



Yoga and body image: Findings from a large population-based study of young adults



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ABSTRACT

This study explored the potential for yoga to promote body satisfaction in a general population of young adults. The sample included 1664 participants (M age: 31.1, $SD = 1.6$ years) in Project EAT, a 15-year longitudinal study. Data from the third and fourth waves (EAT-III and EAT-IV), collected five years apart, were utilized. Practicing yoga (≥ 30 min/week) was reported by 16.2% of young adults. After adjusting for EAT-III body satisfaction and body mass index, yoga practitioners had higher concurrent body satisfaction at EAT-IV than those not practicing yoga (difference: 1.5 units [95% CI: 0.1–2.8], $p = .03$). Among participants within the lowest quartile of prior (EAT-III) body satisfaction, there was preliminary evidence that body satisfaction at EAT-IV was higher among yoga practitioners than in other young adults. Findings suggest that yoga may be associated with improved body satisfaction, particularly among young adults with low prior body satisfaction.

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1. Introduction

Body dissatisfaction is prevalent during adolescence and continues into young adulthood (Bucchianeri, Arikian, Hannan, Eisenberg, & Neumark-Sztainer, 2013). Body dissatisfaction has the potential to negatively impact quality of life (Wilson, Latner, & Hayashi, 2013) and has been found to predict low self-esteem and depressive mood (Johnson & Wardle, 2005; Paxton, Neumark-Sztainer, Hannan, & Eisenberg, 2006). Furthermore, body dissatisfaction longitudinally predicts the use of disordered eating behaviors (Cooley & Toray, 2001; Neumark-Sztainer, Paxton, Hannan, Haines, & Story, 2006; Stice, 2002) and excessive weight gain (Neumark-Sztainer et al., 2007; van den Berg & Neumark-Sztainer, 2007). To avoid these negative outcomes, it is imperative to identify strategies that have the potential to positively impact body satisfaction (Jacobi,

Hayward, de Zwaan, Kraemer, & Agras, 2004; Neumark-Sztainer, Paxton, et al., 2006; Neumark-Sztainer et al., 2007; Stice, 2002).

Yoga is a practice that involves physical poses, focused breathing, mindfulness, and meditation (Cook-Cottone, 2015; Iyengar, 1966; Kraftsow, 2002). Yoga focuses on developing a positive relationship with one's body; the underlying tenets of yoga, including movement in accordance with the needs of one's body in the present moment, enhanced body awareness, and promotion of self-compassion, suggest that yoga could be helpful in promoting greater body satisfaction (Cook-Cottone, 2016; Daubenmier, 2005; Dittmann & Freedman, 2009; Douglass, 2011; Impett, Daubenmier, & Hirschman, 2006; Mahlo & Tiggemann, 2016). Cook-Cottone and Douglass (2017) have described the potential for yoga communities and the spaces in which yoga is practiced to enhance positive embodiment. Furthermore, the practice of yoga appears to be increasingly popular in the United States (Yoga Journal & Yoga Alliance, 2016), particularly among women, who are at high risk for body dissatisfaction (Bucchianeri et al., 2013; Lauche et al., 2017), suggesting its potential as a public health intervention to improve body satisfaction. An important question that remains to be addressed is whether yoga is associated with improvements in body satisfaction over time. A related question is whether yoga has

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the potential to benefit those in greatest need, i.e., those with lower levels of body satisfaction.

Intervention studies suggest that yoga may have positive implications for decreasing eating disorder symptoms, enhancing body awareness/attunement, decreasing self-objectification, and improving overall body satisfaction (Carei, Fyfe-Johnson, Breuner, & Brown, 2010; Impett et al., 2006; Klein & Cook-Cottone, 2013; McIver, McGartland, & O'Halloran, 2009; McIver, O'Halloran, & McGartland, 2009; Neumark-Sztainer, 2012; Pacanowski et al., 2017). However, intervention studies exploring yoga and body satisfaction have been limited in number, have often had study design limitations (e.g., small samples), and findings have not always been consistent, either across measures within studies, or across studies, suggesting a need for further research (Neumark-Sztainer et al., 2012).

Population-based studies on yoga practice can provide valuable information to supplement intervention studies, with regard to who is engaging in yoga in the broader population and the potential impact of yoga, as practiced in the community, on outcomes of interest. For example, population-based studies allow for the opportunity to examine associations between yoga practice, at the frequency with which it is practiced in the general population, and outcomes of interest such as body satisfaction. Furthermore, while there is clearly a need to study clinical populations with eating disorders in order to learn about the potential for yoga to help in the treatment of eating disorders, in determining the potential for yoga to help with prevention it is important to examine yoga in non-clinical samples.

