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Yoga and body image: How do young adults practicing yoga describe its impact on their body image?

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Abstract

This study explored the perceived impact of yoga on body image. Young adults ($n = 34$ female, 12 male; $M_{\text{age}} = 30.6$ [$SD = 1.6$]) practicing yoga were interviewed and data were analyzed for emerging themes across weight status. In general, participants discussed the positive impact of yoga on their body image, but some described both a positive and negative impact. Yoga was perceived as having a positive impact on body image via perceived physical changes, gratitude for one's body, a sense of accomplishment within one's yoga practice, self-confidence, and witnessing different types of bodies practicing yoga. Yoga was perceived to have a negative impact on body image via comparative critique (e.g., upward comparisons with others) and inner critique (e.g., negative self-talk). Themes were generally similar across weight status; exceptions were that participants at higher weight status were more likely than those at lower weight status to discuss accomplishment within one's yoga practice as a positive impact on body image and comparative critique as a negative impact on body image. Yoga studios and instructors can take steps to further enhance the positive impact of yoga and to provide environments that are inclusive of participants with diverse body shapes and sizes.

Keywords

yoga; body image; body satisfaction; eating disorders; young adults

Introduction

Body dissatisfaction is highly prevalent among young adults (Bucchianeri, Arikian, Hannan, Eisenberg, & Neumark-Sztainer, 2013; Neumark-Sztainer, Wall, et al., 2018). While body dissatisfaction occurs among both female and male young adults and across all weight categories, given societal pressures emphasizing thinness, body dissatisfaction is particularly high among females and among those of higher weight status (El Ansari, Dibba, & Stock, 2014; Mintem, Gigante, & Horta, 2015; Neumark-Sztainer, Story, Hannan, Perry, & Irving, 2002; Weinberger, Kersting, Riedel-Heller, & Luck-Sikorski, 2016). Body dissatisfaction

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has harmful consequences for various behavioral, physical, and psychosocial outcomes. For example, body dissatisfaction has been shown to predict greater engagement in health-compromising behaviors, such as unhealthy weight control practices, and lower engagement in health-promoting behaviors, such as physical activity (Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006). Body dissatisfaction is a strong and consistent predictor of disordered eating behaviors and eating disorders (Bucchianeri et al., 2016; Cooley & Toray, 2001; Goldschmidt, Wall, Choo, Becker, & Neumark-Sztainer, 2016; Goldschmidt, Wall, Loth, & Neumark-Sztainer, 2015; Stice & Shaw, 2002), and also predicts weight gain over time, particularly in young women (Loth, Watts, van den Berg, & Neumark-Sztainer, 2015; Neumark-Sztainer et al., 2007; van den Berg & Neumark-Sztainer, 2007). Body dissatisfaction has also been found to be associated with various measures of emotional well-being including lower levels of self-esteem and higher levels of depression (Johnson & Wardle, 2005; Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006; Sharpe et al., 2018).

While the majority of research on body image has focused on body dissatisfaction and its implications for health outcomes, there is a growing body of literature discussing the importance of positive body image and how having a positive body image is not merely the opposite of body dissatisfaction (Tylka & Piran, in press). Components of positive body image include both attitudes (of acceptance and respect) towards one's body and the adoption of healthier behaviors as part of feeling better about one's body (Avalos, Tylka, & Wood-Barcalow, 2005; Piran, 2015, 2017; Piran & Teall, 2012; Tylka & Wood-Barcalow, 2015a, 2015b; Webb, Wood-Barcalow, & Tylka, 2015; Wood-Barcalow, Tylka, & Augustus-Horvath, 2010). Tylka and Wood-Barcalow (2015b) describe positive body image as holistic and multifaceted, including body appreciation, body acceptance and love, a broad conceptualization of beauty that may draw from inner characteristics (e.g., confidence), adaptive investment in appearance, inner positivity, and the ability to filter information in a body-protective manner. The construct of positive body image is also captured in the broader study and framework of embodiment. Embodiment is a psychological variable that describes the quality of individuals' experiences of living in their bodies as they engage with the world around them (Piran 2016, 2017; Piran & Teall, 2012). Piran (2015, 2016) has described five dimensions of the experience of positive embodiment, including: (1) positive body comfort and connection; (2) experiences of agency and functionality; (3) attuned self-care; (4) positive experiences and expressions of bodily desires; and (5) inhabiting the body as a subjective rather than an objectified site. In her developmental theory of embodiment, Piran (2015, 2017) describes the role of both risk and protective factors within the physical, mental, and social power domains in influencing one's experience of embodiment.

Given the high prevalence of body dissatisfaction, the harms associated with having a poor body image, and the potential benefits of having a positive body image, it is crucial to explore potential strategies for improving body image. Yoga is an ancient practice that involves physical movement, focused breathing, mindfulness, and meditation (Cook-Cottone, 2015; Iyengar, 1966; Kraftsow, 2002). The practice of yoga addresses, and is aimed at integrating, the physical, mental, emotional, and spiritual aspects of one's being. The underlying tenets of yoga suggest that the practice may have benefits in terms of body image (Boudette, 2006; Cook-Cottone & Douglass, 2017; Daubenmier, 2005; Dittmann & Freedman, 2009; Douglass, 2009; Mahlo & Tiggemann, 2016; Mehling et al., 2011;

Neumark-Sztainer, 2014). For example, the practice of yoga encourages greater awareness of one's body in conjunction with a sense of selfcompassion and self-acceptance. Yoga students are often encouraged to listen to their bodies and adapt their physical practices to their individual needs, which may vary both across persons and from moment-to-moment within person. This focus on the internal milieu of one's being is likely to contribute to an enhanced positive experience of embodiment. As previously noted, Piran (2016, 2017) describes body connection and comfort, attunement to one's bodily needs, and experiencing the body as subjective, rather than objective site (i.e., from inside-out, rather than from outside-in) as important dimensions of a positive experience of embodiment and suggests that engagement in pleasurable physical activities can enhance the experience of embodiment. Menzel and Levine (2011) have similarly proposed that the more opportunities one has for forming a close, connected, and intimate relationship with one's body, the more one will be able to know and respond to bodily needs and appreciate all aspects of one's body. They specifically propose that participation in activities such as yoga may lead to a positive body image via the processes of enhanced embodiment and a reduction in self-objectification. Mahlo and Tiggemann (2016) tested these ideas among yoga practitioners and found that the relationship between yoga participation and positive body image was indeed mediated by embodiment and reduced self-objectification.

Although findings are not consistent across studies, or across measures within studies, research suggests that yoga may have positive benefits in terms of different aspects of body image (e.g., increased body awareness, decreased self-objectification) and risk factors for eating disorders (e.g., reduced negative affect; Carei, Fyfe-Johnson, Breuner, & Brown, 2010; Cook-Cottone, Talebkhah, Guyker, & Keddie, 2017; Impett, Daubenmier, & Hirschman, 2006; Klein & Cook-Cottone, 2013; McIver, McGartland, & O'Halloran, 2009; McIver, O'Halloran, & McGartland, 2009; Pacanowski, Diers, Crosby, & Neumark-Sztainer, 2017). Of particular relevance to the current study, prior research on young adults participating in Project EAT (Eating and Activity in Teens and Young Adults), a longitudinal, population-based study from which the current study population was drawn, found that practicing yoga was associated with positive changes in body satisfaction over a 5-year period (Neumark-Sztainer, MacLehose, Watts, Pacanowski, & Eisenberg, 2018). In particular, improvements in body satisfaction were found among young adults who had previously reported lower levels of body satisfaction, suggesting that the practice may be most beneficial for those in greatest need.

