How Yoga Influences Mental Wellness for Female College Students

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Abstract. In recent years, mental illness has become one of the most prevalent diseases in the world and one of the leading causes of disability and even death among young people between the ages of 15 and 29, most of whom are female college students. As one of the most complicated groups in society, female students are subjected to high levels of questioning and mental stress in their daily study and life, but they are unable to relieve themselves and can only make negative emotions pile up. Most of them report that mental illness not only makes them feel mentally uncomfortable but also affects their physical state and further negatively affects their school life and daily life; long-term use of medication for mental illness can also cause certain side effects. Yoga, on the other hand, as a more gentle sport that focuses on oneself and the combination of mind and body, has fewer side effects compared to drugs and reduces the stress caused by competitiveness than other sports. This paper explores different aspects of the feasibility and appropriateness of yoga as a treatment modality for mental illness among female college students, and results show that yoga practice can be an effective treatment for mental illness with minimal side effects, both in terms of nervous system regulation, physical state enhancement, self-regulation, and suitability for college students. Also, its long-term effect on suppressing negative emotions and stimulating positive emotions is the reason for recommending its use as a treatment method.

Keywords: College students, psychology, mental wellness, yoga, brain, body strength, treatment.

1. Introduction

Today’s era is one of the most rapidly evolving. Almost everyone born or living in these decades lives in a fast-paced and highly competitive society. There are many talented and hard-working people at work, at school, and even in people's social circles. The slightest slackness will be surpassed by others, and the few opportunities will be taken away from them. In this society of limited resources and abundant talents, once a person misses the opportunity, it is difficult or impossible to catch up with others. As Paul Bloom mentioned in his book Just Babies, people are competitive by nature and want to have an advantage over others. This is indeed reflected in people's lives [1].

As a result, because of the many influences from family, society, and themselves, most contemporary college students set standards for themselves that can be described as demanding. While many people believe that this is the symbol of self-discipline, it has to be noticed that most students who live this way do not like the way they live because of this current social situation that people are forced to move forward more desperately. While those standards ensure their competitiveness, it also means additional burdens and more severe feelings of frustration and self-loathing if they suffer a failure [2]. Living under this kind of pressure for a long time will lead to a build-up of negative emotions that cannot be relieved. Once these piles of emotions explode, it can lead to some very serious mental illnesses.

According to World Health Organization’s data, depression is one of the leading causes of disability; people with serious mental illness die prematurely - up to 10 to 20 years - due to preventable physical conditions, and suicide is the fourth leading cause of death among 15-29 years olds, which covers the age period for most people to go to college or university [3]. One study supports that approximately 47% of students had at least one mental health problem [4]. 47% of students with mental illnesses indicate their illness began in college: depression, eating disorders, self-harm, and obsessive-compulsive disorder were all common issues [5].
One of the main burdens for people with mental or psychological problems is stigma. According to the World Health Organization, this is a major cause of discrimination and exclusion [3]. The symptoms of mental illness and the stigma that comes with it have a negative impact on people's self-esteem, relationships, life, school, and work. College students describe a sense of isolation caused by the stigma of mental illness and therefore are reluctant to talk about their real feelings or seek help [5].

The main risk group for mental illness is college women. According to a survey of about 300 students in West Anhui University using the SCL-90 scale, which is used to evaluate a wide range of psychological problems, female college student's mental health is generally worse than male students, and in China, female students commit suicide at a rate that is more than twice that of male students [2]. Such a situation might be because compared to male students, females are under more diverse pressure.

As more and more female students suffer from mental illness, there is a growing awareness of the importance of mental health.

The traditional method of treating mental and psychiatric disorders is usually through medication, but long-term medication can have significant side effects on the patient's life and body. Also, most patients with severe mental illnesses report that typical depression therapies only partially alleviate their symptoms [8]. As a result, other treatment modalities have begun to be widely studied, and yoga is one of the most well-known, but it is important to acknowledge that although yoga is now widely proposed as a form of treatment for mental illness nowadays, its practical application is rare and not many psychiatric hospitals or clinics use it to treat their patients, so its actual benefits are difficult to assess. However, even if data on actual usage effects are scarce, this does not negate the benefits of yoga for students' mental health.

