Body dissatisfaction, ideals, and identity in the development of disordered eating among adolescent ballet dancers

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Abstract

Objective: Little is known about how female adolescent ballet dancers—a group at high-risk for the development of body dissatisfaction and eating disorders—construct body ideals, and how their social identities interact with body ideals to confer risk for disordered eating. Using a novel body figure behavioral task, this study investigated (1) whether degree of body dissatisfaction corresponded to severity of disordered eating thoughts and behaviors, and (2) how ballet identity corresponded with ideal body figure size among adolescent ballet dancers.

Methods: Participants were 188 female ballet dancers ages 13-18 years who completed self-report measures of study constructs and the behavioral task.

Results: Linear regression models indicated that more severe body dissatisfaction was positively associated with increased disordered eating thoughts and behaviors ($p < .19$), except for muscle building ($p = .32$). We also found that identifying more strongly as a ballet dancer was correlated with having a smaller ideal body size ($p = .017$).

Conclusion: Findings from this study suggest desire to achieve smaller body sizes is correlated with more severe disordered eating endorsement and stronger ballet identity. Instructors and clinicians may consider assessing the extent to which individuals identify as a ballet dancer as a risk factor for disordered eating and encourage adolescent dancers to build and nurture other identities beyond ballet.

Public significance: Eating disorders are debilitating conditions that can lead to malnutrition, social isolation, and even premature death. Though disordered eating thoughts and behaviors can affect anyone, adolescents in physically demanding and body image-driven activities including ballet dance are particularly vulnerable. Investigating how factors like body dissatisfaction and strength of identity are associated with disordered eating among high-risk groups is crucial for developing effective prevention and intervention methods that minimize harm.

KEYWORDS
adolescence, ballet dancers, body dissatisfaction, body ideals, disordered eating, identity

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Eating disorders are severe mental disorders with mortality rates among the highest across all psychiatric illnesses (Arcelus et al., 2011; Fichter & Quadflieg, 2016; Herzog et al., 2000). Even those with subthreshold eating disorder experience marked distress and impairment, including malnutrition, social isolation, and premature mortality (Hart et al., 2020; Kärkkäinen et al., 2018; Le Grange et al., 2012). Thus, elucidating factors correlated with disordered eating across diagnostic and severity spectra is of critical importance.

Body dissatisfaction is both a risk factor and a symptom of eating disorders (Ackard & Peterson, 2001; Dantas et al., 2018; Jacobi et al., 2004; Striegel-Moore & Bulik, 2007) and refers to a discrepancy between one’s current body versus their ideal body, discontent with specific features or parts of the body, and/or the desire to change weight or shape. Perhaps unsurprisingly, female adolescent ballet dancers have often been considered a high-risk group for the development of body dissatisfaction and subsequent eating disorders due in part to their enhanced focus on thinness, leanness, and body ideal achievement as an aesthetic sport (Anderson et al., 2012; Chapa et al., 2022; Engel et al., 2003; Nerini, 2015). Serious athletic training tends to intensify during adolescence, a period of development during which disordered eating commonly onset but is often coupled by the absence of more advanced nutrition and athletic health resources (Martinsen & Sundgot-Borgen, 2013; Thompson & Sherman, 2014; Volpe et al., 2016). As female adolescents experience puberty, the period of rapid physical, mental, and hormonal change may create dissonance as one’s subjective body ideals and expectations are not updated in tandem with their body’s development, which puts individuals at higher risk for disordered eating (Klump, 2013). Prevalence estimates of clinical eating disorders among adolescent females hover around 6.2%, with symptom onset and persuasiveness fluctuating throughout the period from early adolescence to young adulthood (Glazer et al., 2019; Mitchison et al., 2020). This developmental phenomenon, compounded with the strong body ideals imposed in ballet, may lend insight for the higher relative prevalence rates of body dissatisfaction and eating pathology often observed among young ballerinas (Arcelus et al., 2014; Dantas et al., 2018; Pickard, 2013).

