International Journal of Healthcare Sciences ISSN 2348-5728 (Online)
Vol. 5, Issue 1, pp: (137-146), Month: April - September 2017, Available at: www.researchpublish.com

An Updated Review of the Diagnosis and Management of Pica in Children

[1]Alasmari, Arwa Saeed A, [2]Fallatah, Samah Bakr A, [3]Beayari, Sara Mohammed F, [4]Balkhi , Duaa Salem M, [5]Aljahdli, Salmah Mojeer s, [6] Sayis Asmaa Ali Z

Abstract: **This methodical evaluation critically assesses the function of complementary and alternative medication in the treatment of those with an eating disorder. Sixteen research studies were included in the evaluation. The outcomes of this evaluation program that the function of alternative and complementary medicine in the treatment of those with an eating disorder is uncertain and further studies must be carried out. A potential role was found for massage and brilliant light treatment for depression in those with bulimia nervosa and a potential role for acupuncture and relaxation therapy, in the treatment of State Anxiety, for those with an eating disorder. The role of these complementary therapies in treating eating disorders must just be offered as an adjunctive treatment only.**

Keywords: **Alternative and complementary medication (CAM), pica in children.**

1. INTRODUCTION

Alternative and complementary medication (CAM) refers to a broad range of health practices [1-3] and hence a meaning of what constitutes a CAM therapy has at times been uncertain. The National Center for Complementary and Integrative Health different complementary and natural medicine with complementary being "a non-mainstream practice used together with traditional medicine" and alternative being a non- mainstream practice used in place of traditional medication" [4]. An operational meaning of CAM proposed by Wiedland and colleagues specifies CAM based on (i) therapies that trust non-allopathic models of health, (ii) exclusion from basic treatment within the dominant medical system, and (iii) self-care or care delivered by alternative practitioners [5]. This review utilizes this definition of CAM as there are therapies that are used, both in combination with conventional medication, and as the primary treatment.

Eating disorders according to the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5), consist of Anorexia Nervosa (AN), Bulimia Nervosa (BN), Binge Eating Disorder (BED), PICA, Rumination Disorder, Avoidant/Restrictive Food Intake Disorder (ARFID) or Other Specified or Unspecified Feeding or Eating Disorder (OSFED or UFED) [6]. OSFED/UFED changes the Eating Disorder Not Otherwise Specified (EDNOS) classification.

In the developed world the lifetime prevalence of eating disorders is 1.01% and they appear to be increasing [7, 8]. Eating disorder morbidity is also high, and mortalis amongst the greatest of psychiatric disorders [9]. Eating disorders are chronic diseases with regular regressions happening for many people [10]. Greater than 20% of people continue to have an eating disorder on long term subsequent, and numerous might establish mental disorder such as depression (15-60%), anxiety disorders (20-60%), or personality disorders [11].

A multidimensional treatment technique to the treatment of consuming disorders is most frequently adopted. Multidimensional treatment addresses the physical, mental, psychosocial and family needs of the person, and can include psychiatrists, psychologists, primary care doctors, social workers, nurses and diet professionals. Treatment aims to bring back the person's weight within normal range for their height and age, to decrease abnormal eating behaviors, and weight and shape cognitions, and handle comorbidities (both physical and mental). There is proof for making use of cognitive behavioral therapy for BN and BED and family based therapy for teenagers with AN [12] and a little base of evidence for pharmacological management of AN [13], nevertheless the evidence base underlying these present restorative techniques has constraints. Some of these restrictions include dealing with personal healing requirements such as a personally satisfying lifestyle [14] and personal ideas of recovery [10]. Healing from an eating disorder varies between people but

normally involves restoration of healthy consuming practices and "a much healthier mental and physical state of being" [15].

Reported use of CAM is increasing and especially for acupuncture, deep breathing exercises, massage meditation, yoga and treatment [16]. CAM usage is high among people detected with mental health conditions especially stress and anxiety and depression where 56.7 those with stress and anxiety attacks, and 53.6% of those with severe depression reported using CAM as an accessory to treat their conditions [17]. There is an increasing proof base determining the adjunctive use of complementary treatments to help with the management of eating disorders however the frequency of CAM utilize among individuals with and eating disorder is unknown [18-20]. Previous reviews on the use of CAM treatments and eating disorders have actually not been organized, are dated and were undetermined [18, 19]. Qualitative research findings indicate that consuming disorder sufferers' find CAM treatments advantageous and appropriate as accessories to their eating disorder treatment [18, 19, 21, 22]. Alternative and complementary treatments that improve patient outcomes, lower the burden of poor health and assistance assist in personal recovery requirements are extremely desirable. The goal of this review is to examine the function of CAM therapies in the treatment of eating disorders.

