EFFECT OF YOGA ON DEPRESSION, EMOTION AND QUALITY OF LIFE ON PREMENSTRUAL DYSPHORIC DISORDER FEMALE OF DELHI, NCR

Thesis Submitted for the Award of the Degree of

DOCTOR OF PHILOSOPHY
in

Psychology

By

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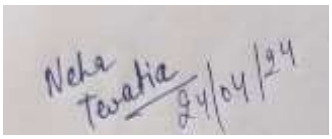
2024

DECLARATION

I, Neha Tewatia, at this moment declare that the thesis entitled **"Effect of Yoga on Depression, Emotion and Quality of Life on Premenstrual Dysphoric Disorder Females of Delhi (NCR)"** has been prepared and submitted by me under the supervision of **Dr. Vijendra Nath Pathak**, associate Professor, Department of Psychology, Lovely Professional University, Phagwara, Punjab as per the requirement for the award of the degree of Doctor of Philosophy (PhD) in Psychology is entirely my original work and ideas and references are duly acknowledge. It does not contain any work submitted for the award of any other degree or diploma from any other university/institution.



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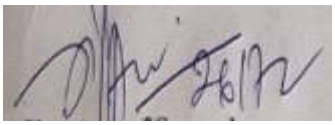
CERTIFICATE

This is to certify that the work reported in the Ph. D. thesis entitled **"Effect of Yoga on Depression, Emotion and Quality of Life on Premenstrual Dysphoric Disorder Females of Delhi (NCR)"** submitted in fulfillment of the requirement for the award of degree of Doctor of Philosophy (Ph.D.) in Psychology, is a research work carried out by **Neha Tewatia (12021144)**, is bonafide record of their original work carried out under my supervision and that no part of thesis has been submitted for any other degree, diploma or equivalent course.



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DEDICATION

This thesis is dedicated to my parents, Mr. Sumer Tewatia and Mrs. Vedan Tewatia, they not only raised and nurtured me but also sacrificed whole heartedly over the years for my higher pursuit and intellectual development.

ABSTRACT

Background -Premenstrual Dysphoric Disorder (PMDD) is a menstrual disorder in females. PMDD is a severe form of Premenstrual syndrome (PMS). Majorly It affects females' reproductive health, physiological health, psychological heath, social relationships and quality of life. In the luteal phase of the menstrual cycle, before ten days or one week, symptoms start arising like body aches, vomiting, anxiety, mood swings, irritation, aches, breast tenderness, abdominal aches, depression, weakness, stress, etc. The aim of the study is to address and improve the quality of life of females with PMDD. This study identifies the use and effectiveness of intervention techniques in the yoga process, which included Pranayama, Vajrasana, Janu Sirsasana, Malasana, and Shavasana. The yoga process aims at bringing about mobility flexibility, aiding weight loss, emotional regulation, dealing with stress, anxiety, and depression, improving the overall quality of life of females with PMDD, and managing physiological and psychological symptoms. Yoga is a well-balanced practice that aims to increase or strengthen one's inherent dominance. It proposes a variety of approaches to achieving total self-awareness. Following Objectives – (i) To examine the impact of yoga on depression with premenstrual dysphoric disorder. (ii)To examine the impact of yoga on emotions with premenstrual dysphoric disorder. (iii) To examine the impact of yoga on quality of life with premenstrual dysphoric disorder. (iv) To examine the level of depression in premenstrual dysphoric disorder. (v) To examine the effect of emotions on premenstrual dysphoric disorder. (vi) To examine the effect of quality of life on premenstrual dysphoric disorder. (vii) To assess the relationship between depression, emotions, and quality of life with premenstrual dysphoric disorder and yoga. Methodology -The design of the study would be pretest and post-test design. It is a quasi-experimental design with two groups: a pre-post-intervention group and a control group. Sampling: A non-probability sampling method is used to test the stated hypotheses, and a purposive sampling technique is selected. According to research, the purposive sampling technique is best suited to focus only on a well-defined population, which is females with PMDD diagnosed by gynecologists between the age range of 16 to 25 years from Delhi (NCR). The current study employs 200 females with premenstrual dysphoric disorder. After that, through simple random sampling, data is divided into two groups – The experimental and the Control groups. Distribution of groups through the odd-even method. Yoga Intervention is only given to the experimental group, not the control group. After the intervention, post-test data was collected. Tools: -

BDI-II, PANAS, AND WHOQOL-BREF. Statistical Analysis- The data was analyzed using the R- - Program version 4.3.3. Descriptive statistics, including mean, standard deviation, and frequency distribution, were used to describe the participants' demographic data (age, marital status, area-urban/rural, qualification- yes/no, occupation- working /not working, family type- joint/nuclear). The pre-and post-intervention scores for the Beck depression inventory, positive and negative affect schedule, and WHO-Quality of Life scales were compared using paired t-tests within the intervention and control groups separately. The between-group differences in the pre-and post-intervention scores were compared using independent t-tests. The level of significance was set at $p<0.05$. Following Inclusive criteria- This research will focus on gathering data on those females with a diagnosis of PMDD from a gynecologist. The sample will include 200 females from Delhi (NCR) (under Dr. Savita Parihar, Gynae & Ortho Center, OJAS & SSS medical health care). Age range between 16-25 years. Females who have attended a minimum of 600 minutes in an overall intervention period of one month (Monday-Friday, 30 minutes per day). The following Exclusive criteria will be kept in mind and will be excluded from the sample: - Females with premenstrual dysphoric disorder, which gynecologists do not diagnose, are not included in the study. Females below the age of 16 and above the age of 25 years are not considered. Females that are not from Delhi (NCR). Females who were diagnosed with the thyroid are not considered in this study. Females who failed to attend the minimum requirement of minutes for the overall intervention period. Females are those who have comorbid psychiatric disorders. Conclusion: - After analyzing the study's data, it can be said that practicing yoga for 30 minutes a day can significantly improve feelings and overall well-being while also lowering depression levels in women with PMDD. Combining five various yoga postures, the yoga process aids in healthy bodily regulation and the creation of a harmonious body, mind, and spirit. Yoga offers many advantages for reducing depression, managing emotions, and improving the quality of life in those with PMDD. As a result, we may conclude that the hypothesis will be accepted. The study's conclusions indicate that regular yoga practice favors one's general health and mood. It has been shown that doing yoga for thirty minutes a day helps to reduce negative emotions and decreases the levels of depression and high positive emotions in females with premenstrual dysphoric disorder while also improving their quality of life.

Keywords: - Yoga, Depression, Emotions, Quality of Life, Premenstrual Dysphoric Disorder

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Date: 24 April ,2024 **Neha Tewatia**

INDEX

TABLE OF CONTENTS

Title Page No.

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

PMDD	Premenstrual Dysphoric Disorder
PMS	Premenstrual Syndrome
DSM	Diagnostic and Statistical Manual
BDI	Beck Depression Inventory
PANAS	Positive and Negative Affect Schedule
QOL	Quality of life
POS	Positive
NEG	Negative
APA	American Psychological Association
PCOD	Polycystic Ovarian Disease
PCOS	Polycystic Ovary Syndrome
SD	Standard Deviation
T- test	Analysis of Covariance
WHO	World Health Organization
ACOG	American Congress of Obstetricians and Gynecologists
LLPDD	Late Luteal Phase Dysphoric Disorder
ICD	International Classification of Diseases
GnRH	Gonadotrophin-Releasing Hormone
CBT	Cognitive Behavioral Therapy
SSRIs	Selective Serotonin Reuptake Inhibitors

SNRIs	Selective Noradrenaline Reuptake Inhibitors
ALLO	Allopregnanolone
CNS	Central Nervous System
NCR	National Capital Region
SDS	Sheehan Disability Scale
ERQ	Emotion Regulation Questionnaire
GAD	General Anxiety Disorder
CTI	Cognitive Triad Inventory
SPSS	Statistical Package for the Social Sciences
HRQOL	Health Related Quality of Life
MDD	Major Depressive Disorder
PRISMA	Preferred Reporting Items for Systematic Reviews and Meta-Analysis
PPD	Postpartum Depression
VADS	Visual Aural Digit Span
IRQ	Intervention Response Questionnaire
ATQ	Automatic Thought Questionnaire
EBS	Emotional Balance Scape
MANCOVA	Multivariate Analysis of Variance
PSST	Premenstrual Symptoms Screening Tool
DRSP	Daily Record of Severity of Problem

LIST OF APPENDIXES

CHAPTER-1

INTRODUCTION

1.1 PMDD: - Premenstrual Dysphoric Disorder (PMDD)

In 2013, PMDD was included in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5). A woman with PMDD experiences intense sadness, anger, and stress around a week before her period. Mood swings, anger or aggression, anxiety or tension, and depression are typical symptoms. Additional indications and symptoms include an indifference to routine tasks, trouble focusing, low energy or easily tiredness, alterations in appetite with particular food cravings, trouble sleeping or excessive sleep, and an overwhelming or out-of-control sense. Weight increase, joint or muscle pain, a feeling of "bloating," or breast discomfort or swelling are all potential physical indicators. These symptoms appear a week to ten days before menstruation begins and fade or disappear around the time menstruation begins. The symptoms cause a lot of distress and make it difficult to function normally or socially.

Premenstrual disorders are defined as mental or physical symptoms that interfere with a patient's usual day-to-day activities during this phase of the menstrual cycle and go away right away after menstruating. Following ovulation, the luteal phase lasts until the onset of menstruation. The specialties of gynecology and psychiatry acknowledge premenstrual disturbances as distinct but overlapping conditions. (O'Brien PM et al, 2011) Premenstrual syndrome is defined by the American Congress of Obstetricians and Gynecologists (ACOG), who also list psychological and physical symptoms. (4^{th} ed. Washington, DC: American College of Obstetricians & Gynecologist, 2014) When it comes to its diagnostic standards for premenstrual dysphoric disorder, the American Psychiatric Association (APA) priorities psychiatric symptoms (PMDD; (APA. DSM-5 ed Washington, DC: APA, 2013) Anytime between menarche and menopause is a possible symptomatic period.

The aetiologies of these two disorders overlap significantly. The heightened sensitivity of the central nervous system to hormonal fluctuations during the periods cycle, which leads to a decrease in serotonin levels, is considered the primary factor underlying both of these conditions. The etiological foundation for remission is also believed to be connected to the rise in progesterone or estradiol levels

in the luteal phase. gonadotropin-secreting hormone. (Source:) (Aleuizou et al,2018). In contrast to PMDD, PMS is more common, as the introduction makes clear. Its frequency has been gradually increasing over the past few years, according to several research conducted worldwide and estimated to be between 20% and 50% (Dennerstein et al., 2021), (Talaei et al., 2021) and (Direkyand-Moghadam et al., 2014). However, according to some studies, the PMDD is far lower—between 3% and 8% (Dennerstein et al., 2012 and Wittchen HU, Becker. E et al., 2002) It is evident from this that both of these illnesses are significantly prevalent.

Medical practitioners are a little confused about these two diagnostic entities because they occur at the same time. Nonetheless, a thorough examination of these two situations will make it clear that their coexistence has been necessary up to this point. PMS features a lower threshold and is highly beneficial for screening premenstrual syndrome patients, whereas PMDD typically includes increasingly severe and incapacitating emotional problems that need more thorough treatment.

1.2 Historical Perspective

Premenstrual disorders have a long history that dates back to antiquity. Therefore, in order to improve clarity, the history is categorized as follows:

1.2.1 pre-twentieth century era

The Greek physicians of Hippocrates' time (400–300 BC) wrote writings that contained the first recorded reference of premenstrual symptoms. Their texts describe an illness that was believed to be brought on by a buildup of black bile in the uterus and was characterized by dizziness, heaviness, leukorrhea, and melancholy. But in the sixteenth century, da Monte advanced this further by proposing a connection that might exist between depression and menstruation cycles (Bonuzzi, 1977). Prichard, however, gave one of the most thorough accounts of this illness under the name of "dysmenorrheal affections," where he emphasized symptoms like melancholy, impatience, nervousness, and a tendency to argue that are associated with "Catamenia" (James Cowles Prichard, 2021).

It is imperative that we acknowledge certain aspects of the pre-1900 theories regarding the genesis of this illness. It is clear that the theories advanced piqued the curiosity of further scholars in this area. Furthermore, the ideas suggested that a tiny percentage of women who are menstruation experienced these symptoms.

1.2.2 Twentieth-century era (1901–1986)

Frank R. T. is credited with providing the earliest contemporary explanation of premenstrual symptoms (Frank, 1931). Under a phenomenon he named "premenstrual tension," emotional pressure might occasionally surface in the second phase of the periods cycle. Later on, though (Greene and Dalton, 1953) argued that "PMS" is probably a more accurate word because emotional tension is just one of several symptoms that individuals with this illness typically experience. to depict the condition in an effective manner. Nearly simultaneously in 1931, among the most highly regarded foundational studies on this matter was completed by Karen Horney. She identified the link between ovulation and symptoms, including tension, irritability, depression, and anxiety, in her studies. She also highlighted the fact that these symptoms tend to occur relatively frequently. More recently, experts in this field have begun to include more somatic symptoms in the symptom cluster, including pain, headaches, thirst, and swelling and tenderness in the breasts (Richardson, 1995). As the phenomenology aspects of PMS were developing, scientists turned their attention to the etiopathological causes of this illness. However, the hypotheses advanced were a broad range of differences. According to her opinion, Horney depended on the Sigmund Freud-proposed psychosexual theory and suggested that the source of these symptoms is displeasure with sex and a woman's unfulfilled desire to conceive a child within her uterus. Greene and Dalton, however, suggested that water the symptoms were caused by retention, and they were Presumably brought on by a sudden increase in the estrogen-progesterone proportion. Despite numerous unresolved issues, this theory's derivatives are still regarded as one of the most promising ideas regarding PMS. (Zendehdel and Elvasi, 2018), numerous etiological theories were put out in this regard, but none could offer a satisfactory explanation. These hypotheses included the use of monoamine oxidase enzymes, vitamin B6, and endogenous opioids. (Richardson, 1995) To the disapproval of others, some later researchers even ventured to hypothesize that females who do not menstruate may also experience similar symptoms and that having a uterus or menstruation is not a need for having this illness (Osborn, 1981) Studies began examining the psychosocial components of the ailment after it seemed that they had failed to identify a strong biological basis for the illness. According to the first population-based studies, these symptoms are common in female menstruation of all ages and cultures (Gold and severino, 1994 and Frayser, 1985). However, it was clear how differently the symptoms were interpreted across cultures. It was discovered that Western culture was more likely to have a thorough presentation with both physical and emotional symptoms. This was the

case to the point that some researchers hypothesized that PMS is a sickness exclusive to Western civilization. The majority of non-Western civilizations, however, frequently manifested with a somatic presentation (Richardson, 1995).

As previously mentioned, Greene and Dalton used the term PMS in 1953. But a few design flaws caused this entity's popularity to become entangled. One of the main points of contention was the idea that the symptoms cluster was arbitrarily classified and that the disease should not be categorized as a "syndrome" as a whole (Frayser, 1985). A further concern brought up was how common PMS was in different samples. There has been debate about whether a condition qualifies for a syndrome nomenclature even if its prevalence is as high as 95% and it is still statistically aberrant (Vssher, 1992). Furthermore, the diagnosis of this disease relied unduly on retroactive reports and self-reports. The condition's poor diagnostic stability, which is a criticism leveled against many other mental illnesses, is the final point that has been brought up. Thus, it became clear that more stringent diagnostic standards were required in order to accurately and definitively classify this as a pathogenic process.

1.2.3 The period following the release of the Diagnostic and Statistical Manual III-R (1987-2022)

Diagnostic and Statistical Manual III

The third edition of the Diagnostic and Statistical Manual, revised version (DSM-III-R) was released in 1987 and the initial addition of the criteria for "Late Luteal Phase Dysphoric Disorder (LLPDD)", where it was categorized as a "proposed diagnostic category needing later study." This came about only after a workshop sponsored by the National Institute of Mental Health in 1983 looked at the problems raised. Two of the committee's main suggestions were to establish an asymptomatic mid-follicular phase and demand that symptoms in the late luteal phase increase by at least 30% compared to the mid-follicular phase. (Endicott, 2002). Despite the possibility of LLPDD becoming well-known, the criteria were frequently applied in studies. Workgroups dedicated to particular diseases and a central task force typically comprised the DSM review process. Since LLPDD was deemed significant, it was given its own workgroup (Zachar and Kendler, 2014). This time, the review procedures included interviewing work group members and other expert individuals in addition to revising the published literature.

This evidence can be grouped into three groups if we review them. First off, there were a couple of pieces of evidence that suggested LLPDD belongs in the main body of the text. It was noted that experts have reached a consensus indicating that the prevalence of this disease ranges from 3% to 6%, a statistically significant variation that necessitates a distinct diagnosis rather than merely an extension of the physiological process.

Additionally, numerous therapeutic approaches have emerged that could effectively reduce the symptoms and enhance the standard of the patient's life, including anxiety medicines, depression medications, and substances that prevent ovulation. Specialists who supported including this thing in the primary text also thought this idea was well suited to the widely recognized biopsychosocial model of disarray.

A different organization also made efforts to get this entity removed from the DSM-IV language as a disorder. These criteria, according to them, could be used as a weapon against women with unfavorable social repercussions because of their high false positive rates and low diagnostic validity. According to the experts, keeping LLPDD in the appendix was the best course of action in this case. Compared to several other diseases that are currently classified in the DSM, they felt that the evidence for LLPDD was stronger. A "consensus model," according to which experts believed that when important data are provided to a group of specialists, the consensus of the experts can result in the best choice, was also followed by the DSM-IV task force. However, this paradigm was contested in the LLPDD case because many outside experts thought the work group was afraid of disagreement, so they did not include it in the main text. (Zachar and Kendler, 2014).

1.2.4 Diagnostic and Statistical Manual IV and International Classification of Diseases, Tenth Edition

PMDD was introduced, and LLPDD was renamed to DSM-IV based on the task force's suggestions. (American Psychiatric Association, 2000) With the exception of one item—"a subjective sense of being overwhelmed or out of control"—the criteria for PMDD and LLPDD were remarkably comparable. The requirements, however, were once more added to the appendix rather than the main body. It is noteworthy to mention that the criteria for PMS were included in the 10th edition of the International Classification of Diseases (ICD-10), which was released at same time in 1992. The code for PMS was

N94.3, “Noninflammatory disorders of the female genital tract,” rather than the “F” code for “Mental, behavioral, and neurodevelopmental disorders” (ICD-10, version- 2016).

An analogous review procedure was carried out before the 2013 release of DSM-5. A few significant events that occurred during this period had an impact on the choices made. The United States Food and Drug Administration's approval of fluoxetine to treat the PMDD (Greenslit, 2005) on the basis of information provided by the pharmaceutical corporation Eli Lilly was one significant event. It was also thought that this approval much reduced the worry of unfavorable societal repercussions. The trend was actually seen positively, with the lay press even urging women to talk to doctors about premenstrual problems, alter their lifestyles, and seek assistance if their symptoms worsened. There was a great deal of conjecture around the chapter's placement in the DSM-5 book.

1.2.5 Diagnostic and Statistical Manual 5 and International Classification of Diseases 11th Revision

In order to assess the DSM-IV criteria for PMDD and provide recommendations and viewpoints regarding whether the entity should remain in the appendix or be incorporated into the main text, the DSM-5 Mood Disorder was created (Epperson et al., 2012). After a lengthy procedure, PMDD was eventually added to the main text and placed under the heading of "depressive disorders." (APA, DSM-5).

In 2019, PMDD (Code GA34.41) was added to the ICD-11, following the example set by the DSM-5. Because affective symptoms predominate, it has been cross-listed in the depressive disorders section but added principally within the genitourinary diseases area. The DSM-5 criteria and its criteria for PMDD, as stated in ICD-11, are compatible. It is anticipated that this inclusion will significantly contribute to the validation of PMDD's status as a condition.

1.3 Epidemiology

Nearly 80% of women say they have at least one physical or mental symptom during the menstrual cycle's luteal phase. However, according to Wittchen HU et al. (2002), the majority do not believe that their everyday lives are significantly hampered.4% of the 2,800 French women in the study had severe symptoms, and 12% of them satisfied the diagnostic criteria for PMS. The incidence of PMS is

independent of age, occupation, and educational attainment. There may be variations in the symptoms' duration and severity.

(Potter J et.al, 2009) study reveals a year later, just 36 percent of females diagnosed with PMS still met the criteria. If a woman has experienced a stressful event or gained weight, she is more likely to receive a PMS diagnosis. The frequency of PMDD between from 1.3% to 5.3%, and few individuals meet the disorder's more stringent diagnostic requirements. (Wittchen HU et al, 2002).

1.4 Etiology

The precise cause of premenstrual syndrome is unknown. Several studies indicate that the symptoms may be brought on by periodic fluctuations in progesterone and estrogen levels. During cyclical progestogen therapy, postmenopausal women who had previously been diagnosed with PMS had repeated physical and psychological symptoms. (Hammarback S et.al, 1985) Furthermore, it has been demonstrated that gonadotropin-releasing hormone analogs can dramatically lessen PMS symptoms by suppressing estrogen. (Kumar. P and Sharma. A, 2014) Mood swings may result from the effects of progesterone and estrogen on the dopamine, serotonin, and -aminobutyric acid systems. These may impact the renin-angiotensin-aldosterone pathway, which might partially account for the gastric and swelling which occur during the luteal phase. (Halbreich. U, 2003) Premenstrual problems cannot entirely be attributed to sex hormone levels. Research shows that estrogen and progesterone levels in premenstrual disordered females are not greater in the general population, and no established theory explains why some females may be more sensitive to fluctuations in these reproductive hormones than others. (Potter.J et.al, 2009) Premenstrual diseases may have a hereditary component, according to investigations of monozygotic twins, although no genes have been discovered (Jahanfar S et.al 2011).

1.5 Diagnosis

When assessing for PMS and PMDD, it is critical to determine the timing of symptoms. The luteal phase may see an increase in other illnesses, including sadness or anxiety, but they may be recognized as PMS because they last the whole menstrual cycle. Considerations should also be made for migraines, anemia, endometriosis, and hypothyroidism, which can all cause symptoms that resemble PMS or PMDD. Diagnostic laboratory testing or imaging should be done to rule out any other possible diagnosis.

The American College of Obstetricians and Gynecologists (ACOG), a woman with PMS has at least one physical and one emotional symptom that impairs her ability to function in social, intellectual, or professional ways. These signs must appear in cycles, stopping just before the menstrual cycle and starting after ovulation. While symptoms are unpredictable or just increased throughout their luteal phase, patients typically exaggerate the cyclical pattern.

Prospective surveys are, therefore, the most reliable method for identifying PMS and PMDD. (4th ed. Washington, DC: American College of Obstetricians 7 Gynecologist 2014, APA. DSM-5 ed Washington, DC: APA, 2013 and Gehlert.S et.al, 2009). A trustworthy and accurate diagnostic tool for PMS or PMDD identification is the Daily Record of Severity of Problems (DRSP). The symptoms listed in the daily notebook correspond to the diagnostic criteria for PMS and PMDD. The process of assessing symptoms throughout at least two menstrual cycles requires patients to invest a significant amount of time and energy. The starting day of menstruation is a good time to check for premenstrual issues with the DRSP. 90 percent negative predictive value and 63.4% positive predictive value are obtained with a threshold of 50. (Endicott J, et al, 2006).
Seven criteria were developed for the diagnosis of PMDD in the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (4th ed. Washington, DC: American College of Obstetricians 7 Gynecologist 2014). (A–G).

1.5.1 Criteria A.

In order to meet Criterion A, five of the eleven symptoms must arise in the final two to three weeks before the start of menstruation and must go off in the week following menstruation (one of the first four symptoms listed must be present). These signs include the following:

1. Listed liability (mood swings)
2. irritation or hostility
3. gloomy mood
4. tension or worry
5. diminished interest in routine tasks
6. Trouble concentrating
7. Lethargic and clearly depleted of energy
8. Significant appetite change

9. Insomnia / hypersomnia
10. Feeling out of control or overwhelmed
11. Physical signs

1.5.2 Criteria B

It must exhibit at least one of the following signs:

1. Marked affective instability

2. Increased interpersonal conflicts or pronounced irritability or anger

3. Profound melancholy, a sense of hopelessness, or low self-esteem

4. Visibly increased anxiety tension and/or tense, tense feelings

1.5.3 Criteria C

When paired with Criterion B, one or more of the additional symptoms listed below must be present to make a total of five symptoms.

1. A decline in enthusiasm for routine tasks (e.g., work, friends)

2. A subjective inability to concentrate

3. Lethargic behavior, easily becoming exhausted, or a notable lack of energy

4. Significant change in appetite

5. Insomnia or excessive sleepiness

6. Sensing overpowered or in charge

7. Physical symptoms

1.5.4 Criteria D

The symptoms—such as avoiding social situations and being less productive and efficient at work, school, or home—are associated with clinically significant discomfort or disturbances to routine social interactions, job, or academic endeavors.

1.5.5 Criteria E

The disruption is more than merely a sign of another illness, such as panic disorder, major depressive disorder, chronic depression (dysthymia), or personality disorder (though any of these diseases may coexist with it).

1.5.6 Criterion F

The daily ratings collected over the period of at least two symptomatic cycles should be used to support Criterion A.

1.5.7 Criterion G

The symptoms cannot be linked to drug addiction, prescription side effects, other therapies, or the physiological consequences of a substance (e.g., hyperthyroidism) or any other medical condition.

1.6 Management

1.6.1 Patient education/counseling: -

Patients, especially teenagers, may experience severe discomfort due to PMS. Thus, providing them with proper information about the condition, including any alternative treatments is crucial. A physiotherapist, a nutritionist, a mental health specialist (psychiatrist, clinical psychologist, or counselor), practitioner, gynecologist, or a gynecologist with a focus on PMDD/PMS, as well as other medical professionals, are all necessary for the treatment of this condition.

