



ISSN Print: 2394-7500
ISSN Online: 2394-5869
Impact Factor: 5.2
IJAR 2016; 2(4): 668-673
www.allresearchjournal.com
Received: 18-02-2016
Accepted: 19-03-2016

Raksha Rawat
Dev Sanskriti
Vishwavidyalaya,
Gayatrikunj, Haridwar,
Uttarakhand, India.

Dr. Chinmay Pandya
Dev Sanskriti
Vishwavidyalaya,
Gayatrikunj, Haridwar,
Uttarakhand, India.

Effect of yogic intervention on eating disorder cognitions among adolescent girls in India

Raksha Rawat, Dr. Chinmay Pandya

Abstract

Background: Eating disorder is very common among western countries but now-a-days it is introducing in India too due to the effect of globalization, Media, Magazine and tendency to have a perfect body shape which results in different health hazards.

Aims: To examine the effect of yogic practises on eating disorder cognitions among adolescent girls in India.

Method: All subjects (11 to 19 years) were taken from Tata Nagar (Jharkhand). Firstly 120 subjects selected for the study from 1056 subjects. Randomly they were divided into two groups, 40 subjects for control group and 80 subjects for experimental group. During yogic intervention most of subjects left the group for their personal reason. Lastly the experiment carried out on 40 subjects.

Results: Significant effects of yogic practises on experimental group were found and no effect was found on the subjects who belonged to control group.

Conclusions: These finding demonstrated that the effect of yoga has a positive impact on eating disorder cognitions among adolescent girls in India.

Keywords: intervention, eating disorder, cognitions, adolescent

Introduction

In the present scenario world has become very modernize and materialistic as well. Everyone wants to remain fit and attractive. In such competition, people are paying much attention towards their physique. Some people are really trying to keep themselves healthy in a positive way by maintaining their lifestyle but few of them are over-conscious about their physique, they considered themselves as very fat due to which they are restricting to intake food by the fear of gaining weight. Such kind of tendency is mostly followed by the adolescent girls which results into many psychological illnesses. Eating disorder is one amongst the psychological diseases outlined by abnormal intake habits which will involve either low or excessive food intake that have an effect on a human physical and psychological state. Anorexia nervosa and bulimia nervosa must be understood and appreciated to be chronic disorders and the others are binge eating disorder and OSFED (other specified feeding or eating disorder).

In anorexia nervosa a person restricts food intake due to an irrational fear of weight gain. In this, a person has a distorted self-image, and typically involves excessive weight loss. Due to their fear of gaining weight, individuals with this disorder restrict the amount of food they consume. Anorexia is not specially related to food only but it is an unhealthy way to try to cope with emotional problem. Anorexia nervosa is diagnosed predominantly in women. Anorexia is the third most common chronic illness among adolescents. In 2013 it resulted in about 600 deaths globally up from 400 deaths in 1990. Anorexia nervosa is a condition thought to be associated with the western culture. However, the recent publication of a case series from Asia suggests that it is a syndrome related to a changing culture. Bulimia nervosa is also a kind of eating disorder in which a person intake large amount of food in a short period of time and just after eating food they immediately purge (self-vomit). People with this disorder generally have impulsive behaviour like sexual behaviours, overspending, family history of alcohol and substance abuse etc. 25% of college-aged women engage in bingeing and purging as a weight-management technique.

Correspondence
Raksha Rawat
Dev Sanskriti
Vishwavidyalaya,
Gayatrikunj, Haridwar,
Uttarakhand, India.

Bulimia nervosa is considered to be less life-threatening than anorexia. Bulimia nervosa is nine times more likely to occur in women than men. The majority of those with bulimia nervosa are at normal weight. 8 The majority, about 80 to almost 90 percent of individuals with bulimia are women. Among women, adolescents are the foremost in danger.

Other Specified Feeding and Eating Disorders (OSFED) is a disorder in which patient has many of the symptoms resemble with Anorexia Nervosa, Bulimia Nervosa or Binge Eating Disorder but will not meet the full criteria for diagnosis of these disorders. People with this disorder has extremely disturbed eating habits, distorted body image, overvaluation of shape, intense fear of gaining weight (if underweight).

