University of Kerbala/ College of Nursing

Premenstrual Syndrome and Coping Mechanisms among University Female Students

A thesis Submitted to

College of Nursing Council/University of Kerbala/ In Partial Fulfillment of the Requirements for the Master's

Degree in the Nursing Sciences

By

Khadija Haider Hussein

Supervised By

Lecturer Ph.D. Haqi Ismael Mansour

June /2024 A.D. **Dhul-Hijjah 1445 AH**

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

" وَيَسْأَلُونَكَ عَنِ الْمَحِيضِ قُلْ هُوَ أَذًى فَاعْتَزِلُوا النِّسَاءَ فِي الْمَحِيضِ

وَلَا تَقْرَبُوهُنَّ حَتَّى يَطْهُرْنَ فَإِذَا تَطَهَّرْنَ فَأْتُوهُنَّ مِنْ

حَيْثُ أَمَرَكُمُ اللَّهُ إِنَّ اللَّهَ يُحِبُّ التَّوَّابِينَ وَيُحِبُّ الْمُتَطَهِّرِينَ "

صدق الله العلي العظيم

سورة البقرة الآية (٢٢٢)

(Supervisor Certification)

I certify that this thesis, which entitled (**Premenstrual Syndrome and Coping Mechanisms among University Female Students**), submitted by (**Khadija Haider Hussein**), was prepared under my supervision at the College of Nursing, the University of Kerbala in partial fulfillment of the requirements for the degree of master in nursing sciences.

Supervisor

Instructor. Dr. Haqi Ismael Mansoor

College of Nursing University of Kerbala

/ /2024

(Approval Certification)

We have reviewed the thesis and ensured that it fulfilling all the requirements.

Head of Maternal and Neonatal Nursing Department

Assist Prof Dr. Sajidah Saadoon Oleiwi

College of Nursing/ University of Kerbala

/ /2024

Associate Dean for Scientific Affairs and Higher Studies

Assist. Prof. Dr. Hassan Abdullah Athbi

College of Nursing/ University of Kerbala

11/9 /2024

Committee Certification

We are examining committee, certify that we have read this thesis **(Premenstrual Syndrome and Coping Mechanisms among University Female Students)** which is submitted by **Khadija Haider Hussein** from Nursing college / kerbala university , and we have examined the student in its contents, and what is related to it and we decide that it is adequate for awarding the degree of Master in Nursing.

Signature
Member
Asst. Prof. Dr. Nora Sabah Rasoul Al-Jabiri
/ / 2024

Signature
Member
Asst Prof Dr. Sajidah Saadoon Oleiwi
/ / 2024

Signature
Chairman
Prof. Dr. Salma Kadhum Jihad
Signature
/ / 2024

Approved by the council of nursing college / university of kerbala

Signature
Asst. Prof. Dr. Selman Hussain Faris
Dean College of Nursing /University of Kerbala
/ / 2024

Dedication

To the Messenger of God, Prophet Mohamed, and his family, especially Imam Hassan Al-Mujtaba.

To the present in my heart, absent from my sight, my master, Imam Mahdi.

To my support after God (Father), my shining star and my eyes with which I see (Mother), my dear sister and her family, the shoulders that I lean on without fear (brothers).

To whoever preceded us to paradise (my younger sister Fatima),
To every martyr who sacrificed his life so that we could remain alive:

Moreover, to who faced difficulties and challenged the consequences to achieve what she aspired to (myself),

With great love and respect.

Khadija

Acknowledgment

This study could not have been completed without God's constant support, so thank God for the great blessing.

Many thanks to the distinguished dean of the College of Nursing/University of Kerbala **(Assist. Prof. Dr. Selman Hussain Faris)** and Associate Dean for Scientific Affairs and Higher Studies **(Assist. Prof. Dr. Hassan Abdullah Athbi).**

I would like to thank all faculty members in the nursing college, especially **(Professor Dr. Ali Kareem Khudhair and Assist. Prof. Dr Safi Dakhil Nawam),** for their continuous support.

Thanks also go to the Head of the Maternal and Neonatal Nursing Department **(Assist. Prof. Dr. Sajidah Saadoon Oleiwi).**

Great thanks to my supervisor **(Instructor Dr. Haqi Ismael Mansour)** for his guidance, assistance, time, encouragement throughout the study, and for everything that he has done for me.

