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Use of yoga in treatment and screening of eating disorders

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Abstract:

Mental disorders are a common cause of human disability and early morbidity. Eating disorders, affecting greatly both mental and physical abilities of the patients, are a frequent diagnosis in modern societies (1-5% in women population) with low rate of full recovery (50%) and high morbidity (10-20%). The difficulties in compliance as well as importance of holistic approach, including restoring mind-body balance, improving body image disturbances and additional psychiatric symptoms, urge medicine to find complementary and alternative solutions for existing therapeutic options. Among those yoga, which involves meditation, body awareness, breathing techniques, light physical activity without significant BMI changes, seems to become a more and more popular mean of additional treatment in fighting eating disorders.

The aim of this study is to present the effectiveness of yoga interventions in treatment of eating disorders and importance of screening of yoga communities in terms of higher prevalence of several eating disorder types among those groups.

Within 6 reviewed articles from PubMed database in years 2008-2018, presented research proved the importance of inclusion of yoga interventions in patients with anorexia nervosa, bulimia nervosa, avoidant restrictive food intake disorder, binge eating disorder. Also among yoga communities, higher scores for disorders like orthorexia nervosa, weight control behaviours were found, comparing to non-participants of those practices.

Yoga, the ancient practice of finding balance between body, mind and soul, should be furtherly researched and developed in psychiatric practices, due to the effectiveness and promising results proved by presented reviewed studies.

Keywords: Yoga, Eating Disorder, Anorexia, Bulimia, Complimentary and Alternative Medicine

INTRODUCTION

Mental disorders in modern society

Mental disorders, one of the most cruel traps for human mind, are one of the major causes of patients disabilities and pre-mature mortality, comprising of 13% of all diseases according to World Health Organization. [1] Among those the group of eating disorders, more common in female patients, occur in 1-5% of female population, with still high 10-20% morbidity. [2;3] Treatment of eating disorders consists of different forms of psychotherapy (cognitive behavioral therapy, acceptance and commitment therapy, family based treatment), dietary treatment, prevention of internal organ damages (e.g. osteoporosis) and treatment of anxiety, depression, social phobia, and other psychiatric symptoms. Unfortunately, not all of the psychiatric patients can benefits from those methods of treatment fully. Above methods in their effectiveness cannot help in all cases - only 50% eating disorders patients can expect full recovery. [4] Facing severe side effects throughout, sometimes lifetime-lasting pharmacotherapy treatment, patients can be reluctant to compliance towards proposed therapeutic methods. [5] Therefore world of medicine shows the need for complementary and alternative treatment, which will support current existing strategies and form more holistic

approach towards presented symptoms, as well as improve self-esteem and mood in patients suffering from mental disorders.

The origins and present view on yoga

Yoga is considered an umbrella term for philosophy and disciplines originated in ancient India and practiced mostly among believers of Hinduism, Buddhism and Jainism. As a group of practices in physical, mental and spiritual aspects, the ancient, primary ultimate goal of yoga is to unite the spirit with Divine. Originated between 5-6 century BCE, it has been hidden in richness of Indian heritage until 1890 and its introduction by Swami Vivekananda to Europe and United States. [6;7] Nowadays considered mostly as a kind of physical activity including relaxation and meditation techniques, yoga is in fact a discipline which helps to increase the awareness of both external stimuli which affect the person, as well as internal states happening in one's body, mind and spirit, and helps to create a state of balance in the well-being, improving efficiency of the practitioner and create positive mindset. [8;9] Physical and mental practices in yoga have been proven effective as a complementary and alternative treatment in many internal diseases conditions, e.g. asthma, high blood pressure, heart disease, chronic renal failure, as well as mental disorders, such as schizophrenia. Yoga, as a mean to improve the mind-body balance, self-awareness and self-confidence, often allows patients to engage in physical activity without weight loss, however with decrease of anxiety, depression and body image disturbance symptoms. [10-12]

