image Investment and BAS scores. Likewise, Body Image Investment and BAS scores were strongly positively correlated (Table 6).

Table 6: *The interrelationships between the participants' scores from the scales*

	RES	SP	EAT	IOET	GBA	BII	BAS
	r	r	r	r	r	r	r
PE	0.528***	0.381**	0.837***	0.320**	-0.330**	-0.387**	-0.370
RES	1	0.395**	0.843	0.195	0.033	-0.084	-0.006
SP		1	0.576***	0.410***	0.012	-0.072	-0.027
EAT			1	0.364**	-0.141	-0.236*	-0.184
IOET				1	0.112	0.114	0.119
GBA					1	0.724***	0.983***
BII						1	0.838***

r: Pearson correlation or Spearman correlation coefficient; *:p<0.05; **:p<0.01; ***:p<0.001

4 Discussion

The findings of this study provide valuable insights into the complex interplay between eating attitudes, body appreciation, and expectations of thinness among opera and ballet artists. The results highlight the significant influence of profession, gender, and health status on these psychological and behavioral factors, reinforcing prior research on the heightened vulnerability of performing artists to body image-related concerns (Kalyva et al., 2023).

The study revealed that a considerable proportion of participants exhibited unhealthy eating attitudes, as indicated by elevated scores on the Eating Attitudes Test (EAT-26). These findings align with previous research demonstrating that performing artists, particularly those in ballet, are at an increased risk of developing disordered eating behaviors due to industry-imposed aesthetic and performance-related pressures (Santo André et al., 2022). Notably, ballet dancers reported significantly higher body investment and appreciation scores, suggesting a greater emphasis on body aesthetics, which may contribute to an increased drive for thinness (Arcelus et al., 2014).

The relationship between income level and eating disorder risk was also notable, with individuals reporting higher income levels being more likely to exhibit disordered eating behaviors. This finding is consistent with studies indicating that financial stability may not necessarily mitigate psychological stress in highly competitive artistic professions (Mikhail et al., 2023). Instead, financial security might exacerbate perfectionistic tendencies, thereby reinforcing restrictive eating behaviors.

Body appreciation varied significantly based on professional discipline, chronic disease status, and BMI classification. Ballet dancers displayed greater body image investment and body appreciation compared to opera artists, supporting previous findings that dancers often develop a heightened awareness of their bodies due to the visual nature of their performances (Swami & Harris, 2012). However, despite this heightened investment, ballet artists also had a higher prevalence of underweight BMI classification, reinforcing concerns about unhealthy weight-control behaviors within the discipline (de Medeiros Eufrásio et al., 2021).

The negative correlations observed between BMI and both General Body Appreciation (GBA) and Body Appreciation Scale (BAS) scores underscore the impact of body weight on self-perception. These results are consistent with research suggesting that individuals with higher BMI scores are more likely to experience body dissatisfaction due to internalized societal beauty standards (Melisse et al., 2022). Furthermore, the presence of chronic diseases was associated with lower body appreciation and higher preoccupation with eating, a pattern that has been identified in other studies linking health complications to increased body image concerns (Kumar, 2023; Matos et al., 2021).

Performance anxiety and interpersonal outcome expectations of thinness emerged as significant factors influencing the psychological well-being of participants. The correlations between social pressure with

expectations of thinness and eating disorder risk corroborate findings from previous research indicating that external validation and perceived societal judgments play a crucial role in shaping body-related behaviors among performing artists (Maftai & Merlici, 2023; Polivy et al., 2022).

Additionally, the significant correlation between preoccupation with eating and interpersonal expectations of thinness (IOET) suggests that individuals who believe thinness provides social or professional advantages are more likely to engage in restrictive eating patterns. These results are in agreement with studies highlighting the impact of external expectations on body dissatisfaction and maladaptive eating behaviors in high-performance fields (Günal et al., 2023; Rodgers et al., 2022).

Performing artists frequently experience unique psychosocial challenges that can influence their eating behaviors and body image. Performance anxiety, occupational stress, and perfectionism are among the most significant factors affecting their psychological well-being. Research indicates that performance anxiety is highly prevalent among professional musicians and dancers, often linked to heightened stress levels before and during performances (Fernholz et al., 2019). This anxiety is exacerbated by the intense scrutiny artists face, as well as the expectation of delivering flawless performances. In opera chorus artists, for instance, trait anxiety and occupational stress are found to be considerably higher than in general populations, suggesting that the demanding nature of their profession significantly impacts mental health. Moreover, perfectionism plays a crucial role in amplifying performance anxiety, particularly when artists feel they lack control over their success, reinforcing stress-induced maladaptive behaviors (Kenny et al., 2004).

The combination of performance anxiety and occupational stress may extend beyond psychological distress, influencing body image concerns and eating behaviors. In professions where physical aesthetics are closely tied to career progression, artists may experience heightened body dissatisfaction, leading to restrictive eating patterns or disordered eating behaviors. Studies suggest that dancers, in particular, often exhibit disturbed eating attitudes due to the persistent pressure to maintain a lean physique, a demand imposed by both industry expectations and peer influences (Junge & Hauschild, 2023; Kalyva et al., 2023). Similarly, opera performers, despite historically facing fewer aesthetic pressures than dancers, may still encounter growing expectations regarding body image, impacting their self-perception (Spahn et al., 2010). Given these challenges, future research should explore how long-term exposure to performance-related stress contributes to changes in body image and eating behaviors, while also investigating intervention strategies that could alleviate these negative effects. By addressing these factors, the performing arts industry can foster a healthier and more supportive environment for artists.