1.6.2 Lifestyle and dietary changes

The intensity of PMS symptoms is largely taken into account while treating it. Symptoms are frequently lessened by regular exercise and dietary limitations. Patients who are obese should be urged to enroll in a weight-management program. A common component of the entire therapy plan is dietary change. Patients are advised to eat more frequent, smaller meals that are heavy in carbohydrates. Intake of high-Salt, caffeine, any type of alcohol, and sugars should be discouraged from consumption by patients.

Endorphins are released through physical activity and exercise, which benefits anxiety, nervous tension, and general wellness.

1.6.3 Behavioral anger and stress management therapies

When their emotions are at their highest, this can assist the patients to manage them or recover control. Different techniques could be used. A few of these are cognitive behavioral therapy (CBT), individual and couple counseling, anger management courses, stress management seminars, self-help support groups, and emotional support from friends and family. Our customers cited family and friends' emotional support as being quite beneficial. Self-hypnosis, yoga, and biofeedback are just a few relaxation techniques that might be beneficial.

1.6.4 Supplements

These include polyunsaturated fatty acids, calcium, Zine, minerals, and magnesium supplements, vitamin E, and vitamin B6, B12 (omega-3 and 6). With varying degrees of success, some complementary medications and herbs have been used to reduce PMS. These treatments must be used for at least two consecutive cycles to succeed. At large dosages, several of these therapies might be toxic and harm the liver.

1.7 Medications

The moderate to severe PMDD symptoms have been treated with a variety of medicines, including:

1.7.1 Diuretics: These are frequently used to remove extra fluid. For instance, spironolactone is frequently used to alleviate facial, hand, and foot edema.

1.7.2 Hormonal treatments: Combining oral contraceptives might be beneficial for certain women. The most recent formulations (drospirenone-containing COCPs) regulate sex hormone swings, which lessen PMS symptoms. Although it may initially cause PMS-like symptoms, the Mirena Intrauterine System distributes modest quantities of progesterone, inhibits ovulation, and lessens PMDD symptoms. Depo-Provera works in a manner comparable to this. It has been discovered that percutaneous estradiol mixed with cyclical progestogens is helpful in controlling both PMS physical and emotional symptoms.

1.7.3 Analogues and agonists of gonadotrophin-releasing hormone (GnRH):

Through its ability to inhibit the ovaries' synthesis of sex hormones, these ovarian hormone suppressors reduce PMS symptoms. An excellent treatment for severe PMS symptoms is GnRH analogs. GnRH analogs include danazol, whereas GnRH agonists include goserelin. Long-term usage of GnRH analogs with anhigh risk of osteoporosis and irreversible virilizing effects; thus, the females who have been taking these drugs for more than six months should obtain add-back hormone therapy. If necessary, give someone tibolone or COCPs.

1.7.4 Analgesics and anti-prostaglandins: frequently used to treat migraines, breast tenderness, periods cramps, and pelvic pain. Ibuprofen, naproxen, and mefenamic acid are examples of non-steroidal anti-inflammatory medications that have proved highly helpful. Long-term usage, however, may put a patient at risk for stomach ulcers.

1.7.5 Antidepressants

Antidepressants (e.g., serotonin, GABA, opioids) increase the amounts of neurotransmitters and excitatory substances in brain. They support the management of mental health conditions linked to PMS. Two such medications are paroxetine and fluoxetine.

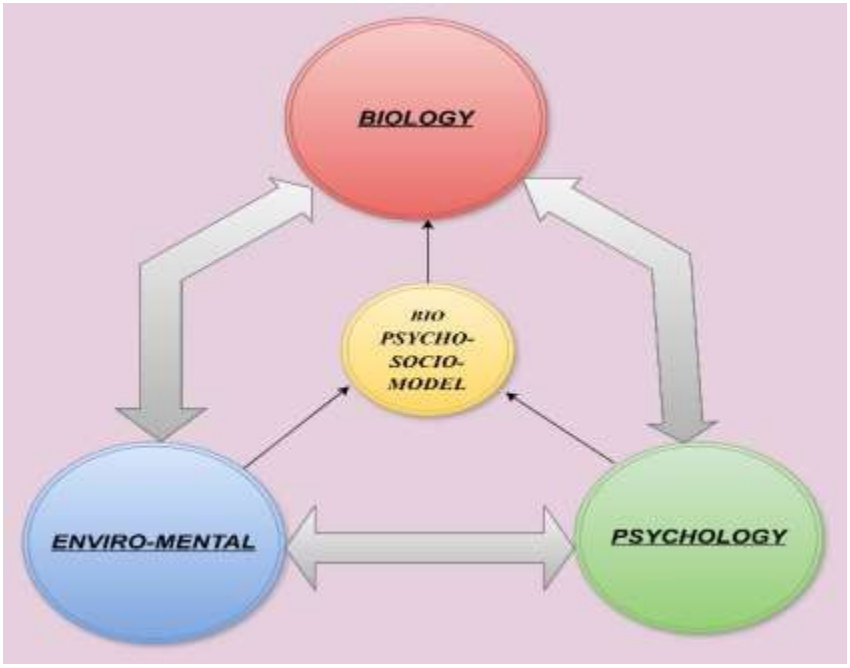
Mood stabilizers having antidepressant properties include SSRI’s and selective noradrenaline reuptake inhibitors. Serotonin and noradrenaline levels rise in the brain, which are both known to low in the luteal phase in females.

1.7.6 Treatment

The primary goals of therapy for PMS and PMDD are psychological and physical symptoms. In order to treat the body's hormonal activity, several drugs prevent ovulation, while other medications alter the number of neurotransmitters in the brain, such as dopamine, serotonin, and norepinephrine. In the US, SSRIs are first-line medications. SSRIs are classified as psychiatric medications; nevertheless, the majority of patients who use them for premenstrual problems report feeling better. 14. Physicians should modify the treatment plan in accordance with the patient's reaction to and tolerance of each medication.

1.8 Theoretical framework – Bio-Psycho-Social Model

Figure 1.1 Conceptual framework of Biopsychosocial model



BIOPSYCHOSOCIAL MODEL-

The relationship between biology, psychology, and socio-environmental variables is examined by a class of trans-disciplinary models known as biopsychosocial models. Psychiatry, health, and human development are the three main themes that these models especially look at the roles that these factors play.

1.8.1 History: -

It is commonly acknowledged that the first biopsychosocial model was proposed in 1977 by George L. Engel and Jon Romano of the University of Rochester. However, others had suggested it a century before (Wade & Halligan, 2017). Because he saw that every patient had unique thoughts, emotions and medical history. Engel battled with the biological dominant approach to medicine and worked towards a more holistic approach (Engel, 1977). Engel defined his model for psychological issues and diseases when he built it.

The biopsychosocial model is an additional well-thought-out explanation of health, not merely one of many rival theories. The greatest way to understand its emergence is in the context of history. The credibility issue that emerged in psychiatry as a medical specialty during the war years had an impact on the development of the biopsychosocial model in the field.

Psychiatry was still a relatively young science during the 20th century. During the Victorian era, psychiatry had to overcome two major obstacles: first, assuming management of the asylum system from non-medical administrators. second, building a solid body of evidence to support medical authority over mental disease. The way to deal with this at the time was to create a justification narrative for psychiatry based on the idea that doctors are the protectors of mental health and that the brain is the source of insanity. This viewpoint both mirrored and aided in the development of eugenics theory in the intellectual life of the West. But this was called into question by the shellshock issue following World War I; there was a fundamental contradiction between a eugenics perspective on insanity and the tragic reality of honorable men crumbling. This was, however, called into question by the shellshock issue following World Battle I; there existed a fundamental contradiction between a view of madness that was eugenics and the tragic reality of respectable men succumbing to predicted regularities in the trenches of battle. This resulted in the adoption of psychoanalysis and the identification of neurosis in psychiatric discourse. The establishment of the British Psychoanalytical Society and the Medical Section of the Psychological Society in 1946 heralded a complex interaction between medical psychotherapy and biological psychiatry. In support of a cohesive psychosomatic approach, the Tavistock Clinic was instrumental in bridging the divide between different schools of thought. The biopsychosocial model was developed in response to these circumstances in order to fundamentally alter our knowledge of psychiatry and health (Pilgrim, 2002).

1.8.2 Biological component

The Biological Component explores the complex physiological mechanisms that influence a person's health. This section offers a comprehensive synopsis of the biological component, highlighting the dynamic interactions that occur inside the human body and impact overall health.

As a basic component of human biology, genetics is crucial in determining health outcomes.

1. Genetic Predispositions: This section examines how hereditary features affect health; specifically, how genetic predispositions might impact susceptibility to particular illnesses. Gaining knowledge about the genetic basis of health can help develop preventative and individualized treatment plans.

2. Health and Epigenetics: This section elaborates on the function of epigenetics in health, building on the genetic basis. Epigenetics research highlights the dynamic interplay between genes and environmental variables, emphasizing the malleability of genetic expression and its potential health repercussions.

The complex relationship between the brain and the body is a major factor influencing health outcomes.

1. Brain-Body Connections: This section describes how the brain and other body systems communicate with each other in both directions, explaining how mental activities affect physical health. Gaining knowledge of the neurobiological connections emphasizes how crucial psychological wellness is to preserving general health.

2. Hormones and Health: This part explores how hormones regulate different physiological processes by delving into the endocrine system. Hormonal balance's effects on mood, stress response, and general health highlight the Biopsychosocial Model's integrative approach and highlight the interdependence of biological and psychological variables in determining health outcomes.

1.8.3 Psychological component

The psychological component of the biopsychosocial model examines the complex relationships between mental processes and health effects. This part provides a thorough review of the psychological component, emphasizing the impact that behavioral, emotional, and cognitive aspects have on an individual's health.
Cognition—which includes ideas, opinions, and perceptions—is quite important relative to health-related behaviors and results.

1. Beliefs and Health Behaviors: This section examines the influence of personal beliefs on behavior, particularly those pertaining to one's health. By analyzing the mental processes that underpin decisions made in health-related circumstances, one can understand how well people follow medical advice and adopt healthy lifestyles.

2. Stress and Coping: A common human experience, stress has a major negative influence on health. This section explains the impact of people's cognitive assessments of stressors on their physical and mental health and explores the cognitive aspects of stress and coping strategies.

Emotions are an essential part of being human and significantly impact health results.

1. Emotional Well-Being and Health: This section examines the reciprocal link between physical and emotional health. By examining the effects of happy emotions on health and the function of emotional resilience in overcoming difficulties, a comprehensive grasp of the psychological component may be attained.

2. Mood's Effect on Physical Health: Examining how mood states—such as anxiety and depression—affect physiological functions, this section highlights the critical interaction between mental conditions and general health results.

The psychological component includes health-related behaviors, which include lifestyle decisions and preventative actions.

1. Health-Related Behaviors: The psychological influences on health-related behaviors, including motivation, self-efficacy, and perceived control, are discussed in this subsection. Healthy lifestyle treatments are informed by knowledge of the psychological determinants of behaviors such as exercise, food, and drug use.

2. Health Promotion and Prevention: Effective methods for promoting and preventing health require considering psychological aspects. The present section delves into the psychological aspects that

encourage individuals to embrace preventive health measures, hence supporting the comprehensive methodology of the Biopsychosocial Model.

1.8.4 Social Component

The Biopsychosocial Model's social component examines how social environments and interpersonal connections affect health outcomes. This section provides an extensive summary of the social component, emphasizing the role those societal variables play in determining an individual's general well-being.

1. Socioeconomic Status: This section examines how socioeconomic status—which includes education, employment, and income—plays a significant role in determining one's health. Variations in health outcomes result from differences in resources, opportunity, and healthcare access depending on socioeconomic position.

2. Education and Health: This section explores the complex link between education and health, focusing on how educational attainment affects preventative measures, health behaviors, and general well-being.

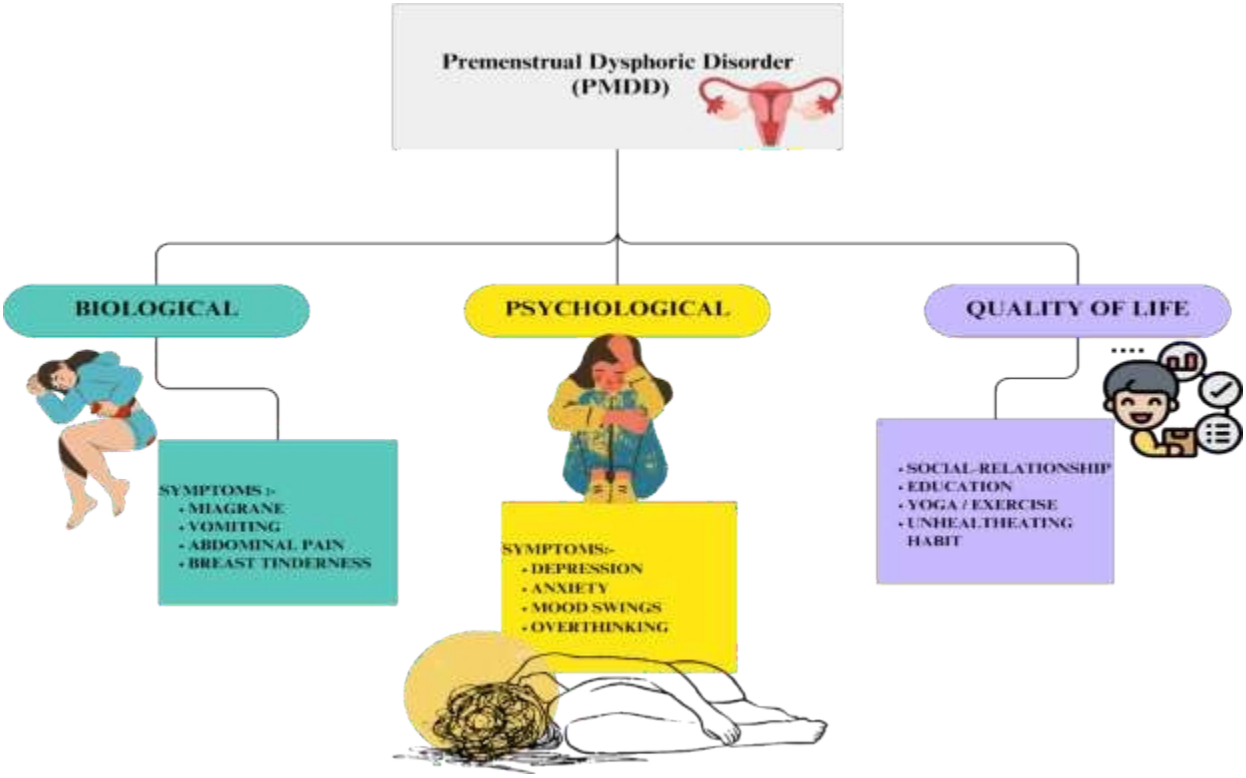
The availability of supportive connections and social networks significantly impacts health.

1. Family and Social Networks: This section examines how family and larger social networks influence health outcomes. Studying how social ties affect coping strategies, health behaviors, and emotional well-being emphasizes the crucial role of social support networks.

2. Community Influence on Health: Communities offer a more comprehensive social framework that affects health on a group basis. This section examines the relationship between community features and health outcomes, including social cohesiveness, neighborhood resources, and cultural influences. A thorough use of the Biopsychosocial Model in treating health concerns at the individual and community levels requires understanding social factors and support networks.

1.9 Bio-psycho-social Model conceptual framework with Premenstrual Dysphoric Disorder (PMDD):

Figure1.2



A perimenstrual pattern of at least five physical, emotional, and/or behavioural symptoms is required to diagnose PMDD. Affective lability encompasses a number of fundamental affective symptoms, including mood swings, sobbing, and resistance to rejection. A notably negative mood, worthlessness, self-deprecating thoughts, or worry, tensed, loss of interest, are additional symptoms, as is irritability or rage, which is frequently accompanied by a rise in interpersonal disputes.

Additionally, the women become uncontrollable, feel overburdened, or struggle to focus. These cognitive-affective symptoms may be accompanied by behavioural and somatic symptoms, such as low energy, changes in appetite or food intake, decreased interest in routine activities, altered sleep patterns, and physical symptoms specific to the premenstrual period, such as bloating, breast swelling, or

discomfort. The DSM-5 criteria required these symptoms to have persisted for the majority of the preceding year's menstrual cycles in order to qualify for a PMDD diagnosis.

1.9.1 Biological Impact of PMDD:

women with Premenstrual Dysphoric Disorder show physiological symptoms before one week when menstruation starts and slowly disappear once the menstrual cycle begins. Symptoms like vomiting, migraine, abdominal discomfort, backbone pain, breast tenderness, heavy bleeding, etc. Genetics, stress, other psychosocial variables, and the central nervous system's sensitivity to reproductive or sexual hormones are possible biological influences. The period of PMDD symptom onset and offset points to hormone variation as a major pathophysiological factor. PMDD are less sensitive to typical changes in hormones, especially progesterone and estrogen, which are neuroactive steroids that affect central nervous system function. The primary metabolite of progesterone, allopregnanolone (ALLO), is likewise a neuroactive steroid, and its levels are reduced throughout the follicular phase and menstruation. Around menstruation, progesterone, and ALLO rapidly drop after increasing throughout the luteal phase. One important possibility in the etiology of PMDD is the abrupt cessation of ovarian hormones after prolonged exposure. The neurotransmitter systems that control mood, thought, sleep, food, and other behavioral elements are all strongly impacted by estradiol. Clinically, women with PMDD display poor mood, food cravings, and worse cognitive function during the luteal phase—all of which are serotonin-related cognitive-affective traits.

1.9.2 Psychological impact of PMDD:

Often accompanied by "a cluster of affective, behavioral, and somatic symptoms," Significant changes in premenstrual mood are a hallmark of PMDD, a severe form of PMS. In 2013, revised diagnostic criteria of PMDD as the subgroup of depressive disorders in (DSM–5). A significant decline in life quality and psychiatric issues result from PMDD, which affects 3-8% of females in the reproductive age group, according to the DSM-5. The top three symptoms of PMDD that are assessed are irritation, anxiety, and depression. It's been suggested that women with PMDD have more difficulty controlling their emotions because emotional issues make up the majority of the disorder's symptoms. Understanding a person's feelings and the ways in which they are experienced, expressed, and

controlled is known as emotional regulation. Emotional dysregulation has, however, been linked to a number of variables, including genetics, trauma history, emotional and physical abuse, including progesterone and allopregnanolone.

Women with depression problems should have their irregular menstrual cycles evaluated, and those who experience interruptions in their menstrual cycles should also be evaluated for depression. Antidepressants have not demonstrated any benefit in these individuals. By controlling the menstrual cycle, providing behavioral treatment for psychological support, and teaching coping skills, these patients can live better lives. Women with irregular periods should be treated by gynecologists and primary care physicians using a multidisciplinary approach that includes screening for menstrual disorders (MDD). Additionally, comorbidities, coping strategies, and available treatments for depression should be explained to these individuals.

1.9.3 Social–environmental impact of PMDD:

Women who have premenstrual syndrome face a number of challenges, such as substantial social or professional dysfunction and deterioration of their physical and psychological health. Symptoms may have a detrimental effect on social relationships and academic performance in early teens in particular. A sense of inadequacy, low self-worth, and an unhealthy lifestyle are further consequences. Studies have also indicated that the quality of life associated with health is low for women who suffer from premenstrual problems.

The lifestyle variables linked to irregular menstruation are discovered to reflect some aspects of daily living that may contribute to irregular menstruation. Menstrual issues are associated with certain risky factors, like anticipatory stress or a family history of other psychological illnesses. Menstrual difficulties are also linked to certain lifestyle variables, such as smoking, excessive coffee and tea use, abnormal body weights, poor eating habits, and lack of exercise. Confounding factors included age, class, place of residence, family type, income, age at menarche, length of cycle, dysmenorrhea and its treatments, family history of PMS/PMDD, physical activity, sleep duration, and dietary habits (coffee intake, salt intake, sweets, and junk food) were expressed as percentages and frequencies.

1.10 Depression

Depressive symptoms, which are mental illnesses, include a persistent sense of melancholy and disinterest. The following categories represent depressive illnesses according to the Diagnostic and Statistical Manual of Mental Illnesses, Fifth Edition (DSM-5) of the American Psychiatric Association:

1. Disruptive mood dysregulation disorder

2. Major depressive disorder

3. Persistent depressive disorder (dysthymia)

4. Premenstrual dysphoric condition

5. Depression brought on by another medical problem

All depressive disorders have the same features of melancholy, emptiness, or irritability, along with physical and cognitive abnormalities that severely limit the patient's ability to function. For unclear reasons, over 60% of depressed individuals do not seek medical attention. Many people believe that stigmatizing mental health concerns in society is wrong and can lead to complications in both one's personal and professional life. Despite strong evidence supporting the effectiveness of most antidepressants, individual patient responses to medication may vary.

1.10.1 Etiology-

Major depressive illness has two primary causes: environmental and genetic. Depression can nevertheless affect those without a family history of the disorder, even though those without a family history are nearly three times less likely to experience depression than the general population.

According to some study, genetic variables are less important in late-onset depression than in early-onset depression. Depression in older persons may put them at biological risk. Numerous conditions have been linked to chronic pain, including multiple sclerosis, stroke, macular degeneration, seizure, depression, and neurodegenerative diseases, particularly Parkinson's and Alzheimer's. Depression is brought on by specific situations and difficulties in life. A person's career load, financial issues, interpersonal problems, conflicts, and tragic occurrences like the death or loss of a loved one are among the stressors that can lead to depression.

1.10.2 Epidemiology-

The prevalence of major depressive illness during a 12-month period is around 7%, with substantial variances by age group. When compared to people 60 years of age or older, the frequency in people between the ages of 18 and 29 is three times greater. Beginning in the early adolescent years, females endure 1.5 to 3 times the rates of boys.

Depression is characterized by poor self-esteem, guilt, and a diminished ability to happy life, according to psychologists. A drop in energy and vigor, a slowness of cognition or activity, a lack of appetite, sleep disturbances or sleeplessness, low confidence and increased self-deprecation, and sadness, despair, or pessimistic sentiments are all common characteristics of depression. Postpartum depression and premenopausal dysphoric disorder are two types of depression that are specific to a certain gender.The interaction of different elements, including neurological, hormonal, genetic, social, and environmental influences, has been suggested to explain these disparities. MDD's impact on menstrual irregularities should not be disregarded. Women With menstruation abnormalities should be treated by primary care physicians and gynecologists using a multidisciplinary approach that includes a depression assessment. Women are twice as likely as males to experience depression. Although women are more likely to suffer guilt, anxiety, increased hunger and sleep, weight gain, and co-occurring eating disorders than males, both sexes share the same diagnostic criteria for depression. Women may obtain higher antidepressant plasma concentrations and hence require lower antidepressant doses. Depending on the patient's age, it may be necessary to take into account how antidepressants can affect a fetus or newborn. According to research, tricyclic antidepressants (SSRIs) have not high teratogenic risk when used during pregnancy. Premenstrual dysphoric disorder and many other comorbid illnesses linked to depression in women can be effectively treated with SSRIs. Women range between mild to severe depression may get psychotherapy or in conjunction with antidepressant medication treatment. Typically, a psychiatrist and a woman who has severe depression and active suicidal thoughts or intentions should work together to treat them.

Depression affects over 20% of women throughout their lives compared to 10% of males. Although the precise cause of this discrepancy is unknown, gender-related variations in cognitive styles, specific biological characteristics, and a greater frequency of psychosocial and economic pressures in women

are most likely to be to blame for the higher level of depression in females. Genetic variances, variations in brain structure and function, and the impact of female gonadal hormones on neurotransmitter and enzyme functioning in susceptible individuals are only a few examples of potential biological processes.

Treatment is necessary for PMDD, which is a very stressful and crippling disorder. Between 3 and 5 percent of females match the diagnostic requirements for this disease, which manifests as cognitive and somatic problems together with symptoms of sadness and anxiety. At least one of the first four symptoms must be present in the luteal cycle in order to diagnose PMDD. The symptoms should not exacerbate a personality disorder, sadness, or anxiety. The length, impairment, and prospective diagnostic validation requirements must be satisfied.

1.11 Emotion

According to APA, emotion is "a complex reaction pattern integrating experiential, behavioral, and physiological factors." People react emotionally to situations or problems that are significant to them. Emotional experiences consist of three parts: a subjective experience, a physical reaction, and a behavioral response. The term "emotion regulation" describes the capacity to identify and manage one's own feelings and how they are experienced and communicated (Gross 1998). Because emotional problems account for the majority of PMDD symptoms, it's expected that women with PMDD will have more trouble regulating their emotions than healthy controls.

1.12 Quality of Life—Modifying one's lifestyle can help alleviate the symptoms of PMS and PMDD. These strategies should be explored first before pharmaceutical treatment for women with mild symptoms. Reliable data: Physicians often advise patients with PMS or PMDD to reduce or eliminate their caffeine, sugar, and sodium intake. Other beneficial lifestyle changes include reducing alcohol and nicotine consumption and getting enough sleep. Regular aerobic exercise has also been shown to help with both the psychological and physical symptoms of PMDD.

The intensity of the symptoms, the long-term nature of the condition, and the interference with daily activities, relationships, and employment, PMDD carries a heavy weight of sickness (Freeman, 2005). The common consensus is that measurements of life satisfaction and health treatment effectiveness depend heavily on one's quality of life (Melchert, 2015). It has been demonstrated that PMDD has a

greater detrimental effect on quality of life than back pain, diabetes, tension, etc. (Yang et al., 2008). The burden of PMDD is the severe depressive illness (Halbreich, Borenstein, Pearlstein, & Kahn, 2003; Yang et al., 2008).

In contrast to other menstrual-related symptoms, premenstrual symptoms are especially associated with a significantly lower overall quality of life connected to psychological health and a decline in overall health status (Craner, 2014). Due to the cyclical nature of these symptoms, women who experience them may minimize or even reject the overall impact of these detrimental impacts on their health. (Lustyk & Gerrish, 2010).