Up to 24 million people of all ages and genders suffer from an eating disorder (anorexia, bulimia and binge eating disorder) in the U.S. Worldwide the figure is more like 70 million sufferers!

Anorexia nervosa and related eating disorders are rare in non-western cultures. In India the information regarding these disorders is very limited but it is increasing very rapidly day by day due to the effect of media and westernization. And because of its effect, adolescents are very keen to have a perfect body figure by adopting wrong eating habits and sometimes by starving themselves. Girls who early in adolescence felt most negatively about their bodies were more likely to develop eating problems (on EAT-26) 2 years later. One research found that after controlling for BMI, all adolescent development measures were correlated with the psychological feelings subscore. This subscore contained items relating to confusion, social unease, sadness, difficulty coping, desiring perfection and loss of control. Tanner breast stage was correlated with the eating behaviour (EB) subscore.

There are number of factors which are responsible for the development of eating disorder. The factors that increase the risk for the onset of eating disorders in adolescents are: genetics, body changes during puberty, the vulnerability of adolescents to the ideals of thinness, social pressures to be thin, body image dissatisfaction, restrictive diet, depression and low self-esteem. However, it is suggested that in different cultures, eating disorders may come from a number of conditions unrelated to compensatory behaviours or weight, but the shape of the body.

47% of girls in 5th-12th grade reported wanting to lose weight because of magazine pictures. 91% of women surveyed on a college campus had attempted to control their weight through dieting. 22% dieted "often" or "always. This kind of tendency among adolescent girls is very dangerous for their health and future. Because a healthy girl can become a healthy mother and can give birth to a healthy child.

The prevalence of eating disorders was 1.25% Psychogenic vomiting was the commonest eating disorders and anorexia nervosa the emerging eating disorder. The most common co-morbidities were depression, intellectual disability, and dissociative disorder. Today's youngsters are the tomorrow's building block of society. Hence it is necessary that they should be healthy.

Eating disorders are common in contemporary society. New information is emerging on the pathogenesis of anorexia nervosa and bulimia nervosa and includes psychologic, biologic, family, environmental, genetic and social factors.

The problem with statistics on eating disorders is that many sufferers do not come forward for diagnosis due to embarrassment, denial or confusion as to what their symptoms are. According to Noordenbox (2002) ^[18] only 1 in 10 men and women with eating disorders receive treatment. Only 35% of people that receive treatment for eating disorders get treatment at a specialized facility for eating disorders.

In eating disorder there is a major disturbance with cognitions of a person. One of the prominent cognition is distorted self-image in which a person considers himself as overweight but in reality the person is underweight. So, it is the need to correct their self-image with the help of yoga. Almost 50% of people with eating disorders meet the criteria for depression. Yoga provides the holistic way to correct their self-image. The main goal of yoga is to teach a person how to strengthen their body, their mind and the connection between the two and it also teaches inner balance of the body.

In eating disorder person has a variety of impulsive behaviour and the manifestations of such behaviour is due to over activation of the sympathetic nervous system (SNS). When the level of cortisol and norepinephrine hormone increases in the body then the body constantly get the message that it is under stress. This chronic stress mode (also known as the 'fight or flight' response) only encourages more of the same disordered symptoms whether it be restriction, bingeing, purging, using substances, stealing, cutting, etc.

In addition to this the parasympathetic nervous system (PNS), which is responsible for physical relaxation and emotional calming becomes overwhelmed by this sympathetic response. Without the parasympathetic nervous system an individual cannot learn how to manage stress, make any room for trusting their bodies, manage a craving, feel less anxious etc.

Due to over activation of sympathetic nervous system parasympathetic nervous system totally gets disturbed. Parasympathetic nervous system (PNS) is responsible for physical relaxation and emotional calming. Without the parasympathetic nervous system an individual cannot learn how to manage stress, manage a craving, feel less anxious etc.