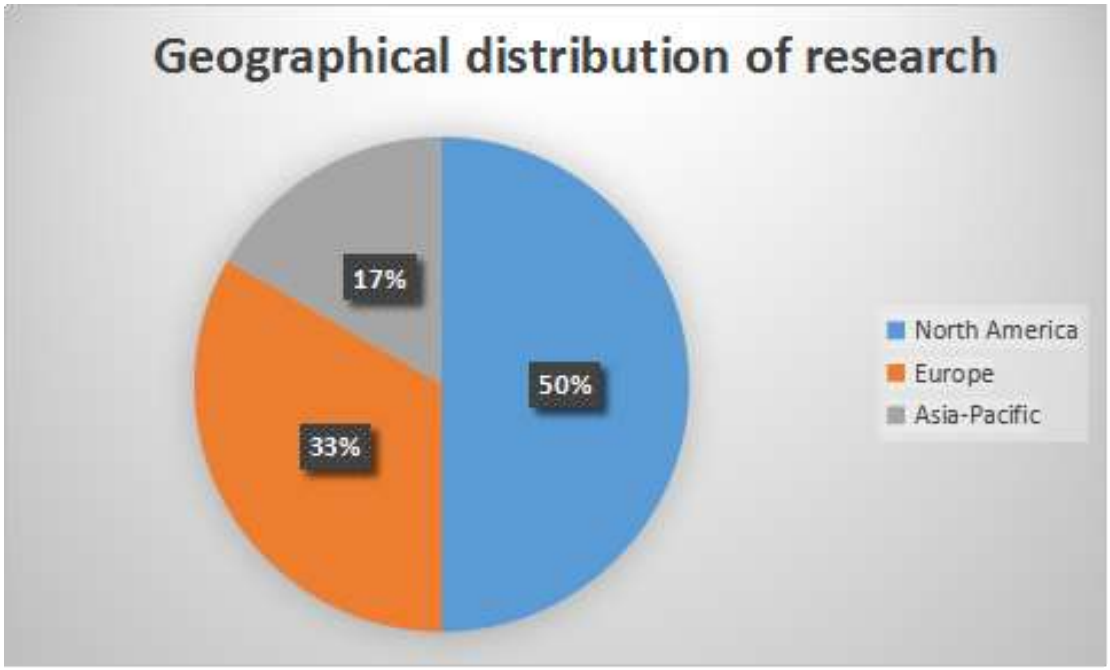
AIM OF THE STUDY

The aim of this study is to present the importance of yoga in eating disorders treatment and screening.

METHODS

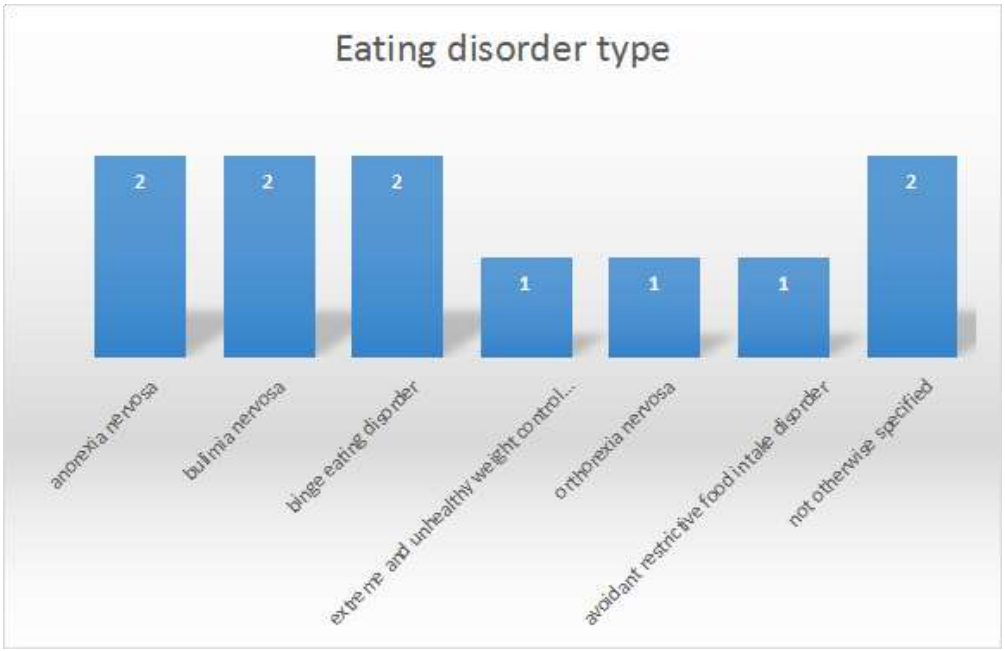
Substantial articles on use of yoga in eating disorders treatment and screening have been analyzed. Among articles in PubMed Medline database from years 2008-2018, 6 articles were selected for analysis.

RESULTS



Graph 1. Geographical distribution of research. Prepared by authors.

Majority of the countries were from North America (50%), followed by European centres (33%) and Asia Pacific (17%).



Graph 2. Eating disorder types discussed in the reviewed research. Prepared by authors.

Most of the studies used yoga intervention in treatment of anorexia nervosa, bulimia nervosa, binge eating disorder and eating disorders not otherwise specified (EDNOS).