1.13 Yoga

Yoga is a well-balanced practice that aims to increase or strengthen one's inherent dominance. It proposes a variety of approaches to achieving total self-awareness. Yoga is a Sanskrit term that literally means "to yoke." It may be characterized as a means of connecting a person's soul to God's universal soul. "Yoga is the suppression of mental changes," according to 2 Maharishi Patanjali. "When the senses are stilled when the mind is at peace," the Kathopanis had described it. Yoga is a term that describes the constant control of the senses and mind. Apana, Vdana, Vyana, Prana, and Samana are the five pranas in Ayurveda that are responsible for our bodies functioning. Apana concentrated on the downward flow. Urination, excretion, and menstruation are all caused by it. The route of Apana is downwards throughout the menstrual cycle, and it aids in the exertion of the body. Yoga is a Sanskrit word that means "to unite," "to connect," and "to combine." Yoga practice serves to combine the mind and body, as well as to merge the soul with God, and this greatest degree of realization is only achievable via diverse yogic activities. Yoga allows a person to gain mastery over their sensory organs. "Yoga Chittwriti Nirodha," according to Maharishi Patanjali, is the disengagement of sense organs from worldly objects.

Menstruation, also known as Apana, flows downhill. Hath yoga combines meditation, deep breathing, and yogic asanas postures to promote a woman's well-being and health, particularly during menstruation, menopause, pregnancy, and premenstrual syndrome. Yoga can help a lady cope with her unease and anguish stages of life. Someone wisely said, "Peace in the body brings composure in the intellect." The practice of yoga practices can aid in alleviating PMS symptoms. Symptoms of PMS can

be alleviated by practicing various yoga techniques on a daily basis, reducing the discomfort and misery that women experience during menstruation.

Low energy should not be associated with menstruation but rather should be viewed as a chance to engage in no physical activity or exertion at this time. During their menstrual cycle, females experience several changes, both mental and physical. PMS affects over seventy-five percent of females. Some women's everyday activities may be disrupted as a result of these symptoms. For other women, it may just be a monthly activity or cycle that occurs at the right time. It differs in severity between men and women. Yoga is one of the finest health practices for living a healthy life and effectively dealing with PMS.

For women, premenstrual symptoms can lead to a number of problems, such as physical impairment, mental health problems, and serious social or professional dysfunction. (Rapkin A.J and Winer S.A 2009). Symptoms in young teens may have a negative impact on academic performance and social connections (Heinemann, L.A.et al., 2010).

Premenstrual disorder sufferers have a low health-related quality of life, according toresearch (Hamaideh. S.H, et al., 2013; Rasheed. P & Al-Sowielem, L. S 2003; Purdue-Smithe, A.C, et al., 2016). Stress, age, BMI, and marital status have all been demonstrated to aggravate PMS symptoms in various studies (Dennerstein, L. et al., 2010). Another study discovered a link between PMS and parity, which was found to be less in the group of low parity (Shershah, S. et al., 1991). The frequency of PMS was likewise linked to a history of PMS in the mother (Dennerstein, L. et. al 2011). While all of these factors have been linked to PMS, coffee consumption has not been linked to the condition (Pal S.A et al., 2011).

Pal et al. found that physical symptoms prevail in Pakistani women's premenstrual experience, with bloating and cramps, irritability, and mood changes being the common symptoms (Silva, C.M.L. da, Gigante, D.P., et al., 2006). According to another study, the common symptoms are joint pain, muscle pain, back ache, and breast ache (Tabassum. S, Afridi B, et al., 2005). Anxiety, despair, and anger were the commonly reported issues by many writers (Elliott, H. 2002). Skin issues, limbs swelling, gastrointestinal, and headaches have also been identified as symptoms reported by women prior to menstruation (Panay, N. 2011 Dennerstein, L. et al., 2010).

Summary— All the variables in the study, including PMDD, yoga, depression, emotions, and quality of life, are briefly explained in this chapter along with their correlations. It also contains the DSM-5 criteria for depression and PMDD. Additionally, premenstrual dysphoric disorder is examined in relation to the theoretical framework of the bio-psycho-social model.

CHAPTER-2

REVIEW OF LITERATURE

This literature review chapter is a critical evaluation and synthesis of previous studies on a certain subject. It gives a summary of the state of knowledge at the moment, points out gaps in studies, and emphasizes important research discoveries. It also introduces previous literature work done in the context of these variables- Premenstrual Dysphoric Disorder, Depression, Emotion, Quality of Life, and Yoga and how they are related, different objectives, the methodology processed in studies, and the significant findings of the literature. Premenstrual Dysphoric Disorder, depression, yoga, emotion, and quality of life variables have been reported below.

2.1 Premenstrual Dysphoric Disorder (PMDD)

Gao. M. et al. (2022) study identified research hotspots and trends in this area; they conducted a bibliometric analysis on the 100 most-cited publications in this study. using a variety of publications, nations/regions, organizations, authors, and keywords, we examined pertinent material. Finally, we created knowledge maps using VOS viewer and Cite space software and identified hotspots and trends. Results: Between 1999 and 2017, the top 100 most referenced papers were published in 55 journals across 24 nations/regions. Obstetrics and gynecology published the most publications, but Psych neuroendocrinology had the highest average number of citations per study. Most publications were produced in the United States, then in England, Canada, and Sweden. The main research directions were in the fields of obstetrics, gynecology, psychiatry, and reproductive biology.

Jayashri. K et.al (2022) Early childhood trauma increases the chance of developing various mental diseases; however, little is known about how early life trauma affects PMDD, a crippling type of Premenstrual Syndrome. Data from the Monash Alfred Women's Mental Health Clinic Database were taken for 100 women who had been diagnosed with PMDD. Physical, sexual, emotional, and/or emotional abuse and/or neglect were the four forms of early life trauma. The prevalence of trauma, which ranged from 59 to 66%, was comparable among the four age groups. Of particular significance, trauma affected 51.8% of women across all age categories. Our findings point to a considerable correlation between PMDD and early-life trauma. PMDD may be most strongly correlated with early emotional maltreatment and/or persistent trauma.

Turkey et al. (2021) this study evaluates neurocognitive abilities in adolescent females with PMS or PMDD at various menstrual cycle stages, such as attention and memory. Method: Premenstrual Assessment Forms were filled out by 86 teenagers in the 14–18 age range (PAF). From that initial cohort, 56 participants were enrolled; 20 were later dropped because they had a PMS score of 1.7. A final group of 30 controls (PAF 1.7) and 36 cases with PMS/PMDD were chosen for the statistical analysis. The PMS/PMDD group's results were weaker during the luteal stage. No discernible variation was found between the groups in the sub-parameters of the VADS-B test.

Renske. C. Bosman et al. (2016) this study Review the application of daily symptom ratings in PMDD. Methods Following a thorough search of PsycINFO and Medline, 75 papers were included that (1) individuals had late luteal phase dysphoric disorder (LLPDD) or premenstrual dysphoric disorder (PMDD) according to the diagnostic criteria and (2) employed diaries to research LLPDD/PMDD. To date, diaries have been utilized to explore linked biological components, evaluate treatment effectiveness, and acquire insight into the etiology and phenomenology of PMDD. We discovered a lack of uniformity in the used diaries; sometimes, only a portion of the menstrual cycle was examined as opposed to the entire cycle. Additionally, we saw that diagnostic standards and processes varied widely.

Rapkin AJ, Akopians AL. (2012); Premenstrual symptoms worsen in direct proportion to the rise in luteal phase concentrations of progesterone and estrogen. All of these issues result in poorer health outcomes for women and their families, as well as a large increase in health care expenses. Further research on the effects of smoking on menstruation is also encouraged by the World Health Organization. With the exception of Africa, where women smoke infrequently, about one-fifth of women in Europe and America today smoke. Women smoke at a rate of around 17% in the US, compared to 24% in Spain and 20% in the UK.

Samet JM, Yoon S. (2010); The World Health Organization views women's tobacco usage as an epidemic. Tobacco smoking as a passive smoker has detrimental effects on the health of the mother, the fetus, and the newborn.United States Department of Health and Human Services. Surgeon General report on smoking and women. 2001; Atlanta, GA: Centre for Disease Control and Prevention Smoking may have an impact on menstrual functioning by exaggerate the likelihood of amenorrhea, dysmenorrhea, and irregular periods, per a study by the Surgeon General.

Dennerstein et al. (2010) found that cyclical premenstrual symptoms affect up to 35% of females of reproductive age in Europe and Latin America in their everyday lives (ADL). According to this study, premenstrual symptoms hinder women's function, social life, and interpersonal relationships. Premenstrual symptoms, regardless of severity or number, have been linked to a considerable falling down in quality of life.

Dennerstein et al. (2010) conducted cross-sectional research to determine the impact of premenstrual symptoms on everyday activities. For this study, they telephonically chose 4085 women aged 14 to 50 from France, Italy, Spain, the United Kingdom, Brazil, Mexico and etc. The quality of life was discovered to be influenced by physical and psychological premenstrual symptoms. PMS was shown to impact 35% of women in Europe and Latin America, causing everyday activities to be disrupted.

Halbreich U, et al. (2007): Systematic reviews of randomized controlled trials are critical for practicing evidence-based medicine and evaluating the efficacy of medications and approaches for treating unpleasant symptoms. Premenstrual syndrome is treated with a variety of approaches, including CBT, botanicals, and vitamins and minerals.

Pal et al. (2011) conducted research in Karachi, Pakistan, to determine the dominant status of premenstrual symptoms in women aged 15 to 30 years. For data collection, they chose 402 women. A 23-point checklist was used to evaluate the sample. According to the study's findings, 98.8% of women are completely ignorant of this illness. PMS affects 79.9% of women, according to the study. The majority of women suffered from this condition without realizing it, and PMS was found to be a key factor. Had an impact on their lives. (2011, Pal SA)

Epperson et al. (2012); A severe type of menstrual disorder known as PMDD is characterized by a constellation of the behavioral, mental, and physical symptoms which primarily interfere with a woman's ability to function normally and her quality of life. These symptoms recur cyclically throughout the phases of the menstrual cycle. Up to 30% of females who are menstruating may suffer PMS, whereas 3-8% of females are thought to be affected by PMDD, a more severe and debilitating disorder (Qiao et al., 2012; Sattar, 2014).

Dhingra et al., (2007); Huo et al., (2007). The etiology of PMDD is complex and multifactorial, involving the interplay of biological, psychological, and social factors. Genetic factors appear to play a significant role, with studies identifying associations between PMDD and polymorphisms in genes involved in serotonergic and estrogen receptor functioning. Hormonal fluctuations during the menstrual cycle, particularly changes in estrogen and progesterone, are also thought to be key contributors to the development of PMDD symptoms (Halbreich, 2003).

In addition to biological factors, psychological and social stressors can also increase a woman's vulnerability to PMDD. Women with PMDD often report higher levels of perceived stress, negative life events, and interpersonal difficulties, which can exacerbate premenstrual symptoms (Lustyk et al., 2004; Brown & Lewis, 1993). Comorbid psychiatric issues, like depression and anxiety disorders, are common in females with PMDD and can further compound the burden of the disorder (Epperson et al., 2012; Perkonigg et al., 2004).

Borenstein et al. (2003) and Heinemann et al. (2012).The significant impact of PMDD on a woman's overall well-being and functioning cannot be overstated. Studies have consistently demonstrated that PMDD is substantial impairment in work quality, social relationships, and quality of life. The symptoms, such as pain and fatigue, combined with emotional disturbances, like mood swings and irritability, can make it difficult for women with PMDD to engage in daily activities and fulfill their personal and professional responsibilities.

Rapkin and Winer (2009) state that the burden of PMDD extends beyond the individual and has significant societal and economic implications. The high rates of absenteeism reduced work performance, and increased healthcare utilization associated with PMDD can translate to substantial costs for both employers and healthcare systems. Furthermore, the interpersonal difficulties and isolation experienced by women with PMDD can have broader ripple effects on their families and communities.

Hofmeister & Bodden, (2016). Despite the substantial burden of PMDD, the disorder is often underdiagnosed and undertreated. Many women with PMDD do not seek medical attention, either due

to a lack of awareness or the normalization of premenstrual symptoms. Even when PMDD is recognized, access to appropriate treatment and specialized care can be limited, particularly in certain regions and socioeconomic contexts.

In summary, PMDD is a serious and debilitating condition that effects a significant proportion of the female population. The complex etiology, involving physiological, psychological, and environmental factors, contributes to significant symptom burden and impairment experienced by women with PMDD. Addressing this disorder's substantial individual, societal, and economic impact should be a public health priority, requiring a multifaceted approach that encompasses improved awareness, early diagnosis, and access to comprehensive, evidence-based treatment options.

2.2 Depression

Pereira. D et.al (2022) In order for this study to better understand if PMDD might be regarded as a risk factor for prenatal depression and the connections between PMDD and other affective disorders (PND). The PubMed, EMBASE, CINAHL, and PsycINFO databases were thoroughly (PRISMA) criteria. There were seven unique investigations in all. There is just one research that found a connection between PMDD and depression during pregnancy, and that study found a correlation between PMDD and PND. This study, along with five others, found a link between PMDD and postpartum depression (PPD), measured from 2 to 4 days to 1 year following delivery. Only one researcher examined PMDD and PPD at four weeks postpartum and found no correlation between the two. The onset of prenatal depression, particularly postpartum depression, and PMDD appear to be positively and significantly correlated. This review affirms the necessity of healthcare providers monitoring women during the perinatal period for the existence of premenstrual dysphoric disorder.

Yen et al. (2020) evaluate the potential correlation between GAD and PMDD. Women with PMDD and healthy women were also evaluated for changes in behavior inhibition, anxiety, depression, and irritability over the menstrual cycle. Using a prospective assessment over the course of three menstrual cycles and a psychiatric evaluation, 100 women were diagnosed with PMDD. A total of 96 healthy females were recruited to serve as controls. Comparing females with PMDD and GAD to those without

General anxiety disorder, the former displayed higher levels of anxiety in the luteal period and high level of PMDD severity, sadness, and irritability during the follicular phase.

Sliwerski. A and Batorowicz –B. E (2019) This study aims to determine if PMS/PMDD incidence may be increased by factors associated with cognitive sensitivity to affective disorders. Methods: 293 females with regular cycles participated in the research overall. Failure was presented to the individuals during either the follicular phase or luteal phase, depending on what was appropriate. The cognitive triad inventory (CTI) and the existence of biased information processing were assessed. Before and after failure, the individuals' moods were assessed, and the CES-D was used to check for depressed mood. The prevalence of PMS/PMDD was evaluated using the PSST. Results show that the females with PMS/PMDD were shown to experience failure with much higher levels of melancholy and irritability throughout the luteal cycle period, but only in those who did not use oral contraceptives.

GreenL.J et al. (2017); and women's health concern on PMS study on behalf of the Royal College of Obstetricians and Gynaecologists. Treatment of premenstrual disorder. CBT provides relaxation, stress management, and assertiveness at the same time. Drug treatment can be avoided if CBT is successful.

ko, C.-H. et al., (2013). The purpose of the study was to ascertain how premenstrual aggravation of these symptoms related to functional impairment and PMDD diagnosis. Psychiatric interviews and follow-up of the questionnaire across three menstrual cycles were used to confirm the diagnosis of PMDD, which was based on a positive Premenstrual Symptoms Screening Tool score. 75 women without a PMDD diagnosis and 67 women with a PMDD were surveyed. The results showed that premenstrualof these three symptoms was seen in women with PMDD but not manageable. Numerous individuals were afflicted by depression. Depression was the most prevalent symptom of PMDD, although irritation was most commonly linked to functional impairment.

Yonkers (1997) examined the connection between different mood disorders and premenstrual dysphoric disorder. The results show that PMDD and sadness, particularly atypical depression, share symptoms of irritability, emotional reactivity, high anxiety and food cravings, sleep problems, and impaired attention. In samples of women diagnosed with PMS or PMDD, the lifetime prevalence of depression ranged from 20% to 76%.

Epperson et al. (2012): During the luteal phase of the periods cycle, a woman may have major mental and physical symptoms that significantly disrupt her normal functioning and quality of life. These symptoms are indicative of a severity of PMS come under menstrual disorder (PMDD). Depression is one of the main symptoms of PMDD, and the literature has provided extensive documentation of the connection between the two disorders.

Epperson et al., (2012); Perkonigg et al., (2004). Studies have repeatedly demonstrated that, PMDD women had a greater incidence of comorbid depression. According to prevalence surveys, at some point in their lives, up to 70% of women with PMDD also fit the criteria for major depressive disorder (MDD) (Yonkers et al., 2018). Furthermore, 5-year follow-up research found that over 50% of women with PMDD had an episode of MDD, suggesting that women with PMDD may be more susceptible to depression outside of the premenstrual period (Wittchen et al., 2002).

Dhingra et al. (2007) and Huo et al. (2007). The high comorbidity between PMDD and depression has led researchers to investigate potential shared risk factors and neurobiological mechanisms. Genetic factors seem to play a role, with studies identifying associations between PMDD and polymorphisms in serotonin receptor genes and estrogen receptor genes that are also implicated in the pathophysiology of depression. Hormonal fluctuations during the menstrual cycle have also been proposed as a potential common pathway, as both PMDD and depression have been linked to dysregulation of the hypothalamic-pituitary-gonadal axis and sex steroid hormones (Kundakovic & Rocks, 2022; Halbreich, 2003).

Lustyk et al., 2004; Brown & Lewis, (1993). In addition to the neurobiological links, depression in the context of PMDD may also be influenced by psychological and social factors. Women with PMDD often report increased stress, negative life events, and interpersonal difficulties during the premenstrual phase, which can exacerbate depressive symptoms. The significant impairment in work, social, and family functioning associated with PMDD can also contribute to feelings of hopelessness, worthlessness, and other depressive symptoms (Borenstein et al., 2003; Robinson & Swindle, 2000).

Epperson et al. (2012); Prasad et al. (2021). Importantly, comorbid depression in PMDD appears to be associated with more severe symptomatology, greater functional impairment, and poorer treatment

outcomes. This underscores the importance of assessing for and addressing depressive symptoms as part of the comprehensive management of PMDD.

In summary, the literature demonstrates a strong and multifaceted relationship between PMDD and depression. Women with PMDD are at elevated risk for developing depression, both during the premenstrual phase and outside of it. Shared genetic, neurobiological, and psychosocial factors likely drive the high comorbidity. Recognizing and treating depressive symptoms is crucial for improving outcomes in women with PMDD.

2.3 Emotion

Petersen. N. et.al (2022) this study determined that the primary signs of premenstrual dysphoric disorder are issues with mood regulation (PMDD). Therefore, we looked at the neurological underpinnings of emotional control issues in women with PMDD. Methods- Eligible individuals were divided into two groups based on their self-evaluations during a two-month period on the Daily Record of Severity of Problems: PMDD and control (18 per group). Results show that women with PMDD have trouble controlling their emotions throughout the luteal phase of the menstrual cycle. This issue, as well as other emotional symptoms of PMDD, may be connected more broadly to hypoactivation in the right dlPFC.

Mikaeili. N and Senobar. L (2021) this study compares premenstrual dysphoric disorder in female university students with and without premenstrual memories, negative automatic thoughts, and emotional balance (PMDD). The study's methodology is comparative-causal and purposeful. At Ardabil Farhangian University, 360 female students enrolled in the 2019–2020 academic year make up the statistical population. The research sample of 60 female students was chosen at random from this statistical group. Thirty undergraduate individuals with PMDD symptoms and thirty without were selected from the student body using simple random sampling. Thus, it can be said that there are differences between those with PMDD and those without it in terms of unsettling memories, automatic thoughts, and emotional balance. These findings can be applied to treat and lessen the intensity of these individuals' problems.

Nasiri. F et al. (2020) current study aimed to examine trait meta-mood characteristics and emotion control mechanisms between females with PMS and non-PMS groups. A total of 252 female college students—126 with PMS and 126 without—were split into two groups according to the interview and screening instrument results. Participants filled out the Trait Meta-Mood Scale and the Emotion Regulation Questionnaire (ERQ). Women with PMS have difficulty controlling their emotions and don't make appropriate use of trait meta-mood methods. The results of our study may aid in the development and delivery of effective therapies by allowing researchers and clinicians to comprehend better some of the psychological challenges faced by women with PMS.

Yen. Yu. J et al. (2018) In this study, premenstrual dysphoric disorder sufferers' estrogen levels were compared to their ability to control their emotions and their levels of despair, anxiety, and stress (PMDD). Additionally, we examined how the aforementioned connection was influenced by the estrogen receptor (ESR) -Xbal polymorphism. As controls, 96 healthy people in total were enlisted. In the final analysis, the information on the participants' estrogen levels, as well as their levels of stress, anxiety, depression, and the ESR -Xbal polymorphism, was taken into account. Results show that the PMDD group exhibited low emotional adapting and tolerating throughout the premenstrual phase as well as significant levels of despair, anxiety, and tension. Stress, anxiety, and depression all have a negative relationship with emotional adjustment.

Qing Liu et al. (2017); Premenstrual syndrome patients' stress reactivity and emotion scores indicate that they felt more negative and less positive affect. In stressful settings, women with PMS also had reduced respiratory rate and increased alpha activity compared to the controls. Women with PMS and controls differed in their emotional states and stress reactivity, according to a covariant analysis that used the periods cycle (luteal and follicular phases) as the covariate.

Reena (2015) discovered that the physiological stress brought on by adolescent physical and psychological changes requires coping mechanisms. This finding helped to explain the link between emotional and behavioral challenges in middle adolescence and pubertal timing. Concerns regarding emotional and behavioral challenges, the interaction between socio-environmental factors, and a school-based survey of health and health-related behaviors were all included in the study. The study's conclusions showed that adolescent girls required counseling to deal with the physiological and

psychological changes associated with puberty and that they experienced difficulties with menstruation when they were unprepared for the physical and mental changes that come with it.

Derntl et al. (2008) investigated the capacity of females to identify emotions throughout the luteal and FPG. The research employed a set of images that each indicated a distinct mood. The participants were then given two options to select from in order to identify the emotion that had been expressed to them correctly. They tracked amygdala activation during the experiment using echo-planar imaging and concluded that amygdala activation was observed in both the luteal phase and FPG groups, with the FPG exhibiting a higher level of amygdala stimulation. This study results also showed that women in the FPG phase were better at recognizing emotions than those in the luteal phase.

Derntl et al.'s (2008) study concluded that the follicular phase was the time when accurate emotion recognition was the most trustworthy. Additionally, the researchers discovered a correlation between better emotion recognition and lower progesterone levels. Additionally, women in the luteal phase were more prone to mistake negative feelings for anger. Estradiol and progesterone levels were significantly correlated with the ability to recognize rage, with luteal-phase females reading emotions with greater accuracy.

Epperson et al. (2012); A variety of additional severe emotional symptoms that recur cyclically during the luteal phase of the menstrual cycle are also indicative of PMDD, in addition to depression. These emotional symptoms, including irritability, mood swings, anxiety, and affective lability, are considered a core feature of the disorder.

Deuster, 1999; Cheng et al., (2013). The emotional experiences of women with PMDD have been extensively explored in the literature. Qualitative studies have provided detailed descriptions of the emotional rollercoaster that women with PMDD endure, with accounts of suddenly shifting from feelings of joy and contentment to intense anger, sadness, and panic. (Taghizadeh et al., 2013; Baker et al., 2007). Quantitative studies have corroborated these findings, demonstrating that thefemales among PMDD report significantly higher levels of negative emotions, emotional reactivity, and emotional dysregulation during the luteal phase compared to the follicular phase and to women without PMDD.

Kundakovic & Rocks, (2022); Halbreich, (2003); The underlying mechanisms driving the emotional disturbances in PMDD are not fully understood, but are thought to involve complex interactions between hormonal fluctuations, neurotransmitter systems, and emotion regulation processes. Neuroimaging studies have found evidence of altered emotional processing and limbic system reactivity in women with PMDD, particularly in response to negative emotional stimuli. (Dhingra et al., 2007), Genetic factors, such as polymorphisms in serotonin receptor genes, have also been implicated in the emotional dysregulation seen in PMDD.

Borenstein et al., 2003; Heinemann et al., (2012); the intrinsic emotional symptoms experienced by women with PMDD are further compounded by the significant functional impairment and interpersonal difficulties associated with the disorder. Extreme mood swings, irritability, and anxiety can disrupt relationships, work productivity, and overall quality of life. This can then feed into a cycle of negative emotions, further exacerbating the premenstrual symptoms.

Prasad et al. (2021): The emotional experiences of women with PMDD are not only distressing but can also have serious consequences. Studies have found links between PMDD and an increased the risk of suicidal thoughts and actions, underscoring the severity of the emotional dysregulation in this population.

In summary, the emotional experiences of women with PMDD are a central and debilitating aspect of the disorder. Complex neurobiological and psychosocial factors drive the intense negative affect, mood lability, and emotional dysregulation during the luteal phase. Addressing the emotional symptoms is crucial for improving the overall wellbeing and functioning of women with PMDD.

2.4 Quality of Life

Thakrar. P et.al. (2021): Finding out how common PMDD is and how it affects disability and quality of life are the main goals of this research. The survey comprised 661 female students studying medicine and paramedicine. The PSST reported that 5.04 percent of students were positive, but the DRSP reported that 4.43 percent of students had PMDD. All domains of functioning were found to be compromised; the most prevalent domain being work/school productivity or efficiency, trailed by

social activities. Compared to normal women, those with PMDD experienced a worse quality of life, especially in the area of social relationships.

Riya S. Shah and Donald S. Christian (2020); Anger and irritability were the most common symptoms among responders followed by physical symptoms. These findings are related to undergraduate medical students at a tertiary care institute in Ahmedabad, Gujarat. The most common functional constraint was productivity or college/work efficiency (n = 79, 48.2%).The use of alcohol and cigarettes has a substantial link to PMDD. The kind of diet has no statistically significant relationship with PMS or PMDD.