The purpose of this paper is to study how yoga affects the mental state of female university students from different aspects, and the feasibility and importance of yoga as a therapeutic modality. Then, it is hoped that the findings of this paper could promote the status of yoga as a therapeutic modality and be adopted by more hospitals, thus helping female university students to maintain a good psychological state and promoting gender equality.

2. How gender inequality influences the development of female university students

2.1. A more complex social identity

Female university students are a combination of women, youth, and intellectuals [2]. As women, female university students are treated with gender inequality; as young people, they are expected by their families, and as intellectuals, they are under pressure from school work and competitors. Due to their complex role identity, the questioning and disapproval they are subject to are far more than men, which makes them internally conflicted and unconsciously question themselves or the decisions they make [2].

On the one hand, the specific environment of a college campus can cause a lot of confusion and conflict in growth and development. Compared with the standardized tests and grades from elementary school to high school, college life is rich and colorful: different majors, different study contents, diverse evaluation systems, complicated interpersonal relationships, and a tough employment situation. Among other factors, these all could make college students feel bewildered and notice that merely studying well is not enough to adapt to the future development of society [6]. This change in the living environment and social requirements makes college students who are used to the uniformity of pace at a loss, and the meaning of their life becomes blurred, and it is very difficult to redefine the direction [6].

Besides, female university students are in a high position in the female group and have an important role in leading women's social status [2]. However, as a member of society, female students
have a lower status than male students and face a more complex environment, questions, and challenges [2].

2.2. The conflict between traditional concepts and modern consciousness

Although women have typically had access to education and employment in modern society, the influence of conventional ideas and gender norms is still not insignificant. As intellectuals, female university students have moved beyond the conventional societal function of motherhood and are now engaged in the struggle for social survival [2]. At the same time, gender inequality still exists in society. In terms of public opinion, the media generally devote sections, space, and time to women - beauty, health, clothing, kitchenware, and education of children - inadvertently dictating women's behavior and lives [2]. Second, in terms of schooling patterns, many schools have neglected to provide guidance and educational development for women's characteristics [2]. Female students are influenced by this environment, and they will intentionally or unintentionally restrain themselves from new views and modern consciousness in study, competition, career selection, and even marriage [2].

Female college students attempt to break out of the traditional roles that society has assigned to them and work in professions that are dominated by men, but because "independent women" and "family" cannot coexist, they are culturally conditioned to fear both failure and success [2]. This results in a variety of health issues, including physical and mental weariness.

2.3. Self-awareness differentiation - attention to self-evaluation and self-improvement

Due to their unique delicate psychological traits, women care more about the evaluation of others than men [2]. Because of the social prejudice against women, when the evaluation of others is not consistent with their own, female college students' self-experience is more negative than positive, and their achievement expectation is too low; the low expectations may undermine the self-confidence of individuals, and then deepen their tendency of anxiety [2].

Those psychological and mental problems can have many negative effects on people's lives. First of all, mental state greatly affects the student's academic status: poor grades, depression due to poor schooling, reduced self-management skills, social isolation, mood swings, and even the desire to drop out of school [5]. Second, there is a fundamental connection between physical and mental health. Anxiety, depression, irritability, and a variety of other negative emotions as well as drugs used to treat mental illnesses can have an impact on a person's physical health [7]. These include arrhythmias, insomnia, and a lack of motivation to take care of one's health, which can lower one's resistance to infection and make one more susceptible to physical harm [7]. Similarly, persons who are not in good physical status can be twice as likely to experience depression and anxiety [7]. This is probably because their bodies prevent them from engaging in some of the desired activities, which can result in frustration and feelings of self-loathing. The stress of school leads to anxiety and negative emotions, lowering immunity and leading to illness, so there is a lack of opportunities and classes to interact with fellow teachers, in which case the pressure to learn is even greater. This creates a vicious cycle that leads to more serious psychological problems or illnesses

3. Viability of Yoga as a Treatment Option for Mental Illness

Yoga is a well-known and easily accessible mind-body exercise that focuses on both physical and mental wellness, not simply physical health. It was first practiced in India circa 2000 B.C. Yoga derives from the Sanskrit term “Yuj” which is sometimes translated as "union," which is frequently understood to mean the bringing together of the body, mind, and spirit to foster health [8]. Yoga is organized into four categories: physical postures (asana), breathing techniques (pranayama), and meditation/active thought (dyhana); although several variations and yoga styles have been created since 1893, they still constitute the foundation of the discipline [8]. The physical motions of yoga may have antidepressant and anxiolytic benefits as a concentrated and gentle workout.
3.1. Yoga and brain