2. METHODOLOGY

The electronic databases The Cochrane Collaboration Depression, Anxiety and Neurosis Controlled Trials Registers, Medline (years 1946-2013), EMBASE (1974-2013), CINHL (1950-2015), PsycINFO (1786-2015) and PubMed (1950-2015) were looked for Randomized Controlled Trials (RCT's) investigating CAM treatments and the treatment of eating disorders in September 2013 and once again in January 2015.

3. RESULTS AND DISCUSSION

Sixteen articles that included CAM therapies and eating disorders were determined and evaluated; see Table 1. Nine various CAM treatments were investigated in the RCT's; acupuncture, intense light therapy, eye movement desensitization and reprocessing, hypnosis, massage, relaxation, repetitive transcranial magnetic stimulation, spirituality and yoga. It is of note that the authors of the included documents utilized different outcome tools covering a wide variety of eating disorder symptomatology to evaluate treatment effectiveness such as binging, purging, depression, anxiety and so on. Comparison interventions or control groups for the included studies included wait lists, placebo/attention controls, active controls e.g. other CAM treatments, pharmacotherapy or Treatment as usual (TAU). Most of treatments were used as an adjunct to treatment as usual, and treatment always included psychological care. One research study using repeated transcranial magnetic stimulation for the treatment of Bulimia Nervosa seems the main treatment [27]. One research study utilizing yoga for the treatment of binge eating disorder was the main therapy for participants [28]. Treatment for each included study was administered at various settings with an even mix of outpatient, eating and inpatient disorder clinic settings. Individuals remained in different stages of their eating disorder and no study looked at the particular timing of the CAM intervention.

Research studies involving info on CAM treatments, evidence of treatments and anticipated results are categorized listed below according to eating disorder diagnostic classification i.e. Anorexia Nervosa, Bulimia Nervosa and combined eating disorders.

Anorexia Nervosa:

The literature search yielded 4 research studies investigating CAM treatment usage for the treatment of Anorexia Nervosa. The CAM methods for the four research studies were acupuncture, intense light therapy, massage and relaxation. Of these research studies 2 were conducted on patients over 18 years of age and 2 consisted of those 15 years of age or greater. Only one research study included both genders [29].

There was no typical outcome measure that was investigated in each of the four research studies nevertheless all research studies took a look at either weight or Body Mass Index (BMI). None of the studies reported a substantial impact from their particular CAM treatment on weight/BMI [29-32].

2 research studies examined eating psychopathology via the Eating Disorder Inventory [29, 31]. One of these research studies found less eating psychopathology for individuals following their very first and their last massage (a one month time period) nevertheless no between group contrasts were undertaken [31]. No considerable impact was discovered for the use of acupuncture for consuming psychopathology [29].

2 studies investigated anxiety (one via the State Trait Inventory and the other via the Stress, anxiety and anxiety scale) [29,31]. Among these research studies discovered less anxiety for individuals following their first and their last massage (a one month period), nevertheless no between group comparison was undertaken [31]. No substantial impact was found for making use of acupuncture for stress and anxiety [29].

Two studies investigated depression (one via the Hamilton Depression Rating Scale and the other through the Stress, anxiety and stress and anxiety scale) [29, 30]. Among these research studies discovered substantially less depression for participants following bright light treatment [30], the other found no changes [29].

All the other outcome procedures used in these 4 research studies were specific to the research study and results included improved state of mind [31] and higher self-esteem and less worry of fat [32].

Bulimia Nervosa:

The literature search yielded six studies investigating CAM therapy use for the treatment of Bulimia Nervosa. The CAM techniques for the six studies were bright light therapy, hypnosis, massage, relaxation and recurring transcranial magnetic stimulation. All of the research studies included ladies as participants in their trials. The majority of these research studies were conducted on patients over 17 years of age.

There was no typical outcome procedure that was investigated in each of the 6 studies. Binge-purge outcomes were investigated in 5 of the research studies typically through record keeping of binge and or purge episodes [27, 33-36]. The intense light therapy studies had actually mixed outcomes with one study finding considerably less binging and purging for individuals [34] nevertheless the other study found no substantial impact [33]. The three other studies discovered no significant impacts for making use of hypnosis [35], relaxation [36] or repeated transcranial magnetic stimulation [27] for reducing or staying away from binging and or purging.