Hussein Shehadeh J, (2018); research on the prevalence and impact of PMS/PMDD is growing around the world, including the effects on female students' conduct, cognitive abilities, mental health status, and academic performance, Czajkowska M et.al, 2015 study on Menstrual cycle and the prevalence of premenstrual syndrome/premenstrual dysphoric disorder in adolescent athletes as well as the impact of symptoms on quality of life.

Yamada. K and Kamagata. E et al. (2017) study says that the term premenstrual dysphoric disorder (PMDD) describes depression that develops during the premenstrual phase and goes away quickly following the start of menstruation. TheQOL is lower in patients with PMDD. This pilot study from chart records aimed to understand the patterns of symptom onset and QOL deterioration in patients with PMDD and to estimate the number of years of quality-adjusted life lost. Findings: The EQ-5D mean score of the 66 PMDD patients was 0.795 0.120 (range: 0.362–0.949), which indicated a predicted mean loss of QALYs of 0.14 years.

Delara et al, (2012); Bakhshani (2009). In contrast to the large number of studies on premenstrual symptoms and their impact on Western populations, we are aware of just a few small studies on the impact of premenstrual symptoms on Iranian women's quality of life. Two studies looked at the health-related quality of life (HRQOL) of Iranian women who had PMS or PMDD and concluded that the quality of life in the affected group was significantly poorer. The SF-36 was used to assess quality of life in both investigations, which included a sample of teenagers.

Tulika Joshi (2015) conducted and researched a study on young Indore MP females. The research focuses on primary dysmenorrhea and how it affects people's quality of life. The sample size was 310

people, all of whom were the same age (i.e., seventeen to twenty-five years old), eating habits, and socioeconomic status. The percentages of females with dysmenorrhea and those without dysmenorrhea were 84.2 percent and 15.8 percent, respectively, according to the findings. According to the results, the percentage of females with emotional instability, anxiety, PMS, leg cramps, dizziness, irritability, exhaustion, and breast discomfort was 29.8, 10.3, 91, 40.1, 17.7, 42.9, 23.4, and 16.3.The significant physical and emotional symptoms associated with PMDD can have a profound impact on a woman's overall quality of life and functioning.

Borenstein et al., 2003; Heinemann et al., (2012). One of the most well-established impacts of PMDD is on work productivity and absenteeism. Women with PMDD report higher rates of missed workdays, reduced work performance, and increased healthcare utilization during the premenstrual phase This can translate to significant economic costs for both the individual and society. A study estimating the economic burden of PMDD in the United States found that the disorder resulted in over $4 billion in lost workplace productivity annually (Rapkin & Winer, 2009).

Robinson & Swindle (2000) and Deuster (1999); PMDD can also significantly disrupt a woman's social and interpersonal functioning. The mood swings, irritability, and anxiety associated with PMDD can strain romantic relationships, family dynamics, and social interactions. Women with PMDD often report feeling isolated, misunderstood, and resentful of the burden their symptoms place on their loved ones.

Lustyk et al. (2004); Baker et al. (2007); Beyond work and relationships, PMDD can also impair a woman's ability to engage in and enjoy leisure activities. The physical symptoms, such as pain and fatigue, as well as the emotional symptoms, like depression and anxiety, can make it difficult for women with PMDD to participate in hobbies, exercise, and other recreational pursuits. This can further contribute to the overall diminishment the quality of life.

Borenstein et al. (2003) and Rapkin & Winer (2009),PMDD seems to have an influence on quality of life that is on par with, if not more so than, other chronic medical and mental illnesses. According to studies, women with PMDD report impairments in job, social, and family functioning on par with or higher than those reported by people with major depressive disorder, diabetes, and asthma.

PMDD's profound and multifaceted impact on quality of life underscores the importance of recognizing and effectively treating this disorder. Interventions that can alleviate the emotional and physiological symptoms of PMDD have the potential to significantly improve a woman's overall well-being and functioning across various life domains.

In summary, the research literature clearly demonstrates that PMDD can have a devastating effect on a woman's quality of life, affecting her work productivity, social relationships, and ability to engage in daily activities. Addressing the debilitating effects of PMDD should be a key priority in the comprehensive management of this disorder.

2.5 Yoga

Ravichandran & Janakiraman (2022); Orio et al. (2013); Kroll-Desrosiers et al. (2017); Beyond symptom management, yoga may also positively impact the overall quality of life and functioning of females with PMDD. Studies have found that regular yoga practice is associated with improvements in various aspects of life, including work productivity, relationships, and overall well-being.

Pearce et al. (2020): A systematic review and meta-analysis found that yoga was associated with significant reductions in both physiological and psychological premenstrual symptoms compared to control environment. The beneficial effects of yoga were observed across a range of outcome measures, including mood, anxiety, pain, and overall symptom severity.

S.D. Kim (2017) to see if yoga nidra may help women with menstruation difficulties with their psychological concerns. As the results demonstrate, both potential trials were identified and incorporated into the evaluation. A substantial difference was seen between the two groups as evidenced by the significantly reduced levels of anxiety and depression in the experimental group compared to the control group.

Women Health Concern and Maharaj S, Trevino K. (2017); Women are advised to exercise for at least 30 minutes a day as part of their PMS treatment, according to 2015 research titled Comprehensive Review of Treatment Options for Premenstrual Syndrome and Premenstrual Dysphoric Disorder.

Aerobic workouts, such as walking, running, cycling, and swimming, lower tiredness, and bad mood while simultaneously improving physical health. Adequate (at least 8 hours per day) and appropriate sleep is advised to reduce fatigue and depressive mood. It is advised that smokers give up since nicotine is thought to make premenstrual symptoms worse.

Nurs Womens Health, and Bazarganipour F, Miri F, et al. (2017); the impact of pressing the LIV3 and LI4 on the 156 premenstrual syndrome symptoms; Handling Stress: Since stress aggravates PMS, handling stress simplifies the treatment of PMS. In this situation, recommended stress-reduction techniques include breathing exercises, relaxation techniques like yoga and meditation, bathing, getting enough sleep, engaging in a hobby, massage, biofeedback, auto-hypnosis, and acupressure.

Vardar Yagli et al. (2015) investigated the effects of yoga and aerobic training on breast cancer survivors' quality of life (QoL), peripheral muscle strength, tiredness, and functional ability. The total number of individuals was 52, and they were separated into two groups: aerobic and yoga, each with 28 and 24 subjects. The aerobic group had six weeks of training, followed by five days a week of 30 minutes each day, whereas the yoga group did an additional one-hour yoga session in addition to aerobic exercise. Both groups showed a substantial increase in peripheral muscular strength, 6 MWT, and QOL (P0.05), while the combined group showed a significant improvement in fatigue perception when compared to the purely aerobic group (p0.05). The findings also showed that combining the two groups enhanced QoL as well as functional ability in breast cancer patients (Vardar Yagli, 2015).

Kamakhya Kumar (2012) states, "Yoga is the integrity of the body, mind, and spirit via a system of asana, pranayama, and meditation. This fusion of body, mind, and spirit aids in the attainment of both physical and mental balance as well as inner calm in an individual's life. Yoga is a powerful tool for enhancing our health and managing sickness."

George (2011): Yoga is best known for its ability to help people relax. Yoga influences our neural and physiological systems, which govern our blood pressure, respiration, heart rate, temperature, and other bodily functions. Yoga relieves muscle cramps, reduces melancholy and anxiety, promotes restful sleep, and is especially beneficial in the treatment of PMS.

Given the significant physical and emotional symptoms associated with PMDD, there has been growing interest in exploring complementary and integrative approaches, such as yoga, as potential treatment

options. Yoga, with its emphasis on physical postures, breath control, and mindfulness, has shown promise in alleviating premenstrual symptoms and positively enhancing the quality of life in females.

Steinberg & Sykes (1985); Maged et al. (2018); The mechanisms by which yoga may improve PMDD symptoms are multifaceted. The physical postures and breath work in yoga can help alleviate physical symptoms like pain, bloating, and fatigue, potentially through the release of endorphins and the modulation of the autonomic nervous system The mindfulness and stress management components of yoga practice may also be particularly helpful; in regulating the intense emotions and mood disturbances characteristic of PMDD (Taghizadeh et al., 2013; Dunn et al., 2001).

A critical analysis of earlier research on yoga's impact on depression, emotions, and quality of life (QoL) in women with PMDD identifies a number of advantages and disadvantages. This is a well-organised critique that highlights the methodological quality, results, limits, and potential future directions:

A severe type of premenstrual syndrome, PMDD is marked by intense physical and emotional symptoms. Yoga is a comprehensive mind-body exercise that has been investigated as a non-pharmacological intervention to improve general quality of life and reduce PMDD symptoms, especially those related to mood disorders including anxiety and despair.

Depression and emotion and quality of life -Yoga practices like pranayama (breathing exercises), mindfulness meditation, and certain asanas (poses) have been shown to reduce stress and emotional reactivity. Several studies (e.g., Rani et al., 2018; Uebelacker et al., 2010) suggest that yoga helps reduce depressive symptoms and improve mood stability through modulation of the hypothalamic-pituitary-adrenal (HPA) axis and enhancement of parasympathetic nervous activity. Following yoga therapies, a number of randomised controlled studies (RCTs) demonstrate increases in both general and menstrual-related quality of life (QoL) measures (e.g., Sharma et al., 2021). Benefits include improved emotional health, better sleep, and less severe premenstrual symptoms. Strengths of the review- Internal validity was improved by certain research' use of rigorous RCT designs. Including psychological, physical, and quality-of-life metrics enables a more thorough understanding of yoga's impact. Biopsychosocial approach: Yoga addresses the physical, emotional, and hormonal aspects of PMDD, which is in line with its complex aetiology.

Identify the gap of the studies while evaluting the review liturature- Reduced generalisability is a result

of the small sample sizes used in many research, which often include less than 50 participants. Short intervention periods: Most interventions span 4–8 weeks, which might not be enough time to have long-lasting effects. It is challenging to distinguish the precise benefits of yoga in many studies due to the absence of active controls, such as stretching or exercise groups. Yoga procedures are heterogeneous, with varying styles and intensities employed and a lack of uniformity among studies. Self-report: Many outcome measures rely significantly on self-reported symptoms, which might lead to bias. Limited studies particularly addressing PMDD: The majority of studies concentrate on period distress, or PMS, in general rather than PMDD, which has more severe diagnostic criteria.

In order to objectively evaluate changes, few research use physiological or hormonal indicators. Longitudinal data: There aren't enough follow-up studies to analyse yoga's long-term effects.The benefits of yoga in comparison to other therapies (such as CBT and SSRIs) are not well understood in this particular demographic. The homogeneity of many samples (such as young college women) restricts their wider applicability due to differences in age and lifestyle.

Overall, available data points to yoga's potential effectiveness as a supplemental treatment for women with PMDD in terms of reducing depression, enhancing emotional control, and enhancing quality of life. However, due to methodological constraints, larger, more reliable RCTs with standardised therapies and longer follow-up times are required. Additionally, future studies should concentrate on groups with clinically diagnosed PMDD and take into account objective biomarkers and comparable therapies,

In summary, the available evidence suggests that yoga may be a safe, cost-effective, and potentially efficacious complementary approach for managing the multifaceted symptoms of PMDD. Incorporating yoga into a comprehensive treatment plan, alongside other evidence-based interventions, may help improve the overall well-being and quality of life.

CHAPTER-3

METHODOLOGY

3.1 Research Gap

The main goal of primary research is to better understand the occurrence and symptoms of premenstrual syndrome and premenstrual dysphoric disorder. Most of the studies address the physiological issues of PMS and PMDD, like deficiency of Vitamin B1, B6, and B12 and low levels of glucose and magnesium, chronic stress, abnormality in the abdominal, emotional deregulation, and other studies on women with PCOS/PCOD, menopause, or middle adulthood. Fewer research has been conducted on the treatment of premenstrual syndrome and premenstrual dysphoric disorder in women by mental health providers. There are more and more occurrences of PMS and PMDD every day, which suggests that this is a significant issue in society where women suffer in silence. Let's now discuss the psychological symptoms that women with PMS and PMDD experience and how yoga can help us manage them. Yoga can assist women manage their psychological, behavioural, and cognitive symptoms of PMS/PMDD. It also helps them control their mood swings, stress, anxiety, depression, and other psychological symptoms.

3.2 Scope of the Study

This study aims to see the effect of yoga on depression, emotion, and quality of life on premenstrual dysphoric disorder in females of Delhi (NCR). This will aid in understanding the management of psychological symptoms that help women with premenstrual dysphoric disorder. this study also explores the intervention strategy of yoga, which is more helpful for females with PMDD. This study contributes to mental health professionals, psychologists, and psychiatrists who are interested in further study on this topic. This research will also contribute to and expand the current literature base to account for the complex ways in which it affects women with PMDD.

Through yoga and a healthy quality of life, we can manage psychological symptoms as well as physiological symptoms of PMDD. Females with PMDD suffer from psychological symptoms more than two weeks before menstruation starts, which affects their mental health and affects their day-to-day activities, and their environment (social, family). Our study helps females who don’t have financial support. They can take interventions which are followed by our study, meditation, regular exercise, yoga postures, aerobics, a healthy diet that includes Vitamin B2, B6, B12, and a diet high

in glucose, magnesium which helps to reduce symptoms of premenstrual dysphoric disorder. This study helps mental health professionals and women with PMDD to manage psychological symptoms in a better way.

3.3 Objectives

1- To examine the impact of yoga on depression with premenstrual dysphoric disorder.
2- To examine the impact of yoga on emotions with premenstrual dysphoric disorder.
3- To examine the impact of yoga on quality of life with premenstrual dysphoric disorder.
4- To examine the level of depression in premenstrual dysphoric disorder.
5- To examine the effect of emotions on premenstrual dysphoric disorder.
6- To examine the effect of quality of life on premenstrual dysphoric disorder.
7- To assess the relationship between depression, emotions, and quality of life with premenstrual dysphoric disorder and yoga.

3.4 Hypotheses

1. There will be no significant difference between depression, emotions, and quality of life with premenstrual dysphoric disorder on pre-test.
2. There will be no significant difference between depression, emotions, and quality of life with premenstrual dysphoric disorder on post- intervention.
3. There will be no correlation between depression, emotions, and quality of life with premenstrual dysphoric disorder females.

3.5 Methodology: -

The main aim of the study is to assess the effect of yoga on depression, emotion, and quality of life of premenstrual dysphoric disorder females of Delhi (NCR). Following the study's requirements, particular procedures and measures were implemented along with predetermined goals. A sufficient sample of females with premenstrual dysphoric disorder was selected, and appropriate instruments for measuring the variables were chosen and used to get the necessary data. Information on the

study's design, sampling technique, psychological testing procedures, and statistical analysis is covered in this chapter.

3.5.1 Design of the study -:

The study will be designed as a pretest and post-test. It is a quasi-experimental design with two groups: a pre-post-intervention group and a control group. where participants are divided into experimental and control groups at random. Prior to and following the experimental group's exposure to the treatment and intervention, measurements are taken of both groups. The selection of participants is based on criteria that a gynecologist diagnosed the females with PMDD, which was considered in the study between the age range of 16 to 25 years of females of Delhi (NCR).

3.5.2 Sample:

A non-probability sampling method is used to test the stated hypotheses, and a purposive sampling technique is selected. According to research, the purposive sampling technique is best suited to focus only on a well-defined population, which is females with PMDD diagnosed by gynecologists between the age range of 16 to 25 years from Delhi (NCR). Purposive sampling is also known as judgmental sampling and convenience sampling. This means that the subject selection is based on the researcher's judgments or criteria. Also, the purposive sampling technique is used in mixed- method research. The current study employs 200 females with premenstrual dysphoric disorder. After that, through simple random sampling, data are divided through the odd-even method in the Experimental and Control groups. Only the experimental group—not the control group—receives the yoga intervention. Data from post-tests was gathered after the intervention.

3.5.3 Inclusive criteria

- This research will focus on gathering data on those females with a diagnosis of PMDD from a gynecologist.
- The sample will include 200 females from Delhi (NCR) (under Dr. Savita Parihar, Gynae &

Ortho Center, OJAS & SSS medical health care)

- Age range between 16-25 years.
- Females who have attended a minimum of 600 minutes in an overall intervention period of one month (Monday-Friday, 30 minutes per day).

3.5.4 Exclusive criteria

The following criteria will be kept in mind and will be excluded from the sample:

- Females with premenstrual dysphoric disorder, which gynecologists do not diagnose, are not taken in the study.
- Females below the age of 16 and above the age of 25 years are not considered.
- Females that are not from Delhi (NCR).
- Females who were diagnosed with the thyroid are not considered in this study.
- Females who failed to attend the minimum-minute requirement for the overall intervention period.
- Females who have comorbid psychiatric disorders.

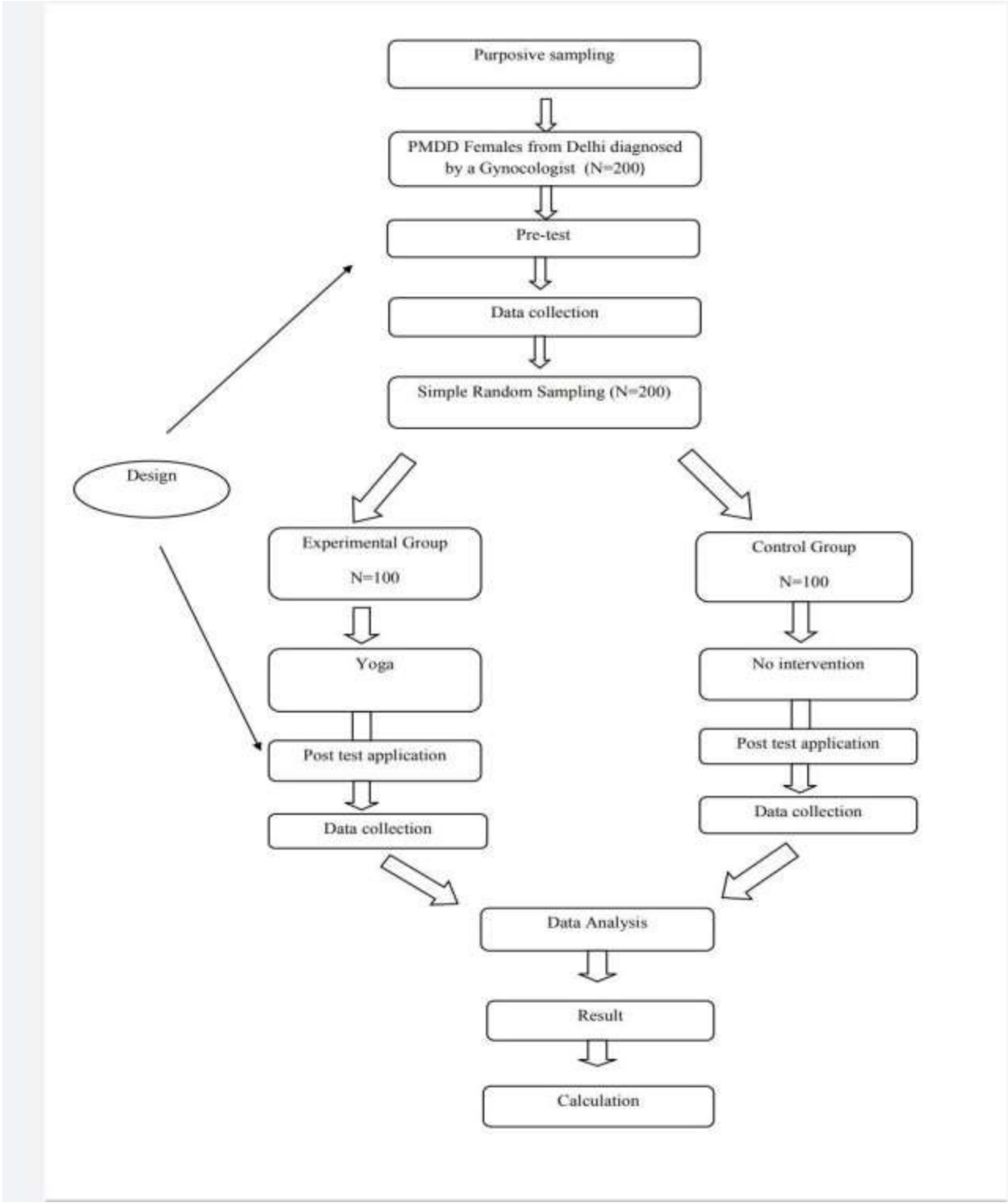


Figure 3.1- Flowchart of Methodology

3.6 Behavior Tools: -

In order to gather data regarding the depression, emotions, and quality of life among females with premenstrual dysphoric disorder, a variety of psychological assessments were employed to help the study achieve its aims. Based on their psychometric qualities and suitability for the Indian setting, these assessments were chosen. This study used a variety of tests, including:

- WHOQOL-BRF -World Health Organization Quality of Life by Geneva,1996
- BDI-II - Beck's Depression Inventory-II by Aaron T. Beck, 1996
- PANAS - Positive and negative Affect Schedule by David Watson, Lee Anna Clark, and Auke Tellegen,1988

3.6.1 WHOQOL - World Health Organization's Quality of Life Program focuses on mental health 1996, Geneva. On the WHOQOL-BREF, there are 26 questions, each of which is scored from 1 to 5 on a response scale that is specified as a five-point ordinal scale. The scores are then linearly translated to a 0-100 scale. There are four domains in all. The domain scores represent the sum total score for each question within the domain, not averages. The WHOQOL-BREF scores are converted to the lengthier version of WHOQOL-100 by multiplying the mean by four. WHOQOL-BREF domain scores are highly correlated (on a scale of 89 or higher) with WHOQOL-100 domain scores The WHOQOL-BREF domain scores showed excellent discriminant validity, content validity, internal consistency, and test-retest reliability.

3.6.2 BDI-II - Beck's Depression Instrument-II is a 21-question multiple-choice self-report inventory developed by Aaron T. Beck in 1996 to assess the severity of depression in adolescents and adults. The BDI-II is calculated by adding the ratings for each of the 21 items. Each item is graded on a scale of 0 to 3 on a 4-point scale. With a Pearson r of 0.71, the BDI-II and the Hamilton Depression Rating Scale are favorably associated. The test had an excellent one-week test-retest reliability (Pearson r =0.93), indicating that it was not unduly susceptible to daily mood fluctuations. Internal consistency (=.91) is likewise high in this test.

3.6.3 PANAS - In 1988, psychologists David Watson, Lee Anna Clark, and Auke Tellegen created the Positive and Negative Affect Schedule. PANAS is a 20-item self-report questionnaire that measures both positive and negative affects. Each item is assessed on a 5-point scale from 1 (not at all) to 5 (very) (very much). The scoring is done on a Likert scale. This scale is made up of a variety of terms that describe various emotions and feelings. Internal consistency for the PANAS was found to be between.86 and.90 for positive affect and.84 and.87 for negative affect. The PANAS (1 week) had a test-retest reliability of.79 for positive affect and.81 for negative affect.

3.7 Procedure of data collection: -

In Delhi (NCR), hospitals were visited personally by researchers. Prior permission was taken from the hospital and gynecologist. Then, the researcher explains the purpose and procedure of data collection to the gynecologist. Once the hospital and gynecologist gave permission to the researcher for data collection, the researcher visited the hospital according to the timing of the gynecologist. After that, when the gynecologist diagnosed the patient with PMDD, she referred to the researcher. Then, the researcher explains the purpose and procedure of the study and makes them understand it in their own language.

The researcher explains to the experimental group of females that the yoga process intervention is given by a certified female yoga teacher. For one month, a yoga teacher will conduct 30-minute evening sessions through Google Meet five days a week (Monday through Friday). If any of you face any problem or challenge while doing yoga postures, you can feel free to ask the yoga teacher. She will help you in all possible ways.

After all the information was given to the Participants and the individual consent of each PMDD client, the researcher administered the psychological tests BDI-II, PANAS, and WHO-QOL.

Before responding, any unclear statement or item was immediately clarified to ensure that everyone understood it. Throughout the test administration, a few ethical concerns were addressed.

- Participants received explanations about the research's goal, significance, and results, as well as information about how they might participate.
- They received assurances that their answers would be kept secret and confidential.

- Only subjects who volunteered to participate had their information gathered.

According to the methodology, the researcher collected the data for the pre-test N= 200 females with PMDD and then divided them into two groups using the odd-even method. In the experimental group and control group. After that, yoga intervention is given to the experimental group only, not to the control group of PMDD females. Then, the researcher personally visits the female yoga teacher and explains the process and purpose of the study, and once the yoga teacher agrees and gives permission. After confirming that the experimental group had received the yoga intervention as intended, the researcher re-administered all three psychological assessments to gather post-test data from the two groups of female PMDD patients.

Scoring is done on BDI-II, PANAS, and WHOQOL-BREIF according to the process written in the respected manual.

3.8 Data Analysis: -

To analyze the data, the R-Program was used. Using descriptive statistics, such as mean, standard deviation, and frequency distribution, the demographic information of the participants (age, marital status, urban/rural location, yes/no qualification, working/nonworking occupation, and joint/nuclear family type) was described. The pre-and post-intervention scores for depression, positive and negative emotions, and Quality of life were compared using paired t-tests within the intervention and controlled groups separately. Independent t-tests were used to compare the between-group differences in the pre- and post-intervention scores. A significance level of $p<0.05$ was established.

3.9 Intervention: -

3.9.1 Yoga:

A set of physical, mental, and spiritual disciplines known as yoga was developed in ancient India. Its goals include mind relaxation and regulation (yoke) while also accepting the existence of ordinary suffering (Dukha) and a detached witness consciousness (Chitta).