Despite the ubiquity of exposure to thin body ideals in ballet, not all adolescent female ballet dancers develop disordered eating behaviors. Some literature highlights the benefit of sports participation, which may actually mitigate the negative effects of body dissatisfaction (Martinsen et al., 2010; Rosendahl et al., 2009). Therefore, adolescent ballet dancers may be differentially impacted by engagement with this intensive sport. We aimed to explore these nuances to better understand for whom, and why, ballet participation may be associated with disordered eating. One factor that may explain why ballet-based body ideals do not impact all dancers equally could be identity. Given that group identification has a powerful influence on behavior, stronger identity as a ballet dancer may be connected to an adoption of unhealthy standards, ideals, and behaviors. Individuals may integrate the social norms established by a salient group (i.e., ballet dancers) into their self-concept (Hornsey, 2008), and the salience of group identification can be related to the degree to which an individual ascribes to its norms (Liu et al., 2019). However, existing literature on this topic is mixed. For instance, recent data among college students from various sports suggests exercise identity (but not athletic identity) is associated with greater disordered eating (Palermo & Rancourt, 2021); whereas a former study found exercise identity was associated with less disordered eating among runners (Gorrell & Anderson, 2018). Of note, this prior work relies on generalized “athletic identity” rather than sport-specific identity, leaving it unclear whether strength of specific sports identities—and the norms for which they specifically represent—might demonstrate differing trends. Further, the role of athletic group identification on disordered eating may be particularly salient during adolescence, a period characterized by rapid and profound development of self-concept and sense of ‘self’ (Sebastian et al., 2008), compared to older populations (e.g., college students). The overvaluation of a specific group identity may dispose certain adolescents to be more vulnerable to the potentially harmful effects of sports participation.

To address these gaps, we examined the associations between ballet identity, body dissatisfaction, and disordered eating in the high-risk group of adolescent female ballet dancers, with two main aims. First, we compared endorsement and severity of disordered eating between adolescent dancers. We hypothesized that more extreme body dissatisfaction (i.e., the difference between current body size and ideal body size) would be associated with greater severity of disordered eating thoughts and behaviors. Second, we examined if the extent to which participants identified as a ballet dancer was associated with ideal body figure size. We hypothesized that individuals who identified more strongly as a ballet dancer would report a smaller ideal body figure size, in alignment with female ballet body norms.

We included an exploratory analysis of body dissatisfaction valence with disordered eating (see Supplement). Given that the literature is less clear regarding the potential for distinctions in positive (desire to increase size) versus negative (desire to decrease size) body dissatisfaction and there is a lack of strong evidence supporting this distinction, we leveraged our data to explore this unique aspect of body dissatisfaction. Therefore, we analyzed whether female adolescents who desired to increase their body figure size endorsed different disordered eating behaviors than those who reported a desire to decrease their body figure size.

## 2 | METHOD

### 2.1 | Participants and procedure

Participants were recruited to participate in the Discerning Attitudes towards Norms, Control, & Eating (D.A.N.C.E.) Study via social media accounts (Instagram, Facebook, TikTok). Additionally, we sent recruitment emails to over 175 ballet dance companies, studios, and academies near urban areas in the United States with professional ballet companies (e.g., Atlanta, Boston, Chicago, Los Angeles, Miami, Nashville, New York, San Francisco). Interested participants were contacted to participate in the study after completing informed consent. Interested participants were recruited to participate in the study through various channels, including social media and email invitations. The study was conducted in compliance with the ethical guidelines set forth by the institutional review board (IRB) of the collaborating university. Data collection included self-report questionnaires assessing eating pathology, body dissatisfaction, and group identification. The study employed a cross-sectional design, allowing for a snapshot of the participants' attitudes and behaviors at a specific point in time. Further, the study utilized a mixed-methods approach, incorporating both quantitative and qualitative data collection. This approach allowed for a more comprehensive understanding of the participants' experiences and perspectives. Data analysis involved statistical methods to examine the associations between body dissatisfaction, ballet identity, and disordered eating. The study aimed to contribute to the understanding of the complex interplay between the ballet world and eating pathology, as well as to inform future interventions targeting disordered eating in adolescent female ballet dancers.
completed a brief screener to assess study eligibility, including: (1) US residency, (2) 13–18 years of age, (3) cisgender, (4), comfort responding to questions about pubertal status and the body, and (5) pre-professional level of dance training. The third criterion was implemented as presenting body images that do not represent an individual’s self-concept—and more specifically presenting body images to transgender, gender non-conforming, and non-cisgender individuals—can be potentially harmful or distressing (Fox et al., 2020). Given that this study depended upon presenting sexed body images to participants to collect information regarding body dissatisfaction, norms, etc., we screened out individuals who did not identify as cisgender to avoid causing potential harm. The fifth criterion could be met one of four ways: (a) enrollment in term-time ballet classes for the 2019–2020 season, (b) enrollment in term-time ballet classes for the 2020–2021 season, (c) acceptance to a 2020 summer intensive 3+ week ballet program, or (d) attendance at a 2020 summer intensive 3+ week ballet program.