According to neurobiology, stress and depression are inextricably linked since stress can induce or worsen depressive symptoms which could be the source of or a result of acute or chronic stress [8]. They state that chronic stress exposure can have a cumulative effect on the body physically and psychologically. The brain initiates a neurobiological reaction to regulate stress and this reaction is normally adaptive and typical in short-term conditions because it serves to safeguard the subject from impending danger [8]. However, if this condition persists for an extended length of time, it may result in a reduction in both mental and physical health, which may impair psychosocial functioning, lower quality of life for those who are exposed to pressure for a while and raise the likelihood of comorbidities [8].

The neurobiological systems of the person, thus, start to malfunction when stress is sustained. Multiple brain areas have been found by brain imaging methods, notably functional magnetic resonance imaging (fMRI) and positron emission tomography (PET) that may be linked to depression or engaged in alterations in stress responses based on blood flow and cellular metabolism [8]. This is a resounding affirmation that these structures are linked to depressive and anxiety-related symptoms and that yoga may effectively lessen these symptoms by altering the way in which these structures work together[8].

3.1.1 Prefrontal cortex (PFC)

According to research, the malfunction or asymmetry of activity between the left and right frontal lobes, which results in decreased positive affect, may contribute to the symptoms of depression (leading to positive affect reduction, emotional instability, and difficulties in processing emotional information) [8]. As shown in electroencephalography in people with seasonal affective disorder, among those with high depression scale scores and people with monophasic depression who are in remission, more resting activity in the right frontal lobe is thought to be a persistent marker of anxiety and depressed tendencies [8].

Additionally, electroencephalography of those patients with mental illness also demonstrates that the PFC has a critical role in controlling emotions, stress reactions, and coping, which means it may be crucially engaged in self-regulating coping behaviors, making this area crucial when examining the neurobiological effects of yoga[8].

3.1.2 Anterior cingulate cortex (ACC)

The "limbic cortex" region of the brain, commonly known as the ACC, is thought to have a role in the emergence of psychiatric and psychological illnesses such as depression and affective disorders. In this state, the person is awake but unconcerned with pain, thirst, or hunger and lacks behavioral initiative (apathy) [8], or tries to intensify the perception of pain by engaging in behaviors such as self-harm to confirm their presence, which is consistent with the symptoms exhibited by some psychiatric disorders. These signs of apathy can be accompanied by ACC injury, indicating that this part of the brain is important in planning active responses to physical difficulties including stress, discomfort, or illness [8]. If yoga practice is restorative in this area, then mental illnesses will also improve nicely.

3.1.3 Dorsolateral prefrontal cortex (DLPFC)

Goal-setting, maintaining focus, and maintaining an emotional state are the three primary roles of DLPFC [8]. Reduced activity in the DLPFC, including a drop in blood flow and gray matter volume, is linked to both chronic pain and depression [8]. This explains why those with mental illnesses such as depression and stress as well as those who have a negative emotional bias are more likely to deal with difficult circumstances [8]. By promoting positive self-talk and self-acceptance, yoga practice helps combat this prejudice and provides the practitioner with a better sense of control over themselves and the situation around them, when the DLPFC becomes more active, reducing depression and chronic pain [8].
The PFC, ACC, DLPFC, and other regions that are utilized to control emotions, react to external stimuli, and establish objectives, among others, have dysfunction or deterioration in the circuits in people with mental illness [8]. People with dysfunction in these areas may experience a loss of self-control. Yoga, a form of exercise that focuses on the person's capacity to meet emotions through self-acceptance, physical movement, easy breathing, and relaxation, can, however, works as a highly effective tool for helping people increase their sense of self-control and thereby lessens thoughts of depression or anxiety [8].

Gamma-aminobutyric acid (GABA), a neurotransmitter in the brain that has antidepressant and anxiolytic properties, has also been shown to rise in specific yoga poses [8]. Yoga, therefore, has a wide variety of positive impacts on the emotional and psychological symptoms of depression from a physiological or neurological standpoint.