I would like to thank all the members of the library in the College of Nursing, especially the head of the library **(Azhar Mohamed Jawad)**, for their cooperation and invaluable assistance.

In addition, I would like to thank Baghdad University/College of Nursing library members.

Sincere thanks to my parents, sister, brothers, friends, and all who supported me.

Finally, I would also like to thank the students who participated in conducting this study.

Abstract

Premenstrual syndrome is a common gynecological disease whose symptoms appear and include a group of behavioral, physical, and psychological changes in females during the luteal phase, ending with the onset of menses. This syndrome is considered one of the complex disorders that affect women at the age of reproduction.

Women use a variety of coping methods such as massages relaxation, hot shower, listening to music, herbal medications and other strategies to control and lessen premenstrual misery.

The descriptive correlational study was conducted on 372 female students at five colleges from Kerbala University. To assess the symptoms of premenstrual syndrome, identify the coping mechanisms that used by students and determine the influence of coping mechanisms that used among female students on symptoms, the data was collected during the period from January 1 to January 31, 2024. The students were selection by utilizing a non-probability (convenience) sample.

Data was collected through using a self-report questionnaire, and version 26.0 of the Statistical Package for Social Sciences (SPSS) was used to analyze and interpret the collected data. The data collection instrument was divided into three parts: socio-demographic and reproductive characteristics, which is contain (age, marital status, residency, college, stage of study, who she lives with, the mother's level of education, monthly income, family history of premenstrual syndrome, age at menarche, menstrual cycle duration, menstrual cycle interval, regularity of the menstrual cycle, and amount of bleeding during the menstrual cycle), the premenstrual syndrome scale which contain 40 items, and the coping mechanisms scale which consist of 22 items.

The results of study reveals that female students associated with moderate to severe symptoms of premenstrual syndrome. Female students show moderate coping mechanisms. coping mechanisms among female students highly influence the symptoms associated with premenstrual syndrome, as indicated by high significant differences in physical, psychological, behavioral, and overall symptoms at p-values = .001. Significant relationship was found among female students' symptoms with their residency, perceived monthly income, family history, menstrual duration, and amount of bleeding at p-values= .013, .019, .001, .012, and .001 respectively. Findings not reveal significant relationship with other variables such as age at menarche, menstruation interval, and regularity of menstruation.

Among the most important recommendations recommended by the researcher is educating the community and increasing female students' awareness of the changes that occur during the premenstrual period and how to deal and cope with these changes in a healthy way by holding special workshops and courses for female students.

List of Contents

List of Appendices

List of Tables

List of Figures

List of Abbreviations and Symbols

Items	Meaning
A	Cronbach Alpha
ACOG	American College of Obstetrics and Gynecology
ANOVA	One-way analysis of variance
BMI	Body Mass Index
BSO	bilateral salpingo-oophorectomy
CATs	Complementary and Alternative Treatments
CBT	Cognitive behavioral therapy
Cm	Centimeter
CNS	Central Nervous System
DRSP	Daily Record of Severity for Problems
DSM-5	Diagnostic and statistical manual of mental disorders
et al	et alias
F	Frequency
FSH	follicle stimulating hormone
GABA	Gamma-Aminobutyric acid
GnRH	gonadotropin-releasing hormone
H.S	High significant
HPO	Hypothalamo-Pituitary-Ovarian
ICD	International Classification of Diseases
ISPMD	International Society for Premenstrual Disorders
LH	luteinizing hormone
M	Mean
N, n	Number of sample
N.S	Non- significant
No.	Number
PMDD	Premenstrual dysphoric disorder
PMDs	Premenstrual disorders

PMS	Premenstrual syndrome
SD	Standard Deviation
Sig	Level of significance
SPSS	Statistical Package for Social Science
SSRIs	selective serotonin reuptake inhibitors
WHO	World Health Organization
%	Percentage
&	And
<	Less than
>	More than
≥	More than or equal

Chapter One

Introduction

Chapter One

Introduction

1.1. Introduction:

There are regular monthly changes in the female reproductive system in preparation for fertilization and pregnancy. These changes occur under the control of hormones, and one of their most prominent characteristics is the shedding of the inner uterine lining and its exit in the form of vaginal bleeding. This condition is called the menstrual cycle (Thiyagarajan, et al. 2022).