A bodily posture known as an asana consists of balancing, twisting, inverting, reclining, and standing positions. Although it was first used to refer to a general sitting meditation pose, it was later expanded to include any position as an exercise in Hatha and contemporary yoga, including standing, reclining, inverted, twisting, and balancing positions [1]. The Yoga Sutras of Patanjali describes "asana" as "a

stable and pleasant pose." [2] Patanjali describes the ability to sit for extended periods of time as one of his eight limbs. Asanas are also referred to as yoga postures or poses in the English language.

3.9.2 Pranayama - "Pranayama" signifies "breath control." The term "prana" in Sanskrit means "breath" or "vital energy" in the body. "Ayama" means control, but "prana" refers to the subtle pranic energy that is life or life force. The literal translation of pranayama is "breath control." Yoga uses a breathing technique called yogic breath, also known as diaphragmatic or belly breath. This is the fundamental exercise that any novice in yoga breathing should start with.

Steps for Pranayama

• In most pranayama techniques, the breath is slow and steady, in and out of the nose and down into the belly. Sit with a straight spine and a calm body at all times. When pranayama is done, let go of all ideas by concentrating on the breathing involved.

• The first aspect of pranayama to learn is exhalation, which means breathing steadily and smoothly. Once the exhalation is mastered, the inhale is smoothed out and made lengthy and leisurely. You shouldn't try to hold your breath until you've mastered a smooth, delicate inhalation and exhale. During your practice, shut or soften your eyes. You can look upwards to the third eye, which is the place between your brows if it is comfortable for you.

3.9.3 Vajrasana: Diamond is another name for Vajra. As a result, some individuals refer to this position as Diamond Pose. Firmness or adamancy are two more definitions of the word. As a result, it's also known as Adamant Pose. Vajrasana is a basic yoga stance for sitting. The term vajra, which signifies thunderbolt or diamond in Sanskrit, was used to give it its name.

Steps for Vajrasana

- Kneel on the ground.
- Make sure your big toes are touching, and your heels are spaced apart. Bring your buttocks down to the distance between your heels, keeping your big toes in contact.
- In Chin Mudra or Jnana Mudra, place the hand on the knees, or just place the palms down on the knees if you want.
- Sit up straight. Close your eyes or concentrate on whatever is in front of you. Take a deep

breath and hold it.

3.9.4 Janu Sirsasana—Janu sirsasana is an asymmetric forward bending position that requires simultaneous stretching and twisting. It is a novice-level position in the fundamental Ashtanga yoga syllabus. It's also called Head-on-Knee, Head-to-Knee Forward Bend, or Seated Head-to-Knee Pose.

Steps for Janu Sirsasana

- Sit in Dand Asana for the first few minutes.
- Bring the sole of your right foot toward you while bending your right knee.
- left leg extended forward and the heel of the right foot touching the perineum.
- Take a deep breath and lift your arms high.
- Bend forward with your hands gripping your left toe as you exhale.
- Exhale more deeply and bend your trunk forward, reaching your head to your left knee.
- Hold the position for 30-60 seconds while breathing deeply.
- Take a deep breath and elevate your head, body, and arms.
- Exhale and stretch your right leg while drawing your hands to your sides.
- Take a few moments to relax before repeating the process with the left leg bent.

3.9.5 Malasana - Malasana also called Garland Pose. Garland Pose is a squatting asana suitable for beginners. It's a low-impact hip opener that boosts metabolism. Malasana is a Vinyasa Yoga pose particularly beneficial for people with tight hips and a congested lower body.

Steps for Malasana

- Place a yoga mat on the floor and stand Tadasana over it. Spread your feet somewhat wider than the breadth of your hips.
- Exhale and drop your hips to the floor by bending your knees and lowering your hips. Lower the hips till they are only a few inches above the floor.
- Take a deep breath and spread your thighs and knees wider than your body. Exhale and lean your body forward between your thighs and knees a little.

- As in Namaste, put your palms together and close to your chest (Anjali Mudra). Press your triceps on the inside of your thigh. To improve focus, close your eyes.
- Hold this position for 30 to 60 seconds while taking deep breaths to improve prana flow.
- Take a long, deep inhale, exhale, and let go of the hands when you're through. Now you may either stand or sit back and relax by pushing down with your feet.

3.9.6 Shavasana - The Sanskrit word "Shavasana" is made up of two basic words. "Shava" is the Sanskrit word for "corpse," and "asana" is the Sanskrit word for "position." The goal of the position is to relax the mind by being present in the moment. It's also used as a post-yogic session to help muscles rest after a strenuous workout. Mritasana (corpse posture) is another name for it.

Steps for Shavasana

- Begin by laying on your back. Hold your arms palms up and keep them 10 to 15 cm from your torso. Raise the finger a bit.
- Next, align your head, torso, and legs in a straight line with a small space between them.
- Next is to close your eyes. Slow your breathing. Ingrain the sensation that your entire body is relaxing and that all your organs are pressure-free.
- Instill a sense of calm and harmony in your head. Feel free of any unpleasant emotions such as rage, envy, pride, hate, and egoism. Believe that these sentiments will not take away your inner calm and delight. Continue to do this step until you are confident that you are free of unpleasant emotions and that you are at peace.
- Finally, pay attention to your breathing or say a mantra. Don't let your thoughts wander.

3.9.7 Process of Intervention:

Table 3.1 process of yoga intervention

Sr. No.	Yoga	Timings	Sets
1.	Pranayama	5 Minutes	5
2.	Vajrasana	5 Minutes	5
3.	Janu-Sirsasana	10 Minutes	10
4.	Malasana	10 Minutes	5
5.	Shavasana	5 Minutes	2

Figure: 3.2 Intervention Process

In order to evaluate changes in females with PMDD, a one-month yoga program comprised of physically and mentally interventional yoga postures. The study's yoga instructor was a skilled,

certified yoga teacher with years of expertise. We selected a female teacher who is experienced with the symptoms of the premenstrual dysphoric disorder in order to account for female participants who could experience self-consciousness throughout the exercise program.

For five days a week and a 30-minute evening session, the yoga teacher carefully guided each participant through yoga poses.

Our research employs five different forms of yoga, each with a step-by-step procedure. (1) 5 minutes of pranayama to help you calm your mind and body while also warming up your body for the following phase

(2) Vajrasana for 5 minutes (5 sets), which helps to change the flow of blood and nerve impulses in the pelvic area, strengthen pelvic muscles, and ease menstruation disorders.

(3) Janu Sirsasana (10 sets) promotes the reproductive and digestive systems, as well as relieving anxiety, exhaustion, headaches, menstrual cramps, and depression.

(4) Malasana (3 sets) for 10 minutes to strengthen the pelvic floor and abdominal core while also expanding the hips and increasing metabolism.

(5) 5 minutes of Shavasana to help you relax and submit your body to serenity.

3.10 Ethical Consideration

This study involving human participation was reviewed and ethically approval was gained from the institutional review board of the research ethics committee of the Lovely Professional University, Punjab (Ref no: LPU/IEC-LPU/2024/1/22).

CHAPTER-4

RESULTS AND DISCUSSION

4.1 Introduction

This chapter provides the specific results of a quasi-experimental pre-test post-test study that looked at how a one-month yoga intervention affected the quality of life, emotions, and depression of women with premenstrual dysphoric disorder (PMDD) who had been diagnosed by a gynaecologist. The data was analyzed using the R-Program Version- 4.3.3. Descriptive statistics, including mean, standard deviation, and frequency distribution, were used to describe participants' demographic data (age, marital status, area-urban/rural, qualification- yes/no, occupation- working /not working, family type- joint/nuclear). The pre-and post-intervention scores for the depression, positive and negative emotions, and Quality of life scales were compared using paired t-tests within the intervention and controlled groups separately. Independent t-tests were used to compare the between-group differences in the pre- and post-intervention scores. At the level of significance, $p<0.05$ was the threshold.

4.2 Demographic Profile

Table 4.1 highlights the demographic profile of the respondents in both groups across pertinent background variables. Independent samples t-tests confirmed that there were no differences between the experimental and control groups in terms of age, marital status, family type, occupation, qualification, or area characteristics. This establishes that both groups were highly similar concerning their socioeconomic and demographic attributes, enhancing the internal validity and allowing clearer inferences regarding the effects of yoga to be drawn.

Table 4.1: Demographic Details

Variables	Total (N=200)
Age (years)	
16-18	25%
19-21	37.5%
22-25	37.5%
Marital Status	
Married	60%
Unmarried	40%
Family Type	
Nuclear	65%
Joint	35%
Occupation	
Working	55%
Not working	45%
Education Qualification	
Yes	70%
No	30%
Area of residence	
Urban	75%
Rural	25%

Age Range: -Figure 4.1 Pie chart representation of Age

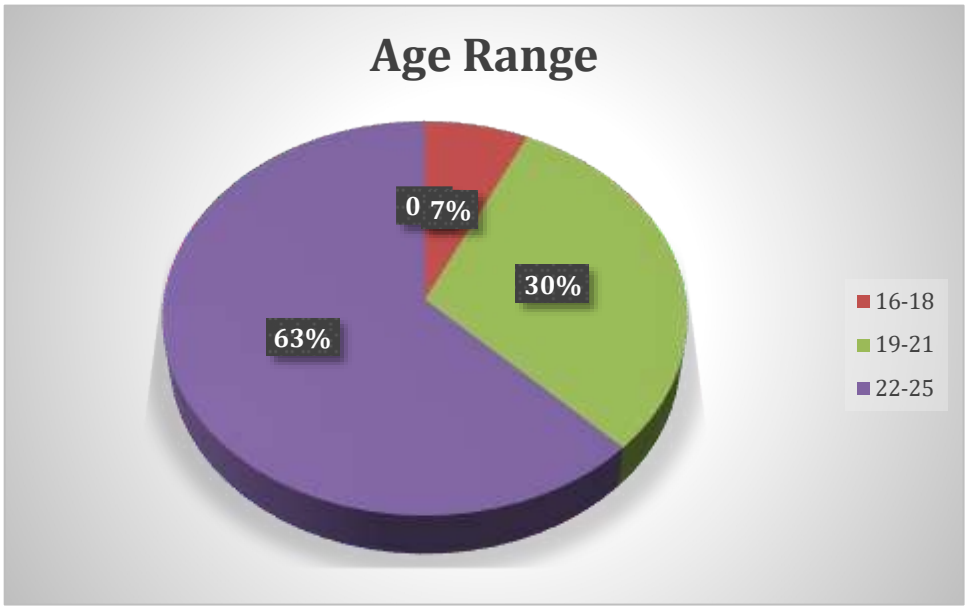


Figure 4.1 Pie chart representation of Age

The participants are divided into three age groups: 16-18, 19-21, and 22-25. The largest proportion (62.5%) falls into the age groups of 22-25 and 19-21 (30.5%), followed by 16-18 (7.0%).

The demographic characteristics of the study population are thoroughly outlined in this analysis, setting the stage for future research into possible correlations between these variables and the psychological health outcomes of females with PMDD diagnoses.

Marital Status: Figure 4.2 Pie chart representation of Marital Status

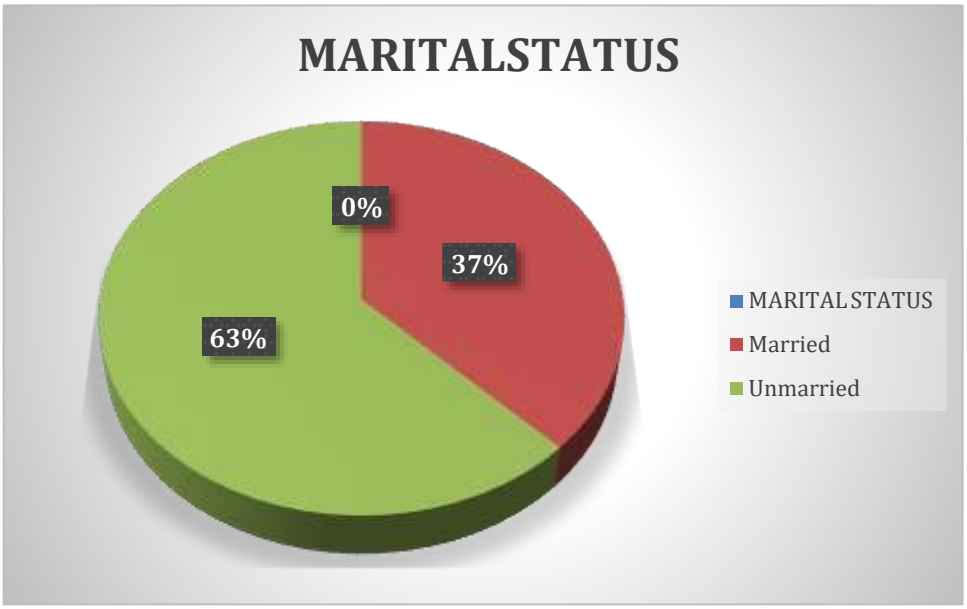


Figure 4.2 Pie chart representation of Marital Status

The interpretation of the marital status indicates that among the participants surveyed, the majority, constituting 62.5%, are unmarried. This suggests that unmarried participants are the most common marital status among the surveyed population. Conversely, married individuals represent 37.5% of the participants, indicating a smaller proportion compared to the married group. Overall, this distribution provides insight into the population's marital composition, highlighting the prevalence of unmarried individuals relative to married ones.

Area of residential: - Figure 4.3 Pie Chart representation of Area

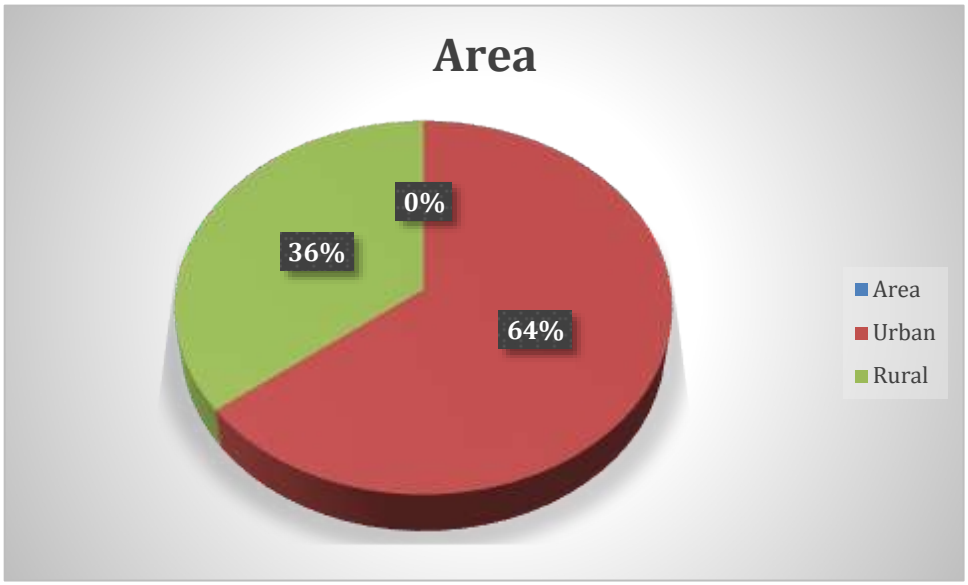


Figure 4.3 Pie Chart representation of Area

The interpretation of the area frequency reveals that the majority of participants, accounting for 64.5% of the sample, reside in Area urban). This indicates that the area (urban) has a higher representation within the surveyed population than the area (Rural). Conversely, 35.5% of participants reside in Area (Rural), representing a smaller proportion relative to Area (Urban). Overall, this distribution provides insight into the geographical distribution of the surveyed population, highlighting the prevalence of urban residents compared to rural residents.

Education Qualification: Figure 4.4 Pie Chart representation of Qualification

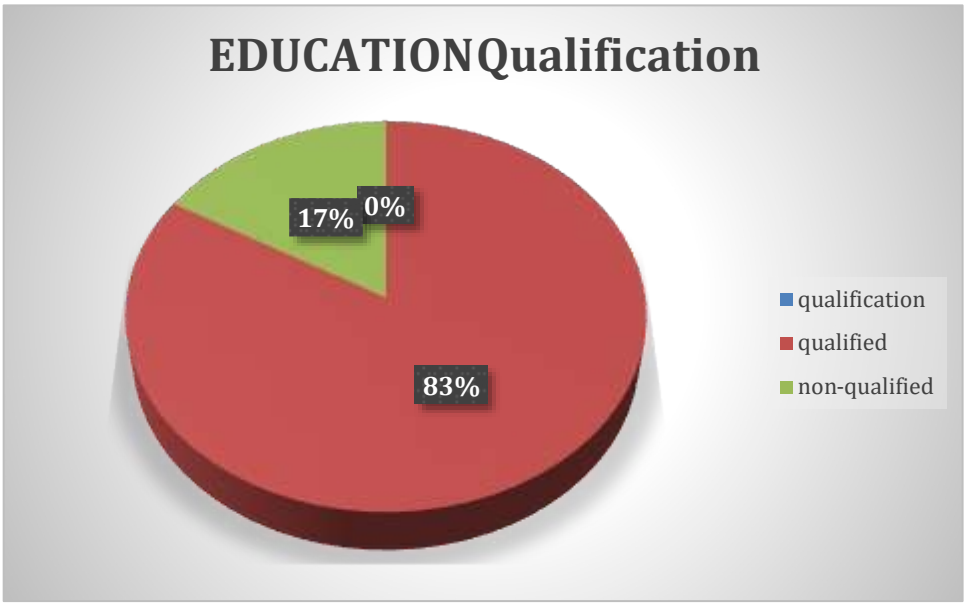


Figure 4.4 Pie Chart Representation of Qualification

The interpretation of the qualification indicates that the vast majority of participants, comprising 83.5% of the sample, are educated. This suggests that a significant portion of the surveyed population was qualified. On the other hand, a smaller proportion, specifically 16.5% of participants, are uneducated.

Occupation: Figure 4.5 Pie Chart representation of occupation

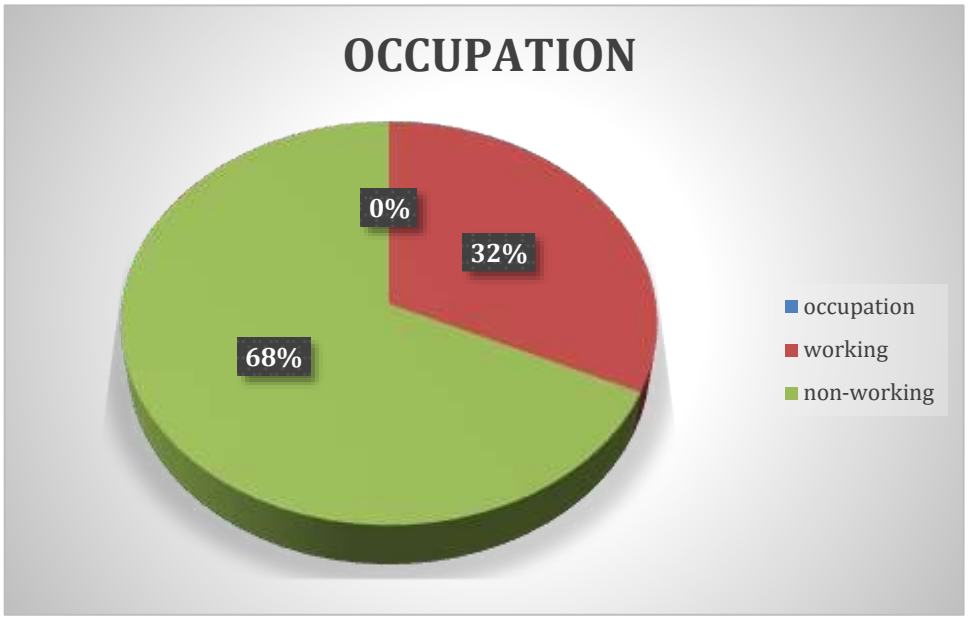


Figure 4.5 Pie Chart representation of occupation

The interpretation of the occupation indicates that the majority of participants, constituting 68.0% of the sample, are working. This suggests that a significant portion of the surveyed population is working in some occupation. On the other hand, the remaining participants, comprising 32.0% of the sample, are not working or unemployed, indicating individuals who are not currently employed. Overall, this distribution provides insight into the employment status of the surveyed population, highlighting the prevalence of employed individuals relative to those who are unemployed.

Family type: Figure 4.6 Pie Chart representation of family type

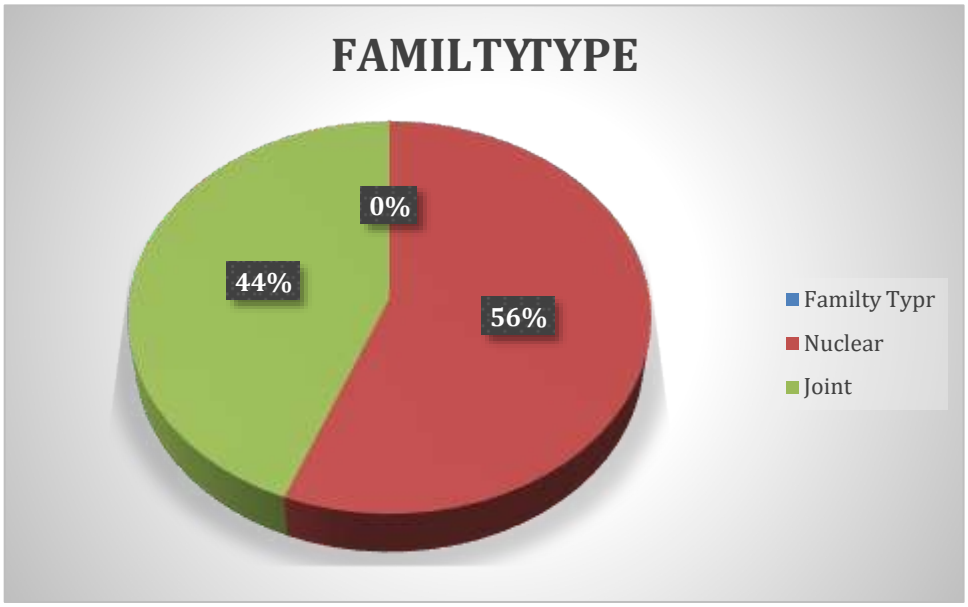


Figure 4.6 Pie Chart representation of family type

The family interpretation highlights the distribution of participants based on the nuclear and joint family types. It shows that among the participants surveyed, 56.0% come from the nuclear family, and 44.0% come from the joint family, suggesting that a significant portion of the surveyed population belongs to joint families.

Table 4.2- Descriptive Statistics Table:

		Depression	Positive Emotion	Negative Emotion	Quality of Life	Group
Mean		23.01	28.07	30.57	78.55	1.50
Std. Error of Mean		.431	.379	.442	.703	.025
Median		21.54a	27.66a	31.33a	78.25a	1.50a
Std. Deviation		8.628	7.578	8.838	14.056	.501
Variance		74.443	57.421	78.105	197.572	.251
Skewness		.587	-.061	-.110	-.281	0.000
Std. Error of Skewness		.122	.122	.122	.122	.122
Kurtosis		-.200	-.922	-1.197	.526	-2.010
Std. Error of Kurtosis		.243	.243	.243	.243	.243
Range		37	33	36	103	1
Minimum		8	10	11	8	1
Maximum		45	43	47	111	2
Sum		9205	11229	12228	31418	600
Percentiles	10	12.09b	17.43b	18.36b	60.70b	. b,c
	20	15.94	21.17	21.65	66.25	
	25	16.79	22.45	23.09	67.92	1.00
	30	17.75	23.52	24.27	69.57	1.10
	40	19.63	25.70	27.00	73.50	1.30
	50	21.54	27.66	31.33	78.25	1.50
	60	24.23	30.14	34.95	84.17	1.70
	70	26.94	33.33	37.18	87.70	1.90
	75	28.03	34.71	38.23	89.65	2.00
	80	29.33	36.02	39.42	91.40	
	90	36.11	38.17	41.96	95.27	

a. Based on data that has been grouped.

b. Grouped data is used to determine percentiles.

c. Neither the top nor lower bounds of the first or last intervals are known. A few percentiles lack a definition.

Descriptive Statistics Table:

An overview of the main descriptive statistics for every variable in the dataset is given in this table. Depression, positive and negative emotions, and quality of life are among the variables. Mean: This column displays each variable's arithmetic mean or average value. Std. Deviation: This column shows the standard deviation, which is a measure of the dispersion of the data around the mean. A higher standard deviation indicates that the data is more spread out. Minimum: This column reports the smallest value observed for each variable. Maximum: This column reports the largest value observed for each variable. Skewness: This column shows the skewness statistic, which measures the asymmetry of the distribution. A value of 0 indicates a perfectly symmetrical distribution. Kurtosis: This column displays the kurtosis statistic, which measures the "peaked Ness" of the distribution. A value of 0 indicates a normal distribution.