3.2. Yoga and body strength

It is well known that there is a fundamental link between physical and mental health. Mental problems may cause some physical states to deteriorate and people’s poor health can lead to a range of mental illnesses. Therefore, improving physical strength is also an important part of improving mental health. Many of the asanas, breathing patterns, and meditations in yoga can alleviate structural, and physical pain or limitations. Yoga's key objectives are to bring about mental tranquility, promote well-being and relaxation, boost confidence, raise productivity, sharpen attention, and lessen irritation and tension. Additionally, many yoga asanas, breathing techniques, and meditations can improve physical fitness, which is crucial for maintaining immune system function, while also reducing or eliminating structural or physical discomfort or limits [9].

3.2.1 Improving body flexibility

One of the most evident advantages of yoga is increased flexibility. For instance, Dhanurasana (Bow-curve position) stretches the spine and encourages the delivery of new blood, while Sarvangasana (Shoulder Stand Pose) stimulates the neurological system and improves blood circulation to the brain [10]. The muscles and connective tissues around the bones and joints progressively relax with repeated use, which helps to lessen discomfort [9]. One of the best ways to break someone's soul is via prolonged, chronic suffering, as experienced at Guantanamo Prison.

3.2.2 Reducing fatigue and insomnia

In addition to stress, prolonged periods of exhaustion can also destroy a person's spirit and psyche. Sleep is known to be a process that naturally restores mental and physical states and reduces fatigue, so too much sleep or sleeplessness can lead to a build-up of fatigue, which then triggers a series of mental instability, irritability, anxiety, depression, crankiness, and similar phenomena to emerge. For example, in the Russian sleep experiment, five prisoners who were considered enemies of the state during World War II were held in a sealed environment with books and enough food, but the researchers kept injecting stimulants into the space to keep the prisoners awake for 30 days. The researchers assured the prisoners that if they could stay awake for 30 days, they would be released. After only five days, however, the inmates showed severe symptoms of paranoia, and after 15 days, the inmates showed severe anxiety, irritability, irritability, and aggression toward themselves and others. The experiment was then terminated, but the surviving inmates had already developed an addiction to the sensations caused by the euphoric gas, even though they were well aware that it was extremely damaging to them physically and mentally [11]. Although such severe and extreme cases do not generally occur in today's society, it is not uncommon for some college students to go two to three days without sleep in order to complete their studies. Otherwise, pressure from life, family, social life, and the school can also cause students to have nervous breakdowns or tensions that prevent them from going to sleep properly.

Yoga offers a break from over-stimulation and the stress and busyness of modern life. Ustrasana (camel pose) in yoga can build strength; Gomukhasana (cow pose) can relieve fatigue, tension, and
anxiety [10]. Other asanas can also lower heart rate and increase endurance, bring calmness, and allow
the nervous system to rest to improve sleep. The traditional way of treating insomnia is through medication, but this is often accompanied by dangerous side effects such as confusion, psychomotor performance deficits, nighttime falls, depression, impaired mental function, and daytime sleepiness [9]. Alternative treatments such as yoga are designed to soothe nervousness by increasing relaxation and inducing a balanced mental state; therefore, Yoga not only solves the problem of insomnia but also brings fewer side effects.

Overall, yoga practice can increase physical strength and flexibility, support and improve respiratory and cardiovascular function, lessen stress, anxiety, and depression, improve sleep quality, and generally improve well-being, quality of life, and mental state.

3.3. Yoga, self-resilience, self-regulation, and prevention

In common sense, depression, anxiety, and other common mental illnesses are treated and regulated by medications. However, the side effects of prolonged medication are no less painful than illnesses. For instance, medications used to treat depression include fluoxetine (Prozac), venlafaxine (Cymbalta), bupropion (Wellbutrin), trazodone (Trazodone), nortriptyline (Pamelor), and iso carbohydrazide (Marplan) and some common side effects of these drugs are anxiety, nervousness, difficulty sleeping, fatigue, headache, nausea, and weight gain [12]. Such a plethora of side effects may cause the patient to be reluctant to continue taking the medication and refuse to double the pain (of both the disease and the medication). In this case, without medication and other means of relief, the patient is forced to let their life be disturbed by the disease and develop bad habits, such as loss of interest in things around them, irregular diet, refusal to socialize, irregular sleep, and self-deprecation. Yoga, therefore, could help to regulate mental illness without that many side effects.