Pt. Shri Ram Sharma Acharya has provided very effective technique like Atmabodh Tatvabodh sadhana, Savita Dhyana (meditation on rising sun) and Pranayama. These practices are very helpful to correct their distorted thinking and help to get rid of anxiety and depression.

Regular practice of Atmabodh tatvabodh sadhana, pranayama and meditation increases the activation of the parasympathetic nervous system. With the help of these practices body learns to remain calm in stressful situations. By practising yoga physical activities get increased and there is a reduction in binge eating. There is also statistically significant reduction in BMI, hips and waist measurement were obtained.

Sample

The sample comprised of 80 students drawn from different schools of Tata Nagar. The age group of 80 purposively selected participants was 11-19 years.

Inclusive Criteria

- All participants should be adolescent girls i.e. age group 11-19 year
- Girls with the symptoms of eating disorder

Exclusive criteria

- Girls above the age group of 20 years cannot participate in this study
- Girls with severe psychological problem cannot participate

Tool

Eating disorder examination questionnaire prepared by Fairburn and Beglin (1994) was used for the assessment of Eating disorder among adolescent girls. The scale consists of 28 statements which are concerned with Restraint category, eating concern, shape concern and weight concern. Higher the score on the scale greater is the symptom of eating disorder and vice versa.

Design and method of study

Pre-test, post-test control- experimental group design was used in the study.

Firstly researcher visited to some modern schools in Tata Nagar and then researcher had administered Eating Disorder Examination Questionnaire over the adolescent girls. After administration of that questionnaire researcher got the desired samples. Researcher randomly divided those samples into two different groups. One was the

experimental group and other was the control group. After that researcher gave yogic intervention to experimental group for 2 months and there was not any treatment for control group. Two months later when the yogic intervention was over researcher again administered EDEQ on both the groups i.e. on experimental as well as on control group. After getting the entire scores researcher compared the results between both the groups with the help of t-test.

Yogic Intervention

Yogic intervention was given to subjects for 12 weeks. Intervention starts with the gayatri Mantra recitation followed by all the yogic practices and ends with shantipath.

Sr. No.	Yogic Intervention	Rounds	Time duration
1	Atmabodh (Self-knowledge)-Tatvabodh (Real-knowledge) sadhna	-	5 Min
2	Nadi-Shodhan Pranayama	5 rounds	5 Min
3	Bhramari Pranayama	5 rounds	5 Min
4	Om chanting	12 rounds	3 Min
5	Savita dhyana	-	10 Min

Results

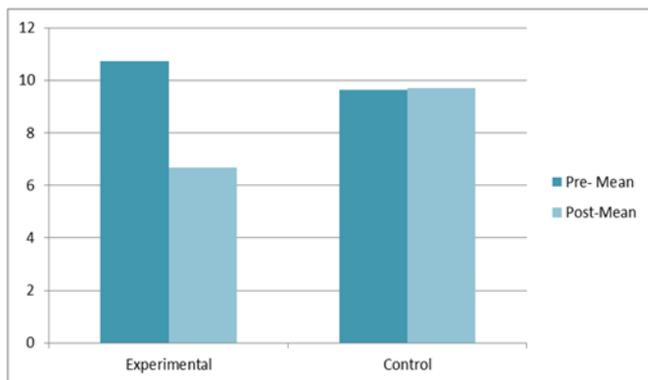
The obtained data was analyzed in terms of mean, SD, 't' and is presented in the tables are as follows:

Eating disorder (Total)

Table 1: Significant difference between pre-test and post-test scores of eating disorder Variable and its categories among experimental and control group.

		N	Mean	S.D.	SEd	R	t-value	Level of significance
Exp	Pre	40	10.73	3.53	0.40	0.70	10.01	<i>P</i> <0.01
	Post	40	6.67	2.94				
Cont	Pre	40	9.64	3.52	0.21	0.92	0.28	<i>P</i> >0.05
	Post	40	9.70	3.39				