Responses that met any of the following Qualtrics or internal study quality checks were considered potential spam, duplicate, or bot responses and were discarded: (1) reCAPTCHA value ≤ .3, (2) duplicate email address, (3) full survey completion response time < 350 s, (4) EPSI response time < 45 s, (5) birth month and year do not match reported age. Survey timing tools were added part-way through data collection. Additionally, (6) Relevant ID Fraud Score >0 or empty cell, (7) Relevant ID Duplicate Score = “True,” and (8) duplicate IP Addresses were flagged, checked for any global survey patterns, and discarded if present. Filler questions were also scanned for suspicious and/or duplicate responses. Participants who completed the full survey were compensated with a $5 Amazon gift card. All individuals who completed the screener were entered into a raffle for $50 online dance retailer gift cards.

Minimum sample size was calculated at \( N = 154 \), which provided adequate power (.80) to detect small to medium effects (\( f^2 = .1 \)) with alpha <.05 for the main regressions. Of 998 completed screener responses, we screened out 628 responses based on failure to meet quality checks and subsequent versions, which have been previously and frequently used to measure body dissatisfaction (Marshall & Harber, 1996; Stunkard et al., 1983; Tebar et al., 2020). Given that there are numerous versions of figure rating scales, most iterations of which have neglected to provide variations on the basis of pubertal maturation and/or skin tone (Jayawardena et al., 2021), we developed a modified rating scale for usage in the present study. All images were created in a digital media software primarily using images 1–6 from versions of the Stunkard Scale for reference in plotting the body figure silhouettes, with additional midpoint figures added in between. In the present study, we presented two versions of the FASST Body Scale for females with less defined pubertal maturation, and those with distinct pubertal maturation (i.e., lines to indicate breast growth, taller and wider hip proportioned silhouette). Each scale included 11 different figures ranging from severely underweight to overweight. There were seven iterations of each scale ranging from light to dark skin tones with one plain version (i.e., no skin tone shading). Participants were prompted to select the skin tone that best matched their own (those who did not provide a response were defaulted to the plain version). Participants then used the body figure scale to select which image best reflected their (1) current body figure and (2) their ideal figure. We used the Tanner Stage Assessment (Morrison & Udry, 1980; Tanner, 1962) to determine pubertal development stage and administer the proper scale iteration. Participants who were determined to be in the pre- to early pubertal maturation stages were shown the less defined pubertal maturation image set, and those in mid- to post-pubertal maturation stages were shown the more defined image set.

### Measures

#### Eligibility and demographics

The eligibility screener assessed US residency, sex, gender identification, age, birth month and year, term-time ballet class enrollment, and summer intensive programs. Participants were also asked whether they would be comfortable answering questions about puberty and examining body diagrams to preempt participation in the Tanner Stage Assessment. Four additional free response filler questions were used to decrease likelihood of participants misrepresenting their eligibility. We also assessed demographic characteristics, including race, ethnicity, grade level, state of residence, height, and weight.