Yoga uses calm, soothing movements to build strength, flexibility, and balance, allowing people to gradually take over control of their bodies, thereby increasing their sense of control over their lives [8]. Slow breathing patterns and relaxation techniques used in yoga are intended to promote mental clarity, well-being, and calmness while slowly raising one's stress tolerance, which can reduce anxiety, depression, and tension to aid individuals in developing coping mechanisms for common emotions that will improve their physical, mental, and spiritual health.

Additionally, in the Yoga Sutras, Patanjali divides the practice of yoga into eight branches, including Yama (ethical rules for interacting with others); Niyama (rules for one's own ethics, behavior, and emotions); Asana (yoga postures and movements); Pranayama (breath control); Pratyahara (sensory control); Dharana (effort, concentration ); Dhyana (meditation, feeling yourself change, thinking, or relaxing) and Samadhi (digesting the changes happening in yourself and being ready for new challenges) [13]. In summary, the eight branches of yoga can be ways for people to self-regulate their emotions, thoughts, or behaviors and to add a sense of well-being to themselves.

Furthermore, Yoga has no requirement for the length of a single session. It is an exercise or therapeutic practice, that needs to be maintained over a long period of time. While a single session can certainly improve a current mental state, a long and consistent practice is a heavy part of getting better results. The amount of time spent practicing yoga has been linked to gains in positive thinking, anxiety, and mental health according to self-reports [14].

In conclusion, as a long-term training program, there are many lessons that people learn during the training that are retained as good habits. Firstly, yoga has the effect of regulating mood and emotions. It has the power to control people's short- and long-term thinking as well as their immediate emotions. It may also immediately promote good emotions and sentiments while reducing negative ones, thus enhancing mental wellness[15]. Secondly, yoga can help people develop good habits. For example, Dharana helps people develop the ability to work hard and focus on getting things done and Yama helps people develop good social skills; Nayama, Dhyana, and Samadhi could not only lead people to find their strengths but could also lead them to reduce or stop self-deprecation and questioning. All of these things can be very helpful for people in a bad state of mind to vent their
negative emotions, build confidence and maintain positive social connections. It is clear how many benefits college and university students might have if they could learn yoga and make it a part of their daily life. In addition, another advantage of Yoga as a suitable treatment for mental illness is that the emotional and physical effects of yoga are long-lasting, which means that Yoga is not just a therapeutic method. It can also prevent mental illness [15].

3.4. Yoga and its suitability with female university/college students

First of all, compared to other sports that require a larger space to practice, such as jogging, usefulness, or tennis, yoga only requires 2~4 square meters and a yoga mat for independent practice. Secondly, compared to sports that require concentrated time, yoga can make full use of fragmented time, and 10 minutes of daily meditation can relieve the fatigue and stress of the day. Finally, as the most basic yoga exercises can also play a sufficient role in exercising the body, except for the yoga mat and yoga clothes, basically, students do not need to buy more equipment [16]. These three points are in line with the situation that college students are busy with daily school work and do not have a large gap of time and enough space to use other sports as a venue to release stress, and the dormitory does not have enough space to store exercise equipment.

In addition to yoga, there are many exercises that have been proposed to help improve the mental state of college students, such as aerobics, ping-pong ball, or volleyball [17, 18]. While other exercises can indeed help, yoga works relatively efficiently. According to Gao Hui’s experiment, the researcher set up three randomly selected 90 people and divided them equally into three groups: yoga, aerobics, and control group for the experiment; the yoga and aerobics groups performed only the corresponding exercises, while the control group continued to live according to their previous habits. It is clear that at the beginning most of the students tended to be in the same mental state, but after an hour of corresponding exercise training, compared to the control and aerobics groups, members of the yoga group showed a significant reduction in negative emotions such as tension, anger, fatigue, depression, and panic, as well as a significant positive change in energy after the training [15]. Other than that, other sports may not have the same focus on psychological healing as yoga. For example, the practice of yoga can lift students out of a state of fatigue, but physical exercise can make people feel more tired afterward. Also, sports can stir up a competitive spirit in students. It is not a bad thing for students to have a moderate level of stress; However, for female college students who are a group that is already under mental pressure, academic pressure, and even social pressure, a little more competitive spirit could be a heavy burden [16]. Moreover, some other sports routines are basically repetitive exercises, which can easily make people with low energy and mental illness feel bored and quit practicing. However, the practice of yoga is much more interesting and easy to get started. Besides the most traditional Hatha Yoga, there are more than twenty other popular yoga streams such as Aerial Yoga, Vinyasa Yoga, and Yin Yoga, and over 100 commonly used yoga asanas. Different combinations can all bring different feelings, which reduces the chance for practitioners to get bored and give up.