df = 39



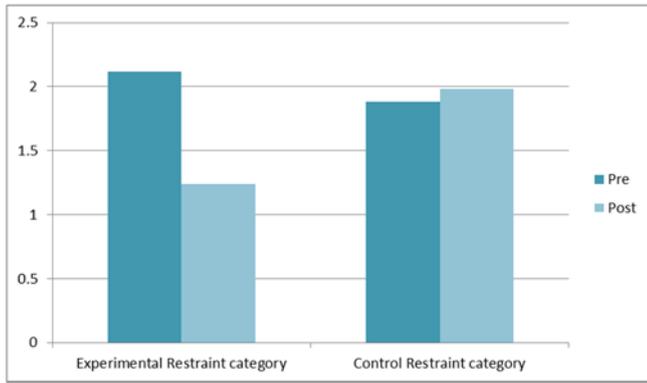
From the above result table-

The mean value obtained for experimental group of pre-test was 10.73 after this, all girls in the experimental group practiced yoga for 12 weeks and after yogic practises examination were done and the mean value obtained for post-test was 6.64. The result shows the significant difference in pre and post-test. For the control group no such intervention was there. The mean value obtained for control group of pre-test was 9.64 and the value for post-test was 9.70. The result shows the non-significant difference between pre and post-test.

Restraint Category

		N	Mean	S.D.	SEd	r	t-value	Level of significance
Exp	Pre	40	2.12	1.27	0.14	0.6	5.92	<i>P</i> <0.01
	Post	40	1.24	0.80				
Cont	Pre	40	1.88	1.02	0.62	0.93	1.60	<i>P</i> >0.05
	Post	40	1.98	1.14				

df = 39



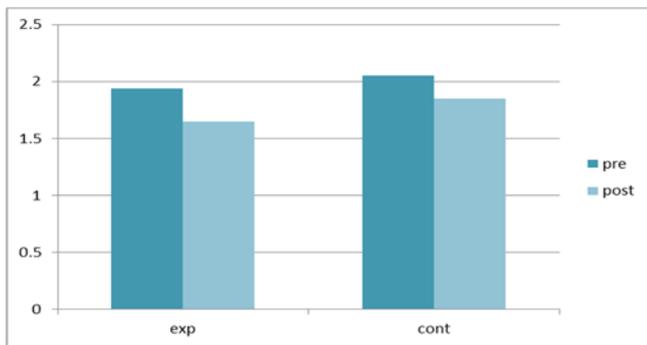
From the above result table-

For the restraint category, the mean value obtained for experimental group of pre-test was 2.12 and the post test was 1.24. Hence, the result shows the significant difference in pre and post-test. The mean value obtained for control group of pre-test was 1.88 and the value for post-test was 1.98. Therefore, the result shows the non-significant difference between pre and post-test.

Eating Concern

		N	Mean	S.D.	SEd	r	t-value	Level of significance
Exp	Pre	40	1.94	1.06	0.15	0.51	4.17	$P < 0.01$
	Post	40	1.30	0.83				
Cont	Pre	40	2.05	0.93	0.71	0.88	1.05	$P > 0.05$
	Post	40	2.12	0.89				

df = 39



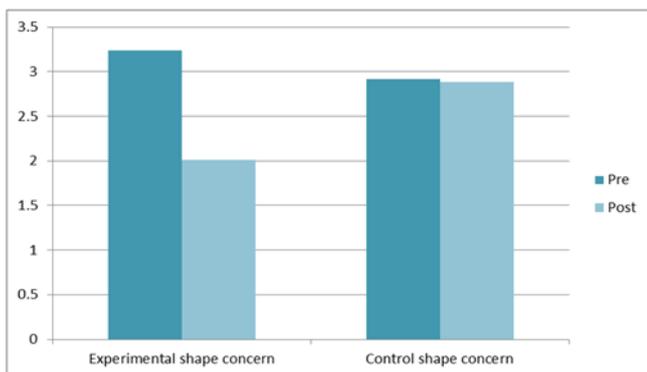
From the above result table-

For eating concern, the mean value obtained for experimental group of pre-test was 1.94 and the post test was 1.30. Hence, the result shows the significant difference in pre and post-test. The mean value obtained for control group of pre-test was 2.05 and the value for post-test was 2.12. Therefore, the result shows the non-significant difference between pre and post-test.