Given the findings, several implications emerge for promoting healthier body image and eating behaviors among opera and ballet artists. Firstly, structured psychoeducational programs focusing on body positivity and self-compassion could help mitigate the adverse effects of performance pressure on body satisfaction (Walton et al., 2025). Secondly, implementing nutritional counseling and support interventions within performing arts institutions could serve as preventative measures against disordered eating behaviors (Challis, 2023; Nicholas & Grafenauer, 2023). Finally, industry-wide efforts to redefine aesthetic standards and foster a more inclusive perspective on body diversity could contribute to long-term changes in artists' perceptions of body image and health.

5 Conclusions

The findings of this study highlight the intricate relationship between eating attitudes, body appreciation, and expectations of thinness among opera and ballet artists. The results indicate that ballet dancers exhibit a greater investment in body aesthetics compared to opera singers, yet they are also at a heightened risk of disordered eating behaviors. A significant association between expectations of

thinness and eating attitudes underscores the influence of external pressures on performers' self-perceptions and nutritional behaviors. The study also reveals that higher body mass index values are negatively correlated with body appreciation, further emphasizing the impact of weight-related concerns on performers' psychological well-being. Additionally, financial status appears to be a relevant factor, as individuals with higher income levels demonstrated a greater risk of unhealthy eating attitudes, suggesting that economic stability does not necessarily protect against performance-related pressures. These findings underscore the need for targeted interventions to foster a healthier psychological environment for performing artists. Educational programs promoting positive body image, self-acceptance, and nutrition awareness may help mitigate the risk of disordered eating behaviors. Implementing structured nutritional guidance and psychological support systems within opera and ballet institutions could aid in reducing body dissatisfaction and enhancing performers' overall well-being. Furthermore, industry-wide efforts to redefine aesthetic expectations in the performing arts could contribute to a more inclusive and health-oriented professional environment.

While this study provides valuable insights, several limitations should be acknowledged. First, the cross-sectional design precludes causal inferences. Future research should employ longitudinal methodologies to examine how these relationships evolve over time. For instance, prospective cohort studies tracking performers from their early training years into their professional careers could reveal how exposure to aesthetic pressures influences changes in body satisfaction and disordered eating patterns. Additionally, repeated-measure designs assessing fluctuations in eating attitudes and body appreciation across different performance seasons such as during auditions, competitive selection periods, or high-intensity rehearsal phases could provide deeper insights into the temporal dynamics of these psychological factors. Such approaches would enhance the understanding of the long-term impacts of body image concerns and eating behaviors in performing artists. Second, all data were collected using self-reported measures, which may introduce response biases such as social desirability and recall bias. The reliance on subjective assessments limits the objectivity of the findings. Future studies should consider incorporating physiological measures (e.g., BMI trajectories, stress biomarkers) or observational assessments (e.g., expert evaluations of body image distress) to validate self-reported data. Lastly, although the sample is representative of the target population, the relatively small sample size may limit the generalizability of the findings to broader artistic communities. Expanding the sample to include performers from diverse institutions and cultural contexts could enhance the applicability of the results. Despite these limitations, this study provides important contributions to understanding the psychological and behavioral challenges faced by opera and ballet artists, emphasizing the need for targeted interventions to support their well-being.

In conclusion, the study emphasizes the significant impact of professional demands and societal expectations on the well-being of performing artists. Addressing body image concerns and promoting healthy eating behaviors through institutional support and industry-wide reforms is crucial for safeguarding the physical and mental health of these individuals. By fostering a more supportive environment, the performing arts community can ensure that artistic excellence is achieved without compromising performers' health and well-being.

6 Declarations

6.1 Study Limitations

The cross-sectional design employed in this research precludes the establishment of causal relationships between variables. Moreover, recall bias and social desirability bias are inherent risks associated with self-reported measures.

6.2 Acknowledgments

The authors would like to acknowledge the Turkish State Opera and Ballet Directorate General for their permission and the artists who participated in the study amid their busy schedules.

6.3 Funding source

No financial support was received for this research.

6.4 Competing Interests

There is no conflict of interest in this study.

6.5 Authors' Contributions

Corresponding Author Ahmet Murat GÜNAL: Conceptualization, Data curation, Formal Analysis, Investigation, Methodology, Supervision, Validation, Writing – original draft, Writing – review & editing.

Ece BAŞARIK: Conceptualization, Data curation, Formal Analysis, Investigation, Writing – original draft, Writing – review & editing.

Gamze ÇELEBİOĞLU: Conceptualization, Data curation, Investigation, Writing – original draft.

Betül Sema YAMAÇ UZUNBOY: Conceptualization, Data curation, Investigation, Writing – original draft.

Nida ÖTEKAN: Conceptualization, Data curation, Investigation, Writing – original draft.

Mustafa KAÇAR: Conceptualization, Data curation, Investigation, Supervision, Writing – original draft.

Funda ŞENSOY: Conceptualization, Methodology, Supervision, Writing – review & editing.

7 Human and Animal Related Study

If the work involves the use of human/animal subjects, each manuscript should contain the following subheadings under this section.

7.1 Ethical Approval

Ethical approval was obtained from the Istanbul Okan University Ethics Committee (Date: 22.03.2023, Number: 163-23) under the Helsinki Declaration.

7.2 Informed Consent

Data were collected face-to-face following the informed consent of the participants.

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