Four studies examined consuming psychopathology (3 through the Eating Disorder Inventory and 2 via the Eating Attitudes Test *) [33-37]. One study found considerably less consuming psychopathology for individuals in the domains of the EAT-dieting subscale, EAT- bulimia and food preoccupation, the EDI-bulimia subscale for hypnosis and EDI-drive for thinness and EDI-bulimia subscale for relaxation [35]. No significant effect was discovered for the use of brilliant light treatment, relaxation or massage for consuming psychopathology [34, 36, 37].

Five research studies examined depression (3 utilizing the Hamilton Depression Rating Scale, one made use of the Hamilton Depression Rating Scale- Seasonal Affective Disorder, four utilizing the Becks Depression Index, and one study used the Profile of Mood State- Depression *) [27, 33, 34, 36, 37]. Three of these research studies found significantly less anxiety for participants however the massage research study (Field et at 1998) did not undertake an in between group contrast [33, 34, 37]. No substantial effect was discovered for making use of recurring transcranial magnetic stimulation or relaxation for depression [27, 36].

All the other outcome steps utilized in these 6 studies were private to the research study and results included less clinical ranked body dissatisfaction and food restriction [36].

Some adverse effects in both groups of the Bright Light Therapy 1994 study were tape-recorded, these were headache, eye tiredness and feeling 'fast' [34].

Mixed Eating Disorders:

The literature search yielded 5 studies examining CAM treatment usage for the treatment of a mixture of consuming disorders (Anorexia Nervosa, Bulimia Nervosa or Eating Disorder Not Otherwise Specified). The CAM techniques for the 5 studies were acupuncture, eye motion desensitization and reprocessing, relaxation, yoga and spirituality. Most of the research studies involved women as participants in their trials with just the yoga study including any males. The majority of these studies were carried out on patients over 15 years of age.

All five research studies investigated eating psychopathology (three using the Eating Disorder Inventory, 2 utilized the Eating Attitudes Test and one utilizing the Eating Disorder Examination) [38-42]. One research study discovered a significant enhancement for eating disorder symptoms with yoga [42]. The authors of the eye motion desensitization and reprocessing study discuss a finding of lower body dissatisfaction (BD) post treatment in the abstract however the primary paper outcomes do not report any considerable differences for Eating Disorder Inventory-Body Dissatisfaction [39]. No significant result was found for the use of acupuncture, eye movement desensitization and reprocessing, relaxation or spirituality for eating psychopathology [38-41].

Three research studies investigated anxiety (all utilizing the State Trait Inventory) [38, 40, 42]. 2 of these studies found considerably less State anxiety, one with acupuncture [38] and one with relaxation [40]. The relaxation treatment likewise found considerably less Trait anxiety [40]. No significant impact was discovered for using yoga for anxiety [42].

Three studies examined depression (all by means of the Becks Depression Inventory [38, 39, 42]. No significant effect was discovered for the use of yoga [42], acupuncture [38] or eye movement desensitization and reprocessing [39] for anxiety.

All the other result steps used in these five research studies were private to the research study and results consisted of significantly lower social role conflict with spirituality [41] and significantly enhanced lifestyle with acupuncture [38].

The acupuncture study reported negative effects; one patient felt faint and nauseous, needles were removed and participant recovered and continued with the treatment [38].

Binge eating disorder:

One study investigated Binge Eating Disorder. The McIver et al 2009 trial of yoga and Binge Eating Disorder included ninety obese or obese females [28]. An advantage was discovered for yoga with a substantial decrease in binge consuming, BMI and hip and waist measurements and an increase in physical activity [28].

An assessment for quality of the included studies was carried out utilizing the Cochrane Review questions for evaluating bias [26], see Table 2. For the majority of research studies the danger of bias was uncertain. Two research studies, which examined making use of acupuncture, were evaluated to have a general low danger of bias [29, 38]. The majority of the studies had concerns

with the reporting hence leading to the uncertain findings. Blinding of participants and personnel in the consisted of CAM research studies was limited due to the intrinsic problems in finding a proper control that makes sure blinding can take place. Only three research studies including brilliant light therapy and repetitive transcranial magnetic stimulation were able to administer blinded controls. Blinding of the outcome assessors and incomplete reporting of the result information was reasonably well reported in simply under half of the included studies nevertheless the reporting of how the randomized series was generated and allocation concealment was poor, likewise numerous authors not provide data on individual loss.