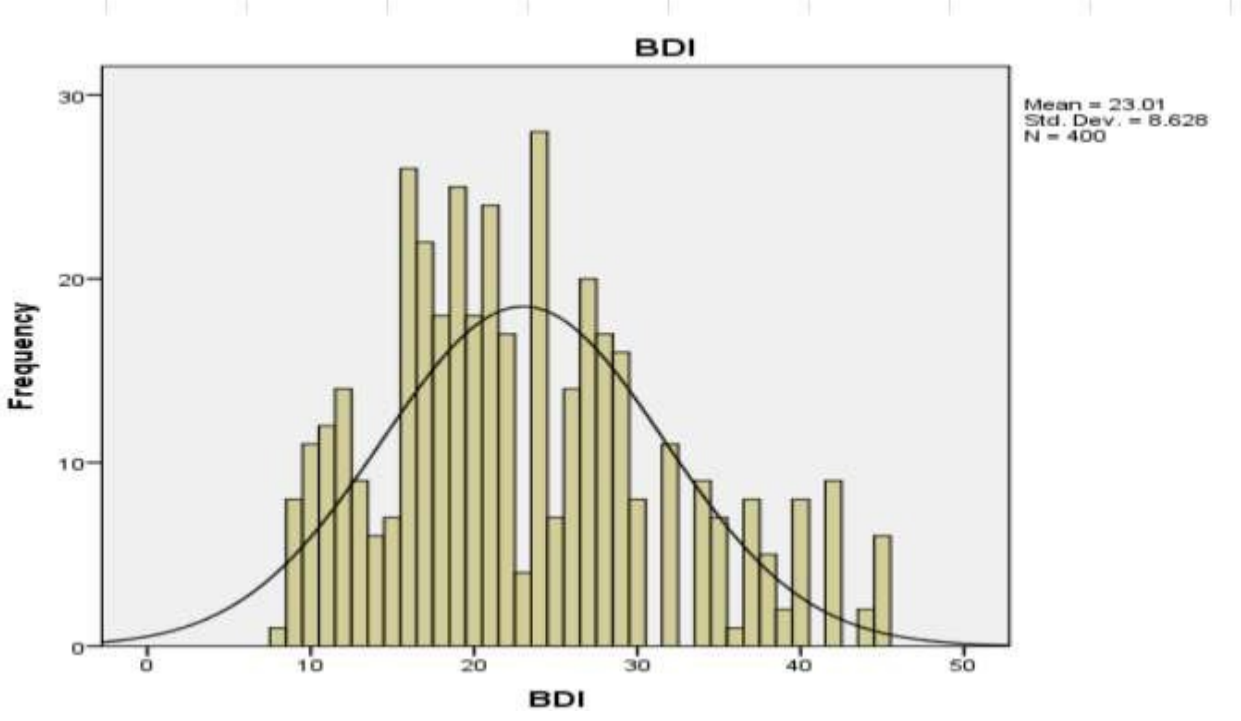


Figure 4.7- frequency of depression

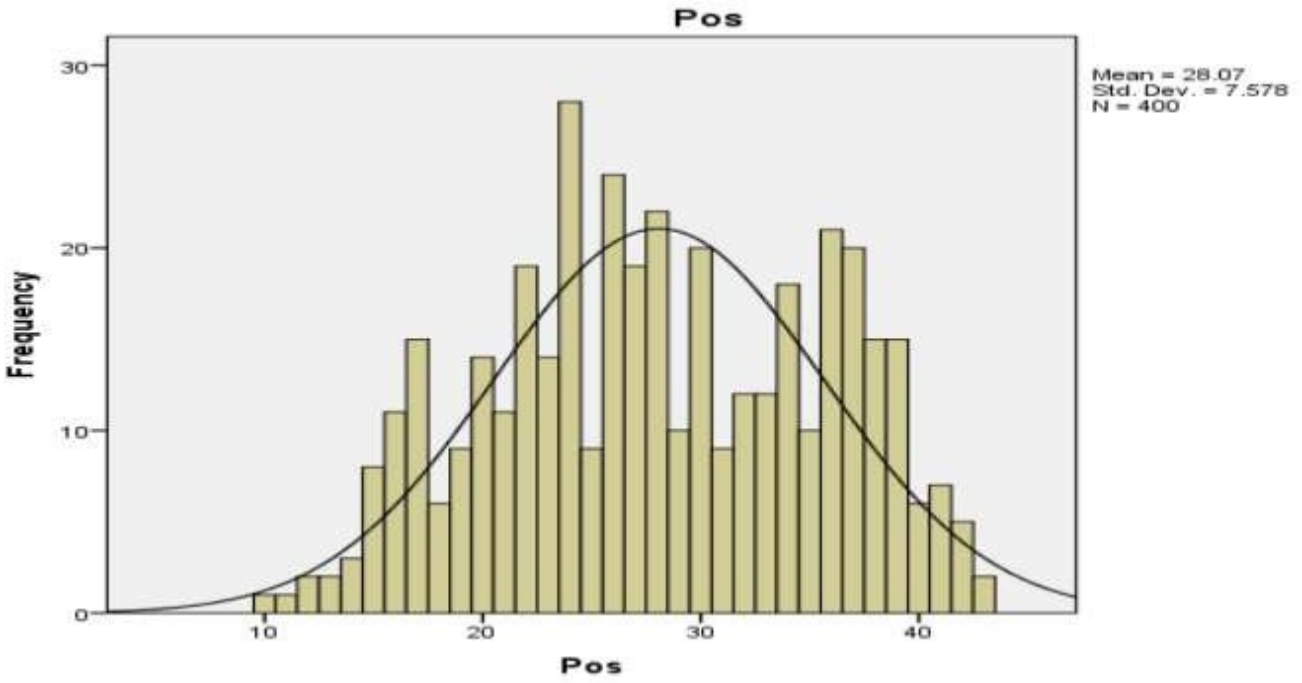


Figure 4.8- Positive Emotion frequency

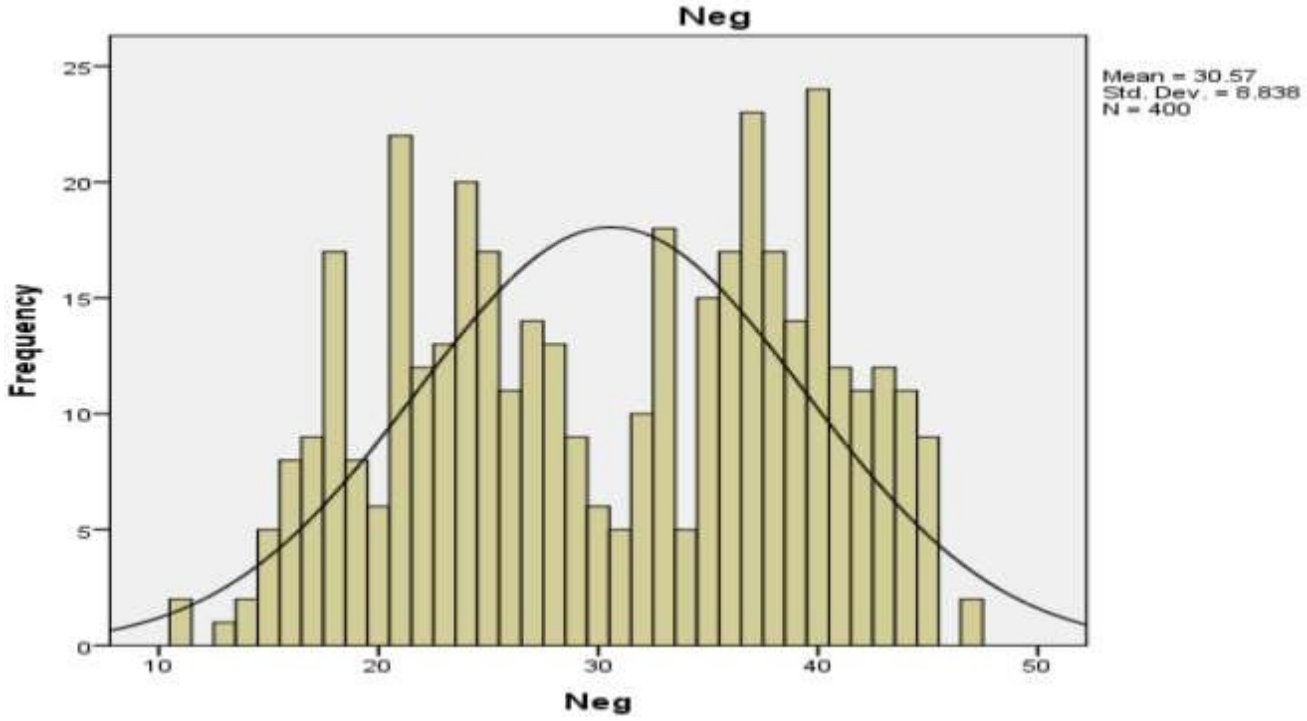


Figure 4.9- Negative Emotion frequency

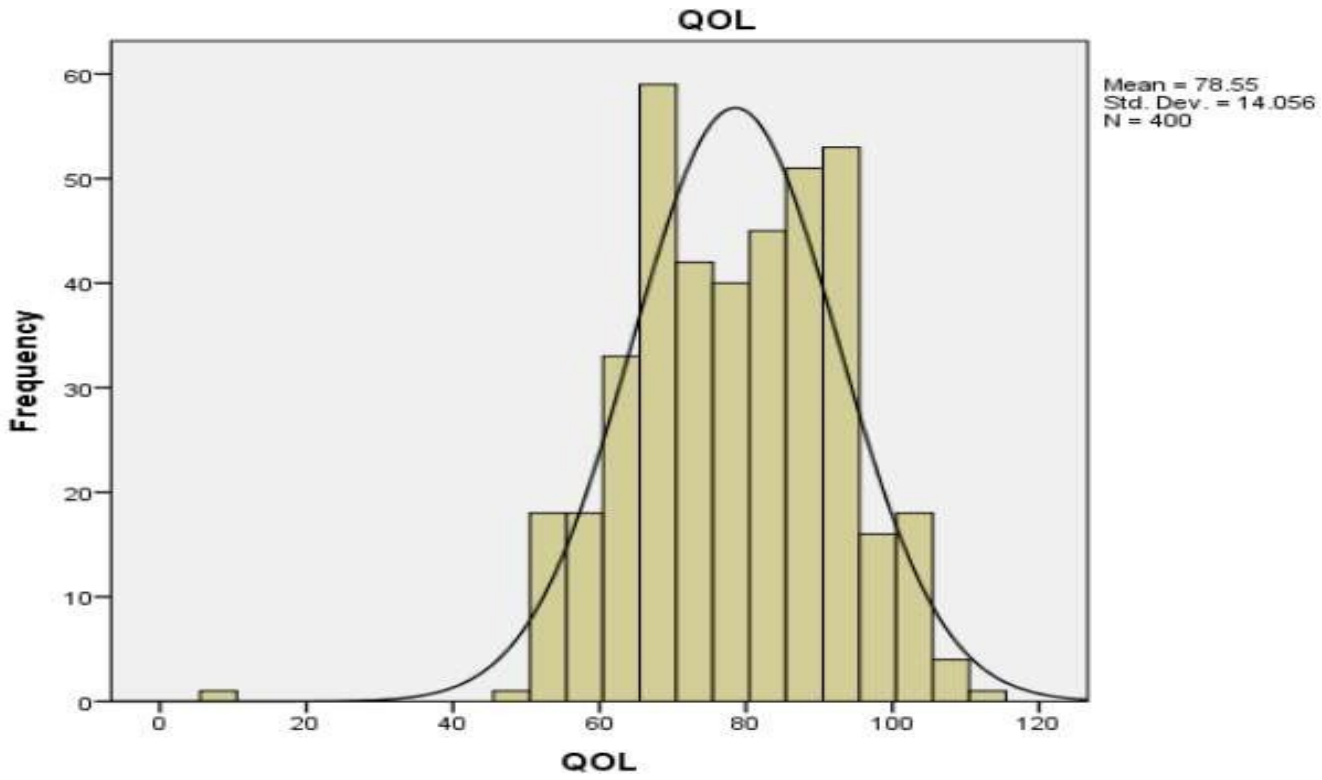


Figure 4.10- Quality of Life frequency

4.2.1 Inferences Statistics: - In inferences statistics**,** the pre- and post-intervention scores of depression, positive and negative emotion, and quality of life were compared using paired t-tests within the intervention and controlled groups separately. The between-group differences in the pre-and post-intervention scores were compared using independent t-tests. The level of significance was set at $p<0.05$

Table 4.3 Depression on Mean, standard deviation, and standard error mean for the pre-test and post-test

	N	Mean	Std. Deviation	Std. Error Mean
Depression _pre	200	26.62	8.744	.618
Depression_ post	200	19.410	6.83487	.48330

BDI-II: Figure 4.11—The bar Graph of Depression (BDI) represented the pre-test and post-test mean, N, Standard deviation, and standard error mean.

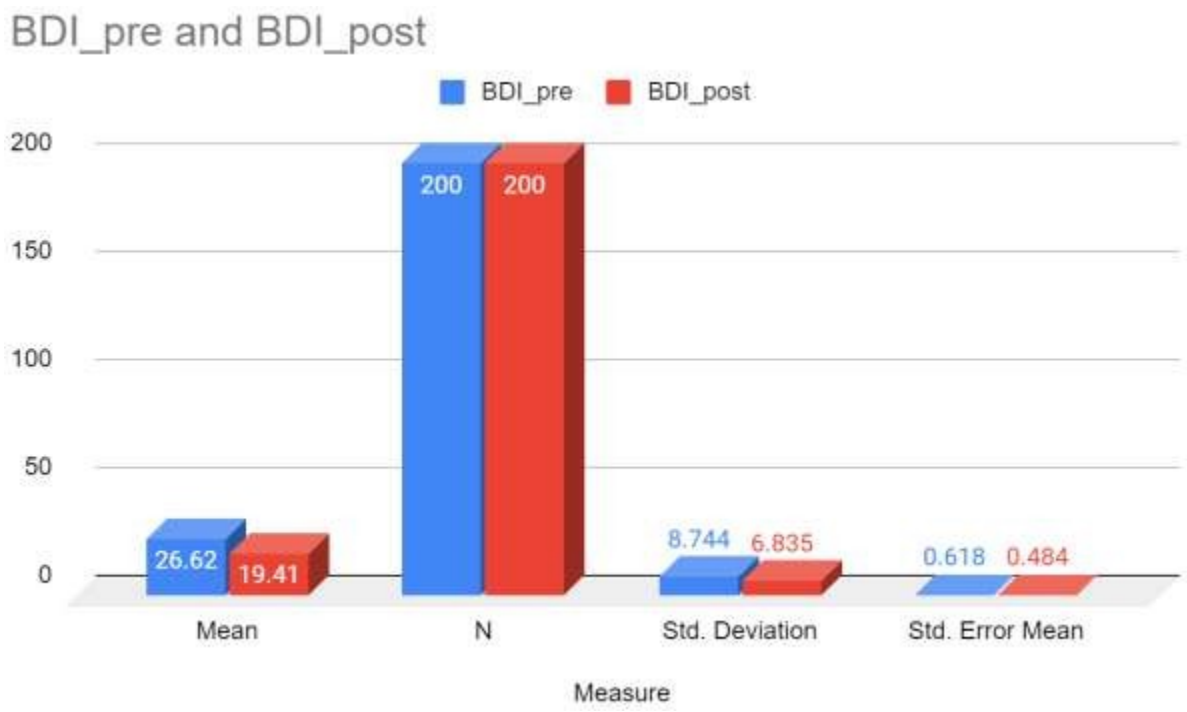


Figure 4.11—The bar Graph of the Depression (BDI) represented the pre-test and post-test mean, sample size (N), Standard deviation, and standard error mean.

Interpretation: Table 4.9 and bar graph (Figure 4.11) show the mean score of depression decreased from 26.62 on the pre-test to 19.41 on the post-test, indicating a significant reduction in depressive symptoms. The standard deviation decreased from 8.744 at the pre-test to 6.835 at the post-test, suggesting a more homogeneous distribution of depression (BDI) scores after the intervention. The standard error of the mean decreased from 0.618 at the pre-test to 0.484 at the post-test, indicating a more precise estimate of the true mean depression score.

Table- 4.4: Paired t-test for Depression

	Paired Differences							
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	T	df	Sig. (2-tailed)
Depression _pre –test								
Depression post-test	7.20500	13.23400	.93578	5.35967	9.05033	7.699	199	.000

Interpretation: This table displays the results of a paired samples t-test comparing pre-test and post-test depression scores. The mean difference between the two scores is statistically significant (t=13.234, p<0.001), indicating a significant low in depression after treatment.

These tables provide comprehensive information about the changes in depression scores before and after treatment and the relationship between pre-test and post-test scores.

Table 4.5 Independent Samples t-test for Depression:

Independent Samples Test		T	Df	P	Mean difference	SE difference	95% Confidence Interval	
							Lower	Upper
Depression	**Equal variances assumed**	-17.390	198	< 0.001	-10.600	.610	-11.802	-9.398
	Equal variances not assumed	-17.390	182.211	< 0.001	-10.600	.610	-11.802	-9.397

*Levene's test significant (Sig. = 0.074 > 0.05) suggests that the assumption of equal variances is met.

Table 4.5 showed that the Independent Samples t-test: The Levene's Test for Equality of Variances indicates that the assumption of equal variances is met (Sig. = 0.074 > 0.05). The independent-sample t-test showed a statistically significant difference in depression scores between the two groups (t = -17.390, df = 198, p < 0.001). Result revealed that the experimental group had significantly lower depression as compared to the control group.

Table- 4.6 Positive Emotion - Mean, Standard Deviation, and Standard error for pre-test -post-test

	N	Mean	Std. Deviation	Std. Error Mean
Positive pre-test	200	26.32	7.52	.53
Positive post-test	200	29.830	7.236	.51

Positive Emotion: - Figure 4.12- Bar Graph of Positive Emotion represented pre-test-post-test mean, N, Standard deviation & Standard error mean.

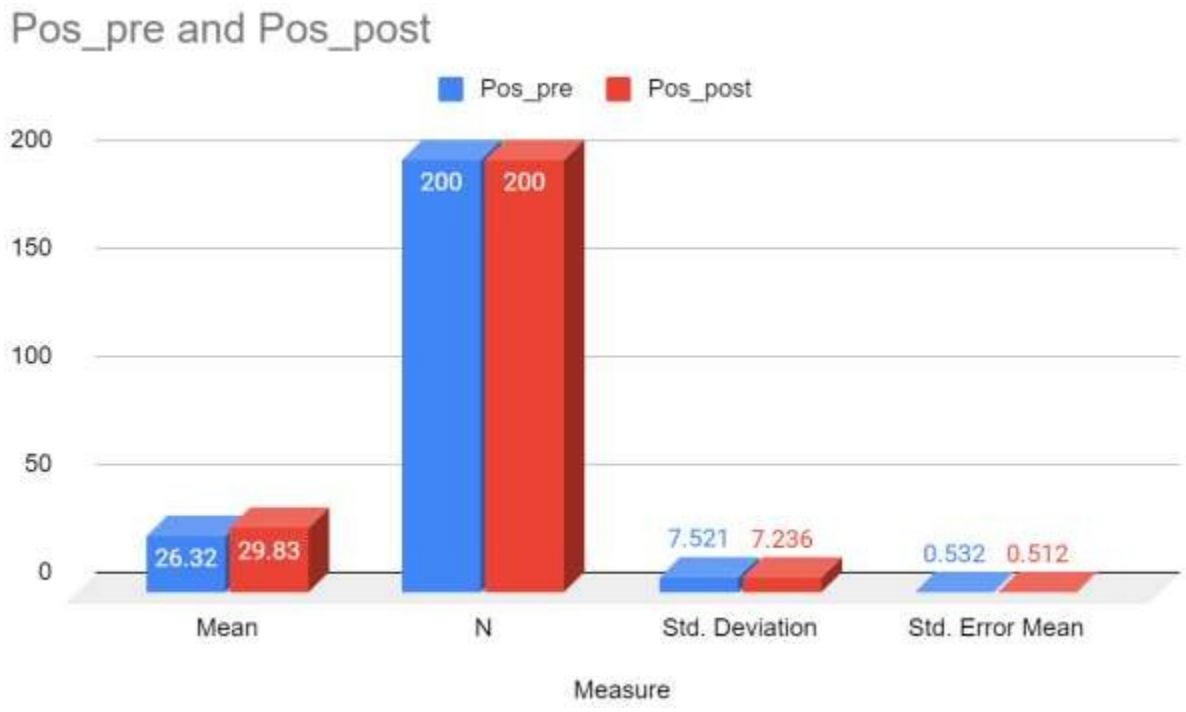


Figure 4.12—Bar Graph of Positive Emotion represented the pre-test and post-test mean, N, Standard deviation, and standard error mean.

Interpretation: Table 4.6 and a bar graph (figure 4.12) show the mean positive affect score increased from 26.32 on the pre-test to 29.83 on the post-test, indicating a significant improvement in positive emotional experiences.The standard deviation decreased slightly from 7.521 at the pre-test to 7.236 at the post-test, suggesting a more consistent level of positive affect among the participants.The standard error of the mean decreased from 0.532 at pre-test to 0.512 at post-test, indicating a more accurate representation of the true mean positive affect score.

Table- 4.7: Paired t -Test for Positive Emotion

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	T	df	Sig. (2-tailed)
	Positive _pre - test								
	Positive _post- test	-3.51	12.87	.910	-5.30	-1.72	-3.86	199	.000

Interpretation: The paired t-test results show a significant difference in Positive Affect scores before and after treatment (t=-3.86, p<0.001), indicating an increase in positive affect following the intervention.

Table 4.8 Independent Samples t-test for Positive Emotion:

Independent Samples Test

		t	Df	p	Mean difference	SE difference	95% Confidence Interval	
							Lower	Upper
Positive	Equal variances assumed	23.60	198	< 0.001	12.40	.525	11.36	13.43
	Equal variances not assumed	23.60	197.47	< 0.001	12.40	.525	11.36	13.43

*Levene's test is significant (Sig. = 0.479 > 0.05) suggests that the assumption of equal variances is met.

Table 4.8 presents Independent Samples t-test for PANAS (positive affect): The Levene's Test for Equality of Variances (Sig. = 0.479 > 0.05) suggests that the assumption of equal variances is met. The independent-samples t-test revealed a statistically significant difference in positive affect scores between the two groups (t = 23.60, df = 198, p < 0.001). The 95% confidence interval for the mean difference in positive affect scores was [11.36, 13.43], suggesting that the experimental group had significantly higher positive affect compared to the control group.

Table- 4.9: Negative Emotion – Mean, Standard Deviation and Standard error for pre-post test.

	N	Mean	Std. Deviation	Std. Error Mean
Negative _pre-test	200	32.15	8.756	.619
Negative _Post-test	200	28.99	8.657	.612

Negative Emotion: - Figure 4.13- Bar Graph of negative emotion represented pre-test – post-test mean, N, Standard deviation & Standard error mean.

Figure 4.13- Bar Graph of Negative Emotion represented pre-test & post-test mean, N, Standard deviation & Standard error mean.

Interpretation: Table 4.9 and bar graph (figure 4.13) shows, the mean negative affect score decreased from 32.15 at pre-test to 28.99 at post-test, indicating a significant reduction in negative emotional experiences.The standard deviation decreased slightly from 8.756 at pre-test to 8.657 at post-test, suggesting a more consistent level of negative affect among the participants.The standard error of the mean decreased from 0.619 at pre-test to 0.612 at post-test, indicating a more precise estimate of the true mean negative affect score.

Table- 4.10: Paired t-test for Negative Emotion

	Paired Differences							
				95% Confidence Interval of the Difference				
	Mean	Std. Deviation	Std. Error Mean	Lower	Upper	T	df	Sig. (2-tailed)
Negative_pre-test Negative_Post-test	3.15000	16.07231	1.13648	.90890	5.39110	2.772	199	.006

Interpretation: The paired t-test indicates a significant difference in Negative Affect scores before and after treatment (t=2.772, p=0.006). The mean difference in Negative Affect scores between pre-test and post-test is 0.90890, with a 95% confidence interval ranging from 0.772 to 5.39110.

Table 4.11 Independent Samples t-test for PANAS (Negative Affect):

Independent Samples t-Test

		T	df	p	Mean difference	SE difference	95% Confidence Interval	
							Lower	Upper
Negative	Equal variances assumed	-27.28	198	< 0.001	-15.35	.563	-16.46	-14.24
	Equal variances not assumed	-27.28	176.22	< 0.001	-15.35	.563	-16.46	-14.24

*Levene's test is significant (p <.05), suggesting a violation of the assumption of equal variances

Table 4.11 presents Independent Samples t-test for PANAS (negative affect): The Levene's Test for Equality of Variances (Sig. = 0.000 < 0.05) indicates that the assumption of equal variances is violated. The independent-sample t-test showed a statistically significant difference in negative affect scores between the two groups (t = -27.28, df = 176.22, p < 0.001). The 95% confidence interval for the mean difference in negative affect scores was [-16.46, -14.24], indicating that the experimental group had significantly lower negative affect compared to the control group.

Table 4.12 Quality of Life— Mean, Standard Deviation, and Standard error mean for pre-post test.

	N	Mean	Std. Deviation	Std. Error Mean
QOL pre-test	200	76.93	16.506	1.16
QOL Post-test	200	80.16	10.883	.769

Quality of Life- Figure 4.14- Bar Graph of Quality of Life represented pre-test and post-test mean, N, Standard deviation & Standard error mean.

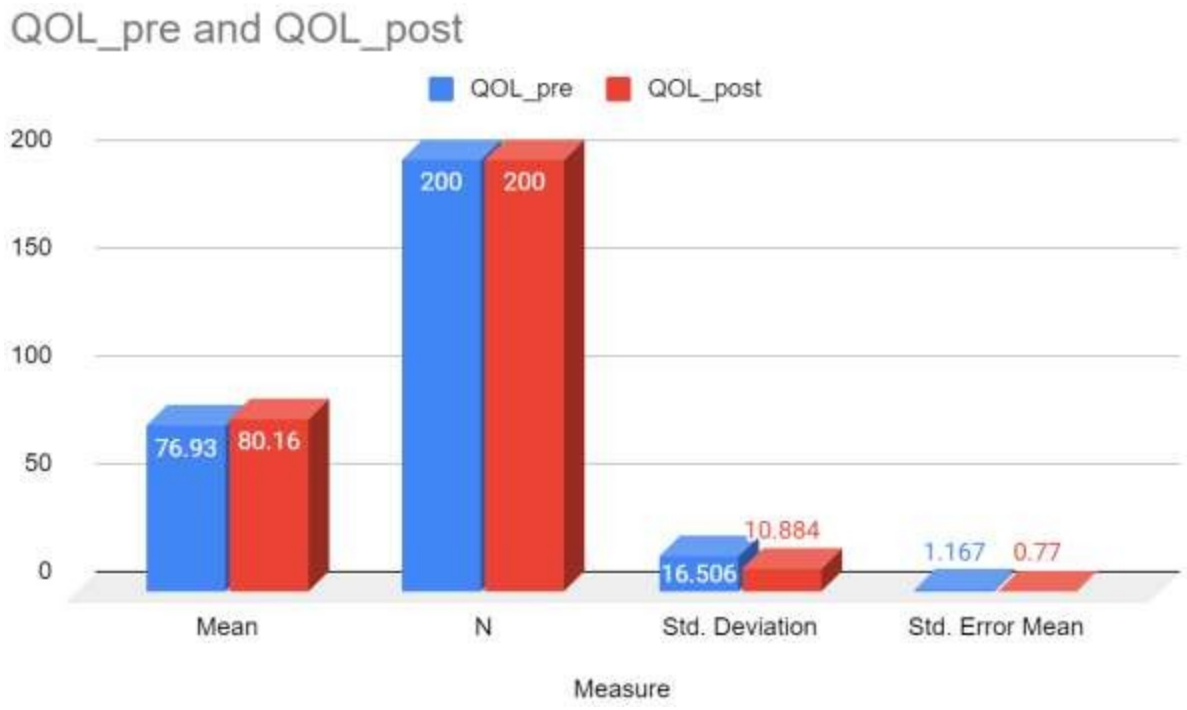


Figure 4.14- Bar Graph of Quality of Life represented pre-test & post-test mean, sample size (N), Standard deviation & Standard error mean.

