

Disordered eating behaviours and correlates in yoga practitioners:

a systematic review

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Abstract

Purpose: Yoga has been increasingly used as a complementary therapy for eating disorders. However, it is still not clear whether yoga is effective in the prevention and treatment of eating disorders, as some studies suggest that yoga practitioners show elevated levels of disordered eating behaviours. The goal of this systematic review is, thus, to analyse the occurrence of disordered eating behaviours and correlates in yoga practitioners.

Method: PRISMA guidelines for systematic reviews were used. Search was conducted in several databases and specific journals.

Results: Twelve articles, all cross-sectional, were identified, following PRISMA guidelines. Results across studies were inconsistent. Yoga practice was usually associated with healthier eating behaviours, lower disordered eating symptoms, and higher positive body image and body satisfaction, suggesting that yoga practitioners may be at a lower risk of developing eating disorders. However, other studies suggested that a high dosage of yoga practice may be associated with a higher prevalence of disordered eating behaviours.

Conclusions: As yoga is increasingly used as therapy for eating disorders, understanding the relationship between yoga dosage and disordered eating behaviours is critical to guide treatment recommendations and establish yoga as a valuable complementary therapy.

Keywords: eating disorders; yoga; therapy; risk factors; orthorexia.

1. Introduction

Yoga is an ancient Indian spiritual practice concerned with the exploration of one's inner world with the goal of achieving samadhi, a state of higher consciousness [1]. Over the last 150 years, yoga has been transported into the western world and has progressively become acculturated, emerging today as a transnational, predominantly Anglophone phenomenon [2, 3]. Despite being at its core a spiritual practice encompassing several elements, the yoga currently practiced in the West is mainly an asana-based practice (physical postures) with varying amounts of breath control techniques and meditation [4], which can be more accurately identified as modern postural yoga [5]. A myriad of modern postural yoga styles can be found across yoga studios, gyms and other venues; the most popular forms include ashtanga vinyasa¹, vinyasa flow, power, Iyengar, integral, Bikram, among others.

Yoga has been shown to have many physical and psychological benefits, not only in non-clinical populations, but also as a complementary therapy in the treatment of physical and mental disorders [6, 7]. Correlational and experimental studies, including randomized controlled trials, have bloomed in the last 15-20 years, focusing on the relationship between yoga practice and mental health (for reviews see [8, 9]), particularly on negative mental health indicators and psychopathology. Bibliometric analyses show that most yoga studies deal with depression, stress, anxiety, pain management and cancer conditions [8, 10]. Recently, more attention has been given to the optimal functioning of individuals, with the emergence of positive psychology [11]. A growing body of research emphasizing positive mental health

¹ Hereafter, we refer to ashtanga vinyasa as ashtanga; not to be confused with Ashtanga Yoga or Raja Yoga, the path of eight limbs described by Patanjali.

indicators has been accumulating (for reviews see [4, 12]), demonstrating the potential of yoga practice as a tool for human improvement.

In the area of eating disorders, yoga has been increasingly used as a complementary therapy, due to its potential ability to enhance the connection and, hence, the acceptance of one's body [13, 14]. Eating disorders and disordered eating behaviours are currently major public health concerns due to their high prevalence and potentially serious physical, social and psychological consequences. Disordered eating behaviours can be subtle and apparently innocuous at the beginning, such as fasting, eating little food, using food substitutes, skipping meals, and may evolve to more extreme behaviours such as taking diet pills, inducing vomit, using laxatives and diuretics [15]. Over time, these behaviours may lead to the development of clinically relevant eating disorders. These include a variety of persistent disturbances of eating behaviour that results in the altered consumption or absorption of food, leading to a significantly impairing of physical health and psychological functioning [16]. Three main eating disorders (ED) are usually considered, namely anorexia nervosa, bulimia nervosa and binge eating disorder. In addition, there is a wide range of disordered eating behaviours that do not fulfil all diagnosis criteria and may not be clinically severe, but may still affect individuals' physical and mental well-being, and may develop over time into full-blown eating disorders. In this context, several "new" eating disorders have been described, of which the most remarkable example is orthorexia nervosa, an unhealthy obsession with healthy eating characterized by obsessive thinking about food, compulsive behaviours, self-punishment and escalating dietary restriction [17].