Participant numbers:

In a traditional meta-analysis the results are weighted due to participant numbers, thus a subgroup analysis based on participant numbers in each study was undertaken. This involved weighting the study results (significant or not significant) based on the proportion of the total number of participants in each subgroup i.e. (sum of the total number of participants in the included studies with significant results/sum total number of study participants in that category) x 100 = %. Where the participant numbers were within 20% of each other the studies were viewed as equal weighting. The results when the studies were weighted were as above excepting for two outcomes: the benefits for depression in those with Bulimia Nervosa using massage and bright light therapy became less beneficial, and second the benefits for anxiety in those with a mixed eating disorder using acupuncture and relaxation became less beneficial.

A statement about the quality of the included studies based on bias is given above. A subgroup analysis is undertaken based on the quality of the included studies. Only two studies, which investigated the use of acupuncture, were assessed to have an overall low risk of bias [29, 38]. Weighting was given by level of bias; low bias was given a third more weight, unclear the same weight and high bias given a third less weight. Weighting the AN and acupuncture study more than the other AN and CAM studies does not change the results. Weighting the results of the acupuncture and mixed eating disorder study more than the CAM and mixed eating disorder results gives more strength to the findings of significantly less state anxiety for those with a mixed eating disorder.

The subgroup analysis results indicate that study bias is not unduly influencing the review findings however participant numbers may be influencing the review findings.

The aim of the review was to evaluate the literature and to clarify the role that CAM plays in the treatment of eating disorders. The review found a potential role for complementary and alternative medicine (CAM) therapies in the treatment of depression with massage and bright light therapy, for those with bulimia nervosa. There was also a potential role for CAM therapies in the treatment of State Anxiety, with acupuncture and relaxation for those with an eating disorder (Anorexia Nervosa, Bulimia Nervosa or Eating Disorder Not Otherwise Specified). Whilst a number of studies

reported beneficial findings for anxiety and depression a sub-group analysis based on study participant numbers indicates that these findings are not conclusive. There was mixed evidence for the role of the CAM treatments hypnosis, relaxation, massage or bright light therapy on the Eating Disorder Inventory domain of Bulimia. The review found little evidence that CAM therapies had a specific benefit on eating disorder symptomology/psychopathology for any eating disorder diagnostic category (AN, BN, or mixed diagnostic group (AN, BN and EDNOS). These results build extensively on the work of two now dated non-systematic reviews into CAM and eating disorder adjunctive treatments [18, 19] that provided inconclusive evidence of the role of CAM in the treatment of eating disorders. While improving and identifying areas for future research is important, so is providing evidence-based information for consumers, caregivers and medical providers. Research has identified a need for access to eating disorder services and CAM therapies have the potential to play an adjunctive role in the stepped care approach for the above-mentioned conditions [43].

The reporting of safety and adverse effects in these studies was limited, however there were similar frequency of events to those in the current literature, with most evidence finding that CAM therapies are relatively safe [44-46]. There was no evidence of any CAM therapy having a detrimental effect on the eating disorder, but the poor reporting of adverse events limits this finding.

A role of CAM therapies in the recovery of eating disorders (as opposed to treatment) might be addressing the need for an unique and personal recovery and a personally satisfying quality of life for eating disorder sufferers [10, 14, 47]. For recovery, much more than clinical treatment is required [47-49]. There are benefits from the experience of receiving CAM therapies, which might be able to assist in recovery from an eating disorder such as making connections, motivation and interests beyond the illness [10,47-50]. Receiving touch can give eating disorder suffers hope, comfort and feelings of being connected [51]. Massage and acupuncture were viewed positively as a welcome supplementary activity from usual care and something to look forward to [29] and yoga has been shown to provide stillness, peace and relaxation [52]. Being able to choose a CAM therapy as part of the process of recovery may engage and motivate sufferers to continue with the recovery journey, foster new interests and meet the individual needs of the sufferer. A sense of connection may arise from the therapeutic relationship. The therapeutic relationship has been shown to be important in eating disorder treatments [10, 53-56]. The experience of the CAM treatment commonly includes the therapeutic relationship [57, 58]. The role of CAM therapies in recovery has not been the focus of research and more evidence is needed before the role CAM plays in recovery is determined.

