



Physical Activity and Diet as a Perceived Panacea to Mental Illness of Women in India: Reality Check

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ABSTRACT

Looking towards the evidence of physical activity and dietary effect on mental health, a massive search of literatures was done and it was concluded that, lifestyle behavioral practices like yoga, exercises and healthy food intake enhances self-esteem capacity and promotes a healthy life by balancing emotions and cognition with daily hurdles. The narration reports the means of preventing mental illness like depression, anxiety and stress among married women through the light of physical activity and diet. However, lack of exercise and negligence towards mainstreaming of mental health services in primary health care raises the burden of common mental disorders in the community.

Keywords: Mental health, physical activity, diet, common mental disorders

INTRODUCTION

Impact of physical activity and diet on mental health and well-being has been studied in a growing corpus of empirical and non-empirical literatures. The key objective of this paper is to review the literatures and analyze the evidence for adopting lifestyle interventions in the form of exercise, yoga, pranayama and diet in the repository of treatment options for people with mental health problems.

SEARCH STRATEGY

A preliminary search of literatures was conducted through google scholar and PubMed database. The keywords for extensive search were identified and the following terms were settled on; women and mental health, Mental health in women and exercise, diet and mental health in women, yoga and mental health in women, lifestyle intervention and mental health in women.

MENTAL HEALTH

Realising own abilities and coping with stressful events of life makes anyone's life more productive and contributes to build a healthy community. The World Health Organization (WHO), puts some light

on individuals' state of well-being in the context of mental health.¹When it identifies positive feelings and positive functioning as key factors for mental health, the definition raises several concerns and lends itself to potential misunderstandings, despite the fact that it represents significant progress in terms of moving away from the conceptualization of mental health as a state of absence of mental illness. People with good mental health are often feel sadness, discomfort, anger and unhappiness, and this is part of a human behaviour. Nevertheless, mental health is often conceptualized as a purely positive effect characterized by a sense of well-being and control over the environment.^{2,3} Concepts used in several papers on mental health include both key aspects of the WHO definition, i.e., positive emotions and positive functioning. Keyes^{4,5} identified emotional well-being, psychological well-being and social well-being as three basic components of mental health.

MENTAL ILLNESS

Mental illness is a condition that affects cognition, emotions, and behaviour.⁶ The formal clinical definition now contains more information (that is, a shift from a partial perspective to a more holistic perspective, from a focus on illness to a focus on health).⁷The

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informal response facilitated a parallel transition from focusing on mental illness stigma to recognizing that mental health is important for general health.⁸

Among the major and minor-illness the rising burden of minor mental illness reflects its curse in the form of common mental disorder which is defined by depression (including unipolar major depression), anxiety, stress and somatoform disorders.⁹ Depression is broadly specified by lack of positivity (loss of attentiveness and amusement in normal things and experiences), low mood, and a variety of emotional attachment, cognitive, physical, and behavioural symptoms.⁸ It is related to mental health issues. Behavioural and physical symptoms usually include tears, irritability, social withdrawal, exacerbation of pre-existing pain, and pain as a result of increased muscle tone. Loss of self-endurance, guilt, worthlessness, and deserved punishment in everyday life are as common as diminished self-esteem, loss of self-confidence, helplessness, suicidal ideation, self-harm and attempted suicide.⁹ A loss of relaxation or comfort in everyday life, and feelings of guilt, worthlessness and deserved punishment are common, as are lowered self-esteem, loss of confidence, feelings of helplessness, suicidal ideation and attempts at self-harm or suicide. Cognitive changes include poor concentration and reduced attention, pessimistic and recurrently negative thoughts about oneself, one's past and the future, mental slowing and rumination. Despite depression, excessive anxiety and stress building its wall in each and every family which has become uncontrolled by common people.¹⁰ Anxiety and stress is often accompanied by restlessness, being easily fatigued, having difficulty concentrating, irritability, muscle tension and disturbed sleep.^{11,12} A range of physical symptoms including excessive blushing, sweating, trembling, palpitations and nausea are associated with both anxiety and stress disorder. Now a days it is very difficult to deal with life situations, problems and goals.