#### FASST Body Scale

To measure ideal body image and body dissatisfaction, we developed the Figures Across Sex, Skin tone, & Tanner stage (FASST) Body Scale (Ohashi, 2022) informed by the Stunkard Figure Rating Scale and subsequent versions, which have been previously and frequently used to measure body dissatisfaction (Marshall & Harber, 1996; Stunkard et al., 1983; Tebar et al., 2020). Given that there are numerous versions of figure rating scales, most iterations of which have neglected to provide variations on the basis of pubertal maturation and/or skin tone (Jayawardena et al., 2021), we developed a modified rating scale for usage in the present study. All images were created in a digital media software primarily using images 1–6 from versions of the Stunkard Scale for reference in plotting the body figure silhouettes, with additional midpoint figures added in between. In the present study, we presented two versions of the FASST Body Scale for females with less defined pubertal maturation, and those with distinct pubertal maturation (i.e., lines to indicate breast growth, taller and wider hip proportioned silhouette). Each scale included 11 different figures ranging from severely underweight to overweight. There were seven iterations of each scale ranging from light to dark skin tones with one plain version (i.e., no skin tone shading). Participants were prompted to select the skin tone that best matched their own (those who did not provide a response were defaulted to the plain version). Participants then used the body figure scale to select which image best reflected their (1) current body figure and (2) their ideal figure. We used the Tanner Stage Assessment (Morrison & Udry, 1980; Tanner, 1962) to determine pubertal development stage and administer the proper scale iteration. Participants who were determined to be in the pre- to early pubertal maturation stages were shown the less defined pubertal maturation image set, and those in mid- to post-pubertal maturation stages were shown the more defined image set.

#### Disordered eating thoughts and behaviors

We used the Eating Pathology Symptoms Inventory (EPSI; Forbush et al., 2013), a 45-item measure with eight subscales assessing body dissatisfaction, binge eating, cognitive restraint, purging, restricting, excessive exercise, negative attitudes towards obesity, and muscle building. Participants respond to each item on a scale of 0: “Never,” 1: “Rarely,” 2: “Sometimes,” 3: “Often,” 4: “Very Often,” and items are summed for each subscale (as > .80). Additionally, we used the Dietary Restriction Screener to assess presence and frequency of restrictive eating (Haynos & Fruzzetti, 2015).

#### Strength of ballet identity

To measure how strongly participants identified as ballet dancers, we first primed them to consider their relevant social identities using an adapted CBT Pie Chart Task (Mendez, 2016). The goal of this task was to allow participants to identify various relevant identities that
they hold. The task prompts participants to name their top identities (e.g., ballet dancer, student, sister, etc.) and rank the extent to which they identify with each identity. The identity “Ballet dancer” was pre-filled as one of the identities, and an additional seven slots are provided to be used at the participant's discretion.

We then administered the Baller Identity Measurement Scale (BIMS; Harrison et al., 2014) to measure strength of ballet identity. This measure includes a five-point scale across 10 items assessing social identity, exclusivity, positive affectivity, and negative affectivity, resulting in a global score ($\alpha = .90$). This scale identifies an individual's