While yoga encourages greater self-awareness in conjunction with greater selfcompassion, practitioners who increase the former without the latter may be at risk for increased body concerns. Although at the population level, yoga may have benefits in terms of body image, there may be individuals for whom the practice could be harmful in terms of body image, or situations that make yoga practitioners feel uncomfortable in their bodies. Piran (2015, 2017) has noted that factors within the domain of social power can influence one's experience of embodiment. While settings in which yoga is practiced may provide a healing and safe environment for many yoga practitioners, some may feel uncomfortable in such spaces due to being different in terms of functional characteristics (e.g., lower skill level in yoga), social factors (e.g., not knowing others, or being from a lower social class), or physical features (e.g., having a larger body size than others practicing yoga).

The predominant manner in which female yoga practitioners are portrayed in the media is similar to that in the larger society, in other words, in a narrow manner that promotes thinness and equates thinness with health (Webb, Vinoski, Warren-Findlow, Burrell, & Putz, 2017; Webb, Vinoski, Warren-Findlow, Padro, et al., 2017). For example, in a content analysis of 139 covers of Yoga Journal, a leading yoga magazine for the public, just one model was coded as having a body mass index (BMI) above 25 and only 2.4% were coded as curvaceous (Webb, Vinoski, Warren-Findlow, Burrell, et al., 2017; Webb, Vinoski, Warren-Findlow, Padro, et al., 2017). This narrow focus could, inadvertently, decrease the benefits of practicing yoga on body image, particularly among practitioners whose body does not fit the cultural ideal for thinness or the image being portrayed most predominantly in the yoga media. A focus on a particular body shape, already viewed as a societal ideal, could also deter individuals in larger bodies from either beginning to practice yoga, or engaging in a consistent yoga practice, due to feelings of discomfort.

The practice of yoga appears to be increasing in popularity and accessibility in the United States (Birdee et al., 2008; Cramer et al., 2016; Lauche et al., 2017; Saper, Eisenberg, Davis, Culpepper, & Phillips, 2004), although there is some variation across studies. The 2016 Yoga in America Study found that 15% of adults in the United States participated in a yoga class in the past six months (Yoga Journal & Yoga Alliance, 2016). The 2010 National Health Interview Survey, conducted on a large population-based adult sample in the United States, reported that 8.9% of adults practiced yoga in the past year, with the highest prevalence among respondents within age groups capturing young adulthood (i.e., 18-29 and 30-39 years of age; Cramer et al., 2016). Among young adults ($M_{age} = 31$ years) participating in Project EAT-IV, 20.5% of women and 6.1% of men practiced yoga at least 30 min/week, on average, over the past year. Yoga was practiced by young adults of different weight statuses, although it was practiced by more young adults with lower BMI values ($BMI < 25$ kg/m²) than those with higher BMI values ($BMI \geq 25$ kg/m²). Specifically, yoga was practiced at least 30 min/week, over the past year, by 27.2% of women and 8.1% of men of lower weight status and 20.5% of women and 6.1% of men of higher weight status.

Further study is warranted given the high prevalence of body dissatisfaction among young adults, particularly young women and those of higher weight status; the potential for yoga to improve body image; and the growing popularity and accessibility of yoga classes for the public. It is of interest to learn more about the experiences of young adults who practice yoga and how yoga is perceived to influence body image among young adults at different weight statuses. Additionally, considering experiences related to the types of teaching practices or situations that may enhance the positive impact of yoga on body image would be useful. For example, it is of interest to gather perspectives on the presence of mirrors within settings in which yoga is practiced, given that research has suggested that mirrors may decrease the positive impact of yoga on social physique anxiety among yoga students who engage in appearance comparisons with other yoga students in class (Frayeh & Lewis, 2018).

The current study builds upon the extant literature and, more specifically, prior research on yoga in young adults participating in Project EAT, by conducting in-depth interviews with young adults who practice yoga to explore their experiences with their practice and the ways

in which yoga is perceived to influence their body image. The study further adds to the literature by gathering perceptions across young adults of different weight statuses to inform better practices in settings where yoga is taught. We believe that it is important for persons of all body shapes and sizes to have access to space in which they can feel comfortable engaging in yoga. In order to ensure that these spaces are created, it is important to gather perspectives from individuals with diverse body weights.

Specifically, this study was guided by the following research questions: (1) How do young adults practicing yoga describe its impact on their body image?; (2) Do perceptions of the impact of yoga on body image differ across weight status and if so, how?; and (3) What types of barriers related to body image do yoga practitioners face and what have they found helpful, including suggestions for yoga teachers and studios? The findings will enhance our understanding with regard to the potential for yoga to improve body image, provide insight into our theoretical understanding of processes influencing body image, and inform recommendations for yoga instructors and settings in which yoga is taught to ensure that instruction is helpful for students' body image and comfort level.

Method

Study Design and Population

This study employed a phenomenological approach to exploring young adults' experiences with yoga and body image. Phenomenology is a method of inquiry that serves to uncover the meaning of individual experiences, predominantly through individual interviews (Lopez & Willis, 2004). Phenomenological inquiry encompasses the subjective experiences of the participant, a qualitative description of meaning, and the active role of the researcher in the co-creation of meaning (Hsieh & Shannon, 2005).

Semi-structured interviews were conducted with 46 young adults who practice yoga to explore the ways in which yoga is perceived to influence their body image. Study participants were drawn from Project EAT-IV, the fourth wave of a large, population-based cohort study on eating and weight-related health. All study protocols were approved by the University of Minnesota's Institutional Review Board Human Subjects Committee.

Project EAT-I first recruited 4746 adolescents in 1998-1999 from public middle and high schools in the Minneapolis-St. Paul metropolitan area of Minnesota, USA (Neumark-Sztainer, Croll, et al., 2002; Neumark-Sztainer, Story, Hannan, & Croll, 2002). Follow-up surveys were conducted online, by mail, or by phone at 5-year intervals (EAT-II, III, and IV; Neumark-Sztainer, Wall, et al., 2018). The EAT-IV survey was completed by 1830 young adults in 2015-2016 (out of 2770 invited to participate in this wave; response rate = 66%). Survey data on participants' sociodemographic characteristics, yoga practice, weight status, and body satisfaction were used to identify potential interview participants and/or to describe the qualitative sample and results. Additional details about the Project EAT study design and survey development are described elsewhere (Berge et al., 2018; Larson et al., 2011; Neumark-Sztainer et al., 2017; Neumark-Sztainer, MacLehose, et al., 2018; Neumark-Sztainer, Wall, et al., 2018). A total of 297 young adults from the EAT-IV sample were identified as yoga practitioners, and of these 46 participated in individual interviews.

For the current study, recruitment emails were sent to a convenience sample of survey participants who indicated that they practiced yoga for an average of at least 30 min/week over the past year. Recruitment emails described the study as related to their experiences practicing yoga and yoga's perceived relationship to their behaviors and health (such as stress, eating habits, and body image). To learn more about yoga across weight status, recruitment was targeted to ensure that half the sample to be interviewed had a BMI 25kg/m^2 . Recruitment was primarily conducted by email with some follow-up phone calls. More follow-up attempts were made for males of higher weight status in an effort to obtain a more gender-balanced sample.

A description of the 46 young adults in the interview sample is presented in Table 1. The average age of participants was 30.6 ($SD = 1.6$) years old; almost three quarters were female; and the majority were white and had a university degree. The mean body satisfaction score was 43.2 on a scale that ranged from 13 to 65 (with higher scores indicating greater body satisfaction). The mean frequency of yoga practice was 2.1 hours/week ($SD = 2.0$; range = 0.8-11 hours/week). Young adults practiced a variety of yoga styles, with Vinyasa Flow being the most commonly reported. Most participants practiced a combination of gentle and vigorous yoga. Participants reported practicing in a variety of locations. Characteristics of interview participants were very similar to those of yoga practitioners in the larger survey sample from which they were drawn. The only statistically significant difference between the interview sample and the larger survey sample involved the location where yoga was practiced, with a larger percentage of the interview sample reporting that they practiced in gyms or fitness centers.