The individual's relationship with his or her body is a key aspect in disordered eating, and to prevent or recover it is crucial that individuals learn to be in and with their bodies in a healthy manner [18]. Yoga may play a role in the prevention and treatment of ED due to its focus on the enhancement of the mind-body connection and body image [19], but research on the effects

of yoga on ED symptoms and behaviours is still in its infancy. A major limitation is the absence of randomized controlled trials to test yoga interventions for the prevention and treatment of ED, as most studies are cross-sectional and use small samples that hamper statistical analysis [20]. In addition, there is little systematic information on the amount of yoga needed to create an effect, and current dosage recommendations are variable and lack empirical support [21]. Finally, yoga interventions use distinct styles of yoga that differ in the relative amounts of yoga components offered (*i.e.*, physical postures, breathing techniques, and meditation), yielding different outcomes to practitioners (e.g.,[22]).

Although yoga research is a field undergoing substantial growth and interest, it is still not clear whether yoga practice is effective in the prevention and treatment of disordered eating. Yoga is usually regarded by clinicians and clients as a potentially positive intervention for ED [14], but some studies indicate that yoga practitioners present higher levels of disordered eating behaviours [23, 24]. Therefore, it is relevant to address the occurrence of these dysfunctional behaviours in individuals that already have a consistent yoga practice; for this reason, we exclude from our analysis yoga interventions on patients with ED that do not have a previous yoga practice. Indeed, the dosage of yoga is a critical variable in evaluating the effects of yoga, as evidence suggests that the length of time someone practices yoga is associated with the benefits of the practice [25]. In addition, the motivations for starting a yoga practice differ between seasoned yoga practitioners and participants in ED interventions; whereas the former group may adopt yoga due to its physical and spiritual aspects [8], the latter participate due to a specific health condition. Understanding how a consistent yoga practice affects eating behaviours is thus critical to establish therapeutic dosages of yoga for ED patients and to guide treatment recommendations; we aim to contribute to this discussion by systematically reviewing the occurrence of disordered eating behaviours in experienced yoga practitioners.

2. Methods

The Preferred Reporting Items for Systematic Reviews and Meta-Analysis (PRISMA) guidelines [26] were followed in this review.

2.1 Inclusion criteria

Types of studies. All studies that evaluated associations between yoga practice and disordered eating variables, published until October 2018, were considered. Studies that reported effects of yoga interventions in patients with eating disorders were excluded. Only studies in English were eligible. Books, book chapters, dissertations, conference abstracts, book reviews and editorials were excluded.

Types of participants. Studies with adult yoga practitioners, with or without disordered eating behaviours, were eligible.

Types of outcomes. Quantitative and qualitative studies that evaluated ED-related variables, such as ED symptomatology, body satisfaction, body image, self-objectification, etc., in yoga practitioners were eligible.

2.2 Literature search

Five electronic databases, Scopus, Web of Science, Pubmed, PsycINFO, and Psychology and Behavioral Sciences Collection (PBSC), were searched between 7th-11th October 2018. Search terms used were “yoga” AND “eating disorder” OR “disordered eating” OR “eating behaviour”. On Scopus, these terms were searched in the article title, abstract and keywords; on Web of Science the topic field was used. On PubMed, the same terms were searched on the title and abstract, and on PsycINFO and PBSC, the terms were searched on the abstract. We

also searched specific international, peer-reviewed journals, namely: Eating Behaviors, Advances in Eating Disorders, Eating Disorders, International Journal of Eating Disorders, Eating and Weight Disorders, Journal of Eating Disorders, European Eating Disorders Review, Appetite, Body Image, International Journal of Yoga, and International Journal of Yoga Therapy. On the ED-related journals, the term “yoga” was searched in the abstract, title and keywords, whereas the term “eating” was searched on the yoga journals.

3. Results

3.1 Study selection

A total of 384 records were identified, 271 after the removal of duplicates. The title and abstract of the 271 records were screened for adequacy, and 246 were excluded; excluded studies included reports of yoga interventions for ED patients, and documents other than journal articles. Finally, 20 full-text articles were assessed for eligibility. Of these, 8 articles were excluded because they did not distinguish between yoga practitioners and other exercisers, or were yoga interventions with non-practitioners, or did not evaluate ED-related variables in yoga practitioners. Twelve studies were thus included in the review. Figure 1 presents the flowchart of the study selection process.