There are many disorders among females related to their menstrual cycle, including premenstrual syndrome (PMS), abnormal uterine bleeding, endometriosis, amenorrhea, and premenstrual dysphoric disorder (PMDD) (Itriyeva, K. 2022).

The most common problem among women of reproductive age that occurs periodically is PMS. During this period, women suffer from psychological, physical, and behavioral symptoms and changes whose severity varies from one woman to another. Very severe symptoms have been classified as a depressive disorder called premenstrual dysphoric disorder, according to the DSM-5 (Gao, et al., 2021).

This syndrome is considered one of the complex disorders that affect women at the age of reproduction. These changes can be considered to result from neuroendocrine differences. This syndrome appears in the luteal phase after ovulation and shows at least one symptom that may be psychological, physical, or perhaps behavioral, which creates a burden on the woman's relationships and daily activities (Nappi, et al. 2022).

Every woman is susceptible to PMS, which is common in females of all ages and causes significant morbidity with obvious damage to lifestyle, work performance, interpersonal connections, emotional health, ability to operate at home, and quality of life. This condition is more prevalent in young girls and appears to worsen over the reproductive years (Dawood, 2020).

Hormonal changes could be the reason behind the group of disturbing symptoms that affect women in the premenstrual period, which in turn lead to difficulties in daily performance, so women's life with PMS show poorer quality than those without PMS (Bhuvaneswari et al., 2019).

Many factors involved in PMS, such as sex hormone change (progesterone deficiency or excess estrogen), mineral and vitamins deficiency, a lack of vital fatty acids, obesity, and smoking (Al-Juhaishi, A. 2017)

On the other hand, PMS is considered a multifactorial syndrome that affects all women’s menstrual cycles in general and adolescent girls in particular. Its symptoms are not the result of an organic disease, and they occur and disappear at the same stages of each menstrual cycle (Al-Ameri et al., 2017).

A wide range of psychological symptoms, including mood swings, anxiety, sadness, impatience, and a lack of confidence, are associated with PMS. In addition, there are bodily complaints, including mastalgia and bloating. The diagnosis of PMS is supported by the timing of symptoms, not the types of symptoms, and the extent to which they interfere with everyday activities (Srivastava, M. 2020).

In addition to affecting women, PMS also has an impact on families, societies, and workplaces since it can lead to bad social life activities, poor home and workplace productivity, and damaged relationships with friends, coworkers, and family members. Since women with PMS have higher rates of anxiety and despair, this disorder in young women is a serious public health concern. It may also have an indirect financial impact on society through increased rates of hospitalization, suicide, and absenteeism from work (Budarapu et al. 2018).

Assisting young women with PMS in developing coping mechanisms can improve their quality of life and safeguard their physical and emotional well-being. PMS is a significant and prevalent issue that lowers quality of life. Thus, it is important to understand the coping mechanisms and coping level of young women with PMS from a research and therapeutic perspective (Keten... and Keten., 2023).

Though little is known about the contributing reasons and useful coping techniques, PMS is generally recognized as a widespread public health issue that affects over half of all women in the world who are of reproductive age, including university students. It is also related to a lower quality of life and decreased productivity. (Abeje and Berhanu ., 2019).

Therefore, this study aimed to assess PMS, the factors associated with it, and coping mechanisms used by female university students, which helps reduce the problem by applying the most effective coping mechanisms in alleviating its symptoms and avoiding factors that increase its severity, thus reducing its impact on the academic performance of female students.

1.2. Importance of the Study:

This disorder affects millions of girls worldwide who are of reproductive age. Premenstrual dysphoric disorder and PMS are said to have relative prevalence rates of 2.8% and 98.5%, respectively. This condition is seen in Asian nations at varying rates: 66.6% in Turkey, 76% in China, and 63.1% in Malaysia. The prevalence ranges from 60% to 80%. According to American College of Obstetrics and Gynecology, 65.5% of individuals have this condition, and 8.75% of those patients need specialist care. It isestimated that 98.2% of Iranian university female students between the ages of 18 and 27 have at least one PMS symptom (Akbarzadeh et al., 2015).