BURDEN OF MENTAL ILLNESS

As per global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020, the total estimated depressive disorders are found as 53.2 million and total anxiety disorders are found as 76.2 million globally.¹³ Overall, major depressive disorders caused 49.4 million DALYs worldwide in 2020, and anxiety disorders caused 44.5 million DALYs worldwide in the same year.¹⁴

FACTS ABOUT WOMEN'S MENTAL HEALTH

According to 2020 WHO report, depressive disorders account for almost 41.9% of women's neuropsychiatric disorders, compared to 29.3% among men.^{15,16} Leading mental health problems faced by women are depression, organic brain syndromes and dementias.¹⁷ Around 80% of the 50 million people are women and children those who are affected by brutal conflicts, civil wars, disasters and displacement.¹⁸ The lifetime prevalence of violence against

women ranges between 16% and 50%.¹⁹ One in five women has been raped or attempted to be raped in their lifetime. Women aged 22 to 55 are the most stressed and have difficulty finding a balance between personal life, social activity and work.²⁰ Working mothers experience work-related stress. It increases with constant pressure to meet the demands of responsibility for their home and work.

WHY WOMEN HAVE MORE RISK?

Traditionally, middle class women usually engage in childcare-focused household chores. For poor women, financial needs force them to look for a job outside the home. Anger over dowry practices, a solid patriarchal family system with little say to women, reduced educational opportunities, and reduced jobs all contribute to women's plight. Women's mental health tends to suffer because they face stressors and are not ready to deal with them. Also, if a woman becomes mentally ill, the service is rarely used and slowed down. Rather, it is believed to be the cause of the illness. A woman with a mental illness can be socially abandoned by her husband and her family. Therefore, being a "female" and being a "mental illness" are double curses. Thara et al. in his study of women with schizophrenia found that the stigma of separation / divorce between family and patient often felt stronger than the stigma of mental illness.²¹ Some studies have shown that married women experience more stress than married men. Irregular menstruation, infertility, childbirth, miscarriage or stillbirth, in-law's torture, diminished relationship with husband, husband's alcoholism habit, history of sexual abuse, financial stress, and major career changes are stressful events and many of them depend on gender.²²

WAY AHEAD

There are various effective psychosocial and pharmacological treatments for depression, but there are major barriers to finding a cure. The most important is the stigma that undermines confidence in treatability and prevents caregivers from spending resources to access treatments and services. Various randomized controlled trials have been conducted in India, demonstrating that interventions are effective in terms of results and costs. The better result came in the trial where using affordable antidepressants such as fluoxetine.²³ One review showed the effectiveness of antidepressants such as selective serotonin reuptake inhibitors (SSRIs), while lowering the dose of these drugs because women can increase the plasma levels of the antidepressants.²⁴ Although drug efficacy and cost-benefit ratios have been proven through such studies, stigma remains a major barrier.

COST OF TREATMENT AND BUDGET ALLOCATED

Under Article 18 of the 2017 Mental Health Care Act,

it describes access to mental health care and treatment through mental health services operated or funded by the relevant government.²⁵ As a result, the state is responsible for providing mental health care to its citizens. The lifetime prevalence of mental illness in India is 13.7%, and the current prevalence of severe mental illness according to National mental health survey (NMHS)-2016, is 10.6%.²⁶ This means that there are a total of 13 million mental illnesses in India.²⁷ Mental Healthcare Act (MHCA)-2017 is responsible for supplying more patient centric care to the state with 13 million inhabitants.²⁸ The public health system must be ready to process the person with mental illness. If the state does not allow access to mental health services, the relevant government will issue rules regarding the reimbursement of medical expenses to the PMI under Section 5 (f) of the 2017 MHCA. According to NMHS, the median monthly cost of caring for and treating various disorders is estimated to be 2250 rupees for alcohol use disorders, 1000 rupees for schizophrenia and other psychotic disorders and for 1500 rupees for depressive disorders. According to NMHS, the minimum total cost based on the median cost of treating three disorders (schizophrenia, depression and alcohol use) is only 698 rupees per month.²⁹

ROLE OF LIFESTYLE MODIFICATION ON MENTAL HEALTH

Lifestyle changes are especially important for people with severe mental illness. Many of these people are at increased risk of chronic illnesses associated with sedentary behaviour and drug side effects, such as diabetes, hyper lipidaemia, and cardiovascular diseases. The quasi-experimental study was conducted by **Eman et al. 2015** on the effects of health education programs on depression, anxiety and stress in nursing students at Benha University. The authors took 100 female nursing students as a suitable sample and found a statistically very significant difference ($p < 0.001$) between the pre-program and post-program mean scores of depressions, anxiety, and stress in the intervention group.) was revealed.³⁰

A study of psychological treatment for depression in women experiencing intimate violence in Goa, India, conducted a Health Activity (HAP) program in 6-8 times around 30-45-minute sessions over 2-3 months. It shows that HAP's core interventions included activity and mood psychoeducation, behavioural monitoring, activity planning, social networking, and problem-solving. The severity of depressive symptoms was measured using Patient Health Questionnaire 9 (PHQ9; **Kroenke et al. 2014**).³¹ The Common Element Therapeutic Approach (CETA) has been successfully used in people with IPV and depression (**Bass et al.**) 2013.³² Similarly, interpersonal therapy improved traumatic survivor depressive symptoms, functional outcomes, and PTSD (**Cort et al. 2014**).³³