4. Suggestion

As a suggestion, it is recommended that yoga could be part of psychotherapy and be an option for students as a university curriculum. First of all, yoga has been proven to be a true mind-altering and therapeutic treatment for mental illness. In terms of its effect on the human nerves, its physical enhancement, and its increase in mental capacity, yoga can effectively reduce existing negative emotions and increase positive ones. Meanwhile, Yoga can, to some extent, take the place of medication for mental problems. Reducing the number and type of medications used means that patients can be less afflicted by side effects. Using yoga as a treatment can also make it more difficult for mental illness to recur. When there comes a time when the medication stops, yoga can be kept as a personal hobby or habit. In this way,
even if there are times when there are more negative emotions or stress, yoga practice can help students to relax their tense and tired spirit.

Additionally, if yoga is available as an option in college, it certainly provides a layer of mental well-being for female students. Through the practice of yoga, female students can increase their confidence in themselves and stop being hard on themselves or adding too much pressure on themselves in the first place. Secondly, yoga will also enhance their ability to withstand and self-regulate and not let themselves indulge in the bad feelings that come with momentary failures and less-than-ideal situations that make them uncomfortable. Finally, the practice of yoga helps female college students identify their true feelings and provides them with the courage to seek help.

5. Conclusion

College depression and anxiety can be attributed to the exhaustion and powerlessness brought about by the pressure from all sides of life. Fatigue makes people feel depressed, depression makes people feel unmotivated, and the more students force themselves to do something energetic, the more likely they are to feel tired. The more fatigued people are, the more easily they will overlook details, even obvious mistakes. The same is true of powerlessness, which makes people feel anxious. The more anxious they are, the more they want to prove themselves, but also the more likely they are to become flustered and then make mistakes. This cycle will also aggravate the feeling of powerlessness.

Secondly, there is a lack of self-confidence, which is shown more in college girls. As college students, female students have to face the pressure of academic and career selection first; as women, they have to undergo the test of gender inequality and the self-questioning of women's delicate psychology at the same time. Therefore, the mental health of college girls is more vulnerable to damage.

When mental health problems occur, it is a matter of how long it takes to affect physical health. Insomnia, headaches, and decreased immunity are common problems that can affect students' daily studies, life, and work. However, the treatment of mental illnesses is a long and painful process, and the medications alone for mental illnesses can have significant side effects and are expensive, adding a significant burden to the individual patient and family.

In order to solve this problem, yoga has been proposed as a means of treating depression, and there are also many doctrines that prove its feasibility. Its positive effects on the interaction of neurological areas provide physical benefits, enhance physical fitness and function, and build confidence, as well as physical and mental self-resilience and regulatory effects that are proven to treat or improve mental illness. More importantly, yoga can reduce or prevent the appearance of mental illness. It is a long-term improvement for students' spirit and can be practiced before mental illnesses sprout, as well as an exercise for physical exercise. Medications and other similar means basically cannot be as effective as yoga.

The doctor's advice is important. When students find that they are developing psychological or mental problems, they should always see a doctor at the first opportunity if they can and follow his or her advice for treatment. While yoga can help, the treatment of mental and psychological disorders probably could never be cured by just this one exercise. Additionally, students should also try to choose a teacher or institution that has a yoga instructor certification for training. Tutorials on the internet and various social media programs are best used only as an introduction. Such advice not only ensures practice safety but also ensures effectiveness. If yoga is used as therapy, it is best that the yogi also has counseling certifications.

The conception and confirmation of yoga as a treatment modality for mental illness involves various theories, methods, and techniques, but actual data and cases are still relatively few and need to be accumulated and improved in practical application. Therefore, the future research direction will focus on the collection of experimental data on the effect of yoga on the psychological state of college students and the accumulation of cases on the practical application of yoga as a therapeutic modality.
References