3.2 Study characteristics

The 12 studies identified were cross-sectional studies conducted with a) yoga practitioners only (5 studies), b) yoga practitioners and other exercisers (2 studies), and c) yoga practitioners and non-practitioners (5 studies) (Table 1). Most studies involved yoga practitioners in the

USA; 3 studies were conducted in Australia, 1 in Spain and 1 in Norway. Most studies included evaluations of eating-related behaviours or disordered eating symptoms; other studies analysed ED-related variables such as body image, body satisfaction, self-objectification, exercise dependence, among others.

3.3 Eating behaviours in yoga practitioners

The occurrence and intensity of disordered eating behaviours and ED symptomatology in yoga practitioners in relation to non-practitioners were not consistent across studies. One study found that yoga practitioners reported fewer disordered eating attitudes in relation to aerobics practitioners, but did not differ from the baseline comparison group, composed by women not currently enrolled in physical activities [27]. Two other studies found no significant relationship between yoga practice and disordered eating in women [15, 28], but men participating in yoga and/or Pilates classes reported the use of more extreme weight control behaviours and binge eating than nonparticipants [15]. In contrast, two other studies reported higher levels of disordered eating in yoga practitioners [23, 24]. Specifically, the prevalence of orthorexia nervosa (ON) in a sample of ashtanga practitioners was 86%, with vegetarian practitioners scoring lower on the ON test (*i.e.*, more symptoms of ON) than other participants [23]. An other study found an association between self-reported eating disorders, particularly in the drive for thinness, and a higher weekly volume of instructing yoga/Pilates classes in female group fitness instructors [24].

Several studies addressed specific eating behaviours of yoga practitioners, such as the consumption of healthy foods, vegetarianism and veganism. Overall, yoga practice was associated with a higher consumption of fruits and vegetables, and a lower consumption of unhealthy food [29]. Compared with non-practitioners, yoga practitioners consumed

185 significantly more vegetables and fruits, and less fast-food and sugar-sweetened beverages than
186 non-practitioners [30]. However, the healthy eating habits of yoga practitioners were also
187 associated with a high prevalence of orthorexia nervosa, particularly in vegetarians [23].

188 Other ED-related variables, such as body satisfaction and self-objectification, were
189 evaluated in several studies. In general, body satisfaction, body awareness, and body
190 responsiveness were positively associated in yoga practitioners [29, 31], whereas body
191 objectification and self-objectification were negatively associated with yoga practice [28].
192 Comparisons of yoga practitioners and non-practitioners showed that yoga practitioners
193 reported significantly lower levels of self-objectification than practitioners of other forms of
194 physical activities and non-practitioners [27, 28, 32], and body objectification was negatively
195 correlated with disordered eating attitudes in yoga practitioners [33]. Likewise, body
196 satisfaction was significantly higher in women practicing yoga/Pilates than in other exercisers
197 or non-exercisers [15, 27, 34]. Body responsiveness and body awareness were also significantly
198 higher in yoga practitioners in relation to aerobics practitioners and non-practitioners [27]. A
199 qualitative study indicated that practitioners believe that yoga practice has a positive impact on
200 body image due to 'perceived physical changes, gratitude for one's body, a sense of
201 accomplishment within one's, self-confidence, and witnessing different types of bodies
202 practicing yoga', but it can also have a negative impact on body image due to comparisons with
203 others and inner critique [35].

204 Reasons to exercise, or to practice yoga, were evaluated in some studies. A comparison of
205 different types of exercisers showed that participation in yoga classes was related to health and
206 fitness reasons, rather than appearance-related reasons [28]. However, practitioners of different
207 yoga styles may have different reasons to practice; for instance, Bikram yoga practitioners
208 reported more appearance-related reasons than Iyengar yoga practitioners [32]. It was also

shown that individuals that practice for psychospiritual reasons reported higher body satisfaction than practitioners driven by physical appearance reasons [31].

4. Discussion

4.1 Eating behaviours and correlates in yoga practitioners

Overall, yoga practitioners reported fewer disordered eating behaviours, higher consumption of healthy foods, and higher body satisfaction. However, comparisons between yoga practitioners and non-practitioners yielded diverse results, from no differences, fewer disordered eating behaviours, and higher disordered eating behaviours in yoga practitioners in relation to non-practitioners.