PMS prevalence ranges between 5.3% and 31% in women of childbearing age. Women with this syndrome have reported approximately 300 different symptoms. Because there is no fixed and specific definition for this syndrome and the definitions established are constantly changing, studies have shown great variation in the prevalence of symptoms of the syndrome (Kamat, et al. 2019).

Premenstrual disorders (PMS and PMDD) have been documented in several nations and have progressively gained prominence as issues. The PMS prevalence is varied from (12%) in France to (98%) in Iran, with (47.8%) a pooled estimate, according to a meta-analysis that included 17 studies (Trieu et al., 2023).

Most of the symptoms of PMS are related to the physical condition and mood, and in most women, these symptoms are severe, which hinders and affects their family and career lives, so it is considered a public health problem among females (Adnan& Razzak. 2020).

The majority of women deal with premenstrual tension as a normal physiological phenomenon that does not require medical consultation or treatment. But the truth is that focusing on premenstrual disorder is very important because it is widespread among girls and remains constant until they reach menopause and because it causes a major disruption in their daily performance in the days preceding the period (Jasim, W. 2018).

While lifestyle modifications can alleviate mild-to-moderate PMS symptoms, pharmaceutical therapies are necessary for the majority of severe symptoms (Sodouri et al., 2013).

Women with premenstrual disorder have a decreased quality of life and decreased job performance, which makes them have strange thoughts. Therefore, previous research focused on studying the relationship between suicide and premenstrual disorder. It has been shown that there is a relationship between suicidal ideation and severe premenstrual disorder (Prasad et al., 2021).

In addition to health issues, menstrual abnormalities including PMS can lead to limitations in academic performance and work attendance, which can impede real-world accomplishments and career opportunities. Not only may early detection and treatment of such problems reduce the chances of future disease in young adulthood, but they can also enhance the health, general quality of life, and sense of well-being of the woman (Elnagar et al., 2017).

The American College of Obstetrics and Gynecology (ACOG) defines PMS as the periodic recurrence of symptoms that are severe enough to interfere with specific aspects of life and that consistently and predictably coincide with menstruation. Women who suffer from PMS miss more work, spend more on healthcare, and have a poorer quality of life when it comes to

their health, which can have a substantial financial impact (Liguori et al., 2023).

Women's perceptions of premenstrual symptoms, how these symptoms affect their capacity to carry out everyday tasks, and the help they receive for treatment and care can all be influenced by their cultural surroundings so It's critical to understand the cultural background of the global conversation on women's menstrual health. While this review does not address cultural influences on women's reproductive health and how these relate to PMS diagnosis, symptom expression, management, and care, it is important to recognize the impact of these cultural factors on a comprehensive understanding of PMS and how the community supports and responds to women experiencing premenstrual distress (Sanchez et al., 2023).

1.3. Problem Statement

PMS is one of the most common menstrual disorders among women in the period between puberty and menopause. The changes that occur due to this syndrome cause a major obstacle for females in terms of completing their domestic tasks and their family and social relationships; in addition to that, it may cause them to have dangerous thoughts such as suicidal thoughts, as mentioned in previous studies. .

Its impact is not only limited to relationships and home tasks, but it can also cause them to be absent from performing their duties at work or affect the academic level of female students.

Because the majority of girls may be ignorant of the cause of the changes that occur to them, or they may be aware of them, but they do not know how to deal with these changes in healthy ways, and also coping mechanisms such as hot shower, massage, listen to music and other

mechanisms play an important role in dealing with stressors, this problem was raised to understand the effect of the different coping mechanisms used by university students on the symptoms of PMS. In addition, this study will examine how demographic and reproductive characteristics are associated with PMS and the extent to which they influence this condition.

1.4 Objectives of the Study:

This study aims to:

1. Assess the symptoms of premenstrual syndrome among female students.

2. Identify the coping mechanisms that used to reduce the PMS symptoms among female students.

3. Determine the influence of coping mechanisms on PMS symptoms among female students.

4- Find out relationship between premenstrual syndrome among female students and their demographic and reproductive characteristics.