Shape Concern

		N	Mean	S.D.	SEd	r	t-value	Level of significance
Exp	Pre	40	3.24	1.27	0.14	0.68	8.30	$P < 0.01$
	Post	40	2.01	0.97				
Cont	Pre	40	2.92	1.24	0.12	0.82	0.35	$P > 0.05$
	Post	40	2.88	1.38				

df = 39



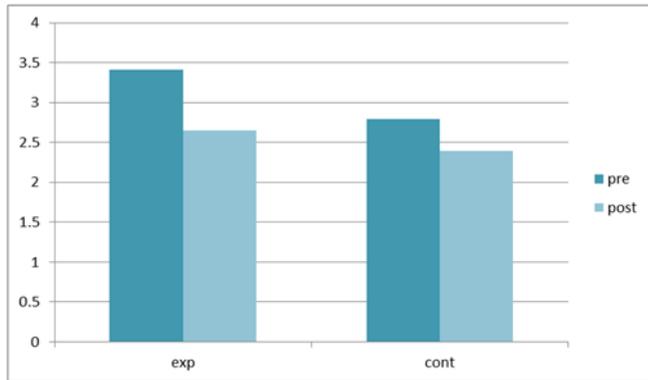
From the above result table-

For shape concern, the mean value obtained for experimental group of pre-test was 3.24 and the post test was 2.01. Hence, the result shows the significant difference in pre and post-test. The mean value obtained for control group of pre-test was 2.92 and the value for post-test was 2.88. Therefore, the result shows the non-significant difference between pre and post-test.

Weight Concern

		N	Mean	S.D.	SEd	r	t-value	Level of significance
Exp	Pre	40	3.41	1.25	0.19	0.52	6.73	$P < 0.01$
	Post	40	2.11	1.23				
Cont	Pre	40	2.79	1.37	0.97	0.89	1.36	$P > 0.05$
	Post	40	2.65	1.29				

df = 39



From the above result table-

For weight concern, the mean value obtained for experimental group of pre-test was 1.94 and the post test was 1.30. Hence, the result shows the significant difference in pre and post-test. The mean value obtained for control group of pre-test was 2.05 and the value for post-test was 2.12. Therefore, the result shows the non-significant difference between pre and post-test.

All the result tables reveal that there was significant difference in the pre-test and post test scores of experimental group. The calculated value of “t” is lower than its tabulated value. Hence, it shows that there is a positive effect of yoga on eating disorder cognitions. Hence, on the basis of the result the hypothesis “There will be no significant effect of Yogic intervention on Eating disorder cognitions among adolescent girls” was rejected.

Discussion

Results revealed that there is a significant difference between pre-test and post test score of experimental group of eating disorder cognitions of adolescent girls. The obtained value of t in experimental group is “ $t=10.01$ ” which is significant at 0.01 due to the practice of yogic intervention and the obtained value of t in control group is “ $t=0.28$ ” which is not significant. Therefore, the practice of yoga by adolescent girls may help them from coming out different cognitions, anxiety and depression. By the practice of meditation and pranayama subjects tried to improve their distorted self-image. Hence, on the basis of the result the hypothesis of the study i.e. “There will be no significant effect of Yogic intervention on Eating disorder cognitions among adolescent girls” was rejected. The above tables also reveal that on all four category of eating disorder there has been significant improvement among the group. One study support the result by saying that individualized yoga treatment decreased EDE scores at 12 weeks, and significantly reduced food preoccupation immediately following yoga sessions. Yoga treatment did not have a negative impact on BMI. Results suggest individualized yoga therapy holds promise as adjunctive therapy to standard care. One more study reported that by practicing yoga there is an improvement in Binge eating disorder. For the yoga group, self-reported reductions in binge eating and increases in physical activity were statistically significant. Thus the practice of yoga may help eating disorder cognitions to improve distorted self-image, get rid of depression and anxiety.

Yoga is considered as an effective adjunctive treatment to improve eating disorder symptoms. With the help of atmabodh tatvabodh sadhna one is able to correct their self-concept. Atmabodh-Tatvabodh Sadhna was given by pt.