Interpretation: The table 4.12 and bar graph (figure 4.14) shows, mean Quality of Life (QOL) score increased from 76.93 at pre-test to 80.16 at post-test, indicating an improvement in quality of life.The standard deviation decreased from 16.50 at pre-test to 10.88 at post-test, suggesting a more homogeneous distribution of QOL scores after the intervention.The standard error of the mean decreased from 1.16 at pre-test to 0.77 at post-test, indicating a more accurate representation of the true mean QOL score.

Table-4.13: Paired t-test for Quality of Life

		Paired Differences							
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper	T	df	Sig. (2-tailed)
Pair 1	QOLpre-test								
	QOLPost-test	-3.230	22.22	1.571	-6.328	-.131	-2.05	199	.041

Interpretation: The paired t-test reveals a significant difference in Quality-of-Life scores before and after treatment (t=-2.05, p=0.041). The mean difference in QOL scores between pre-test and post-test is -6.328, with a 95% confidence interval ranging from -0.131 to -2.05.

Table 4.14 Independent Samples t-test for Quality of Life (QOL):

Independent Samples t-Test

		t	df	p	Mean difference	SE difference	95% Confidence Interval	
							Lower	upper
QOL	Equal variances assumed	11.69	198	<0.001	13.88	1.187	11.54	16.22
	Equal variances not assumed	11.69	197.37	<0.001	13.88	1.187	11.54	16.22

*Levene's test is significant (Sig. = 0.171 > 0.05) suggests that the assumption of equal variances is met.

Table 4.14 presents Independent Samples t-test: The Levene's Test for Equality of Variances (Sig. = 0.171 > 0.05) suggests that the assumption of equal variances is met. The independent-samples t-test revealed a statistically significant difference in QOL scores between the two groups (t = 11.69, df = 198, p < 0.001). The 95% confidence interval for the mean difference in QOL scores was [11.54, 16.22], suggesting that the experimental group had significantly higher quality of life compared to the control group.

Table 4.15 shows the Correlation between Depression, Positive and Negative Emotion, and quality of Life.

correlations

	depression	**Positive emotion**	**Negative emotion**	**Quality of life**
Depression	1	-.877**	.895**	-.790**
Positive emotion		1	-.883**	.703**
Negative emotion			1	-.761**
Quality of life				1

****. correlation is significant at the 0.01 level (2-tailed).**

Table 4.15 shows correlations between depression, positive emotion, negative emotion, and quality of life in females with Premenstrual Dysphoric Disorder (PMDD1. The range of correlations is between -1 and +1. The two variables have a perfect positive correlation when their correlation is 1. A

correlation of -1 indicates a perfect negative connection between the two variables. The absence of a linear relationship between the two variables is shown by a correlation of 0.

In the table:

- *Dark grey* indicates positive associations.
- *Light grey* indicates negative relationships.
- *Two asterisks (*) are used to indicate statistically significant associations.

Some observations about the correlations in the table:

There is a significant positive correlation between depression and negative emotion (.877). This means that as depression scores increase, negative emotion scores also increase. There is a significant negative correlation between depression and positive emotion (-.883). This means that as depression scores increase, positive emotion scores decrease. Quality of life and negative emotions are significantly correlated negatively (-.761). This indicates that quality of life scores falls as negative emotion levels rise. Positive emotions and quality of life have a strong positive association (.703). This indicates that quality of life ratings rise in tandem with positive emotions scores. There is a weak negative correlation between depression and quality of life (-.790).

4.3 Findings for the Research Hypotheses

There were eight hypotheses formulated in this study.

4.3.1 Hypotheses Testing

According to hypothesis, the pre-and post-intervention scores for depression, positive and negative emotions, and Quality of life were compared using paired t-tests within the intervention and controlled groups separately. Independent t-tests were used to compare the between-group differences in the pre- and post-intervention scores.

4.3.2 Hypotheses-wise Findings

The key findings from the hypothesis testing are as follows:

H1: There will be a significant impact of yoga on depression levels among PMDD females.
Inference: The hypothesis will be accepted, which leads the yoga will decreases depression in PMDD females.

H2: There will be a significant impact of yoga on positive emotions among PMDD females.
Inference: The hypothesis will be accepted, which leads the yoga will increases positive emotion in PMDD females.

H3: There will be a significant impact of yoga on negative emotions among PMDD females.
Inference: The hypothesis will be accepted, which leads the yoga will decreases the negative emotions in PMDD females.

H4: There will be a significant impact of yoga on quality of life among PMDD females.
Inference: The hypothesis will be accepted, which leads the yoga will improves quality of life of PMDD females.

H5: There will be a high level of depression among PMDD females
Inference: The Directional hypothesis will be accepted which leads, without yoga intervention level of depression will be high in PMDD females.

H6: There will be a low level of positive emotions among PMDD females
Inference: The Directional hypothesis will be accepted which leads, without yoga intervention there will be low level of positive emotions in PMDD females.

H7: There will be a high level of negative emotions among PMDD females
Inference: The Directional hypothesis will be accepted which leads, without yoga intervention there will be high level of negative emotions in PMDD females.

H8: There will be a low quality of life among PMDD females

Inference: The Directional hypothesis will be accepted which leads, without yoga intervention there will be low level of quality of life of PMDD females.

Table 4.16 -This table summarizing which hypothesis were accepted or rejected:

Hypothesis No.	Hypothesis Statement	Accepted/Rejected
H1	There will be a significant impact of yoga on depression levels among PMDD females.	Accepted
H2	There will be a significant impact of yoga on positive emotions among PMDD females.	Accepted
H3	There will be a significant impact of yoga on negative emotions among PMDD females.	Accepted
H4	There will be a significant impact of yoga on quality of life among PMDD females.	Accepted
H5	There will be a high level of depression among PMDD females.	The directional hypothesis will be Accepted
H6	There will be a low level of positive emotions among PMDD females.	Directional hypothesis will be Accepted
H7	There will be a high level of negative emotions among PMDD females.	Directional hypothesis will be Accepted
H8	There will be a low quality of life among PMDD females.	Directional hypothesis will be Accepted

The results demonstrate that all eight hypotheses were approved in light of the study's strong statistical analysis and supporting data. The yoga intervention had a significant positive impact on reducing depression, higher positive emotions, lower negative emotions, and improving quality of life for females with Premenstrual Dysphoric Disorder (PMDD). Additionally, the study confirmed that PMDD females generally exhibited higher levels of depression, lower positive emotions, higher negative emotions, and bad quality of life compared to the general population.

4.4: Discussion

The results were discuss through critical comparison of previous studies and current study that investigated the effect of Yoga on depression, emotions, and quality of life (QoL) on females with Premenstrual Dysphoric Disorder (PMDD). This overview highlights the differences in outcomes.

Overview of Research Focus

PMDD is a severe form of PMS, characterized by emotional, behavioral, and physical symptoms during the luteal phase of the menstrual cycle. Yoga has been increasingly studied as a non-pharmacological intervention for PMDD due to its potential benefits on mental health. Rani et al. (2018), study carry sample size 60 women with PMDD, RCT and provided intervention of 8-weeks yoga program (asana, pranayama, mediation). Results reveals the significant reduction in depression & anxiety and improve quality of life of women with premenstrual dysphoric disorder.

Kaur et al. (2015), study sample size was 30 college students with PMDD and intervention given for 12-weeks yoga therapy (Hatha yoga) to measure the emotional symptoms and level of stress in students. After intervention process results shows the significant impact on students with PMDD emotional regulation improved and cortisol levels is reduced. Chauhan et al. (2020) this study was quasi-experimental design and sample size was 40 females with PMDD. Yoga and lifestyle modification intervention were given to experimental group. After comparing the results of experimental and control group suggested that the significant positive impact on mood and quality of

life of females who were under the intervention group.

Kumara & sharma (2016), study sample size was 50 participants under non-randomized design and yoga intervention given to intervention group only for 3 weeks to measure the emotional stability and menstrual symptoms of PMDD females. Results shows significant positive effect on emotional stability and fewer PMDD symptoms. Bali et al. (2016), in this study sample size was 45 participants and integrated yoga module (IYM) was given to intervention group further results shows integrated yoga module more effective then exercise in mood regulation.

Critical Comparison between strength and weakness of previous studies:

The majority of the studies' use of validated instruments such as the BDI, WHOQOL-BREF, and PMS scales. Some research (like Rani et al. 2018) improved internal validity by the use of randomised controlled designs. Several areas of wellness were addressed via holistic interventions, such as pranayama and meditation. Now, let's examine some of the earlier studies' flaws.

Most studies have small sample sizes, which restricts their potential to be broadly applied. Brief intervention times (often 8–12 weeks), which makes evaluating long-term impacts challenging." Insufficient blinding and possible placebo effects were not sufficiently managed. Restricted diversity in demographics; many research were conducted with college-aged women or in India, which limited their generalizability to larger populations. In order to assess the long-term benefits of yoga on PMDD, longitudinal research is required. There are few comparative trials with medication or cognitive-behavioral therapy (CBT). Incorporating biomarkers, such as cortisol and serotonin levels, might aid in supporting physiological assertions. The absence of standardisation in yoga interventions (kind, duration, and intensity) has an impact on reproducibility.

Depression Outcome Variability: Although the extent varied, the majority of studies found a significant decrease in depression symptoms. Emotion: Conflicting findings; some research revealed notable advantages, while others lacked follow-up to verify long-lasting impacts. Quality of Life: Improved consistently in yoga groups, although direct comparisons were made more difficult by the use of different measurement instruments in different research. Theoretically, yoga is believed to alleviate PMDD symptoms by promoting GABA activity, lowering cortisol, regulating the HPA axis, and improving parasympathetic tone. However, the mechanistic hypotheses are undermined because

not all research measured physiological markers. Additionally, further Larger, more thorough studies using standardised procedures and physiological assessments would be beneficial to the literature in order to validate and clarify the advantages of yoga for this demographic.

The results of current study provide strong evidence for the effectiveness of yoga as a treatment for females with premenstrual dysphoric disorder (PMDD). The study's quasi-experimental design, rigorous quantitative approach, and robust statistical analyses provide valuable insights into the intricate relationships between yoga practice, depression, emotions, and quality of life.

The formulated hypotheses were meticulously examined, leading to several notable conclusions contributing to the existing knowledge base and opening avenues for future research endeavors. The key findings are summarized as follows:

1. Impact of Yoga on Depression

The profound impact of the one-month yoga intervention on alleviating symptoms of depression among PMDD-affected females was unequivocally established. Participants in the experimental group exhibited a remarkable decline in their Beck Depression Inventory (BDI-II) scores, transitioning from severe to minimal levels of depression. In contrast, the control group participants not expose to intervention, showed no notable changes in their depression symptomatology.

The effect size associated with the reduction in depression scores among the yoga group was exceptionally large, underscoring the substantive nature of this positive outcome. These findings corroborate previous research highlighting the therapeutic potential of yoga in mitigating depressive symptoms across various clinical and non-clinical populations.

2. Positive Emotional

Complementing the amelioration of depressive symptoms, the study also uncovered yoga's remarkable capacity to foster positive emotional experiences among PMDD-affected individuals. Participants in the experimental group reported substantial increases in their scores on the Positive and Negative Affect Schedule (PANAS) positive affect subscale, reflecting heightened levels of positive emotions.

The magnitude of this enhancement was substantial, as evidenced by the large effect size observed. Conversely, the control group exhibited negligible changes in their positive affect levels, further bolstering the unique contribution of the yoga intervention in cultivating emotional buoyancy.

3. Negative Emotions

In addition to enhancing positive emotional states, the study demonstrated yoga's efficacy in mitigating negative emotional experiences among PMDD-affected females. Participants in the experimental group reported marked reductions in their scores on the PANAS negative affect subscale, indicating a decreased propensity towards experiencing negative emotions, such as distress, anger, and hostility.

The effect size associated with this reduction was substantial, highlighting the practical significance of this outcome. In contrast, the control group exhibited no notable changes in their negative affect levels, further reinforcing the unique contribution of the yoga intervention in alleviating emotional disturbances.

4. Quality of Life

Perhaps the most profound and far-reaching impact of the yoga intervention was observed in the domain of quality of life. The Participants of experimental group reported remarkable enhancements on quality of life.

The Effect sizes associated with these improvements were exceptionally large, underscoring the substantive nature of the positive outcomes. In stark contrast, the control group exhibited no notable differences in their scores of quality-of-life, further highlighting the unique contribution of the yoga

intervention in fostering holistic well-being.

5. Confirmation of Psychological Disturbances in PMDD

Extending beyond the investigation of yoga's therapeutic effects, the study also yielded compelling evidence corroborating the hypotheses surrounding the psychological disturbances associated with PMDD. At the baseline stage, the sample of PMDD-affected females exhibited heightened levels of depression, diminished positive affect, and elevated negative affect compared to normative levels reported in the literature. Additionally, their overall quality of life scores was markedly lower than typical population averages, reflecting the pervasive impact of PMDD on various domains of well-being. These findings reinforce the fifth, sixth, seventh, and eighth hypotheses, underscoring the psychological and emotional challenges faced by individuals afflicted with PMDD and highlighting the critical need for effective interventions to alleviate these disturbances.

The present study's robust evidence, derived from a rigorous quantitative approach and advanced statistical analyses, contributes to the growing body of knowledge surrounding the therapeutic potential of yoga for managing PMDD. The findings not only validate the formulated hypotheses but also offer valuable insights into the mechanisms through which yoga exerts its positive effects on emotions and quality of life outcomes.

Several potential explanations can be proposed to elucidate the observed positive outcomes. Firstly, the practice of yoga encompasses a holistic mind-body approach that integrates physical postures (asanas), controlled breathing techniques (pranayama), and meditation practices (dhyana). This multifaceted approach may synergistically contribute to the regulation of physiological and psychological processes involved in emotional regulation and stress management. Additionally, the meditative aspects of yoga practice may cultivate mindfulness and self-awareness, enabling individuals to recognize and manage their emotional states more effectively. This enhanced emotional awareness and regulation capacity could contribute to the observed reductions in negative affect and depressive symptoms, as well as the increased experience of positive emotions. Furthermore, the practice of yoga emphasizes the cultivation of self-acceptance, compassion, and equanimity, which may counteract the negative thought patterns

and cognitive distortions commonly experienced in emotional disorders like PMDD.

The current study's conclusions have important ramifications for both clinical practice and public health initiatives. Considering the high prevalence of PMDD among young Indian females and the substantial psychological distress associated with the condition, the integration of yoga as a complementary therapeutic modality could offer a cost-effective and accessible approach to alleviating emotional disturbances and enhancing overall well-being.

Healthcare professionals, including gynecologists, psychologists, and counselors, could consider recommending and incorporating yoga practices into their treatment protocols for individuals diagnosed with PMDD. This holistic approach not only addresses the physical and emotional manifestations of the disorder but also promotes self-care and empowerment, enabling individuals to take an active role in managing their condition. Further confirmation of the study's quasi-experimental design through randomized controlled trials (RCTs) with bigger sample sizes and longer follow-up periods would be beneficial, even though the design is sound in its methodology. Such rigorous experimental designs would further enhance the internal validity and generalizability of the findings, while also enabling the investigation of long-term treatment effects and potential relapse prevention strategies.

Alongside quantitative studies, qualitative investigations may offer important new perspectives on the real-life experiences of people using yoga as an adjunctive treatment for PMDD. Such studies could uncover subjective perspectives, personal narratives, and cultural nuances that may not be captured through quantitative measures alone. This holistic understanding could inform the development of culturally sensitive and tailored interventions that resonate with the unique needs and preferences of diverse populations. Moreover, future research could explore the potential benefits of yoga for specific subgroups or comorbid conditions associated with PMDD. For instance, investigating the efficacy of yoga for individuals with PMDD and comorbid anxiety or depression could yield valuable insights into the management of complex clinical presentations.

Lastly, it would be valuable to explore the potential economic and societal implications of integrating

yoga as a complementary therapy for PMDD. Cost-effectiveness analyses, health economic evaluations, and policy-oriented research could provide valuable insights into the potential cost savings and societal benefits associated with implementing yoga-based interventions within healthcare systems and community settings.

CHAPTER-5

CONCLUSION

The present study represents a significant stride in the exploration of complementary therapeutic approaches for managing premenstrual dysphoric disorder among young Indian females. The robust findings, derived from a rigorous quantitative methodology, offer compelling evidence supporting the efficacy of yoga in alleviating emotional disturbances, enhancing positive emotional experiences, and fostering holistic improvements in quality of life.

These findings support the ideas that have been developed and add to the larger discussion of incorporating mind-body techniques into mental health treatment. The study's conclusions have important ramifications for clinical practice, public health initiatives, and upcoming investigations, opening the door to the creation of all-encompassing and holistic care for PMDD sufferers.

As the field of complementary and alternative medicine continues to evolve, the present investigation serves as a testament to the transformative potential of ancient practices like yoga in alleviating modern-day psychological disturbances. By embracing a holistic perspective and integrating evidence-based complementary therapies into mainstream healthcare, we can empower individuals to take an active role in their healing journeys, fostering emotional resilience, and promoting overall well-being.

5.1 Future Suggestions and Limitations: -

Although the controlled experimental study makes valuable contributions, certain limitations should be acknowledged. The reliance on self-report measures could permit subjective biases and demand characteristics. The lack of biological assays prevents objective verification of proposed mechanisms. The limits follow-up duration hampers determining long-term stability of gains. Additionally, the specificity of the standardized intervention restricts generalizability and comparisons against other treatments. The relatively modest sample size may inadequately represent the heterogeneous PMDD population.

- Primary being those generalizations of this research results as it is focusing on participants

from the Delhi NCR females who were diagnosed by gynecologist, which may limit the findings to females with PMDD in other geographic regions or settings.

- There may be other extraneous factors that can enhance the positive emotion and quality of life among females with premenstrual dysphoric disorder other than the interventions applied like supportive environment, proper routine, healthy diet which include glucose, magnesium, calcium.

- Participants that are not diagnosed with PMDD with gynecologist and the age group less than 16 years and above 25 years are not considered in the study.
- This might restrict the findings' applicability to those who exercise in various ways or who might have varied preferences when it comes to physical activityand also consume other contraceptive pills for balancing hormones or support for healthy body functioning.

- There may be extraneous variables that may further lead to premenstrual dysphoric disorder like imbalance in biological function, stress, substance abuse, medicines (continuous dose).
- Another disadvantage is the very small sample size, which may constrain the statistical power of the analysis and the capacity to identify tiny yet significant effects.

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Appendix "A"

DEMOGRAPHIC INFORMATION

Name (optional): …….

Age (in years): ……

Marital Status: Married/Unmarried

Area: Urban/Rural

Education Qualification: Yes/No

Occupation: Working/Non-Working

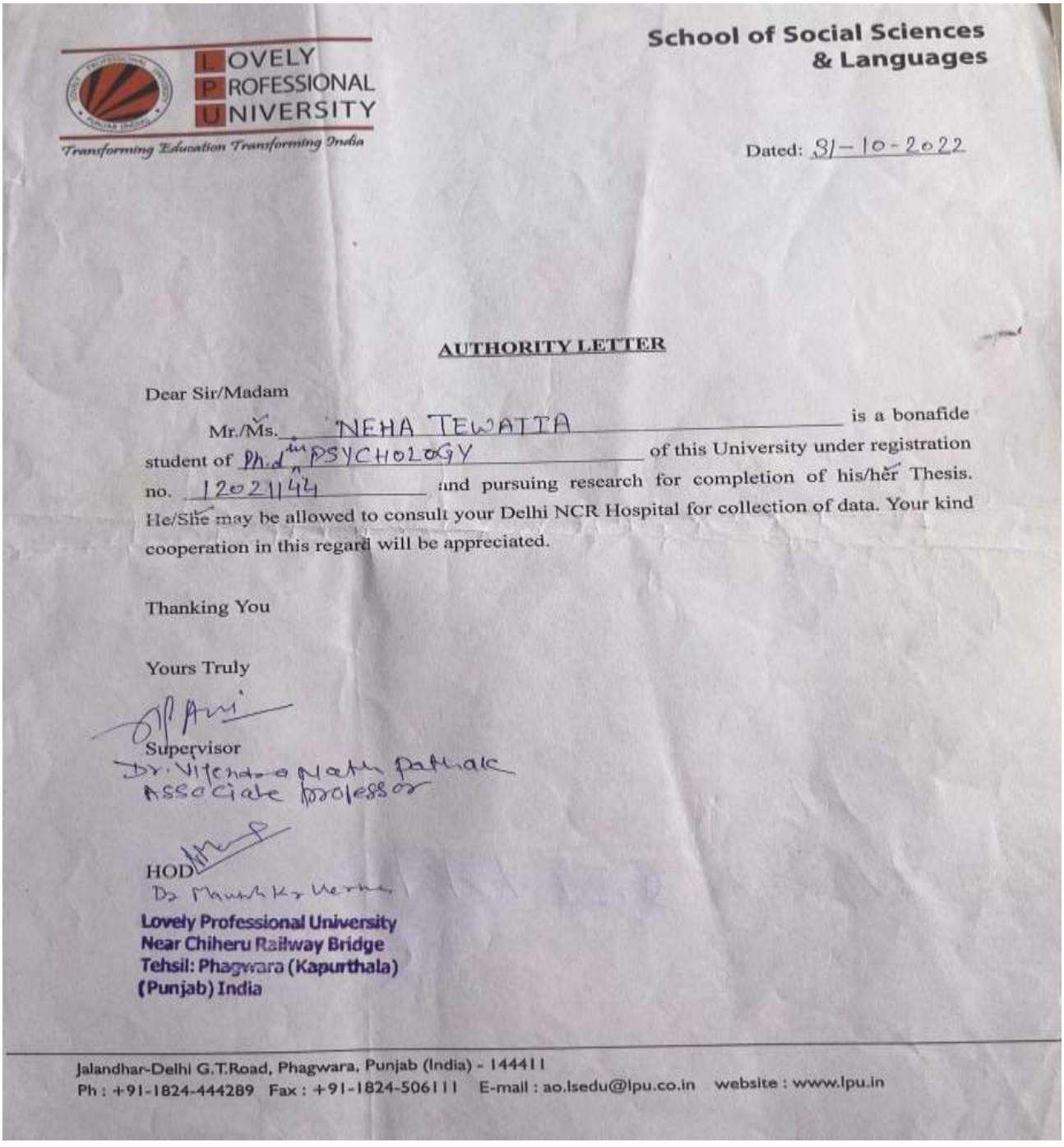
Family Type: Joint/Nuclear

Date: …….

Signature/thumb: ……

"Appendix B"

UNIVERSITY AUTHORITY LETTER



LOVELY PROFESSIONAL UNIVERSITY
Transforming Education Transforming India

School of Social Sciences & Languages

Dated: 31-10-2022

AUTHORITY LETTER

Dear Sir/Madam

Mr./Ms. NEHA TEWATIA is a bonafide student of Ph.d in PSYCHOLOGY of this University under registration no. 12021142 and pursuing research for completion of his/her Thesis. He/She may be allowed to consult your Delhi NCR Hospital for collection of data. Your kind cooperation in this regard will be appreciated.

Thanking You

Yours Truly

Supervisor
Dr. Vijendra Nath Pathak
Associate Professor

HOD
Dr Manish Verma

Lovely Professional University
Near Chiheru Railway Bridge
Tehsil: Phagwara (Kapurthala)
(Punjab) India

Jalandhar-Delhi G.T.Road, Phagwara, Punjab (India) - 144411
Ph : +91-1824-444289 Fax : +91-1824-506111 E-mail : ao.lsedu@lpu.co.in website : www.lpu.in

“Appendix C”

LETTER OF CONSENT

Respected Participants,

Through this form I am informing you that I am a Ph.D. scholar collecting data for my research work on premenstrual dysphoric disorder (PMDD). PMDD is a menstrual disorder in females which effects physical, psychological and quality of life of females. In this study Three questionnaires are given to you which you have to fill, please read carefully and give right answer according to you. There is no right/wrong answer in these questionnaires so do not worry about that. These questionnaires are generally asking question on depression, emotions and quality of life. Your actively participation is help us to reach our goals in our research work. All the information is collected during this study is kept confidential to the extent permitted by regulations. The study data maybe published or submitted to regulatory authorities. In all cases your identity will not disclosed. You have freedom to participant in this study, if in any case you don’t want to continue with so, it’s totally excepted. You can discontinue your participation at any time if you are not comfortable with. We respect your decision. If you have any questions so, please feel free to ask us.