1.4. Research Questions:

1. What are the symptoms of premenstrual syndrome among female students, and do these symptoms correlate with the students socio-demographic and reproductive characteristics?

2. What are the coping mechanisms that used to reduce the symptoms of premenstrual syndrome and if those coping mechanisms have an influence on symptoms of premenstrual syndrome among female students?

1.6. Definition of terms:

1.6.1. Premenstrual Syndrome:

A. Theoretical Definition:

Cluster of symptoms experienced by some women, typically occurring from a few days up to 2 weeks before the onset of menses (Davidson et al, 2020).

B. Operational Definition:

Physical and emotional symptoms in female students that experience one or two weeks before their period, PMS symptoms usually ease when period starts.

1.6.2. Coping Mechanisms:

A. Theoretical Definition:

The strategies people often use in the face of stress and/or trauma to help manage painful or difficult emotions. Coping mechanisms can help people adjust to stressful events while helping them maintain their emotional well-being (Coping Mechanisms - GoodTherapy.org Therapy Blog, 2023).

B. Operational Definition:

It’s a different methods used by female students to deal with the premenstrual physical, psychological, and behavioral changes, this methods help them in adapting to stressful situations while and make them more stable emotionally (e.g. relaxing treatment, sleep, bathing)

Chapter Two

Literature Review

Chapter Two
Literature Review

Before discussing PMS and coping mechanisms, we need to talk about the anatomy and physiology of the female reproductive system and its hormones to understand the hormonal changes that occur pre- and during menstruation.

2.1. Anatomy of Female Reproductive System:

The female reproductive system is divided into the external and internal reproductive organs. The female vulva, or external genitalia, is made up of numerous structures such as the Mons pubis, Labia majora, Labia minora, Clitoris, Urethral meatus and opening of the paraurethral (Skene) glands, Vaginal vestibule, Perineal body. Women differ significantly in how their external genitalia appear. The external organs of a woman are influenced by her age, race, number of children born, and her genetic makeup (Perry et al., 2022).

The ovaries, fallopian tubes (also known as oviducts or uterine tubes), uterus, adjacent structures (adnexa), and vagina are collected together to formed the internal reproductive structures of women (Ameer, et al. 2022).

An accessory organ of reproductive system is the breast or two mammary glands, after childbirth breast produce the milk to provide the antibodies and nutrition from mother for the infant, is contain pigmented areola surruonding the nipple. The amount of fatty tissue in a breast is what determines its size and is not related to a woman's capacity to produce milk (Leifer, 2018).

2.2. Female Reproductive Cycle

The female reproductive cycle is a multifaceted process that involves a convoluted sequence of chemical reactions and secretions in order to maximize fertility and conceive. The ovarian cycle, the endometrial cycle, the hormonal fluctuations that govern them, and the periodic changes in the breasts are all included in the general term for the female reproductive cycle. The cyclical changes that aid in the body's preparation for fertilization involve the endometrium, ovaries, pituitary glands, and hypothalamus (Ali & Al-Saffar, 2014).

A female's fertile years last from the time she arrives at puberty (ages 11–14) until menopause (ages 40–45). The ovarian cycle, which happens in the ovary's cortex, and the menstrual cycle, which takes place in the uterus' endometrium, are the two periodic cycles that a fertile female display Regular vaginal bleeding is an external indicator of a healthy menstrual cycle. This happens when the oocyte fails to fertilize or when implantation fails, causing the endometrial lining to shed. The pituitary, hypothalamus, and ovaries together known as the hypothalamo-pituitary-ovarian axis (HPO), regulate the female reproductive hormones levels, which in turn affect the cycle (Kenny & Bickerstaff, 2017).

2.2.1 Ovarian Cycle

The sequence of events connected to an oocyte (ovum or egg) developing inside the ovaries is known as the ovarian cycle. Approximately 400,000 follicles remain in the female ovary during puberty, compared to the 2 million oocytes present at birth. When the follicular cells (the ovum and surrounding cells) enlarge and the maturation process commences, the ovarian cycle begins. At this point, the developing follicle is known as a graafian follicle. Every month, the ovary produces numerous follicles, but

typically only one of those matures to the point of ovulation. The follicular phase, ovulation, and the luteal phase are the three stages of the ovarian cycle (Ricci, et al. 2020).