Detailed research in the specified countries

Authors	Country	Type of disorder	Target group	Aim of the study	Results
Carei et al. (2010)	USA	anorexia nervosa, bulimia nervosa, eating disorder not otherwise specified	54 adolescent patients (standard treatment vs standard + yoga)	Measure the impact of yoga in treating eating disorder symptoms (anxiety, depression, food preocupation)	Decreased EDE scores,anxiety and depression, maintained BMI score
Neumark-Sztainer et al. (2011)	USA	extreme and unhealthy weight control behaviors, binge eating	2287 adolescents and young adults, yoga/pilates participants	Prevalence of eating behaviours symptoms in participants of yoga and pilates classes	Significant differences between male participants and non-participants in terms of extreme weight control behaviors, binge eating
Hall et al. (2016)	USA	anorexia nervosa, bulimia nervosa, avoidant restrictive food intake disorder and other	20 adolescent patients	Measure the impact of yoga in eating disorders treatment on anxiety, depression, body image disturbance	statistically significant decrease in anxiety, depression, and body image disturbance - STAI score, anorexia nervosa scale, Beck depression score, weight and shape concern scores
Valera et al. (2014)	Spain	Orthorexia nervosa	136 yoga community participants	Prevalence of the disease in the community	Mean score 35.27 ± 3.69, 86% of respondents with score lower than 40
Karlsen et al. (2018)	Norway	Bulimia nervosa and other eating disorders not otherwise specified	30 female adult patients	Impact on eating disorder symptoms	Reductions in EDE total as well as subscales in restrain and eating concerns
McIver et al (2009)	Australia	Binge eating disorger	50 patients	Effectiveness of yoga intervention on binge eating symptoms, physical activity and physical measurements	Significant decrease in binge eating symptoms, increase in physical activity and slight decrease in BMI, waist, hip measurements

Table 1. Detailed research in specific countries. Prepared by authors.

First American study included 54 adolescent patients, suffering from anorexia (55%), bulimia (11%) and other unspecified eating disorders (28%), divided into two groups of standard care (physician/dietician appointments) and standard plus 8 weeks yoga intervention. The results for primary outcomes - general improvements of eating disorder symptoms with weight invariability, were measured with: Eating Disorder Examination (EDE) - clinical interview including restraint, eating concern, weight concern, shape concern, and Body Mass Index. Secondary outcomes - improvement of the additional symptoms such as anxiety, depression and food preoccupation were measured with STAI, BDI and Food Preoccupation questionnaire. EDE scores tended to decline throughout the intervention for yoga group, for control group it reduced until week 9 and then started to increase between weeks 9-12. No significant differences were found within subscales, apart from Weight Concern and Shape Concern scores. Within secondary measures, participants of both groups decreased depression, state and trait anxiety symptoms over time. food preoccupation declined in the yoga group. BMI did not change in both of study groups. [13]

Study by Hall et al. focused on implementation of yoga intervention in group of adolescent patients of eating disorder clinic (suffering from DSM-5 diagnosed bulimia, anorexia, avoidant restrictive food intake disorder, and other). Among 20 adolescent patients (age 11-18), who underwent the yoga 12-week course, significant improvement in symptoms was observed. Questionnaires used for the measurement purposes were State-Trait Anxiety Inventory (STAI), State of Mind (Beck Depression Inventory plus Anorexia scale), Eating Attitudes Test (symptoms and concerns of eating disorders scale) and Eating Disorder Examination-Questionnaire (weight and shape concern scale). The results proved effectiveness of yoga intervention in decreasing symptoms of anxiety (STAI score pre-intervention 47, post-intervention 42; P=0.0316), depression symptoms (BDI from 18 pre- to 10-post intervention, P= 0.0001). Within specific eating disorders scales, also significant decrease was observed in anorexia nervosa scale (from 10 pre to 6 post-intervention, P=0.0004), weight concern score (from 16 pre to 12 post-intervention, P=0.0120) and shape concern score (from 31 pre to 20 post intervention, P=0.0034). Positive psychological changes occurred without significant body weight changes (BMI measurement).[12]

In Australian study, 12-week yoga intervention among binge eating disorder patients has been applied and compared with control group. Participants of characteristics >20 Binge Eating Scale, BMI>25 and 25-65 years old were involved in a weekly 60-min yoga intervention,

which was constructed to provide physical and mental awareness, relaxation as well as encourage to physical activity. Apart from traditional yoga components, like hatha yoga, yoga nidra, binge-eating specific elements like meditation on mindful eating were included in the intervention. Primary outcome measures - reduction of binge eating symptoms and increase in physical activity were measured with Binge Eating Scale (self-reported severity tool for BES) and International Physical Activity Questionnaire (IPAQ). Secondary outcome measures included in this study were BMI, waist and hip measures. After the intervention, statistically significant differences between pre- and post-intervention states in yoga group were found (BES scale reduction from 28,9 pre- to 14,5 post- p=0.001; IPAQ score increase 1196 pre- 2714 post-intervention p=0.001). Within secondary outcomes, decrease was also observed (BMI: 35,6 pre- to 34,7 post, p=0.009; waist 100,8cm pre- to 97,9cm post, p=0.001; hips 120,4cm pre- to 117,3cm post, p=0.001). The success rate were similar to psychological and dietary interventions reported in other studies. [14]