Project EAT Survey Measures

The Project EAT survey asked about a range of weight-related lifestyle behaviors and sociodemographic characteristics and included the addition of detailed questions about young adults' yoga practice. The survey was tested in a sample of 103 young adults to examine test-retest reliability (test-retest correlations or percent agreements of survey measures are presented below). Measures included in the current study are described here.

Yoga practice.—Young adults who indicated they had ever done yoga (*yes/no*) and had done yoga in the past year (*yes/no*) were additionally asked, "On average, how frequently did you do yoga over the past year?" Respondents who indicated they had engaged in yoga at least 30 min/week in the past year were identified as *yoga practitioners* (test-retest agreement = 92%), all others were considered nonpractitioners (i.e., did not practice regularly or had never done yoga). For sample description purposes, we also examined *types* of yoga practice, the *intensity* of yoga practice, and *locations* of yoga practice. Types of yoga practice was assessed by asking participants to select the type(s) of yoga that they usually do from the following list (they were able to select all that applied): *Hatha*, *Vinyasa Flow*, *Restorative Yin*, *Hot*, or *Other* (test-retest agreement = 85%-100%). Intensity of practice was assessed with the question, "How would you describe your yoga practice?" Response options were: *Mostly Vigorous*, *Mostly Gentle*, or *Gentle and Vigorous* (test-retest $r = .53$). Locations of practice was assessed by asking, "Where do you usually practice yoga?" and to

select all that apply from the following options: *Gym or Fitness Center*, *Yoga Studio*, *Home*, or *Other* (test-retest agreement = 90%-100%).

Weight status.—Young adults self-reported their height and weight, from which BMI (BMI, kg/m²) was calculated. Self-report of height and weight (test-retest $r = .95$ for height and $r = .98$ weight) were previously validated in Project EAT-III in a subsample of 63 male and 62 female participants for whom height and weight measurements were completed by trained research staff (Quick, Wall, Larson, Haines, & Neumark-Sztainer, 2013). Participants were then classified by weight status based on current BMI guidelines for adults (Barlow, 2007): higher weight status (BMI ≥ 25 kg/m²) and lower weight status (BMI < 25 kg/m²).

Body satisfaction.—Using a modified form of the Body Shape Satisfaction Scale (Pingitore, Spring, & Garfield, 1997), participants reported satisfaction with 13 body parts including height, weight, body shape, and overall body fat. Body satisfaction ratings ranged from 1 (*very dissatisfied*) to 5 (*very satisfied*). Item responses were summed such that higher scores were indicative of greater satisfaction (potential range: 13-65; psychometric properties: Cronbach's $\alpha = .93$, test-retest $r = .82$).

Sociodemographic characteristics.—Survey items asked young adults to report their *age* (in years), *ethnicity/race* (dichotomized for this analysis as: white/non-white), *gender* (male/female), and *educational attainment* (categorized for this analysis as: < university degree/Bachelor's degree/graduate degree).

Interview Data Collection

For the qualitative data collection, a semi-structured interview guide was first piloted with two yoga teachers and two young adults to make sure questions were clear, elicited in-depth discussion, and were acceptable to participants. Prior to being asked specific questions about body image, participants were asked to describe their yoga practice, reasons for practicing, and perceived benefits. They were then specifically asked about the impact of yoga on their stress, mood/emotional state, eating habits, and physical activity. Following questions on the impact of yoga on their body image (described below), they were asked about the impact of yoga on their weight. Participants were then asked to provide suggestions for utilizing yoga to improve these outcomes (Watts, Rydell, Eisenberg, Laska, & Neumark-Sztainer, 2018).

Given that the current study aimed to explore the perceived impact of yoga on body image and gather suggestions to inform interventions aimed at improving body image, responses to questions of most relevance to body image were examined in the present study. To address the primary aim of the current study, which was to explore the perceived impact of yoga on body image, participants were asked, "Has yoga had an impact on your body image, meaning how you feel about your body?" Follow-up prompts included, "Can you explain how or why you think yoga impacted how you feel about your body? This could include how you feel about your body while practicing yoga or also how you feel about your body when you are doing other things outside of your practice." An additional follow-up prompt was, "Was the change positive? Negative? Neutral? Please explain." The focus of the questions used in the current analysis was primarily on attitudes towards one's body, in

contrast to questions asked earlier in the interview that focused on perceptions of yoga's impact on behavioral outcomes of eating and physical activity (Watts et al., 2018). A secondary aim was to explore how body image might be a barrier to yoga participation, and what yoga studios and teachers might do to mitigate these barriers. Study participants were asked a general question about barriers to practicing yoga: "What do you find are some of the main barriers to doing yoga?" Following this general question, participants were asked: (1) "Do body image concerns ever serve as barriers to practice and if so, how?"; (2) "When you look around at the people in your yoga classes, how different, or similar, are they in terms of their gender, race, and size? How does that impact you? How did this make you feel?"; and (3) "Some studios or other centers offering yoga classes provide facilities or take steps to help students feel better about themselves and their bodies, while others make students feel worse. What have been your experiences with facilities and room set-up (for example, mirrored walls, group changing rooms, etc.)? What suggestions do you have for studios or centers offering yoga classes?"

While the majority of comments included in the current analysis were in response to these questions on body image, relevant responses to other questions in the survey (e.g., "Has yoga had an impact on your mood or emotional state?"; "What have your experiences been with the teaching strategies used, for example use of props?"; "What have your experiences been with teacher language used?") were also coded and are included in the analysis.

Interviews were conducted by one of three female research staff members who were trained in qualitative research and interviewing techniques and had relevant experience practicing or teaching yoga. Interviews took place over a 1-year period and the interview length ranged from 20 to 60 minutes. The majority of interviews took place in a private room in the Epidemiology Clinical Research Center, which is close to the university campus, while two interviews took place at community locations chosen by the participant and one interview occurred over Skype. Interviews were audio-recorded and written consent was obtained before commencing the interview. Following each interview, research personnel reflected on the interview by recording field notes that included their comments about the interview session, impressions of the discussion and notes about emerging themes. Young adults received a \$50 Target gift card for participating.

Data Analysis

Socio-demographic information derived from Project EAT-IV survey responses were tabulated for the interview participants ($n = 46$), and for the full sample of Project EAT-IV survey participants who reported practicing yoga regularly ($n = 297$). Continuous variables were presented as means and standard deviations, while categorical variables were presented as percentages and frequencies. Descriptive data were tabulated for both the interview participants, and for participants of the larger survey sample of yoga practitioners from which interview participants were recruited. Characteristics of the two groups were compared and tested for statistically significant differences with t -test, Wilcoxon rank-sum test, and chi-square analyses.

Transcripts of the audio-recorded interviews were coded and analyzed using a directed thematic analysis approach (Burnard, Gill, Stewart, Treasure, & Chadwick, 2008; Hsieh &

Shannon, 2005). This method allows for hypotheses to provide an initial guide for the analysis, but also for participants' phenomenological descriptions of their experiences to emerge inductively from the transcripts. Following this method, an initial coding scheme was developed based on the interview guide and all new ideas emerging from the first transcript. The coding scheme was iteratively and inductively updated as additional transcripts were coded.

Multiple coding was triangulated between three research team members (Mays & Pope, 2000). Two research team members coded all transcripts independently to identify each unique concept emerging from the data. Coding was reviewed by a third research team member to resolve all discrepancies by reaching consensus among the three research team members and to organize/collapse themes where overlap was identified. The research team members, who contributed to the study's design, research questions, and the co-creation of the data generation and analysis, were female and had previous experience with a positive yoga practice. They also came to the study with a perspective on body weight and health that was informed by the public health and eating disorders fields.