In a study of randomized clinical trials conducted at

Hamedan University in Iran in 2017, where both intervention group and control group were taken, researchers investigated the effect of well-education using Fordyce's cognitive-behavioural approach on anxiety and depression in women suffering from spontaneous abortion. The results showed that the mean fear score in the intervention group was significantly lower than that in the control group ($P < 0.001$). The mean depression score in the intervention group was significantly lower than in the control group after the intervention ($P < 0.001$).³⁴

In another quasi-experimental study by **Matthias et al.**, depicted the effect of a short-term pilot intervention on the mental health and resilience of young women in the city of Dehradun, slums in northern India, where the researchers used "The Connor-Davidson Resilience Scale" (CDRISC) which measures coping and resilience using 25 items on a 5-point Likert scale, Schwarzer's General Self-Efficacy Scale, Patient Health Question (PHQ9) screening tool, The Generalized Anxiety Disorder Scale (GAD7) and the GEMS Gender Attitude Scale measures attitudes towards gender equality and covers areas such as sexual and reproductive health, sexual relations, violence and family. This study evaluates pilot implementations of Nae Disha interventions using psychological measurements of anxiety, depression, self-efficacy, resilience, and gender attitudes. Central slums in life in northern India. The Nae Disha intervention significantly improved all five measures, reduced symptoms of depression and anxiety, increased self-efficacy and resilience, and demonstrated a more equitable attitude.³⁵ An essential part of lifestyle change is physical activity or exercise. The importance of exercise is not fully understood or recognized by patients and mental health professionals. There is evidence that exercise can be an intervention that is often ignored in psychiatric care.

EFFECT OF EXERCISE ON MENTAL HEALTH

The various aerobic exercises like jogging, swimming, cycling, walking, gardening, and dancing have been shown to decrease the level of anxiety and depression. These mood improvements are caused by exercise-induced increased blood flow to the brain and effects on the hypothalamic-pituitary-adrenal (HPA) axis, and thus on physiological responsiveness to stress.³⁶ This physiological effect can be mediated by HPA-axis communication with several areas of the brain, including the limbic system that controls motivation and mood. The amygdala responds to stress and causes anxiety. The hippocampus plays an important role not only in memory formation, but also in mood and motivation. Various psychological hypotheses have been proposed to explain the positive effects of physical activity on mental health. The main ones are distraction, self-efficacy, and social interaction. The distraction hypothesis suggests that distraction from harmful stimuli leads to improved mood during and after exercise. The self-efficacy hypothesis put forwards the concept that, since physi-

cal exercise stands as a challenging activity, the ability to get involved in it in a regular manner might lead to improved mood and self-confidence. With respect to the social interaction hypothesis, the socialism commonly inherent in physical activity, as well as the mutual support which occurs among individuals involved in exercise, play a vital role in the effects of exercise on mental health.

Carolyn et al found in his study that structured group programs can be effective for individuals with serious mental illness, lifestyle changes that focus on the accumulation and increase of moderate intensity activity throughout the day may be better way for most patients.³⁷ Ironically, adherence to physical activity in psychiatric patients as well as general people appears to be effective in their mental status by **Svensson M et al.**³⁸

Evidence also indicates that daily physical activity may protect against the development of depression, or that physical inactivity might be a risk factor for depression, but the possible protective effect has not been displayed experimentally.³⁹ The effects of regular physical activity on mood have mainly been studied using aerobic exercise, but evidence indicates that anaerobic physical activity, such as body building or flexibility training, can also reduce depressive symptoms. Thirty minutes of exercise of moderate intensity, such as brisk walking for 3 days a week, is sufficient for these health benefits. Moreover, these 30 minutes need not to be continuous; three times 10 minute walk are believed to be as equally useful as one 30 minute walk.^{40,41}

Health benefits from regular exercise should be emphasized and reinforced by every mental health professional to their patients include improved sleep, better endurance, stress relief, improvement in mood, increased positive spirit and resilience, reduced tiredness that can increase mental alertness, reduction of weight as well as level of cholesterol and improve cardiovascular fitness. Mental health service providers can help in providing effective, evidence based physical activity interventions for individuals suffering from serious mental illness.