Table 1. Summary of included studies and the significant findings by CAM therapy

CAM Therapy	Intervention and participant numbers (n)	Eating Disorder type and setting	Outcome Measures	Results at end of the treatment Mean (M), Mean Deviation (MD,) odds ratio (OR) or F statistic for ratio of variances (F) Confidence interval (CI) / Standard Deviation (SD)/Standard Error/r /df/ f
Fogarty 2010	TCM style acupuncture + TAU n = 9 v TAU n=9	AN or BN Patients > 17 years of age at a private outpatient eating disorder clinic	EDI-3, BDI, STAI & EDQoL	The acupuncture group has a mean STAI score of 37.6, 3.3 (SE) which was significantly less than the control group which had a mean STAI score of 46.3, 5.8 (SE).
Smith 2013	Acupuncture + TAU n = 13 v acupressure/light massage + TAU n = 13	AN Inpatients at a private hospital > 15 years of age	BMI, EDI-3, EDE-Q, DASS, EDQoL	The control group had significantly lower EDE-Q eating concerns score than the acupuncture group 1.0 (MD), 95% CI 0.05-1.9
Janas-Kozik 2011	BLT + CBT n= 12 v CBT alone n= 12	AN. Female patients at an inpatient hospital, aged 15-20 years & > 17 points on the HDRS	HDRS & BMI	The BLT group has a mean depression score of 10.67, 1.61 (SD) which was significantly less than the control group which had a mean depression score of 13.58, 3.09 (SD).

Bloomgarden 2008	EMDR + TAU n= 43 or TAU only n= 43	AN, BN or EDNOS. Females at a residential eating disorder setting	BIM, BIS, ASI, EDI-BD, SATAQ-R, EAT-26, BDI, DES	The EMDR group had a significantly lower distress about negative body image memories score (earliest memory) than the placebo group 3,252 (F) = 7.27, 0.17 (r) The EMDR group had a significantly lower distress about negative body image memories score (worst memory) than the placebo group 3,252 (F) =6.78, 0.16 (r)
Walpoth 2008	RTMS n=7va sham RTMS with a magnetic field absorbing metal plate n = 7	BN. Females aged 18-35 years with a BMI of > 17.5 & a HAMD score of < 18	Binge-Purge status, HDRS, BDI, YBOCS	No statistical difference between groups for any outcome measures
Carei 2010	8 one hour a week yoga sessions plus TAU n = 26 v TAU n = 27	AN, BN or EDNOS. Patients at a Children's hospital outpatient department between ages 10-21 years.	EDE, BMI, BDI & STAI	There was significantly less eating disorder symptoms for the yoga group compared to the control group F (2,35) = 3.26
McIver 2009	60 min weekly yoga group for 12 weeks plus a home yoga program n = 25 v wait list n - 25	Binge eating Disorder. Women from a community based sample of overweight or obese women (BMI of> 25) BED defined by a score of > 20 on the BES, aged between 25 -65 years	BES, Short form of IPAQ	There was significantly less binge eating for the yoga group compared to the control group F (1,48) = 38.3 There was significantly more physical activity for the yoga group compared to the control group F (1,48) = 12.8 There was significantly less BMI scores for the yoga group compared to the control group F (1,48) = 7.5 There was significantly less hip measurement scores for the yoga group compared to the control group There was significantly less binge eating for the yoga group compared to the control group F (1,48) = 38.1 There was significantly less waist measurement scores for the yoga group compared to the control group F (1,48) = 61.2

The findings from this review show no substantial beneficial effect from CAM therapies on the eating disorder itself. The majority of included studies were using the CAM therapy as an adjunctive treatment and thus it is probable that the researchers were not expecting global changes in the participant's eating disorder. The use of CAM treatment research as an adjunct mirrors CAM clinical practice [(20)]. A survey of acupuncturists in the United Kingdom found that acupuncturist's commonly treated eating disorder related side- effects/symptoms such as emotional and mental issues, menstrual irregularities and stress or depression and provided emotional support, rather than primarily treating patients for their eating disorder [(20)]. It is recommended that CAM treatments should be provided as adjunctive treatments only.

Future research could focus on the therapies and eating disorders that are the most promising, such as massage, bright light therapy and acupuncture. Future CAM and eating disorder studies might consider investigating experiential benefits

such as increased hope, feeling 'normal', making connections, being motivated and so forth and more global outcome measures of health such as quality of life, emotional well-being and so forth to capture both the experience/effect of the treatment and the effect of the CAM therapy on recovery. Limitations of this review include that a meta-analysis could not be undertaken due to the small number of studies available. The reporting of the methodology was poor in many of the included studies, which lead to an overall unclear risk of bias for the majority of studies. This was taken into account when reporting the review findings and recommendations and information about methodological issues have been included throughout the review text where relevant.