Another American study decided to focus on differences in groups of young adults, yoga/pilates participants and non-participants, and association with disturbed body image and eating disorders, mainly binge extreme and unhealthy weight control practices. Among 2287 adolescents, prevalence of behaviours was measured with Body Shape Satisfaction scale and the questionnaire prepared by authors based on Godin Leisure-Time Exercise Questionnaire (for Total Physical Activity measurement), and specified questions for eating disorders behaviours, such as: ”Have you done any of the following things in order to lose weight or keep from gaining weight during the past year” (unhealthy and extreme weight control behaviors), “In the past year, have you ever eaten so much food in a short period of time that you would be embarrassed if others saw you (binge eating)”. Among whole study group of young women, binge eating was reported by 15,2%, extreme weight control by 21,2% and unhealthy weight control behaviors by 55.2% of participants. Among young men, same symptoms have been found in 7,1% for binge eating, 7,8% for extreme weight control and 33,1% for unhealthy weight control behaviours. Comparing the prevalence between participants and non-participants of yoga/pilates classes, among female participants of yoga/pilates interventions less body dissatisfaction was found (36,1%) then in non-participants (51,4%) - P<0.001. It was found that in male participants of the yoga/pilates interventions extreme weight control behaviors (18.6% in participants vs. 6.8% in non-participants, p=0.006) and binge eating (11.6% in participants vs. 4.2% in non-participants p=0.023) are more frequent than in non-participant population. [15]

In European region, a Norwegian study on importance in yoga treatment in bulimia and ED not otherwise specified was conducted among 30 female adult patients with 11-week hatha yoga intervention for yoga group and group meeting about prevention of ED for control group. The outcomes were measured with EDE-Interview global score, as well as Eating Disorders Inventory (EDI-2). The primary outcomes improved within yoga group of statistically significance - EDE global total score ($p<0.01$), subscales of eating concern ($p<0.01$) and restrain concern ($p<0.05$). No changes within EDI-2 were found in this study. [16]

In Spanish study, the prevalence of orthorexia nervosa in ashtanga yoga community was measured. Orthorexia nervosa (ON), pathological obsession with natural and proper nutritional value of foods, often with fear of body contamination due to non-natural substances, willingness of constant detox/purification of food, is a personality/behavioral disorder poorly understood and guide lined within modern psychiatry. Although the diagnosis is not recognized by DSM-5 or ICD-10, it is considered as an existing problem in many communities. The first diagnostic tool has been introduced in 2004 by Donini et al. with ORTO-15 questionnaire, and later diagnostic criteria have been proposed in 2016 study by Dunn and Bratman (Criterion A - obsessive focus on healthy eating, Criterion B - compulsive behaviour and mental preoccupation with consequences to one's health). ORTO-15 questionnaire, used for screening of the yoga community population in study by Valera et al., is a 15-multiple choice items list, with threshold below 40 indicating possibility of ON diagnosis. Among 136 participants of the study, 86% of responders reached the ORTO-15 score below 40, with mean score of 35.27 ± 3.69 of the study group. Correlation with lower score and vegetarianism was found among respondents characteristics (mean ORTO-15 for vegetarians 34.26 ± 4.15, non-vegetarians 35.66 ± 3.45, $P=0.033$). The score was not correlated with age or BMI. Study suggested high prevalence of possible ON-cases among yoga community, which suggests yoga mentors and teachers to pay more attention to suggestions and restrictions on healthy diet forwarded to yoga community. [17]

CONCLUSIONS

Complementary and alternative medicine emerges in psychiatry from the urge of improving compliance and increasing full recovery rates, in order to help more and more patients suffering from mental disorders. Yoga, the ancient practice which supports human struggle in restoring balance of the entity, was proven to be effective as a supportive treatment in anorexia nervosa, bulimia nervosa, avoidant restrictive food intake disorder and binge eating

disorder. On the other hand, yoga communities have a higher prevalence of several eating disorder types comparing to non-practicing, such as orthorexia nervosa and weight control behaviours, which points out the importance of yoga instructors and mentors in recognizing unhealthy practices among participants and support the ideology of mindful eating and balancing body and spirit.

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