Female yoga practitioners enrolled in ashtanga and/or Iyengar yoga classes reported fewer disordered eating behaviours than women practicing aerobics classes, but no differences were found between practitioners and non-practitioners [27]. Other studies also reported no significant differences in disordered eating behaviours between yoga practitioners and non-practitioners [15, 28]. In contrast, some studies found a higher prevalence of disordered eating behaviours in yoga practitioners, namely in instructors of body/mind classes and male yoga/Pilates practitioners [15, 24]. The prevalence of orthorexia nervosa was also high (86%) in a sample of ashtanga yoga practitioners [23].

These differences across studies may be due to several factors; the most prominent is probably the dosage of yoga. Yoga practitioners with fewer self-reported disordered eating behaviours were also those who reported spending more time practicing yoga (almost 5 hours per week: Daubenmier, 2005). In contrast, women spending more time at aerobics classes presented more ED-attitudes than those practicing less [27]. Indeed, it has been shown that

excessive physical activity is a common point among individuals suffering from an eating disorder [36]. Yoga practitioners, however, showed an inverse relationship between time spent practicing and disordered eating, suggesting that not all physical activities have the same relationship with eating disorders, and that more yoga practice may be related with better eating habits [27].

However, results reported in a sample of ashtanga yoga practitioners indicate the contrary; in this sample, orthorexia nervosa was found in 86% of the practitioners [23]. The average time spent practicing is not referred in the study, but, traditionally, ashtanga yoga is a 90 min/day, 6-day a week practice [37], which can sum up to 9 hours of practice per week. Another study found that female yoga instructors with self-reported ED were those with a higher teaching load of yoga classes per week [24]. Therefore, can a higher dedication to the practice of yoga be associated with higher levels of disordered eating behaviours?

Yoga dosage is a key factor for experiencing the benefits of yoga practice; to obtain gains from the practice, a sustained practice is necessary [38]. For instance, ashtanga yoga is a 6-day per week practice [37], and daily practices are also advised for Iyengar yoga practitioners [39]. However, the frequency of yoga classes and duration of yoga interventions in experimental studies is low, comparing to the dosages followed by the seasoned practitioners that exhibit inverse relationships between yoga practice and disordered eating behaviours. For instance, a study where yoga was practiced at a small dosage (45 minutes per week for 6 weeks) had no significant effects on eating disorder symptomatology [40]. Interventions that offered higher yoga dosages (60 minutes per week for 12 weeks: [41]; 2 hours per week for 8 weeks: [42]; 60-90 minutes per week for 12 weeks: [43]) yielded positive results in decreasing disordered eating symptomatology or increasing positive body image.

Maintaining a healthy diet is a common concern in yoga practitioners, and this is why the consumption of fruit and vegetables tends to be correlated with yoga practice [29]. In addition, yoga practitioners consume significantly more healthy foods and less fast-food and sugar-sweetened beverages than non-practitioners [30], further suggesting that the concern with healthy eating is associated with the practice of yoga. This concern has its roots on the ancient yoga texts and spiritual practices of the Indian subcontinent. For instance, the first self-restraint referred by Sage Patanjali in the Yoga Sutras is Ahimsa, translated as non-violence, non-killing, or harmlessness [1]. Practitioners are advised to behave in a way that does not harm themselves or other living creatures; therefore, many follow and recommend a vegetarian or vegan diet as a way to comply with Ahimsa, supporting a more ethical and healthier yoga practice. A survey of yoga practitioners in Australia showed that 8.7% and 1.6% of female yoga practitioners between 19 and 25 years old are vegetarian or vegan, respectively [44]. In the USA, 10% of yoga practitioners are vegetarian, which is almost 4 times the prevalence of vegetarianism in the general population [45].

The high prevalence of vegetarianism or healthy eating behaviours in yoga practitioners is probably triggered by yoga teachers that demonstrate such behaviours, thus potentially acting as role models for their students [44]. Indeed, many yoga lineages, schools and teachers advise their students to change their eating habits towards vegetarianism [46, 47]. However, this psychological pressure on yoga students to change their eating habits should be refrained [23], to prevent disordered eating behaviours and attitudes that may develop into serious psychopathological problems. Differences in eating behaviours across yoga styles have been found in a sample of German yoga practitioners, with ashtanga, Iyengar and Sivananda yoga practitioners more likely to be vegetarians or vegans than practitioners of other yoga styles [48]. In addition, an association between orthorexia and vegetarianism was found in a sample of ashtanga yoga practitioners [23].