<table>
<thead>
<tr>
<th>TABLE 1</th>
<th>Demographic and Clinical Characteristics.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$ (SD)</td>
</tr>
<tr>
<td>Age (years)</td>
<td>16.14 (1.48)</td>
</tr>
<tr>
<td>Weight (lb)</td>
<td>119.3 (19.81)</td>
</tr>
<tr>
<td>Height (in.)</td>
<td>64.53 (3.04)</td>
</tr>
<tr>
<td>Body Mass Index (BMI)</td>
<td></td>
</tr>
<tr>
<td>Exact percentiles</td>
<td>34.03 (27.2)</td>
</tr>
<tr>
<td>Tanner Pubertal Development Stage</td>
<td></td>
</tr>
<tr>
<td>Breast Size</td>
<td>3.59 (1.11)</td>
</tr>
<tr>
<td>Hair Growth</td>
<td>3.17 (1.13)</td>
</tr>
<tr>
<td>Overall</td>
<td>3.91 (0.96)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>145 (77.13)</td>
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<tr>
<td>Asian/Asian American</td>
<td>19 (10.11)</td>
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<tr>
<td>Black/African American</td>
<td>10 (5.32)</td>
</tr>
<tr>
<td>American Indian/Alaska Native</td>
<td>2 (1.06)</td>
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<tr>
<td>Mixed/Other</td>
<td>12 (6.38)</td>
</tr>
<tr>
<td>Ethnicity</td>
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<tr>
<td>Hispanic/Latinx</td>
<td>17 (9.04)</td>
</tr>
<tr>
<td>Non-Hispanic/Latinx</td>
<td>171 (90.06)</td>
</tr>
<tr>
<td>Studio Type</td>
<td></td>
</tr>
<tr>
<td>Academy affiliated with professional company</td>
<td>31 (16.49)</td>
</tr>
<tr>
<td>Competition dance studio</td>
<td>33 (17.55)</td>
</tr>
<tr>
<td>Dance boarding school</td>
<td>13 (6.91)</td>
</tr>
<tr>
<td>Performance dance studio (non-competitive)</td>
<td>95 (50.53)</td>
</tr>
<tr>
<td>Professional dance company</td>
<td>5 (2.66)</td>
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<tr>
<td>Other</td>
<td>11 (5.85)</td>
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<tr>
<td>Body Figure Scale: Body Dissatisfaction</td>
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<tr>
<td>Negative (BD &lt; 0)</td>
<td>–1.53 (1.74)</td>
</tr>
<tr>
<td>Body Satisfaction (BD = 0)</td>
<td>144 (76.6)</td>
</tr>
<tr>
<td>Positive (BD &gt; 0)</td>
<td>28 (14.89)</td>
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<tr>
<td>Eating Pathology Symptoms Inventory</td>
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<tr>
<td>Body Dissatisfaction</td>
<td>17.24 (7.08)</td>
</tr>
<tr>
<td>Binge Eating</td>
<td>12.49 (6.22)</td>
</tr>
<tr>
<td>Cognitive Restrained</td>
<td>6.10 (3.04)</td>
</tr>
<tr>
<td>Purging</td>
<td>4.67 (4.97)</td>
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<tr>
<td>Restricting</td>
<td>10.59 (5.34)</td>
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<tr>
<td>Excessive Exercise</td>
<td>11.48 (4.60)</td>
</tr>
<tr>
<td>Negative Attitudes Towards Obesity</td>
<td>5.83 (5.04)</td>
</tr>
<tr>
<td>Muscle Building</td>
<td>4.44 (3.78)</td>
</tr>
</tbody>
</table>
relationship to a sport, switching out the term “baller” with the identifying terminology (“ballet dancer” in the present study).

2.3 | Data analysis

All analyses were conducted using R version 4.1.3. We first examined demographic characteristics and average EPSI subscale scores. Second, we calculated body dissatisfaction by taking the difference between current body figure size and ideal body figure size, via FASST Body Scale images. Third, we tested the association between degree of body dissatisfaction, captured by the FASST (using absolute values), across all EPSI subscale scores. We conducted a Pearson’s correlation test with the body dissatisfaction absolute scores. Fourth, we examined Pearson’s correlations between ballet identity score and ideal body figure size. We conducted a linear regression for ballet identity score with personal ideal body figure size. Overall, .0025% of data were missing and imputed with mean imputation.

3 | RESULTS

3.1 | Participant characteristics

A total of 188 female adolescent ballet dancers ages 13–18 years ($M = 16.14, \text{SD} = 1.48$) were included in the analyses. Participants were majority White ($n = 145, 77.13\%$), which was representative of existing ballet industry demographics (Integrated Postsecondary Education Data System, 2017), and reported living across 34 states and the District of Columbia. Of note, 150 (79.79\%) participants reported engaging in restrictive eating in the past year ($n = 111, 59.0\%$ in the past month with a median of 6.50 reported episodes). Table 1 provides descriptive statistics for demographics and clinical characteristics.

3.2 | Degree of body dissatisfaction and disordered eating endorsement

To investigate whether stronger body dissatisfaction was associated with more severe disordered eating endorsement, we performed a correlation test for each EPSI subscale. Seven out of the eight subscales were significantly correlated with degree of body dissatisfaction, as measured by the absolute difference between current body figure size and ideal body figure size: EPSI Body Dissatisfaction ($r = .61, p < .0001$); Binge Eating ($r = .22, p = .002$); Cognitive Restraint ($r = .44, p < .0001$); Purging ($r = .20, p = .007$); Restricting ($r = .16, p = .026$); Excessive Exercise ($r = .31, p < .0001$); and Negative Attitudes Towards Obesity ($r = .17, p = .019$). Muscle Building was the only subscale for which scores were not significantly correlated with degree of body dissatisfaction ($r = .07, p = .32$; Figure 1).