The coding scheme was maintained with a Microsoft Word file and coding was done by hand on hard copies of the interview transcripts, which were then used to compare coding among team members and to create a reconciled version. Coding from each reconciled interview transcript was entered into a Microsoft Excel file to tabulate the frequency of codes/themes for each individual, the frequency of individuals endorsing each code/theme, and to compare differences in the frequency of individuals endorsing each code/theme by weight status. Compelling quotes associated with each code/theme were also documented using Microsoft Word. The frequency with which a theme emerges can give some indication of the magnitude of the theme. Thus, frequencies are provided in the results when their inclusion was deemed as useful for interpreting the findings. However, the primary focus of the current analysis is of a qualitative, not a quantitative, nature.

Results

Perceived Impact of Yoga on Body Image

The majority of the 46 participants indicated that yoga influenced their body image in some way; more participants talked about a positive impact on their body image ($n = 38$) than a negative one ($n = 13$). Positive and negative experiences were not mutually exclusive as some participants reported both positive and negative experiences; all but one of the participants reporting that yoga had a negative impact on their body image also made comments about yoga's positive impact.

A small number of participants ($n = 6$) did not describe any relationship between yoga and body image. The majority of these "neutral" participants were male (5 out of 6), and two of these individuals reported that their yoga practice took place exclusively at home (only three study participants reported practicing yoga exclusively at home). Ideas expressed by these individuals were coded as neutral because the participants simply stated they did not know if there was a relationship between yoga and their body image, there was not a relationship between yoga and their body image, or they felt neutral on the topic and did not provide any

additional discussion on this topic to explore. As such, the results focus on the positive and negative ways that yoga was perceived to impact body image.

Positive Impact of Yoga on Body Image

Five themes emerged from the data with regard to the positive impact that yoga was reported to have on participants' body image: (1) physical changes ($n = 18$); (2) gratitude ($n = 15$); (3) accomplishment ($n = 14$); (4) confidence ($n = 7$); and (5) diversity of body shapes ($n = 4$).

Physical changes.—In response to being asked if and how yoga had influenced their body image (i.e., how they feel about their bodies), participants discussed seeing positive physical changes in their bodies that they attributed to yoga, which made them feel better about themselves. Almost half of participants talked about physical changes to their bodies, in terms of aspects of their body functionality and/or their appearance, such as being more muscular, toned, or leaner; losing weight; and having better posture. Perceived physical changes did not have to be dramatic; small changes were seen to improve one's body image. The impact of physical changes on body image was talked about fairly equally by practitioners of higher ($n = 8$) and lower ($n = 10$) weight status. Examples of participant quotes include:

Yeah, [yoga had a positive impact on my body image] because I lost a little weight, I was standing up straighter, and people around me, you know, like my husband and my family, I think, noticed too...just very subtle changes in my body, but that made me feel better about myself and feel good. (female, white, lower weight status)

I think [yoga] has definitely helped improve my body image. I've noticed that I have gotten more muscular and more toned, and so I see myself in a different way than I did before, and I think it's — you know, there's still struggles there, but it's definitely improved since I started. (female, white, higher weight status)

Gratitude.—Gratitude was talked about by many practitioners in that yoga helped them to focus on the positive aspects of their body. Yoga helped them to accept and appreciate their current body and what it is capable of doing. Some young adults described how focusing on these positive aspects of their bodies shifted their attitudes and helped them to deal with any negative feelings that might arise during class (for example, when attention might be drawn to a negative aspect of their body when looking in the mirrored walls or while doing a difficult pose). Gratitude was described equally across higher ($n = 7$) and lower ($n = 8$) weight status. Some examples of quotes demonstrating gratitude are as follows:

I think yoga has had a very positive impact on my body image. I think because yoga is what brought me around to this idea that my body serves a purpose and a function to bring me through my day. That's kind of— I've latched on to the body is my temple, so it's also helped me when feeling really like, oh, should I eat this or that? And thinking about my body as a temple, but also thinking of my body as the stonework of the temple that protects my soul, so keeping my body strong, but saying like it is what it is. (female, white, lower weight status)

[Yoga's] just changed my attitude, in that, you know, I've tried to be more just accepting of my — you know, the way I am. (male, white, higher weight status)

Accomplishment.—Many participants talked about how experiencing progress over time and accomplishments in their practice made them feel good about their bodies. For example, participants talked about improvements in body functionality (e.g., described feeling good about experiencing progress in their practice or improvement in their flexibility), being able to do a pose that they couldn't do beforehand, or just finishing a class. Some participants also talked about how they felt better about themselves and their bodies when they kept their focus on their own progress instead of an absolute level of skill or in comparison to others in the class. The theme of accomplishment was talked about by twice as many practitioners at higher weight status ($n = 10$) than among those at lower ($n = 4$) weight status. Some quotes that demonstrate this theme include:

When I'm doing yoga, I feel — I don't know, I just feel better about my body, I guess. Just afterward, it just feels like I accomplished something and it was good for me. (male, white, higher weight status)

[Yoga has] probably had a positive influence [on my body image]...sometimes you like get to a point where you can do something that you couldn't do before, so it's like, oh, I'm getting stronger or more flexible or, you know, whatever, and that's definitely good. (female, white, higher weight status)

Confidence.—Another way that yoga made some young adults feel better about their bodies was through increased confidence. Participants described feeling more confident in what their body was capable of, discussed having more confidence in their body to try new forms of physical activity, or talked about improvements in the way they carried themselves in day-to-day life, such as standing taller. The number of practitioners who reported that yoga had a positive influence on their body image via gaining greater confidence through yoga was similar for those of higher ($n = 4$) and lower ($n = 3$) weight status. Some examples of how participants talked about their confidence and body image include:

[Yoga] improves your posture and that improves your confidence, you know, just the way you walk. (female, white, lower weight status)

Yeah, I think it's a positive, just for the sake of for me walking out of there feeling good and being able to actually feel my whole body while I'm doing yoga and concentrate on, wow, my body can do this, or, you know, going one step further than I had in the days prior. You know, that's more just a confidence of what my body can do, allowing me to look at my body in a positive image. (female, white, higher weight status)

Diversity of body shapes.—Finally, yoga class was described by a few participants as a place where they could see a variety of body shapes and sizes, which helped them to feel more comfortable about their own bodies while in class. A feeling of togetherness was also fostered by seeing a variety of shapes and sizes. This theme was equally talked about across weight status ($n = 2$ for each weight status group). Examples of quotes from participants include:

I think more so it's a positive, yeah, because I can see that other people are shaped differently than me, like smaller, bigger, all that, and like we're all still just doing this together and probably want a similar end result, you know. (female, white, lower weight status)

I think it's been really positive. I mean, I go to classes and I see every shape and size and age, and you know, there are like old women that are doing poses I can't do. So I think it has been positive for me in that way... And there are a lot of like social media people that are doing things like yoga for everybody and they show lots of images of different types of people doing yoga, so that's been helpful for me. (female, white, higher weight status)

Negative Impact of Yoga on Body Image

While fewer participants described a negative impact of yoga on body image than a positive impact, comments were made by a fourth of the participants and their comments demonstrate the complexity of the practice in terms of body image. The negative impact of yoga on body image was described as working via either: (1) comparative critique ($n = 10$); or (2) inner critique ($n = 4$).