Table 2: Risk of bias in included studies

Paper	Random sequence generation	Allocation Concealment	Blinding of participants and personnel	Blinding of outcome assessment	Incomplete outcome data	Selective reporting	Other bias
Bloomgarden 2008	Yes	Unclear	No	Yes	Unclear	Unclear	None
Blouin 1996	Unclear	Unclear	Yes	Yes	Unclear	Unclear	Yes
Bulik 1998	Unclear	Unclear	No	Unclear	Unclear	Unclear	None
Carei 2010	Unclear	Unclear	No	Unclear	Yes	Yes	Unclear
Field 1998	Unclear	Unclear	No	Unclear	Unclear	Unclear	Unclear
Fogarty 2010	Yes	Unclear	No	Yes	Yes	Yes	None
Goldfarb 1987	Unclear	Unclear	Unclear	Unclear	Yes	Unclear	None

4. CONCLUSION

This organized evaluation summarizes and seriously evaluates the literature on alternative and complementary medicine as an accessory treatment for people with an eating disorder. Sixteen studies were consisted of in the review. Due to the little research study numbers a meta-analysis was unable to be carried out. This review found the role of alternative and complementary medication in the treatment of those with an eating disorder is unclear and further studies must be conducted. There may be a potential function for the CAM treatments relaxation, massage and intense light treatment, in the treatment of depression for those with bulimia nervosa and a prospective function for the CAM treatments acupuncture and relaxation, in the treatment of State Anxiety, for those with an eating disorder. The review found no proof that CAM treatment has a significant useful impact on the eating disorder itself and therefore CAM treatments need to be supplied as adjunctive treatments. CAM treatments may have a role in the healing from an eating disorder through making connections, inspiration and developing interests.

REFERENCES

[1] Weir M. What is complementary and alternative medicine. Faculty of Law at ePublications@bond: Bond University; 2005. p. 14-40.

[2] NICM. Highlighting Complementary Medicine Research- Choosing Complementary Medicine. In: Medicine) NNIoC, editor. Fact Sheet 2011. p. 3.

[3] National Center for Complementary and Alternative Medicine N. What is Complementary and Alternative Medicine? : NCCAM; 2012 [updated May 2012; cited 2013 4th April]. NCCAM Pub No.: D347].

[4] National Center for Complementary and Integrative Health. Complementary, Alternative, or Integrative Health: What's In a Name? : National Institutes of Health; 2008 [updated March 2015; cited 2016 16th February].

[5] Wieland SL, Manheimer E, Berman BM. Development and classification of an operational definition of complementary and alternative medicine for the Cochrane Collaboration. Altern Ther Health Med. 2011;17(2):50-9.

[6] American Psychiatric Association. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (Feeding and Eating Disorders): The American Psychiatric Association (APA); 2013 [cited 2013 6th September].

[7] Mitchison D, Hay P, Slewa-Younan S, Mond J. Time trends in population prevalence of eating disorder behaviors and their relationship to quality of life. PLoS ONE. 2012;7(11):17.

[8] Qian J, Hu Q, Wan Y, Li T, Wu M, Ren Z, et al. Prevalence of eating disorders in the general population: a systematic review. Shanghai Arch Psychiatry. 2013;25(4):212-23.

[9] Arcelus J, Mitchell AJ, Wales J, Nielsen S. Mortality rates in patients with anorexia nervosa and other eating disorders: a meta-analysis of 36 studies. . Arch Gen Psychiatry. 2011;68(7):724-31.

[10] Dawson L, Rhodes P, Touyz S. "Doing the Impossible": The Process of Recovery From Chronic Anorexia Nervosa. Qual Health Res. 2014;24(4):494-505.

[11] Lowe B, Zipfel S, Buchholz C, Dupont Y, Reas D, Herzog W. Long-term outcome of anorexia nervosa in a prospective 21-year follow up study. Psychol Med. 2001;31:881-90.

[12] Hay P. A systematic review of evidence for psychological treatments in eating disorders: 2005–2012. International Journal of Eating Disorders. 2013;46(5):462-9.

[13] Treasure J, Claudino A, Zucker N. Eating Disorders. Lancet. 2010;375(9714):583-93.

[14] Mitchison D, Morin A, Mond J, Slewa-Younan S, Hay P. The bidirectional relationship between quality of life and eating disorder symptoms: a 9-year community-based study of Australian women. PLoS One. 2015;Mar 26;10(3).

[15] National Eating Disorders Collaboration. Understanding Recovery 2015 [updated 5th May 2015; cited 2015 25th May].

[16] Barnes P, Bloom B, Nahin R. Complementary and Alternative Medicine Use Among Adults and Children. United States: National Center for Health Statistics, 2008.