Other variables that were significantly associated with yoga practice were body dissatisfaction and self-objectification. Body dissatisfaction, considered a strong predictor of disordered eating behaviours, reflects the degree of dissatisfaction with body shape and weight [49–51]. Body dissatisfaction was significantly lower in yoga practitioners in relation to non-practitioners [15, 27], and it was associated with lower body awareness and body responsiveness, and higher levels of self-objectification and disordered eating attitudes [27]. Self-objectification is another construct that has been related to disordered eating and other psychopathological problems, particularly in women. According to the Objectification Theory [52], in social environments where women are viewed as aesthetic objects to be evaluated by others, they tend to view themselves as objects of evaluation; over time, self-objectification may lead to negative psychological outcomes and may contribute to disordered eating attitudes and behaviours in girls and women [27, 53]. Self-objectification was lower in yoga practitioners in the studies analysed [27, 28]. Other studies found significant relationships between continued yoga practice and positive body image [34, 54, 55]. These results support the potential of yoga practice in increasing individuals' self-image and its use for the prevention of disordered eating attitudes.

4.2 Methodological limitations

Despite the associations between yoga practice and disordered eating behaviours, body image and body satisfaction reported by the studies reviewed, several methodological limitations can also be discussed. To start with, most studies did not refer the style of yoga practiced by the participants; the studies that indicate which style is practiced include three different styles, namely ashtanga [23, 27], Iyengar [27, 32] and Bikram [32]. Overall, specific information on the style of yoga, frequency and duration of the practice, years practicing and

305 degree of immersion in the practice, and the relative proportion of yoga postures, breathing
306 exercises and meditation, would allow a more thorough comparison across studies and,
307 specifically, across yoga styles. This is highly relevant, given that specific yoga styles may
308 influence different health indicators, such as body mass index, vegetarianism/veganism,
309 mindfulness, and quality of life [48].

310 Other concern worthy of discussion is causal effects *versus* selection regarding the
311 relationship between yoga practice and disordered eating behaviours. We assumed in this
312 review that yoga may affect the occurrence of disordered eating behaviours, but it is possible
313 that individuals with such behaviours will feel attracted to yoga due to yoga's potential effects
314 on body shape and weight control. Studies show that yoga practitioners have lower body mass
315 indices (BMI) than non-practitioners [48, 56, 57], but it is not clear whether yoga promotes
316 weight loss or individuals with lower BMI are more attracted to yoga than people with higher
317 BMI [56]. In U.S. practitioners, only 4.4% refer weight loss as the primary reason for adopting
318 a yoga practice, but 27.2% and 33.9% mention weight loss as an additional reason to start the
319 practice and to continue practice, respectively [58].

320 Regarding the use of self-report questionnaires to evaluate ED-related variables, most
321 instruments used in the articles reviewed possess well established psychometric qualities,
322 except for ORTO-15, a 15-item questionnaire meant to diagnose orthorexia nervosa [59].
323 ORTO-15 has consistently shown poor reliability, internal consistency and construct validity,
324 and tends to overestimate the occurrence of ON [60–62]. Indeed, this instrument appears to be
325 measuring a more normative focus on health and wellness, rather than a pathological behaviour
326 [63]. Therefore, the high prevalence (86%) of orthorexia nervosa found in a sample of ashtanga
327 yoga practitioners [23] may have been overestimated by the use of ORTO-15 as diagnostic tool.

328

5. Conclusions

This systematic review showed that yoga practice is generally associated with healthier eating behaviours, lower disordered eating behaviours, and higher positive body image and body satisfaction, suggesting that yoga practitioners may be at a lower risk of developing eating disorders. However, some studies suggest that a high volume of yoga practice may be related with disordered eating behaviours. As yoga interventions are increasingly used as a complementary treatment for eating disorders, understanding the relationship between style and dosage of yoga, and ED behaviours is critical. Therefore, future research should focus on how much is too much yoga – is there an optimal level of involvement in yoga practice, whereas below or above that level practitioners are at higher risk for ED? In addition, are some styles of yoga, like ashtanga, more closely related with disordered eating behaviours? If so, how much yoga and which yoga should be offered as treatment for eating disorders? Answering these and other questions is essential to establish yoga as valuable and effective complementary therapy for eating disorders and to guide treatment recommendations.