Comparative critique.—A potential downside that yoga may have on young adults' body image is through increased attention to, and comparison with, others' bodies and physical abilities. Some yoga practitioners indicated that seeing bodies that they perceived to be more positive (e.g., thinner, more flexible) could make them feel badly about themselves. Having mirrors in the class also exacerbated this negativity for some individuals. Mirrors may make it easier to make comparisons with others by drawing more attention to what other people in class look like or what they are able to do. Of note, comparative critique emerged as a theme primarily among practitioners of higher weight status ($n = 8$) as compared to those of lower weight status ($n = 2$). Selected quotes that demonstrate participants' comparative critique include:

I mean, I never really feel that physically fit after I go to a yoga class, because there's always people that are way better than me and dudes with their shirts off that look way better than me. But, I mean, it does help keep me fit where I want to be, so that part I feel better about. And it is — I try to ignore it. I mean, if anything it kind of pushes me to sort of work harder and know that there's something — like I could — like there's still more that I can achieve type of thing, and then I don't walk out of there feeling bad about myself or anything like that. (male, white, higher weight status)

I'm just, like, I would love to be one of those girls that like can do all those crazy poses and like have great form. (female, white, higher weight status) Sometimes like you're looking at other girls' bodies and you're like, whoa, I really need to lose a lot of weight, you know, because like there's so many mirrors... Like I feel like a good majority of the class is like super fit, you know, and so you're just like, oh, my gosh, like everyone's like really skinny and they're wearing like really tight like workout stuff and, you know, I'm just — I just want to put on a baggy T-shirt over my yoga pants, you know...that's probably like the only thing I don't like about

going to yoga sessions, is that like some girls are like super fit. (female, Asian American, higher weight status)

Inner critique.—In contrast to making comparisons with others, a small number of yoga practitioners also talked about how their awareness was drawn to their own limitations in a class or to aspects of their bodies that they didn't like, which would make them feel more negative about their bodies. Mirrors in class could contribute to these negative thoughts by making some people pay more attention to the aspects of their bodies that they don't like. Practitioners of higher ($n = 2$) and lower ($n = 2$) weight status talked about their awareness being drawn to their own bodies in a negative way. Examples of how participants talked about their inner critique are below:

When you're working out, there's all the mirrors, and a lot of times you focus on what you don't like. (female, white, lower weight status)

I don't want, you know, like I'm doing the downward dog, or the downward-facing dog, and like having the person behind me be like, "She has a fat butt, like look at the cellulite," or like snicker with somebody else, "Ha, ha, ha." Like that's — I worry about that. You know, it's like you — like people are just really judgy. (female, white, higher weight status)

For one thing, you know, as far as the negativity goes, there are certain moves that are just harder for a fat girl. Like I hate to put it that way, but there are just certain moves and modifications that need to be made for someone who is not the same size as the yoga instructor... I am not this tiny little thing, and so, yeah, for me it's going to be, you know, incredibly hard to do things like crow pose, or even just like twirling my elbows around and, you know, having my hands match. Like so it — I think modifications are very important for that kind of thing, because then it makes you feel a little less bad about like, everybody is so thin, and I can't do it. (female, Asian American, higher weight status)

Body Image-Related Barriers to Practicing Yoga and Suggestions for Studios

A secondary study aim was to explore how body image might be a barrier to yoga participation, and what yoga teachers and studios might do to mitigate these barriers. Participants were first asked questions about barriers to yoga participation, followed by a prompt as to whether concerns about their body ever acted as a barrier to practice. If so, participants were asked whether they had suggestions to decrease these barriers and help students feel more comfortable about their bodies and themselves. As described below, participants talked about feeling intimidated or uncomfortable ($n = 21$), which served as barriers to practicing yoga. Having a more diverse population attending yoga classes was seen as positive ($n = 16$) and the importance of the teacher's language was also discussed ($n = 36$). Participants had mixed feelings about the presence of mirrors within settings in which yoga is taught ($n = 46$).

Feeling intimidated/uncomfortable.—Practitioners felt that major barriers for them included feeling intimidated or uncomfortable in the presence of others who they perceived as belonging to the yoga culture, having more yoga skills, or being thinner and/or fitter.

Several practitioners talked about feeling uncomfortable because they did not feel like they were wearing the right clothing. Some young adults talked about practicing yoga at home where they were more comfortable. Practitioners discussed feeling uncomfortable or intimidated in certain situations across weight status in fairly equal numbers (lower weight status, $n = 12$; higher weight status, $n = 9$) Selected quotes from participants include the following:

Like going initially, it can feel intimidating, because it's like everybody knows what they're doing and they've got their little outfits and their stuff and their bags, and it's really intimidating, and there's a lot going on, but it's okay. I'll get over it. (female, white, lower weight status)

I don't think I know of any yoga classes that are focused on people of color or, you know, intersectional, I want to say, and like usually everybody kind of fits this kind of mold when you go in and there's kind of like this culture shock, where it would be nice to see both more body and, you know, ethnic and age diversity. (female, Asian American, higher weight status)

Diversity of body shapes.—Conversely, when prompted about feelings related to diversity in yoga classes, participants spoke about feeling more comfortable being in the presence of more diverse students and teachers, particularly with regard to body size, as they developed more yoga skills. It was particularly important for some practitioners to see other practitioners with similar bodies to themselves, and for one practitioner, to see that weight was not a barrier to participating in yoga. Young adults of both lower weight status ($n = 6$) and higher weight status ($n = 10$) discussed these ideas. Selected quotes from practitioners include:

It definitely made me more comfortable that there were all different types of bodies and different ages there, for sure, because the idea of going into a studio where it's like all young people who are in perfect shape is not inviting to me. (female, white, lower weight status)

There's other bodies that are just like mine, so I think that does help a little bit too. (female, Asian American, higher weight status)

Sometimes I'm like, "Oh, God, I wish I could be slim and trim like the girl who's sitting next to me." You know? It just looks like things come very easier to her, because sometimes I equate slim and trim with being flexible, which is not the case...But then it's also seeing somebody who's bigger than me is also very much motivating... "Well, they're doing it and they can try it, so I can." You know, like weight isn't a barrier with yoga. (female, white, higher weight status)

Role of teacher.—Most participants mentioned how yoga teachers could create an atmosphere that would help them feel more at ease and more accepting of where they were in their practice. Some participants talked about the importance of teachers using dialogue during class to help students focus inward instead of comparing themselves to others in the class. They also suggested that teachers keep language very accessible and welcoming to beginners and those who may not be familiar with yoga terminology. Suggestions were

provided equally by young adults of lower weight status ($n = 18$) and higher weight status ($n = 18$). For example, participants' suggestions included:

My first class, [the teacher] spent a lot of time with me to like help me get comfortable and explain what everything was, because your first class is scary... You know, because they use words that you don't know. (female, white, lower weight status)

The atmosphere that the teachers can create I think just make it possible to sort of let go of those like feelings of inadequacy of even just, yeah, not being as good. (male, white, higher weight status)

Some instructors talk about, you know — just like, you know, say positive things about body image and not to worry about your ability and compare yourself to other people, stuff like that, yeah... I mean, it's good, you know, just for me, but I think it's a good message for everyone in the class, and, yeah, I don't know, it's nice to be reminded of that. (female, African American, lower weight status)

In pretty much every class I've been in, [the teachers] talk about being on your mat and where you are in your journey and not comparing yourself to other people in the class, and I think I try to really keep that in mind and like just think everyone's in a different place. And I've been doing yoga for different amounts of time, and maybe there's a pose I can do that's really hard for the person next to me or vice-versa, and you just keep that in mind the whole time. (female, white, higher weight status)

Presence of mirrors.—Participants talked about mirrors as being both helpful and harmful. More than three quarters of practitioners indicated that mirrors could be useful, primarily because they liked to check their form to ensure they were doing the poses correctly and safely. Additionally, some practitioners also liked to see how others were doing the poses. However, about a quarter of participants said that mirrors contributed to negative self-talk during class, including the feeling of being judged by others, negative comparisons with others, and critique about one's body that was not in relation to other students, and as a distraction that made it difficult to focus inward. The majority of participants who made negative comments about mirrors also made positive comments about mirrors ($n = 9$). Positive feelings about mirrors in yoga settings were expressed fairly equally by practitioners of higher weight status ($n = 16$) and of lower weight status ($n = 20$), although those making only negative statements were all of higher weight status ($n = 3$). Some of the comments reflecting these positive, negative or mixed thoughts about mirrors include the following:

I think mirrors are helpful because you can monitor what you're doing, and it just helps you be more accurate with it. And it also kind of helps you see the class, too, so you get kind of that — it's really group accountability, but it's, you know, just the positivity of working with a group. (female, white, lower weight status)

I think it would be much better if there were no mirrored walls because I think looking at a mirror, you're only really trying to perfect what you're doing and you

can only — and maybe this is not everybody, but, for me, like you only see the negative attributes. You don't see the positives. (female, white, higher weight status)

Mirrors can be distracting, because you can start to focus on the person on the mat next to you and go, oh, why can't I be more like them?...and yet you want to stay in the correct alignment when you're a beginner, so then there's nothing to aid you in that. It's a hard balance. (female, white, lower weight status)

[Mirrors are] important so that you can see what you're doing, but it's also kind of like self-conscious. You're like, I don't want to look at myself when I'm doing this, but it's also a good thing, too, because you can see how other people are doing it and kind of look and see, you know, am I doing this right? (female, white, higher weight status)

Discussion

This study was aimed at learning more about the perceptions of young adults practicing yoga with regard to the impact of yoga on body image. In-depth interviews with young adults enabled a study of their experiences with yoga and its impact on their body image. Body image-related barriers to practicing yoga and suggestions for yoga studios and yoga instructors to decrease these barriers and help young adults feel more comfortable practicing yoga were also described by the participants. The study further aimed to identify similarities and differences across weight status. The use of a phenomenological approach enabled an exploration of personal experiences, which provided a more nuanced picture than has been previously described among a population-based sample of yoga practitioners. While the primary impact of yoga on body image appeared to be a positive one, with over 80% of participants describing a positive impact of yoga on their body image, about one-fourth of the study participants experienced both a positive and negative impact of practicing yoga on their body image. Yoga was perceived as having a positive impact on body image via physical changes, gratitude for one's body, accomplishments within one's physical practice, greater self-confidence, and through witnessing different types of bodies practicing yoga. Yoga was perceived as having a negative impact on body image via the mechanisms of comparative critique (e.g., upward comparisons with others in class) and inner critique (e.g., negative self-talk). In general, themes tended to be similar across weight status, suggesting similar processes; noteworthy differences and their implications are discussed below.

Perceived Positive and Negative Impacts of Yoga on Body Image

A major theme discussed by participants, in response to the question about how yoga had influenced their body image, was that yoga had led to perceived positive physical changes, which in turn led to improvements in body image. While perceived physical changes, or changes in aspects of body functionality, such as becoming stronger or more flexible, can be positive outcomes of practicing yoga (Gothe & McAuley, 2016; Kongkaew, et al., 2018; Shiraishi & Bezerra, 2016), ideally, yoga practitioners would experience positive changes in body image regardless of accompanying physical changes. Gratitude for the body that one has, a sense of accomplishment or progress in one's yoga practice, and greater confidence

were other major themes that emerged with regard to yoga's positive impact on body image; these themes appeared to reflect factors beyond visible physical changes.

These emerging themes suggest that yoga has the potential to influence various aspects of a positive body image. Tylka and Wood-Barcalow (2015b) have described a positive body image as being multifaceted and including aspects such as body appreciation, which is similar to the theme of gratitude that emerged among yoga practitioners in the current study, and inner positivity, which shares similarities with the emerging theme of confidence discussed by yoga practitioners. The developmental theory of embodiment, as described by Piran (2015, 2017), suggests that participation in pleasurable physical activity (e.g., yoga) has the potential to enhance one's experience of embodiment. Findings from the current analysis, and a prior analysis that incorporated data from these interviews and Project EAT survey data (Watts et al., 2018), provide some support for the role of yoga in enhancing various dimensions of the experience of embodiment, as described by Piran (2016). In the current analysis, yoga practitioners described how yoga had a positive impact on various aspects of their body image (i.e., greater body comfort and connection) and led to greater physical strength and confidence (i.e., agency). In the prior analysis, survey data showed that yoga practitioners were more likely than nonpractitioners to engage in healthier eating, including eating more fruits and vegetables and less fast food (Watts et al., 2018). Furthermore, interview data indicated that yoga practitioners felt that yoga supported healthier eating by increasing their motivation to make healthier food choices, greater mindfulness, management of emotional eating, healthier food cravings, and the support of the yoga community (Watts et al., 2018). These changes are suggestive of greater attunement to internal needs and self-care, another dimension of the experience of embodiment.

The perceived negative impact of yoga on body image operated via the mechanisms of comparison critique, in which young adults engaged in upward comparisons with other students, and inner critique, in which young adults engaged in self-criticism but not in relation to others. Comparisons with others, resulting in a negative impact of yoga on body image, was the predominant theme. Participants discussed comparisons at the level of physical appearance (e.g., how others looked) and at the functional level (e.g., their ability to do certain poses). These findings are in line with theories about social comparisons with others and the tendency to compare with those who are similar to oneself (Festinger, 1954) and toward making upward comparisons (Tiggemann & McGill, 2004; Tiggemann & Polivy, 2010). For example, research has suggested that upward social comparisons with models can have adverse consequences such as reduced body satisfaction (Tiggemann & Polivy, 2010). Findings from the current study with regard to comparisons at the functional level are of particular interest given questions regarding the potential benefits of moving the focus from bodily appearance to body function. Alleva and colleagues (2015) found improvements in body image among women who participated in a body image intervention that trained women to focus on various aspects of their body functionality through structured writing exercises. However, Mulgrew and Tiggemann (2018) found that shifting young women's attention toward the body functionality of others (namely, their physical health and fitness), using imagery of models in the media, was not helpful, and was actually detrimental to one's body image. Strategies aimed at having a greater appreciation for one's own body functionality may be helpful in improving body image, while comparisons with others, even

when the focus is on aspects of body functionality and not physical appearance, may not be helpful.

One of the goals of this study was to determine whether perceptions of the impact of yoga on body image differ across weight status. Themes regarding the positive impact of yoga were equally mentioned across weight status suggesting that yoga is perceived as having a positive impact on various aspects of body image via similar mechanisms, regardless of weight status. The general absence of differences across weight status suggests that the practice has a similar impact on body image among young adults of varied body shapes and sizes. The only exception was with regard to the theme of accomplishment within one's yoga practice, which was mentioned twice as often by yoga practitioners of higher weight status. This finding suggests the suitability of yoga for young adults in larger bodies as it provides a practice with which they can feel good about the progress that they are making and accomplishments in their practice. In contrast, differences were more apparent across weight status with regard to the negative impact of yoga on body image. Most of the participants who described comparison critique and its negative impact on body image were of higher weight status. This finding likely reflects greater societal norms regarding the ideal body as being thin. Thus, young adults of higher weight status may be more likely to compare themselves with other students in their yoga classes and feel badly about themselves. As discussed below, while strategies aimed at helping students focus on themselves and not compare themselves to others are important for everyone, these strategies may be particularly important with regard to students of higher weight status.

Recommendations for Enhancing the Positive Impact of Yoga Practice on Body Image

To minimize body image-related barriers to practicing yoga in the community, including feeling intimidated or uncomfortable, participants recommended having more students with diverse body shapes and sizes. Concerted efforts will be needed to ensure that persons in larger bodies feel comfortable coming to a yoga studio and have a positive experience once they are there (Pickett & Cunningham, 2017). Yoga instructors have the potential to help students reduce both their inner critique and comparison critique. Some participants talked about the importance of teachers using dialogue during class to help students focus inward instead of comparing themselves to others in the class. This type of dialogue can benefit all students and may be of particular benefit to students in larger bodies. Likewise, yoga instructors can help decrease students' sense of intimidation, particularly among those new to the practice. Study participants talked about the role of the yoga instructor in creating an atmosphere that could help them feel more at ease and more accepting of where they were in their practice. While these types of discussions are certainly important for beginning students, they are also important for more experienced students, given the predominant culture that is rampant with harmful body-image messages. Indeed, the role of the yoga instructor is paramount to ensuring that yoga practice is helpful, and not harmful, in terms of body image (Cook-Cottone & Douglass, 2017). The developmental theory of embodiment states that social power and relational factors can influence one's experience of embodiment (Piran & Teall, 2012); providing a setting in which all yoga practitioners feel safe and all bodies feel welcome can help ensure that the yoga studio can be a healing space for all.