EFFECT OF YOGA AND PRANAYAMA ON MENTAL HEALTH

Studies have shown the effects of yoga on many medical conditions, including multiple sclerosis, asthma, irritable bowel syndrome, lymphoma, hypertension, drug addiction, osteoarthritis, and mental health problems. Increased stress, depression and anxiety are characteristic of modern lifestyles. Because of the side effects of drugs in the treatment of anxiety and depression, and in some cases their ineffectiveness, researchers are looking for non-pharmacological and non-invasive treatments for these disorders. Yoga practice improved self-description, psychological state, and quality of life. Researchers suggest that yoga as an intellectual and mental exercise improves health. In addition, yoga can improve the psychologi-

cal state of monitoring and coping with stress and negative emotions, enhance positive emotions, and support mental balance. **Shohani et al.**⁴² Study have shown that there is a very statistically significant difference between the average values of depression, anxiety, and stress before and after regular hatha yoga practice. However, despite the popularity and positive psychological and physiological effects of yoga, it has not been extensively studied to find out how far it actually prevents and treats mental illness. After 12 regular pranayama exercises, female depression and stress were significantly reduced. **Anuraj Joshi** (2011) conducted a study to assess female well-being through Nadi Shodan pranayama training in Punjab.⁴³ He had conducted study on a group of women who volunteered to practice pranayama for three months. He observed that 75% of the subjects had increased health, 80% had memory, 75% had increased psychological stress relief, and 90% had increased physical relaxation. He proved that pranayama is very effective in reducing stress, physical well-being and psychological well-being. **Patil et al.** (2011) carried out a study to evaluate the effectiveness of pranayama for reduction of stress in married women in Northampton.⁴⁴ For this, researchers selected 75 random samples. Participants were in the age group of 3,050. Researchers have investigated the effectiveness of a 5-minute yoga intervention. It explores the benefits of self-care and stress relief for married women. Participants participated in a two-week study and asked to assess stress levels before and after yoga intervention. The results confirmed the benefits of pranayama intervention to reduce stress for participants.

EFFECT OF DIETARY HABIT ON MENTAL HEALTH

Mood and mental health are undoubtedly affected by our diet, and this is true throughout adulthood as well as developmental stages. Current evidence suggests that poor mental health may be associated with skipping breakfast and the possibility of an unbalanced diet. People diagnosed with depression are more likely to skip breakfast. In addition, skipping breakfast and breakfast, which are lacking in major food groups such as muesli, fruits, vegetables, meat, substitutes, and milk, can lead to psychological stress and lack of attention. Several studies have also found an association between stress and increased snack and fast-food intake.⁴⁵ Similarly, there were evidence of statistically higher consumption of fast food among women with depressive symptoms as compare to women who did not report depressive symptoms. On the other hand, people with low intakes of "finished" foods have been found to have a significantly lower prevalence of symptoms of depression.⁴⁶ It has also been found that high intakes of soft drinks increase the risk of psychological distress.⁴⁷ Recent studies have shown that a diet high in processed foods or fried foods was significantly associated with an increased risk of mental illness.⁴¹ Several cross-sectional studies suggest that frequent

drinking of sweet drinks is associated with higher risk. The prevalence of depression and stress may be related.⁴⁸ In some of these studies, mental health indicators and food consumption assessments are based on self-reported reports and can be misdirected to different social desirability. Primary care requires monitoring daily exercise and nutritional patterns among females. Exercise referral programs are recommended, which provide a systematic and personalized screening process, require assessment of specific activities at defined times by exercise professionals, and program impact assessments as soon as possible to reduce stigma. Detailed guidance for psychiatrists interested in referrals to carry out referral programs should be available at all medical facilities, not just community clubs. In addition to referencing patients to training programs, medical staff can use training interventions relatively easily in their daily interaction with patients. A good place to start is to incorporate lifestyle assessments (including exercise and diet) into your daily mental health assessments. Exercise and diet can be part of a structured intervention, and women can be accompanied by family and community leaders when doing sports such as exercise, daily walks, swimming, soccer or racket sports. Many forms of exercise are fun and can be incorporated into a woman's daily life to reduce the boredom and monotony that women often experience in their daily home activities.

CONCLUSION

Physical activity and diet improve mental health and well-being, reduces depression and anxiety and enhances cognitive functioning. Although exercise and dietary habit seems to improve the quality of life of those living with mental health problems, its value is seldom recognized by mainstream mental health services. The evidence suggests that physical activity and adopting healthy diet pattern may be a neglected intervention in mental health care. Hence community based physical activity program should be implemented in local set up for reduction of depression, anxiety and stress level of women which will prevent the rising problems of mental illness among Indian women.

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