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Ethical approval: This article does not contain any studies with human participants or animals performed by any of the authors.

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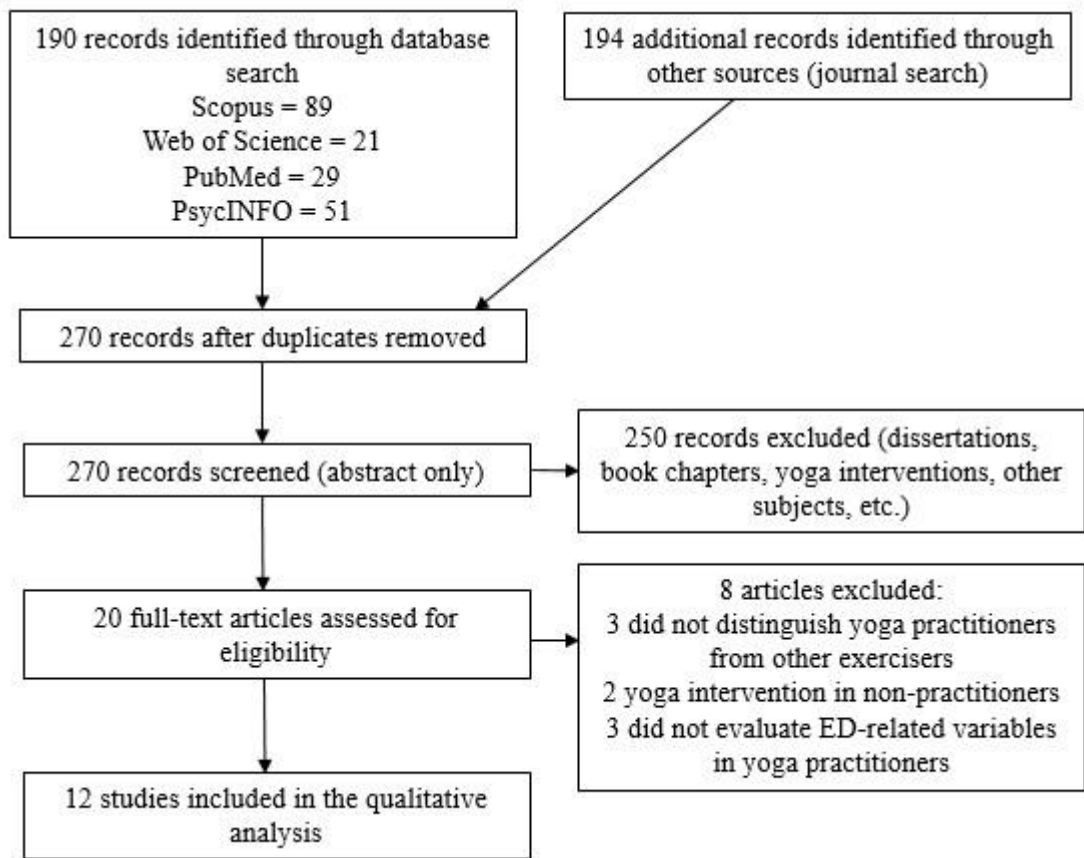
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Figure 1 – Flowchart of the study selection process.



537 Table 1 – Main characteristics of the studies included in the review. Only statistically significant results ($p < .05$) are presented.