Participants spoke about both the pros and cons of having mirrors in the yoga space. The majority of study participants indicated that mirrors can help with alignment, although many also spoke about how the presence of mirrors allows for more comparisons with others, which in turn leads to harmful self-talk. While the frequency of positive comments was higher than the frequency of negative comments, negative comments about the presence of mirrors were very strong. Many participants talked about both the positive and negative aspects of having mirrors in the yoga room, although those of higher weight status were more likely to only comment on the negative aspects of having mirrors present. Interestingly, one study utilizing a randomized, experimental design to compare yoga with and without mirrors, also found mixed results regarding the impact of mirrors during yoga on various measures of body image (Frayeh & Lewis, 2018). There were no between-group differences in state body image and body objectification following the intervention. However, students in the mirrored condition engaged in higher levels of social comparison during yoga than the nonmirrored condition. Furthermore, participants who engaged in more appearance comparisons reported higher state social physique anxiety than those who engaged in fewer appearance comparisons (Frayeh & Lewis, 2018). In a small, in-depth study of yoga instructors engaging in body-positive yoga, the topic of mirrors did not emerge as a strong theme discussed as important (Pickett & Cunningham, 2017). Whether or not mirrors are present may be less important than how they are used, cues from the teacher, and the diversity of the student body. Characteristics of the students practicing yoga, in terms of eating and weight concerns, are likely to be important in determining how important it is to avoid having mirrors in settings in which yoga is practiced. Given the potential for mirrors to contribute to yoga having a negative impact on body image, they should not be used in yoga settings in which students are likely to have eating and weight concerns. That said, in most yoga classes, it is highly likely that students with some type of body concerns or disordered eating behaviors will be present (Neumark-Sztainer, Eisenberg, Wall, & Loth, 2011). Thus, even though there may be some benefits of having mirrors present, the potential harmful effects on body image lead us to conclude that, whenever possible, the use of mirrors should be avoided. When mirrors are present (e.g., in a gym setting), it may be helpful for yoga teachers to use language to deter students from engaging in negative self-talk, encourage positive self-talk and gratitude, a focus on their own body functionality versus appearance, and redirect students toward an inward focus in which they sense proper alignment from within themselves (e.g., move to a position in which they feel a sense of opening the heart). Findings from the current study suggest that this type of language will be important for all students and particularly for those in larger bodies.

Intervention implications include building upon the ways in which yoga has a positive impact on body image while being aware of how the practice might negatively impact some practitioners. Strategies likely to enhance the potential for yoga to improve practitioners' body image, based on findings from the current study and recommendations from others (Cook-Cottone & Douglass, 2017; Neumark-Sztainer, 2014; Pickett & Cunningham, 2017), include providing a welcoming atmosphere to address feelings of intimidation, a practice space and instructor language that minimizes students' tendencies to make comparisons with other students, and a setting and overall philosophy to attract a diverse student population in terms of body shapes and sizes, physical abilities, ethnicity, gender, and age. Yoga

instructors have an important role to play in enhancing the positive impact of yoga on body image, and reducing its negative impact, through language that encourages students to meet their bodies where they are at, focuses on the functionality of the postures rather than what they look like, encourages looking inward rather than looking at others in the class, promotes a sense of gratitude for one's body and all it does, and helps students be aware of their progress over time.

Steps need to be taken within yoga studios and other settings in which yoga is practiced to further enhance the positive impact of yoga on body image and to make the practice more accessible to those in larger bodies through intentional actions to attract and meet the needs of students from diverse backgrounds and in diverse body shapes and sizes (Cook-Cottone & Douglass, 2017; Pickett & Cunningham, 2017). Some suggested guidelines for yoga studios and instructors, based primarily on participant responses, are included in Table 2. It is promising that more attention is being directed toward the potential for yoga to have a positive impact on body image and that there are greater resources available for yoga practitioners, yoga instructors, yoga studios, and mental health professionals (Cook-Cottone & Douglass, 2017; Costin & Kelly, 2016; Guest-Jelley, 2017; Klein, 2018; Klein & Guest-Jelley, 2014).

Strengths and Limitations of this Research

Study strengths and limitations should be taken into account in interpreting study findings and in planning for future research. The mixed-methods, population-based study design, in which study participants completed surveys; were recruited based upon responses to questions on yoga practice, weight status, and gender; and were then interviewed to collect in-depth qualitative data is a study strength. The mixed-methods approach allows for the collection of rich data on participants' experiences and the population-based sample allows for greater generalizability. Findings from this qualitative analysis build upon and supplement prior quantitative analyses (Neumark-Sztainer, MacLehose, et al., 2018) for a greater understanding of the nuances involved. Participants were drawn from a population-based sample of young adults, which enhances our understanding of the impact of yoga on body image among young adults who are practicing yoga in the community. Thus, the findings will be of relevance to the public for whom interventions to improve body image are needed. Although the sample that was interviewed represented the fuller Project EAT-IV study population who practiced yoga, and included diversity in terms of gender, educational background, and ethnicity/race, our population was not representative of the broader population in the United States, particularly with regard to age and geographic location.

Furthermore, there are also limitations in recruiting study participants from a population-based sample, as the majority of participants did not practice yoga at a high frequency and may have had fewer opportunities to consider, or experience, the impact of yoga on body image. The data that were collected may have been even richer had they been collected from young adults with more consistent and deeper yoga practices. The impact of yoga on body image may differ for practitioners who practice more frequently and also for those who incorporate various aspects of yoga, aside from the physical practice, into their lifestyles (e.g., work on the chakras or energy centers, mindfulness throughout the day, and attention

to yoga's ethical principles, namely the yamas and niyamas, such as non-harming actions and self-study). While frequency of practice is not necessarily equivalent to depth of practice, those practicing more often may have greater exposure to yoga teachings. Additionally, in the current study, there were very few participants who only practiced at home, therefore we were not able to make comparisons across home versus group practice. It is highly likely that the theme of comparative critique, and its negative impact on body image, would be less predominant among those with a home-only practice.

Prior to asking participants about the impact of yoga on their body image, it may have been preferable to first ask participants how they felt about their bodies. Furthermore, it is highly likely that the data would have been richer had the sole focus of the interviews been on body image and its intersection with yoga. Tylka and Wood-Barcalow (2015b) have described the holistic and multi-faceted nature of positive body image and including interview questions to further assess the various aspects of a positive body image may have provided richer data. Relatedly, had we decided a priori to include questions to assess the experience of embodiment and influences from within the physical, mental, and social power domains (Piran, 2015, 2016, 2017), our participants may have been guided to discuss the impact of yoga on body image using a broader lens. That said, even with the few questions asked about body image, participants' responses demonstrated the impact of yoga on different aspects of a positive body image and suggest the importance of both the atmosphere of the settings in which yoga is taught and the role of the instructor in providing a safe and welcoming environment for all.

Finally, the ability to compare participants across weight status is a study strength as findings provided insight into the similarities and differences across weight status to inform greater inclusivity. While the inclusion of both men and women in the sample is also a study strength, as was the inclusion of persons of different ethnic/racial backgrounds, there were too few male and non-white participants to allow for a separate examination of these groups or comparisons across gender or ethnicity/race.