[17] Kessler R, Soukup J, Davis R, al e. The use of complementary and alternative therapies to treat anxiety and depression in the United States. Am J Psychiatry. 2001;158:289-94.

[18] Madden S, Fogarty S, Smith C. Alternative and Complementary Therapies in the Treatment of Eating Disorders, Addictions, and Substance Use Disorders. In: Brewerton TD, Dennis AB, editors. Eating Disorders, Addictions and Substance Use Disorders. New York: Springer; 2014. p. 625-47.

[19] Fogarty S, Madden S. A review of the use of acupuncture in the treatment of Anorexia Nervosa. In: Gramaglia C, Zeppegno P, editors. New Developments in Anorexia Nervosa Research. New York: Nova Science Publishers Inc; 2014. p. 141-50.

[20] Clarke L. Exploring the basis for Acupuncture Treatment of Eating Disorders; A Mixed Methods Study: Northern College of Acupuncture (NCA); 2009.

[21] Vancampfort D, Vanderlinden J, De Hert M, Soundy A, Adámkova M, Skjaerven LH, et al. A systematic review of physical therapy interventions for patients with anorexia and bulimia nervosa. Disabil Rehabil. 2014;36(8):628-34.

[22] Katterman SN, Kleinman BM, Hood MM, Nackers LM, Corsica JA. Mindfulness meditation as an intervention for binge eating, emotional eating, and weight loss: A systematic review. Eat Behav. 2014;15(2):197-204.

[23] World Health Organization. International Classification of Diseases,. 1992.

[24] Birmingham CL, Beumont P. Medical Management of Eating Disorders. Cambridge: Cambridge University Press; 2004. 289 p.

[25] Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement 2009 2009-07-21 10:46:49.

[26] Higgins J, Green S. Cochrane Handbook of Systematic Reviews of Interventions: The Cochrane Collaboration; 2008.

[27] Walpoth M, Hoertnagl C, Mangweth-Matzek B, Kemmler G, Hinterholzl J, Conca A, et al. Repetitive transcranial magnetic stimulation in bulimia nervosa: preliminary results of a single-center, randomized, double-blind, sham-controlled trial in female outpatients. Psychotherapy & Psychosomatics. 2008;77(1):57-60.

[28] McIver S, O'Halloran P, McGartland M. Yoga as a treatment for binge eating disorder: A preliminary study. Complement Ther Med. 2009;17(4):196-202.

[29] Smith C, Fogarty S, Touyz S, Madden S, Bucket G, Hay P. Acupuncture and acupressure health outcomes for patients with anorexia nervosa: findings from a pilot randomized controlled trial and patient interviews J Altern Complement Med. 2014;Feb; 20(2,):103-12.

[30] Janas-Kozik M, Krzystaneck M, Stachowicz M, Krupka-Matuszczyk I, Janas A, Rybakowski JK. Bright light treatment of depressive symptoms in patients with restrictive type of anorexia nervosa. J Affect Disord. 2011;130:462-5.

[31] Hart S, Field T, Hernandez-Reif M, Nearing G, Shaw S, Schanberg S, et al. Anorexia Nervosa Symptoms are Reduced by Massage Therapy. Eating Disorders. 2001;9(4):289-99.

[32] Goldfarb LA, Fuhr R, Tsujimoto RN, Fischman SE. Systematic desensitization and relaxation as adjuncts in the treatment of anorexia nervosa: a preliminary study. Psychological Reports. 1987;60(2):511-8.

[33] Blouin AG, Blouin JH, Iversen H, Carter J, Goldstein C, Goldfield G, et al. Light Therapy in Bulimia nervosa: a double-blind, placebo controlled study. Psychiatry Res. 1996;60:1-9.

[34] Lam RW, Goldner EM, Solyom L, Remick R. A Controlled Study of Light Therapy for Bulimia Nervosa. Am J Psychiatry. 1994;151(5):744-50.

[35] Griffiths RA, Hadzi-Pavlovic D, Channon-Little L. A controlled evaluation of hypnobehavioural treatment for bulimia nervosa: Immediate pre-post treatment effects. EUR Eat Disord Rev. 1994;2(4):202-20.

[36] Bulik CM, Sullivan PF, Carter FA, McIntosh VV, Joyce PR. The role of exposure with response prevention in the cognitive-behavioral therapy for bulimia nervosa. Psychological Medicine. 1998;28(3):611-23.

[37] Field T, Schanberg S, Kuhn C, Fierro K, Henteleff T, Mueller C, et al. Bulimic adolescents benefit from massage therapy. Adolescence. 1998;33(131):555-63.