Shriram Sharma Acharyaji. This was given to incorporate the non-attachment in an individual. As soon as one gets up he should think that he is born today. He has to live only for a day and sleep in the lap of death in the night. The greatest aim of life is to utilize this intervening time in best possible manner. This is testing time and on it depend all prospects of future. Prudence lies in making best use of human birth which is regarded as greatest fortune. Soon after getting up, each day should be regarded as full life and it should be pondered how this valuable trust of Almighty God should be utilized for the purpose for which it has been granted. On this basis, the routine for the entire day should be checked out. Care should be taken to fulfil the schedule during the day. If something has been left out it should be completed on the following day. Tatvabodh sadhna is performed in the night while going to sleep. It should be thought that death is shortly being embraced. It will have to be answered in the royal court of God how today's time has been utilized. The activities and thoughts of the entire day should be reviewed. It should be judged and analysed impartially what was right and where mistake was committed. The self should be praised for anything done or thought is decided to rectify on the next day. Atmabodh tatvabodha sadhna is a kind of self-realization technique. With the help of this technique person tries to focus on his deed i.e. what he is doing actually during whole day and in which manner. This kind of practise gradually helps in correcting ones distorted self-image.

Pranayama and Yoga brings stability, calms the mind, improve blood circulation and cure depression, stress and anxiety which are very common in eating disorder. Nadishodhan pranayama helps to clean the nadis and channelize the flow of prana throughout the body. This pranayama helps to remove blockages of prana. One study shows that there is a decline in basal heart rate ($P<0.0001$) and systolic blood pressure ($P<0.001$) was observed by following nadi-shodhana pranayama of 20 minutes. Bhramari pranayama is a very effective pranayam for mind. In this pranayam the sound of humming bee helps to activate the neurons of the mind. This pranayama helps to build up concentration. It helps in reducing anxiety and stress. Bhramari pranayam significantly reduced the irritability, depression and the anxiety associated with tinnitus.

With the help of bhramari pranayama on both the systolic and diastolic blood pressure were found to be decreased with a slight fall in heart rate. Chanting of OM Mantra purifies the environment around the chanter and produces positive vibrations. The OM not only gives positive results to the one who is chanting it but to the entire vicinity wherever its vibrations flow. It cleanses aura. It brings us in a meditational state which gives deep relaxation. With the help of Om chanting concentration increases. In one study the meditators showed a statistically significant reduction in heart rate during meditation and Om chanting compared to the control period.

With the help of meditation patients are able to cope up with stress and depression. Meditation provides peace to the mind. It calms down sympathetic activities like anxiety, irritability etc. which is generally common in person with eating disorder.

By practising meditation there is a reduction in heart rate was about 9% and diastolic blood pressure was slightly raised. Savita dhyana (meditation on rising sun) is very good

in improving once mental set. This meditation is a boon for depression. Meditation initiates parasympathetic activities in the body which results in coolness and calmness of the body. It also slows down the sympathetic activity. Meditation not only improves calmness of the mind but also develop self-confidence and ability to accept our self. Through the continuous practice of meditation one is able to get rid of symptoms of eating disorder cognitions.

Conclusion

In the present study there is a significant improvement in the experimental group as compared to control group. Although the sample size is small still there is a positive impact in reducing eating disorder cognitions of adolescent girls. Further study of a large sample is necessary to confirm these results.

The present study reveals that yoga is more effective in the treatment of eating disorders and it also improves quality of life. Yoga therapy has a definite place in the treatment of rapidly increasing eating disorders among adolescent girls. Therefore, it can be concluded that yoga is very effective in treating eating disorders.