Study	Population	Characteristics	Outcome variables	Results
Daubenmier 2005	Female yoga practitioners and non-practitioners (n = 139)	Three groups: yoga (Iyengar and ashtanga), aerobic, non-practitioners. Yoga practitioners practiced 4.96 ± 3.19 hours/week for average of 6 years	Self-objectification Body satisfaction Disordered eating symptomatology Body awareness Body responsiveness	Yoga practitioners had lower body mass index and self-objectification, and higher body awareness, body responsiveness and body satisfaction than aerobics and non-practitioners. Yoga practitioners had lower disordered eating symptomatology than aerobics practitioners, but no different than non-practitioners.
Prichard & Tiggeman 2008	Female fitness class participants (n = 571)	Three groups: yoga, cardio, weights	Drive for thinness Body dissatisfaction Self-objectification Body esteem Reasons for exercise	Yoga practice is negatively correlated with self-objectification and appearance-related reasons for practice, and positively correlated with health/fitness reasons. No relationships between yoga practice and ED symptomatology.
Dittman & Freedman 2009	Female yoga practitioners (n = 157)	Group 1 – psychospiritual reasons (n = 99); Group 2 – physical appearance reasons (n = 30)	Body satisfaction Body awareness Body responsiveness Spiritual readiness Intuitive eating	Body awareness positively correlated with body responsiveness, body satisfaction, intuitive eating and spiritual readiness. Body mass index inversely correlated with body responsiveness, intuitive eating and body satisfaction. Group comparisons: body satisfaction and spiritual readiness is higher in group 1 (psychospiritual reasons for practice).
Delaney & Anthis 2010	Yoga practitioners (n = 92)	Different styles of yoga	Eating attitudes Body satisfaction Body objectification	Disordered eating attitudes are positively correlated with body dissatisfaction and body objectification.
Neumark-Sztainer et al. 2011	Yoga and Pilates practitioners (n = 274), non-practitioners (n = 2013)	Practitioners reported average of 30 min or more practicing yoga or Pilates per week	Body satisfaction Disordered eating	Women practitioners were less likely to report body dissatisfaction than non-practitioners. No differences in eating behaviours between women practitioners and non-practitioners. Men practitioners were more likely to have extreme weight control behaviours than non-practitioners.

Martin et al. 2013	Female exercisers (n = 159)	Participants practiced yoga and cardio- based exercise	Dietary intake Mindful eating Trait mindfulness Body responsiveness Proneness to disordered eating	Positive correlations between yoga practice and consumption of fruit and vegetables, mindful eating, trait mindfulness and body responsiveness. Negative correlation between yoga practice and proneness to disordered eating.
Valera et al. 2014	Yoga practitioners (n = 136)	Ashtanga yoga practitioners	Orthorexia Eating habits	86% of participants classified as orthorexic. Association between orthorexia and vegetarianism.
Bratland- Sanda et al. 2015	Group fitness instructors (n = 837)	Includes instructors of body/mind classes (yoga and Pilates)	Disordered eating symptomatology Exercise dependence	Correlation between ED symptomatology and exercise dependence. Instructors with self-reported ED were those with higher weekly volume of instructing body/mind classes (yoga/Pilates). Major difference between ED and non-ED instructors was the drive for thinness.
Mahlo & Tiggemann 2016	Yoga practitioners (n = 193) and non- practitioners (n = 127)	Practitioners of Iyengar and Bikram yoga	Body image Embodiment Self-objectification	Yoga practitioners showed higher positive body image and embodiment, and lower self-objectification than non-practitioners. Reasons for practicing yoga were different between practitioners: Bikram practitioners reported more appearance-related reasons than Iyengar practitioners.
Neumark- Sztainer MacLehose, et al. 2018	Yoga practitioners (n = 268) and non- practitioners (n = 1387)	Practitioners reported 30 min or more practicing yoga per week in the past year	Body satisfaction	Yoga practitioners reported higher levels of body satisfaction than non-practitioners.
Neumark- Sztainer, Watts, & Rydell, 2018	Yoga practitioners (n = 46)	Participants practiced at least 30 min of yoga/week over the past year	Body image (via semi- structured interviews)	Yoga is perceived as having a positive impact on body image via perceived physical changes, gratitude for one's body, and sense of accomplishment within one's yoga practice. Yoga is perceived as having a negative impact on body image via comparisons with other and inner critique.
Watts et al. 2018	Yoga practitioners (n = 297) and non- practitioners (n = 1523)	Practitioners reported 30 min or more practicing yoga per week in the past year	Healthy eating behaviours Moderate-to-vigorous physical activity (MVPA)	Yoga practitioners reported higher consumption of fruit and vegetables, and lower consumption of fast food and sugar-sweetened beverages than non-practitioners. Yoga practitioners also reported higher participation in and MVPA than non-practitioners.