Few studies that have examined yoga use in the general population have included measures of body image, and where they have, directions of association have not always been consistent (Delaney & Anthis, 2010; Lauche et al., 2017; Neumark-Sztainer, Eisenberg, Wall, & Loth, 2011; Sharpe, Blanck, Williams, Ainsworth, & Conway, 2007). In a large population-based study of women in Australia, yoga/meditation was found to be associated with higher body satisfaction in non-overweight women; however, no association was found in women with obesity (Lauche et al., 2017). In Project EAT-III, an earlier wave of the longitudinal cohort presented here, we examined cross-sectional associations between the practice of yoga/Pilates and body satisfaction and found that young adults, particularly women, who practiced yoga/Pilates were more likely to be satisfied with their bodies, although associations were not statistically significant after adjusting for body mass index (BMI; Neumark-Sztainer, Eisenberg et al., 2011). However, yoga and Pilates were assessed in the same survey item; thus, we were not able to isolate associations between yoga and body satisfaction, which was a study limitation as Pilates is a different practice to that of yoga.

These above-mentioned population-based studies have all been cross-sectional. Authors of these studies have noted the limitations inherent in using cross-sectional data to examine associations between yoga practice and body satisfaction. One limitation is that people who feel good about their bodies may be more likely to participate in yoga. To the best of our knowledge, no population-based studies with a longitudinal component have examined how yoga practice is associated with changes in body satisfaction over time.

Furthermore, studies have not examined the differential effect of yoga on individuals with different levels of prior body satisfaction. It is of interest to examine whether participation in yoga can help those at greatest need for interventions to improve body image, i.e., those in the population with low levels of body satisfaction. It is also important to ensure that young adults with lower prior levels of body satisfaction, who may be more vulnerable, are not increasing their risk for further decreases in body satisfaction by practicing yoga. For example, practicing in a yoga class could make vulnerable individuals feel worse about their bodies if they

make comparisons with the teacher or other students whom they perceive as more flexible, stronger, or thinner than they are. Messages given in yoga classes are unlikely to focus on appearance, but often focus on aspects of improving the body's functionality. While focusing on functional aspects of the body may have positive benefits for body image and related outcomes (Abbott & Barber, 2010; Wasyliw & Butler, 2014), Mulgrew and Tiggemann (2018) found that exposure to images of idealized models displaying physical competence (e.g., a body that looks strong and fit) may be harmful to one's body image.

Given the high prevalence of body dissatisfaction in the general population of young adults, the adverse outcomes associated with body dissatisfaction, the growing popularity of yoga, and the underlying tenets of yoga, it is worthwhile to explore the potential for utilizing yoga as a tool for improving body satisfaction in the general population, and particularly among those with low prior levels of body satisfaction. If found to be associated with improvements in body satisfaction, yoga could be utilized as an option for promoting greater body satisfaction, and preventing adverse outcomes associated with body dissatisfaction, in the general population.

Thus, the current study aims to address the following research questions: (a) In a population-based sample of young adults, how is practicing yoga associated with body satisfaction in cross-sectional analyses and in analyses adjusted for prior levels of body satisfaction?; and (b) Do associations between yoga and concurrent levels of body satisfactions differ by prior levels of body satisfaction?

Given the underlying tenets of yoga and the extant literature on yoga and body image, we hypothesized that practicing yoga would be associated with higher levels of body satisfaction and that these associations would be attenuated but remain significant after adjustment for prior levels of BMI and body satisfaction. A priori hypotheses were not made for the second research question; on the one hand, individuals with low levels of body satisfaction could be expected to increase their body satisfaction by participating in yoga classes as there is more room for improvement in body satisfaction and yoga has the potential to address body image concerns through practices that address the physical, mental, and emotional parts of one's being. On the other hand, engaging in yoga could make individuals with low levels of body satisfaction even more dissatisfied if they feel that they cannot do the physical poses, are exposed to yoga teachers who do not use body-sensitive language, or if they make upward comparisons with others in their yoga classes that make them feel worse about their bodies. Determining if, for whom, and in what direction, yoga is associated with changes in body satisfaction is important for the design of yoga offerings for young adult populations.

2. Method

2.1. Study overview

Project EAT (Eating and Activity in Teens and Young Adults) is a large, population-based study on eating and weight-related outcomes that followed young people from adolescence to young adulthood (Larson, Neumark-Sztainer, Story, van den Berg, & Hannan, 2011; Neumark-Sztainer, Eisenberg et al., 2011; Neumark-Sztainer, Paxton et al., 2006; Neumark-Sztainer, Story, Hannan, Perry, & Irving, 2002; Neumark-Sztainer, Wall, Eisenberg, Story, & Hannan, 2006; Neumark-Sztainer, Wall et al., 2011). At the original assessment (1998–1999), 4746 adolescents attending public middle and high schools in Minneapolis-St. Paul, Minnesota, completed surveys and anthropometric measures. Follow-up mailed and online surveys were completed at 5-year intervals (Projects EAT-II, III, and IV).

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