Reference

1. Bulimia Nervosa. National Eating Disorders Association, 2014.
2. Acharya Pt, Shriram Sharma. The spiritual Training and Adoration of Life deity, Shantikunj, haridwar.
3. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders (Fifth ed.). Arlington, VA: American Psychiatric Publishing, 2013, 347. ISBN 978-0-89042-555-8.
4. American Psychiatric Association. Diagnostic and statistical manual of mental disorders. (4th ed.). Washington, DC. American Psychiatric Press, Inc, 1994.
5. Attie, Ilana, Brooks-Gunn, Jeanne. Development of eating problems in adolescent girls: A longitudinal study. *Developmental Psychology* 1989; 25(1):70-79.
6. Barker P. Psychiatric and Mental Health Nursing: The Craft of Caring. Great Britain: Arnold, 2003.
7. Carei TR, 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(4):346-351.
8. Comerci D. Eating Disorders in Adolescents. *Pediatrics in review*, 1988, 37-47.
9. Garret, Hennary E. Statistics in psychology and education. Paragon international Publisher, New Delhi, 2004.
10. GBD. Mortality and Causes of Death Collaborators. Global, regional, and national age-sex specific all-cause and cause-specific mortality for 240 causes of death, 1990-2013: a systematic analysis for the Global Burden of Disease Study. *Lancet* 2013; 385(9963):117-171.
11. Lal M, Abraham S. Adolescent development and eating disorder related quality of life in Indian females. *Eating and Weight Disorders - Studies on Anorexia, Bulimia and Obesity* 2011; 16(1):56-60.
12. Lang R, Dehof K, Meurer KA, Kaufmann W. sympathetic activity and transcendental meditation. *Journal of neural transmission*. 1979; 44:117-135.
13. Mammen P, Russell S, Russell PS. Prevalence of eating disorders and psychiatric comorbidity among children and adolescents. *Indian pediatrics* 2007; 44(5):357-359.
14. McIver S, O'Halloran P, McGartland M. Yoga as a treatment for binge eating disorder: A preliminary study. *Complementary therapies in medicine* 2009; 17(4):196-202.
15. Mendhekar DN, Arora K, Lohia D, Aggarwal A, Jiloha RC. Anorexia nervosa: an Indian perspective. *National medical journal of India*. 2009; 22(4):181-182.
16. Murphy B, Manning Y Manning. An introduction to anorexia nervosa and bulimia nervosa. *Nursing Standard (Royal College of Nursing (Great Britain))*, 1987; 18(14-16).
17. Subbalakshmi NK. Immediate effect of 'nadi -shodhana pranayama' on some selected parameters of cardiovascular, pulmonary, and higher functions of brain. *Thai journal of physiological sciences*. 2001; 18(2):10-16.
18. Noordenbox G. Characteristics and Treatment of Patients with Chronic Eating Disorders. *International Journal of Eating Disorders*. 2002; 10:15-29.
19. Pandey S, Mahato N, Navale R. Role of self-induced sound therapy: Bhramari Pranayama in Tinnitus. *Informa health-care* 2010; 8(3):137-141.
20. Portela de Santana ML, da Costa Ribeiro Junior H, Mora Giral M, Raich RM. Epidemiology and risk factors of eating disorder in adolescence: a review. *Nutrition hospital journal*. 2012; 27(2):391-401.
21. Prevention of Eating Problems with Elementary Children, Michael Levine, USA Today, 1998.
22. Public Health Service's Office in Women's Health, Eating Disorders Information Sheet, 2000.
23. S Jean Emans. Eating disorders in adolescent girls *Pediatrics International* 2000; 42(1):1-7.
24. Shisslak CM, Crago M, Estes LS. The Spectrum of Eating Disturbances. *International Journal of Eating Disorders*. 1995; 18(3):209-219.
25. Telles S, Nagarathna R, Nagendra HR. Autonomic changes during OM meditation. *Indian journal of physiology and pharmacology*. 1995; 39(4):418-420.
26. The Renfrew Center Foundation for Eating Disorders, Eating Disorders 101 Guide: A Summary of Issues, Statistics and Resources, published, 2002, 2003.
27. Wade TD, Keski-Rahkonen A, Hudson J. Epidemiology of eating disorders. In M. Tsuang and M. Tohen (Eds.), *Textbook in Psychiatric Epidemiology* (3rd ed.). New York: Wiley, 2011, 343-360.
28. Yager J. Bulimia nervosa. *The Western Journal of Medicine*. 1991; 155(5):523-4.