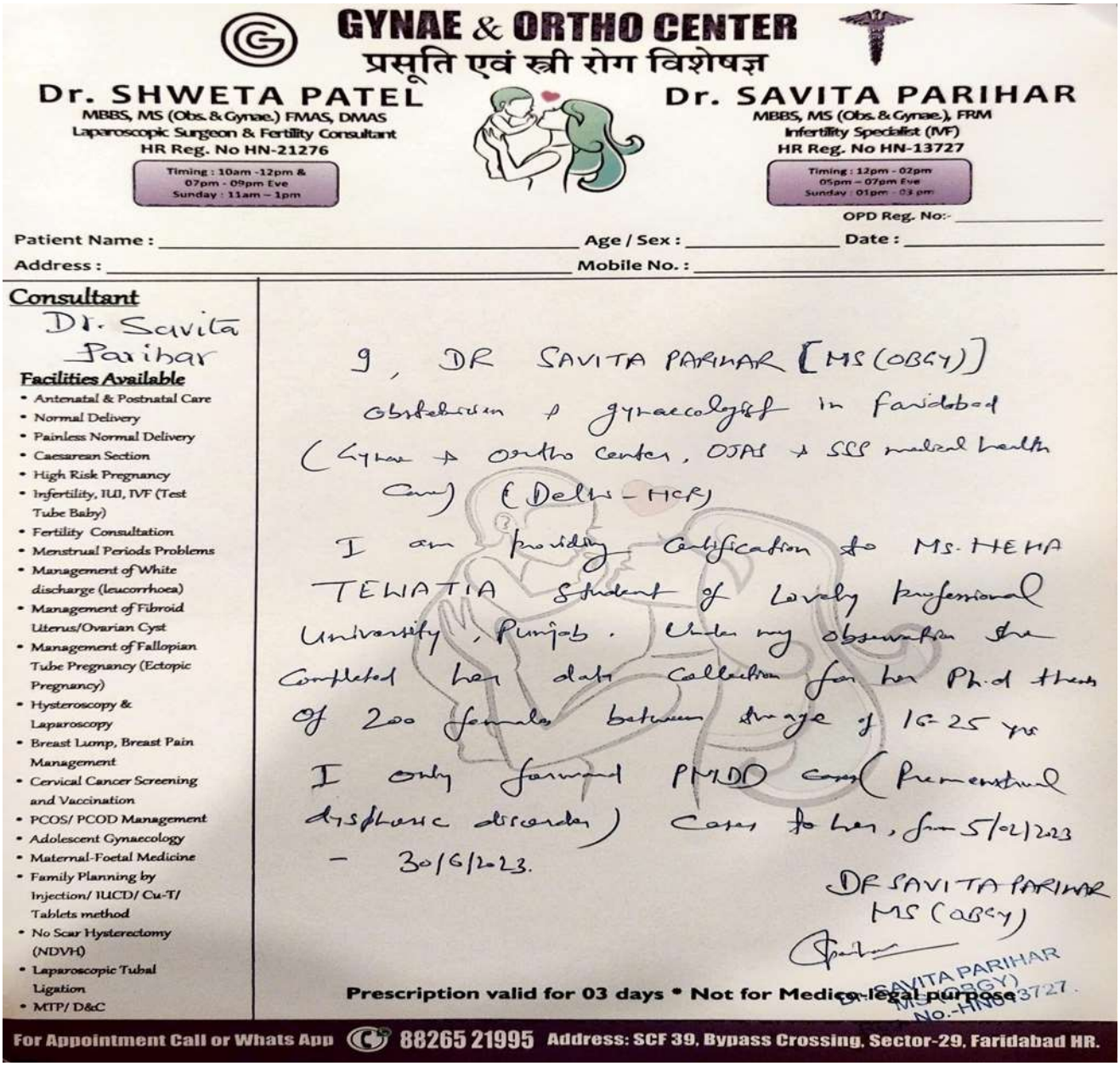
I am ……. willing to participate in the study voluntarily. I have been explained everything in the language I can understand best.

Client name-

Client signature/date: Researcher signature/date:

"APPENDIX D"

HOSPITAL CONSENT LETTER



GYNAE & ORTHO CENTER
प्रसूति एवं स्त्री रोग विशेषज्ञ

Dr. SHWETA PATEL
MBBS, MS (Obs. & Gynae.) FMAS, DMAS
Laparoscopic Surgeon & Fertility Consultant
HR Reg. No HN-21276
Timing : 10am -12pm & 07pm - 09pm Eve
Sunday : 11am – 1pm

Dr. SAVITA PARIHAR
MBBS, MS (Obs. & Gynae.), FRM
Infertility Specialist (IVF)
HR Reg. No HN-13727
Timing : 12pm - 02pm 05pm – 07pm Eve
Sunday : 01pm - 03 pm

OPD Reg. No:- _____

Patient Name : _____ Age / Sex : _____ Date : _____

Address : _____ Mobile No. : _____

Consultant
Dr. Savita Parihar

Facilities Available
- Antenatal & Postnatal Care
- Normal Delivery
- Painless Normal Delivery
- Caesarean Section
- High Risk Pregnancy
- Infertility, IUI, IVF (Test Tube Baby)
- Fertility Consultation
- Menstrual Periods Problems
- Management of White discharge (leucorrhoea)
- Management of Fibroid Uterus/Ovarian Cyst
- Management of Fallopian Tube Pregnancy (Ectopic Pregnancy)
- Hysteroscopy & Laparoscopy
- Breast Lump, Breast Pain Management
- Cervical Cancer Screening and Vaccination
- PCOS/ PCOD Management
- Adolescent Gynaecology
- Maternal-Foetal Medicine
- Family Planning by Injection/ IUCD/ Cu-T/ Tablets method
- No Scar Hysterectomy (NDVH)
- Laparoscopic Tubal Ligation
- MTP/ D&C

9, DR SAVITA PARIHAR [MS (OBGY)]
Obstetrician & gynaecologist in faridabad
(Gynae & ortho center, OJAS & SSS medical health Care) (Delhi - HCR)
I am providing Certification to Ms. HEMA TEWATIA Student of Lovely professional University, Punjab. Under my observation she completed her data collection for her Ph.d thesis of 200 females between the age of 16-25 yrs I only followed PMDD Cases (Premenstrual dysphoric disorder) Cases to her, from 5/2/2023 - 30/6/2023.

DR SAVITA PARIHAR
MS (OBGY)

DR. SAVITA PARIHAR MS (OBGY) Reg. No.-HN-13727.

Prescription valid for 03 days * Not for Medico-legal purpose

For Appointment Call or Whats App 88265 21995 Address: SCF 39, Bypass Crossing, Sector-29, Faridabad HR.

LIST OF PUBLICATIONS

SI NO.	Title of paper with author names	Name of the journal	ISSN NO., VOLNO. &Issue NO. & Paper ID	Indexing in Scopus/Web of Science/UGC-CARE List & Web Link
1	Title: A Systematic review-based paper on the Effect of Yoga on Depression, Emotion, and Quality of Life of Premenstrual Dysphoric Disorder Females Authors name: Neha Tewatia (First) Dr. Vijendra Nath Pathak (Co-author)	Madhya Pradesh institute of social science research, Ujjain	ISSN: 0973-855X, Vol 28 No 10, Oct, 2023 Paper ID-S12321	UGC-CARE List Group-1 Web Link: -N/A (Print)
2	Title: Psychological Impact of Premenstrual Dysphoric Disorder and Effective Management Techniques Authors name: Neha Tewatia (First) Gurpreet Verma & Kavita Shankar Gadade (Co-author)	Madhya Pradesh institute of social science research, Ujjain	ISSN: 0973-855X Vol 29 No 3, Mar, 2024 Paper ID-S12633	UGC-CARE List Group-1 Web Link: -N/A (Print)

3	Title: Effect of Yoga on Quality of life of females with Premenstrual Dysphoric Disorder Authors name: Neha Tewatia (First) Dr. Vijendra Nath Pathak (Co-author)	Nanotechnology perceptions	ISSN: 1660-6795 Vol-20No. S15 (2024)	Scopus Q4 Link – https://doi.org/10.62441/nano-ntp.vi.4332

LIST OF CONFERENCES

SI No.	Conference Presented	Title	Date	Institution
1	International Conference of UNICEF-India on "Feminine Hygiene Management-Beyond Taboo" (ICHFM-2022)	To Sensitize Feminine Hygiene Management including Reproductive Health, Menstrual Hygiene, and Menopause across the Genders"	25th-26th Nov, 2022	Lovely Professional University, Phagwara, Punjab
2	7th International Conference of Indian Academy of Health Psychology	A Systematic Review Based paper on Premenstrual Dysphoric Disorder (PMDD)	22nd-24th Dec,2022	Gautam Buddha University, Greater Noida, Uttar Pradesh
3	International Conference of Indian Academy of Health Psychology on "Holistic Health & Well-being: Issues, Challenges & Management"	A Systematic Review based paper on Effect of Yoga on Depression, Emotion and Quality of Life of Premenstrual Dysphoric Disorder	2nd-3rd Jun, 2023	Lovely Professional University, Phagwara, Punjab

Tools

Beck Depression Inventory-II (BDI-II)

BDI - II

Instructions: This questionnaire consists of 21 groups of statements. Please read each group of statements carefully. And then pick out the one statement in each group that best describes the way you have been feeling during the past two weeks, including today. Circle the number beside the statement you have picked. If several statements in the group seem to apply equally well, circle the highest number for that group. Be sure that you do not choose more than one statement for any group, including Item 16 (Changes in Sleeping Pattern) or Item 18 (Changes in Appetite).

1. Sadness
   0. I do not feel sad.
   1. I feel sad much of the time.
   2. I am sad all the time.
   3. I am so sad or unhappy that I can't stand it.

2. Pessimism
   0. I am not discouraged about my future.
   1. I feel more discouraged about my future than I used to.
   2. I do not expect things to work out for me.
   3. I feel my future is hopeless and will only get worse.

3. Past Failure
   0. I do not feel like a failure.
   1. I have failed more than I should have.
   2. As I look back, I see a lot of failures.
   3. I feel I am a total failure as a person.

4. Loss of Pleasure
   0. I get as much pleasure as I ever did from the things I enjoy.
   1. I don't enjoy things as much as I used to.
   2. I get very little pleasure from the things I used to enjoy.
   3. I can't get any pleasure from the things I used to enjoy.

5. Guilty Feelings
   0. I don't feel particularly guilty.
   1. I feel guilty over many things I have done or should have done.
   2. I feel quite guilty most of the time.
   3. I feel guilty all of the time.

6. Punishment Feelings
   0. I don't feel I am being punished.
   1. I feel I may be punished.
   2. I expect to be punished.
   3. I feel I am being punished.

7. Self-Dislike
   0. I feel the same about myself as ever.
   1. I have lost confidence in myself.
   2. I am disappointed in myself.
   3. I dislike myself.

8. Self-Criticalness
   0. I don't criticize or blame myself more than usual.
   1. I am more critical of myself than I used to be.
   2. I criticize myself for all of my faults.
   3. I blame myself for everything bad that happens.

9. Suicidal Thoughts or Wishes
   0. I don't have any thoughts of killing myself.
   1. I have thoughts of killing myself, but I would not carry them out.
   2. I would like to kill myself.
   3. I would kill myself if I had the chance.

10. Crying
   0. I don't cry anymore than I used to.
   1. I cry more than I used to.
   2. I cry over every little thing.
   3. I feel like crying, but I can't.

11. Agitation
   0. I am no more restless or wound up than usual.
   1. I feel more restless or wound up than usual.
   2. I am so restless or agitated, it's hard to stay still.
   3. I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest
   0. I have not lost interest in other people or activities.
   1. I am less interested in other people or things than before.
   2. I have lost most of my interest in other people or things.
   3. It's hard to get interested in anything.

13. Indecisiveness
   0. I make decisions about as well as ever.
   1. I find it more difficult to make decisions than usual.
   2. I have much greater difficulty in making decisions than I used to.
   3. I have trouble making any decisions.

14. Worthlessness
   0. I do not feel I am worthless.
   1. I don't consider myself as worthwhile and useful as I used to.
   2. I feel more worthless as compared to others.
   3. I feel utterly worthless.

15. Loss of Energy
   0. I have as much energy as ever.
   1. I have less energy than I used to have.
   2. I don't have enough energy to do very much.
   3. I don't have enough energy to do anything.

16. Changes in Sleeping Pattern

0. I have not experienced any change in my sleeping.
1a I sleep somewhat more than usual.
1b I sleep somewhat less than usual.
2a I sleep a lot more than usual.
2b I sleep a lot less than usual.
3a I sleep most of the day.
3b I wake up 1-2 hours early and can't get back to sleep.

17. Irritability

0. I am not more irritable than usual.
1. I am more irritable than usual.
2. I am much more irritable than usual.
3. I am irritable all the time.

18. Changes in Appetite

0. I have not experienced any change in my appetite.
1a My appetite is somewhat less than usual.
1b My appetite is somewhat greater than usual.
2a My appetite is much less than before.
2b My appetite is much greater than usual.
3a I have no appetite at all.
3b I crave food all the time.

19. Concentration Difficulty

0. I can concentrate as well as ever.
1. I can't concentrate as well as usual.
2. It's hard to keep my mind on anything for very long.
3. I find I can't concentrate on anything.

20. Tiredness or Fatigue

0. I am no more tired or fatigued than usual.
1. I get more tired or fatigued more easily than usual.
2. I am too tired or fatigued to do a lot of the things I used to do.
3. I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex

0. I have not noticed any recent change in my interest in sex.
1. I am less interested in sex than I used to be.
2. I am much less interested in sex now.
3. I have lost interest in sex completely.

Total Score: _____

Positive and negative Affect Schedule (PANAS)

THE OHIO STATE UNIVERSITY

Positive and Negative Affect Schedule (PANAS-SF)

Indicate the extent you have felt this way over the past week.		Very slightly or not at all	A little	Moderately	Quite a bit	Extremely
PANAS 1	Interested	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 2	Distressed	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 3	Excited	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 4	Upset	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 5	Strong	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 6	Guilty	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 7	Scared	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 8	Hostile	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 9	Enthusiastic	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 10	Proud	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 11	Irritable	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 12	Alert	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 13	Ashamed	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 14	Inspired	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 15	Nervous	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 16	Determined	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 17	Attentive	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 18	Jittery	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 19	Active	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5
PANAS 20	Afraid	☐ 1	☐ 2	☐ 3	☐ 4	☐ 5

World Health Organization Quality of Life- BRIEF (WHOQOL-BRIEF)

WHO Quality of Life Scale-Brief

Before we begin we would like to ask you to answer a few general questions about yourself by circling in the correct answer or by filling in the space provided.

1. What is your gender? Male Female

2. What is your date of birth? _____ / _____ / _____ (Day / Month / Year)

3. What is the highest education you received?
None at all
Elementary School
High School
College
Graduate/Professional Degree

4. What is your marital status?
Single Separated
Married Divorced
Living as Married Widowed

5. Are you currently ill? Yes No

6. If something is wrong with your health, what do you think it is? _____ illness/problem

Instructions: This questionnaire asks how you feel about your quality of life, health, or other areas of your life. Please answer all of the questions. If you are unsure about which response to give to a question, please choose the one that appears most appropriate. This can often be your first response.

Please keep in mind standards, hopes, pleasures, and concerns. We ask that you think about your life in the last two weeks. For example, thinking about the last two weeks a question might ask:

Do you get the kind of support from others that you need?	*(Please circle the number)*				
	Not at all	A little	Moderately	Mostly	Completely
	1	**2**	**3**	**4**	**5**

You should circle the number that best fits how much support you got from others over the last two weeks. So you would circle the number 4 if you got a great deal of support from others.

Do you get the kind of support from others that you need?	*(Please circle the number)*				
	Not at all	A little	Moderately	Mostly	Completely
	1	**2**	**3**	**(4)**	**5**

You would circle number 1 if you did not get any of the support that you needed from others in the last two weeks.

1

Do you get the kind of support from others that you need?	*(Please circle the number)*				
	Not at all	A little	Moderately	Mostly	Completely
	①	2	3	4	5

Please read each question, assess your feelings, and circle the number on the scale that gives the best answer for you for each question.

For Office Use G1/G1.1	**1.** How would you rate your quality of life?	*(Please circle the number)*				
		Very poor	Poor	Neither poor nor good	Good	Very Good
		1	2	3	4	5
For Office Use G4/G2.3	**2.** How satisfied are you with your health?	*(Please circle the number)*				
		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
		1	2	3	4	5

The following questions ask about **how much** you have experienced certain things in the last two weeks.

		(Please circle the number)				
		Not at all	A little	A moderate amount	Very much	An extreme amount
For Office Use F1.4/F1.2.5	**3.** To what extent do you feel that physical pain prevents you from doing what you need to do?	1	2	3	4	5
For Office Use F11.3/F13.1.4	**4.** How much do you need any medical treatment to function in your life?	1	2	3	4	5
For Office Use F4.1/F6.1.2	**5.** How much do you enjoy life?	1	2	3	4	5
For Office Use F24.2 /F29.1.3	**6.** To what extent do you feel your life to be meaningful?	1	2	3	4	5
For Office Use F5.2 /F7.1.6	**7.** How well are you able to concentrate?	1	2	3	4	5

		(Please circle the number)				
		Not at all	Slightly	A moderate amount	Very much	Extremely
		1	2	3	4	5
	8. How safe do you feel in your daily life?					
For office Use F16.1/F20.1.2	**9.** How healthy is your physical environment?	1	2	3	4	5

For Office Use F22.1/F27.1.2

The following questions ask about **how completely** you experience or were able to do certain things in the last two weeks.

	(Please circle the number)				
	Not at all	A little	Moderately	Mostly	Completely
10. Do you have enough energy for everyday life?	1	2	3	4	5
For Office Use F2.1/F2.1.1 **11.** Are you able to accept your bodily appearance?	1	2	3	4	5
For Office Use F7.1/F9.1.2 **12.** Have you enough money to meet your needs?	1	2	3	4	5
For Office Use F18.1/F23.1.1 **13.** How available to you is the information that you need in your day-to-day life?	1	2	3	4	5
For Office Use F20.1/F25.1.1 **14.** To what extent do you have the opportunity for leisure activities?	1	2	3	4	5

	(Please circle the number)				
	Very poor	Poor	Neither poor nor well	Well	Very well
For Office Use F21.1/F26.1.2 **15.** How well are you able to get around?	1	2	3	4	5

For Office Use F9.1/F11.1.1

The following questions ask you to say how **good** or **satisfied** you have felt about various aspects of your life over the last two weeks.

	(Please circle the number)				
	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
16. How satisfied are you with your sleep?	1	2	3	4	5
For Office Use F3.3/F4.2.2 **17.** How satisfied are you with your ability to perform your daily living activities.	1	2	3	4	5

For Office Use F10.3/F12.2.3

		(Please circle the number)				
		Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
For Office Use F12.4/F16.2.1	**18.** How satisfied are you with your capacity for work?	**1**	**2**	**3**	**4**	**5**
For Office Use F6.4/F8.2.2	**19.** How satisfied are you with yourself?	**1**	**2**	**3**	**4**	**5**
For Office Use F13.3/F17.2.3	**20.** How satisfied are you with your personal relationships?	**1**	**2**	**3**	**4**	**5**
For Office Use F15.3/F3.2.1	**21.** How satisfied are you with your sex life?	**1**	**2**	**3**	**4**	**5**
For Office Use F14.4/F18.2.5	**22.** How satisfied are you with the support you get from your friends?	**1**	**2**	**3**	**4**	**5**
For Office Use F17.3/F21.2.2	**23.** How satisfied are you with the conditions of your living place?	**1**	**2**	**3**	**4**	**5**
For Office Use F19.3/F24.2.1	**24.** How satisfied are you with your access to health services?	**1**	**2**	**3**	**4**	**5**
For Office Use F23.3/F28.2.2	**25.** How satisfied are you with your mode of transportation?	**1**	**2**	**3**	**4**	**5**

The following question refers to **how often** you have felt or experienced certain things in the last two weeks.

		(Please circle the number)				
		Never	Seldom	Quite often	Very often	Always
For Office Use F8.1/F10.1.2	**26.** How often do you have negative feelings, such as blue mood, despair, anxiety, depression?	**1**	**2**	**3**	**4**	**5**

Did someone help you to fill out this form? *(Please circle Yes or No)* Yes No

How long did it take you to fill out this form? _____minutes

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Certificate of Recognition

This is to certify that **Prof./Dr./Mr./Ms. Neha Tewatia** from **Lovely Professional University** has successfully participated as **Oral Presenter** in the International Conference on **"Feminine Hygiene Management- Beyond Taboo" (ICHFM-2022)** on the Theme of "To Sensitize Feminine Hygiene Management Including Reproductive Health, Menstrual Hygiene, and Menopause across the Genders" held on 25th to 26th November 2022 organized by School of Pharmaceutical Sciences in an under the technical guidance of UNICEF-India at Lovely Professional University, Punjab.

Date of Issue: 24-12-2022
Place: Phagwara (Punjab), India

Prepared by
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INDIAN ACADEMY OF HEALTH PSYCHOLOGY REGD.NO.1107 (ESTD. 2015)

Certificate of Participation

This is to certify that Dr./Mr./Ms. **Neha Tewatia** of **Lovely Professional University, Phagwara** has presented a paper on **A Systematic Review based paper on Effect of Yoga on Depression, Emotion and Quality of Life of Premenstrual Dysphoric Disorder** in the International Conference on "**Holistic Health & Well being: Issues, Challenges & Management**" held from **02nd to 03rd June, 2023** organized by School of Education & Department of Psychology at Lovely Professional University, Punjab.

Date of Issue : 30-06-2023
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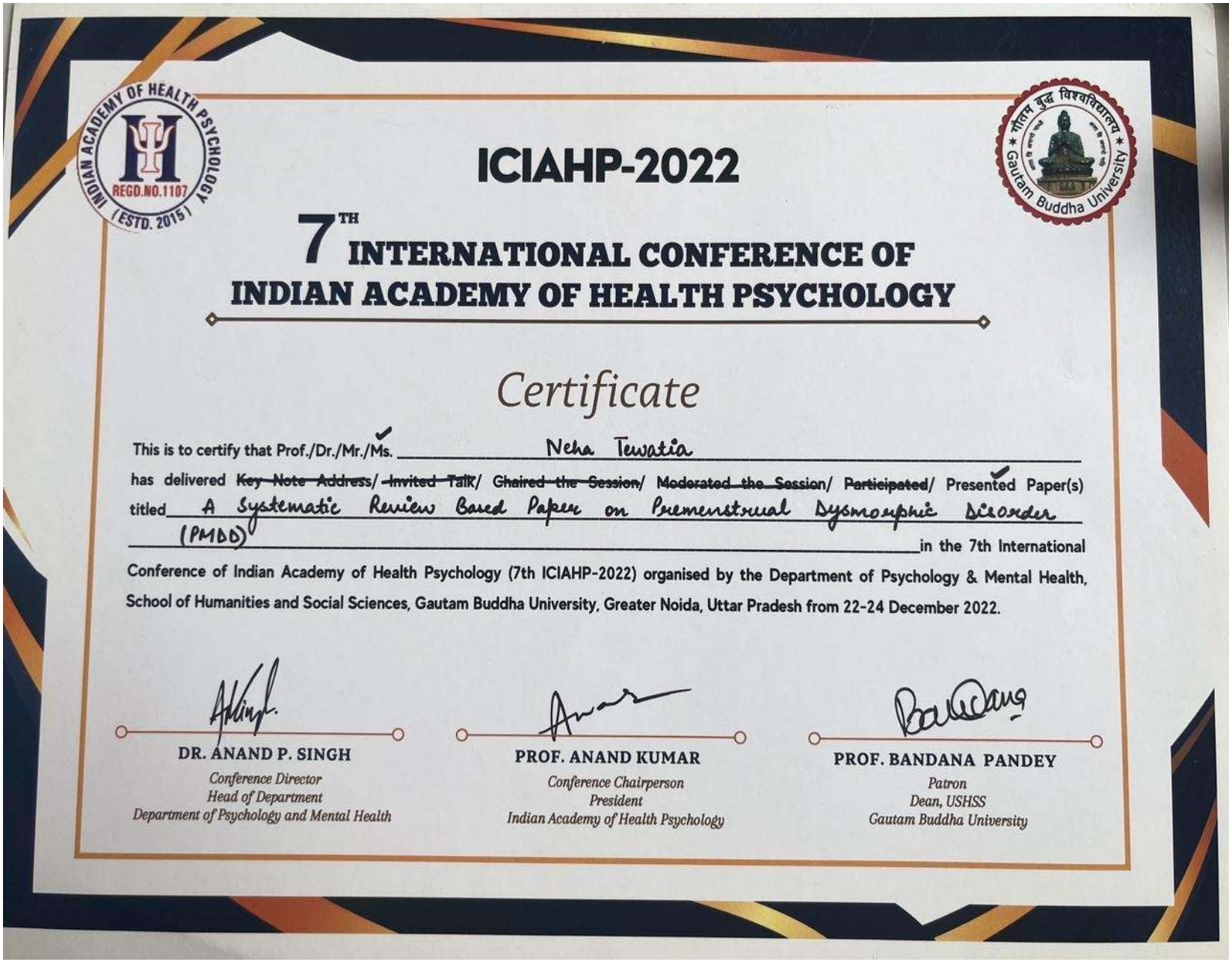

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Conference Director
Head of Department
Department of Psychology and Mental Health

PROF. ANAND KUMAR
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A SYSTEMATIC REVIEW-BASED PAPER ON THE EFFECT OF YOGA ON DEPRESSION, EMOTION, AND QUALITY OF LIFE OF PREMENSTRUAL DYSPHORIC DISORDER FEMALES

Authored By

Neha Tewatia
(research scholar, department of psychology, Lovely Professional University,Punjab)

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This is to certified that the article entitled
PSYCHOLOGICAL IMPACT OF PREMENSTRUAL DYSPHORIC DISORDER AND EFFECTIVE MANAGEMENT TECHNIQUES
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(Research Scholar, Department of Psychology, Lovely Professional University,Punjab)
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Editor-in-Chief

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प्राप्ति की तिथि/Date of Receipt: 16/08/2024

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