Future Research Directions

Important next steps for research include examining the impact of yoga on body image and related outcomes in populations with varied levels of yoga experience and among both males and those from different age groups and diverse ethnic/racial backgrounds. It is also of interest to quantitatively identify mechanisms of action by which yoga may be leading to improvements in body image, building on themes that emerged from the current study (e.g., gratitude). Findings from this study provide a basis for moving forward with a more in-depth study that collects both quantitative and qualitative data from yoga practitioners on various aspect of body image and the influence of practicing yoga on body image. For example, it would be of interest to examine the impact of yoga on different aspects of practitioners' body image and experience of embodiment, quantitatively using tools such as the Body Appreciation Scale-2 (Tylka & Wood-Barcalow, 2015a), the Functionality Appreciation Scale (Alleva, Tylka, & Kroon Van Diest, 2017), and the Experience of Embodiment Scale (Piran, in press), and qualitatively to gather perceptions and more nuances. An important question to be addressed regards the impact of other aspects of yoga aside from the physical

practice on body image, such as breath work, meditation, and the more philosophical and ethical yoga practices (Patañjali & Feuerstein, 1979; Sorbara Mora, 2016). Further exploration of the use of mirrors (e.g., advantages and disadvantages, how best to use if present, the impact of repeated exposure to mirrors during practice over time) is also of interest. Another potential avenue for future research is to examine how media representations of who practices yoga may influence experiences of embodiment and body image among yoga practitioners. Finally, the impact of yoga-based interventions, addressing some of the points raised by participants in the current study, is important. A mixture of qualitative, large-scale survey, and intervention studies will provide a richer picture to inform the field's understanding of how yoga may be utilized to improve various aspects of body image.

Conclusions

We have previously reported that the practice of yoga is associated with improvements in body image over time, particularly among young adults with low prior levels of body satisfaction (Neumark-Sztainer, MacLehose, et al., 2018). The current study supplements this prior study by taking a more in-depth look at perceptions of a subgroup of the original population-based sample for a more nuanced understanding of the potential for yoga to influence body image. Yoga was perceived as having a positive impact on body image via physical changes and greater body functionality, gratitude for one's body, accomplishments or progress within one's physical practice, greater self-confidence, and through witnessing different types of bodies practicing yoga. Yoga was perceived as having a negative impact on body image via the mechanisms of comparative critique (e.g., upward comparisons with others in class) and inner critique (e.g., negative self-talk). While themes tended to be similar across weight status, yoga practitioners of higher weight status were more likely to discuss the themes of accomplishment or progress in their practice and comparative critique with other students in class.

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Highlights:

1. The primary impact of yoga on body image is perceived to be positive.
2. Comparative and inner critique during yoga may be harmful to body image.
3. Most themes were similar across weight status, with a few exceptions.
4. Steps are needed to ensure that yoga students in all bodies feel welcome.
5. Yoga has the potential to positively improve body image and experience of embodiment.

Table 1.

Sociodemographic, weight status, and yoga-related characteristics of interview sample as compared to the overall sample of yoga practitioners in Project EAT-IV

Characteristics	Qualitative interview sample (n = 46)	EAT-IV survey sample (n = 297)	p-value
Age, years (<i>SD</i>)	30.6(1.6)	30.8 (1.7)	.16
Gender, % (n)			.28
Female	73.9% (34)	79.8% (237)	
Male	26.1% (12)	20.2% (60)	
Educational attainment, % (n)			.32
< University degree	23.9% (11)	30.1% (89)	
Bachelor's degree	47.8% (22)	45.6% (135)	
Graduate degree	28.3% (13)	24.3% (72)	
Ethnicity/race, % (n)			.14
White	82.6% (38)	73.7% (219)	
Non-white	17.4% (8)	26.3% (78)	
Weight status, % (n)			.32
Lower weight status (BMI < 25 kg/m ²)	50.0% (23)	55.6% (175)	
Higher weight status (BMI ≥ 25 kg/m ²)	50.0% (23)	44.4% (122)	
Body Satisfaction, mean score (<i>SD</i>)	43.2(10.1)	42.4 (10.3)	.57
Frequency of yoga practice, hours/week (<i>SD</i>)	2.1 (2.0)	1.7 (1.4)	.11
Types of yoga practiced, % yes (n) ^a			
Hatha	34.8% (16)	26.8% (78)	.18
Vinyasa Flow	52.2% (24)	57.0% (166)	.47
Restorative/Yin	32.6% (15)	24.1% (70)	.14
Hot Yoga	30.4% (14)	25.8% (75)	.43
Other/unspecified ^b	17.8% (8)	17.3% (50)	.93
Intensity of yoga practice, % (n)			.29
Mostly vigorous	10.9% (5)	11.2% (33)	
Mostly gentle	26.1% (12)	35.8% (106)	
Gentle and vigorous	63.0% (29)	53.0% (157)	
Locations where yoga is practiced, % yes (n) ^a			
Home	56.5% (26)	57.6% (171)	.88
Gym/fitness center	43.5% (20)	30.6% (91)	.04
Yoga studio	39.1% (18)	39.7% (118)	.91
Other	4.4% (2)	4.0% (12)	.93

Note. *SD* standard deviation; BMI = body mass index.

^aParticipants could select all that apply, therefore, percentages do not add up to 100%.

^bResponses to the "other" category included prenatal classes, yoga sculpt, and unspecified types such as YMCA fitness yoga or a yoga video, for example.

Table 2.**Recommendations for yoga instructors to enhance the positive impact of yoga on body image**

1. Use language to help promote a positive body image	Yoga instructors can use language to help students connect their yoga practice to a more positive body image (e.g., sense of coming home to one's body, greater body awareness and appreciation, acts of self-care), regardless of any physical changes that may occur in response to practicing yoga. Additionally, yoga instructors can communicate that the positive physical benefits of yoga (e.g., greater functionality such as increased strength or flexibility) are likely to improve body appreciation.
2. Use language of gratitude	Instructor language and activities aimed at increasing feelings of gratitude for one's current body may enhance yoga's positive impact on body image (e.g., taking time to thank different parts of one's body, encouraging students to modify their practice in line with their current physical and emotional needs).
3. Acknowledge progress over time	It is important to focus on meeting one's current body-of-the-day, and not getting attached to "achieving" a certain pose. However, helping students acknowledge their progress and accomplishments over time (e.g., enhanced flexibility, ability to focus on breath, getting into a pose with the use of props) may be useful in improving body image.
4. Use techniques to decrease comparative critique	Yoga instructors can use language to help decrease upward comparisons with others; encourage students to come inward or when looking around at other students to do so with the aim of learning and appreciating how different poses look across students. Students may need reminding that, while poses will look different for every body on the outside, all variations will have a positive impact on this inside.
5. If mirrors are present, try to direct students' thoughts in a positive direction	If mirrors are present in the setting in which yoga is being practiced, instructors should be aware of the potential for comparative or inner critique and use language to help students be kind to themselves when looking in the mirror. Remind students to notice their positive attributes (e.g., growing strength and balance), and focus on alignment for safety and inner sensation.
6. Implement policies and practices to welcome diversity	Deliberate steps need to be taken by studios and instructors to attract and retain a more diverse student body in terms of background (e.g., gender, ethnicity) and body shapes and sizes. Some examples include hiring yoga instructors who are diverse in terms of body shapes and sizes, gender, age, ethnicity/race, and physical abilities or disabilities; having text and photos on websites that clearly state studio's policies and practices to ensure all feel welcome; and training teachers to work with diverse students. These changes are likely to benefit everyone.
7. Take extra steps to help vulnerable students feel comfortable	Taking steps to enhance the comfort levels of students may help extend the reach of yoga. Ensuring students' comfort is particularly important for those who may be vulnerable, such as new students and those in bodies that do not fit the cultural ideal. Studios can provide individual or special classes that allow for greater individual attention. The role of the yoga instructor in creating a welcoming atmosphere and using appropriate language is paramount.