FIGURE 1 Correlation between Degree of Body Dissatisfaction and Eating Pathology Symptoms Inventory Subscale Score FINAL. Correlations between absolute degree of body dissatisfaction (difference between current body figure size and ideal body figure size) and Eating Pathology Symptoms Inventory subscale scores. Note. EPSI score ranges vary across subscales based on the number of items designated. For each item, 0 indicates “Never” endorsing and 4: “Very Often”.

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3.3  Strength of ballet identity and ideal body figure size

To test if stronger ballet identity was associated with smaller ideal body figure size, we analyzed the correlation between BIMS score and ideal size. Across participants, ballet identity was negatively correlated with ideal body figure size ($r = -0.17, p = .017$; Figure 2), suggesting individuals who identified more strongly as a ballet dancer also tended to desire smaller bodies.

4  DISCUSSION

This study had two primary aims: to investigate the association between degree of body dissatisfaction with severity of disordered eating, and to examine whether ballet identity was associated with ideal body figure size. We additionally included an exploratory analysis of the relationship between valence (positive versus negative) body dissatisfaction with disordered eating behaviors. Supporting our hypotheses, findings demonstrated that degree of body dissatisfaction was positively correlated with severity of disordered eating among adolescent ballet dancers, and that stronger ballet identity was associated with smaller body image goals. Overall, these findings extend the existing body of literature on the relationship between body dissatisfaction and disordered eating directly. This captured a unique association between the strength of identity tied to a relevant sport and formed body ideals, a potentially separate relationship from body ideal formation with the experience of body dissatisfaction. However, due to the cross-sectional nature of our analysis, we are unable to infer temporal or causal relationships beyond these correlations.

In addition, we developed a novel comprehensive body figure measure (FASST Body Scale; Ohashi, 2022) with two female 11-figure scales. This scale was among the few, if any, to introduce variants of skin tone and pubertal maturation stage (pre- to early mid- to post-maturity figures), which was a unique expansion of existing measures. This allowed us to customize the participant experience and tailor images to resemble the participant more closely. We developed the FASST with the intention to address limitations of existing scales on aspects of overall design, body figure size range and image quality (Jayawardena et al., 2021; Lønnebotn et al., 2018; Stunkard et al., 1983). The novel scale was also designed with a focus on accessibility and inclusion regarding skin tone, physical developmental stage, figure size, and sex. The lack of such personalization has long been noted as a limitation in other body-related stimuli (e.g., including skin tone for stimuli used to measure suicide and self-harm behaviors; Jaroszewski et al., 2020)—and thus our modifications could encourage...
greater engagement from individuals in using body figure scales to provide answers about their bodies.

4.1 Limitations and future directions

We experienced several challenges during participant recruitment. Most notably, the COVID-19 pandemic prevented us from conducting on-site visits to summer intensive programs hosted by professional dance companies (e.g., Kansas City Ballet, Boston Ballet, New York City Ballet). This would have allowed for in-person recruitment, which would have reduced (if not fully eliminated) bot/spam responses. However, the extensive response quality checks and filler questions maintained the legitimacy of the collected responses. In addition, direct recruitment from summer intensives would have guaranteed more homogeneity among the sample population. We thus expanded definitions of “pre-professional” level training in attempt to recruit an adequate sample size, which likely resulted in more variation within the sample. However, past studies have demonstrated that findings regarding body dissatisfaction or disordered eating may be generalized across athletic intensity level—for example, elite versus non-elite or non-competitive versus recreational athletes (Kong & Harris, 2015; Thompson & Sherman, 2014; Voelker et al., 2014). Another limitation of this study was that the final analyses only included female participants. We originally aimed to include both male and female ballet dancers in the sample, but recruitment of male participants was limited despite focused advertising and outreach efforts. Future research should extend this work to male populations, and we additionally developed a male FASST Body Scale for such future work. Additionally, although the present study’s reflection of the ballet industry’s White-dominated overall demographics (Integrated Postsecondary Education Data System, 2017), the sample has a lack of racial and ethnic diversity that limits the generalizability of these findings across diverse identities. To better reflect all ballet dancers’ potential experiences, future studies should place an emphasis on recruiting and sampling more diverse groups of adolescent ballet dancers.