[38] Fogarty S, Harris D, Zaslawski C, McAinch AJ, Stojanovska L. Acupuncture as an Adjunct Therapy in the Treatment of Eating Disorders: A Pilot Study. Complement Ther Med. 2010;18(6):227- 76.

[39] Bloomgarden A, Calogero RM. A randomized experimental test of the efficacy of EMDR treatment on negative body image in eating disorder inpatients. J Eat Disord. 2008;16(5):418-27.

[40] McComb JJR, Clopton JR. The effects of movement, relaxation, and education on the stress levels of women with subclinical levels of bulimia. Eat Behav. 2003;4(1, March):79-88.

[41] Richards SP, Berrett ME, Hardman RK, Eggett DL. Comparative Efficacy of Spirituality, Cognitive, and Emotional Support Groups for Treating Eating Disorder Inpatients. J Eat Disord. 2006;14(5):401-15.

[42] Carei RT, Fyfe-Johnson AL, Breuner CC, Brown MA. Randomized Controlled Clinical Trial of Yoga in the Treatment of Eating Disorders. Journal of Adolescent Health. 2010;46:346–51.

[43] Hay P, Chinn D, Forbes D, Madden S, Newton R, Sugenor L, et al. Royal Australian and New Zealand College of Psychiatrists clinical practice guidelines for the treatment of eating disorders. Aust N Z J Psychiatry. 2014;48(11):977-1008.

[44] Zhang J, Shang H, Gao X, Ernst E. Acupuncture-related adverse events: a systematic review of the Chinese literature. Bulletin of the World Health Organization: The World Health Organization, 2010.

[45] Witt CM, Pach D, Brinkhaus B, Wruck K, Tag B, Mank S, et al. Safety of Acupuncture: Results of a Prospective Observational Study with 229,230 Patients and Introduction of a Medical Information and Consent Form. Forsch Komplementmed. 2009;16(2):91-7.

[46] Harris T, Grace S, Eddey S. Adverse Events from Complementary Therapies: An Update from the Natural Therapies Workforce Survey Part 1. Journal of the Australian Traditional Medicine Society. 2015;21(2):86-91.

[47] Espíndola C, Blay S. Long term remission of anorexia nervosa: factors involved in the outcome of female patients. PLoS One. 2013;8((2):e56275).

[48] Hay PJ, Cho K. A Qualitative Exploration of Influences on the Process of Recovery from Personal Written Accounts of People with Anorexia Nervosa. Women's & Health. 2013;53(7):730-40.

[49] Espindola C, Blay S. Anorexia Nervosa treatment from the patient perspective: a meta synthesis of qualitative studies. Ann Clin Psychiatry. 2009;21:38 - 48.

[50] Federici A, Kaplan AS. The patient's account of relapse and recovery in anorexia nervosa: a qualitative study. EUR Eat Disord Rev. 2008;16(1):1-10.

[51] Henricsona M, Segestena K, Berglundb A-L, Määttäa S. Enjoying tactile touch and gaining hope when being cared for in intensive care. A phenomenological hermeneutical study. Intensive Crit Care Nurs. 2009;25:323-31.

[52] Douglass L. Yoga as an Intervention in the Treatment of Eating Disorders: Does it Help? J Eat Disord. 2009;17(2):126-39.

[53] Fogarty S, Smith C, Touyz S, Madden S, Bucket G, Hay P. Patients with anorexia nervosa receiving acupuncture or acupressure; their view of the therapeutic encounter. Complement Ther Med. 2013.

[54] Wright KM. Therapeutic relationship: Developing a new understanding for nurses and care workers within an eating disorder until. J Psychiatr Ment Health Nurs. 2010;19:154-61.

[55] Wright KM. An Interpretive Phenomenological Study of the Therapeutic Relationship between Women Admitted to Eating Disorder Services and Their Care Workers. Lancashire: University of Central Lancashire; 2014.

[56] Wright KM, Hacking S. An angel on my shoulder: a study of relationships between women with anorexia and healthcare professionals. Journal of Psychiatric and Mental Health Nursing. 2012;19:107-15.

[57] Paterson C, Zheng Z, Xue C, Wang Y. Playing Their Parts": The Experiences of Participants in a Randomized Sham-Controlled Acupuncture Trial J Altern Complement Med. 2008;March, 14(2).

[58] Anderson KT. Holistic Medicine Not "Torture": Performing Acupuncture in Galway, Ireland. Medical Anthropology. 2010;29(3):253-77.