One additional limitation is the absence of psychometric testing for our new FASST Body Scale. As the FASST images were heavily informed by the figures from the Stunkard Scale, and because the Stunkard Scale has been previously validated, we did not complete a separate validation as we were not creating an entirely new figure scale. Rather, our aim in developing the FASST images was to improve on a well-established scale that has been cited in hundreds of articles but grows outdated in its image quality and usability. Different research groups have repeatedly called for digitally improved versions of the Stunkard Scale and other figure rating scales, with some also criticizing the lack of skin tone variation among existing images (Jayawardena et al., 2021). The FASST images address these concerns, providing both clearer images and the manipulation of skin tone and developmental stage in response to calls for such work. Additionally, for the context of our present study, the images introduced in the FASST were clearly presented to the participants numbered and in size order. As such the deliberate manipulations of body figure size and differences across the individual images were made explicitly clear, thus reducing further confounds in image interpretation. Nonetheless, validation of this newly improved scale would be an important next step and allow for the enhanced scale’s potential usage and adaptation in future studies.

Separately, given the variance in how individuals construct their perceptions of identity, another direction for future research could examine elements of the ballet environment (e.g., training discipline style, perceived competition, peer relationships) to better understand how personal ballet identity translates into ideal body goals. Past research on weight and body pressures within athletic samples have looked to coaches, teammates, uniforms, and environmental factors (Francisco et al., 2012; Kong & Harris, 2015; Reel et al., 2013; Thompson & Sherman, 2014). Thus, future research may consider exploring the body figure sizes of relevant peer groups (e.g., ballet peers, schoolmates) and how strongly an individual perceives their identity to be connected to that cohorts.

5 CONCLUSIONS AND IMPLICATIONS

This study provides insight into the association between degree of body dissatisfaction and disordered eating among adolescent ballet dancers. In addition, we highlight the relationship between ballet identity and personal body ideals. Previous research has suggested adolescent, athletic, and ballet cohorts are at increased risk for body dissatisfaction and disordered eating (Anderson et al., 2012; Martinsen & Sundgot-Borgen, 2013; Smink et al., 2012). This study extends this work by demonstrating that ballet identity and body ideals may be important facets in identifying and understanding this phenomenon. Moving forward, instructors and clinicians may consider assessing the extent to which individuals identify as a ballet dancer as a marker for possible disordered eating and take preemptive steps to combatting harmful trends. Emerging research has explored how adjusting exposure to certain body figure sizes influences the reported size of personal body ideals (Aniulis et al., 2021), which provides an explanation as to why and how adolescent ballet dancers may internalize unhealthy body standards, even in the face of nutritional and physical health education. These findings, alongside our present research, emphasize the importance of encouraging adolescent dancers to build and nurture other identities beyond ballet. This strategy of building a healthy relationship between body and sport may aid the success of existing prevention programs implemented among adolescent ballet cohorts (Littleton & Ollendick, 2003).

AUTHOR CONTRIBUTIONS

Yuri-Grace B. Ohashi: Conceptualization; data curation; formal analysis; funding acquisition; investigation; methodology; project administration; visualization; writing – original draft; writing – review and editing. Shirley B. Wang: Conceptualization; formal analysis; funding acquisition; methodology; resources; supervision; visualization; writing – review and editing. Rebecca M. Singleton: Conceptualization; resources; supervision; writing – review and editing.
Matthew K. Nock: Conceptualization; funding acquisition; resources; supervision; writing – review and editing.

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CONFLICT OF INTEREST STATEMENT
The authors declare no conflicts of interest.

DATA AVAILABILITY STATEMENT
The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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