2.2.1.1 Follicular Phase

The follicular phase begin with the onset of bleeding at the first day of menstrual cycle, and lasts about 14 days, The follicular phase is marked by dominance in estrogen, follicle stimulating hormone (FSH), and luteinizing hormone (LH). In order to prepare a mature ovum for release during ovulation, FSH stimulates the ovary. LH stimulates the theca cells of the ovary to create androgens which convert to estrogen in the granulosa cells of the ovary. The hypothalamus releases gonadotropin-releasing hormone (GnRH) just prior to ovulation. The anterior pituitary releases LH and FSH in response to this activity. The ovum is stimulated to release when there is an LH spike, and follicular phase comes to an end with ovulation (Hacker et al., 2015).

2.2.1.2. Ovulation Phase:

It is the process by which the mature ovum rupturin the Graafian follicle and leaves the ovary. It happens once per month, or roughly every 28 days, when a human female is fertile. It does not happen when a woman is pregnant. It can occasionally happen during breastfeeding. Although the exact time of ovulation varies, it often occurs on the fourteenth day of the ovarian cycle. Ovulation happens around 14 days (± 1 day) prior to the start of the subsequent menstrual cycle. The anterior pituitary gland's suppression of F.S.H. and promotion of L.H. secretion is thought to be the cause of ovulation. This leads to a rise in the salt content of the liquid folliculi, which raises its osmotic pressure and causes the Graafian follicle to burst (Haroun, H .2016)

2.2.1.3. Luteal Phase

When the mature egg leaves follicle the luteal phase begins. Corpus luteum is the term that given to remnant of the follicle.in this phase quickly transitioning from generating mostly estrogen to primarily progesterone occur which induces a slowdown of LH release and preparing endometrium to implantation of an embryo.

A fertilized egg will produce human chorionic gonadotropin and implant in the endometrium a few days following ovulation. During the first four months of pregnancy, this hormone will keep the corpus luteum (and thus the synthesis of progesterone) intact in the absence of LH until the placenta releases enough estrogen and progesterone to keep the pregnancy going.

The corpus luteum will recede in the absence of a fertilized egg, which will result in a decrease in progesterone and estrogen. Loss of endometrial blood supply results from progesterone withdrawal, which this causes the endometrium to shed and the menstrual cycle to begin. The luteal phase comes to an end and the subsequent menstrual cycle begins with the commencement of menses. (Chou. B, 2020) and (Luesley & Kilby, 2016)

2.2.2. Uterine (menstrual) Cycle

It also called endometrial cycle, it happen in endometrium layer of the uterus as response of hormonal changes that occur in the ovarian cycle. The uterine cycle goes through three phases: menstrual, proliferative and secretory phases. This cycle lasts from the start day of one menstrual cycle to the first day of the subsequent period. Typically it is duration about 28 days but however it maybe range from 21 to 40 days Regardless of the presence of the uterus or not, the HPO axis causes changes in hormones that

occur during the menstrual cycle (Haroun, H. 2016) and (Kenny & Bickerstaff, 2017).

2.2.2.1. Menstrual Phase

During the menstrual flow, also known as menses (monthly bleeding), which typically continue 4 to 5 days, the functional layer of the uterine wall sheds and is eliminated. Tiny fragments of endometrial tissue are mixed with the blood that is expelled from the vagina. The damaged endometrium become thin after menstruation (Moore et al., 2015).

2.2.2.2. Proliferative Phase

The expansion of the endometrial glands in response to rising estrogen levels marks the beginning of the proliferative phase. In order to make room for the implantation of the fertilized ovum, the blood vessels dilate and the endometrium thickens eight times, rising from 0.5 to 5 mm in height. In helping to increase the chances of fertilization, cervical mucus becomes thinner, clearer, stretcher, and more alkaline, this phase Begin on day 5 of the menstrual cycle until ovulation. This phase, which corresponds with the follicular phase of the ovarian cycle, is dependent on estrogen stimulation originating from ovarian follicles (Ricci, S. 2020).

2.2.2.3. Secretory Phase

In addition to estrogen, the cells that make up the corpus luteum release progesterone, another significant hormone, following ovulation. This enhances the effect of estrogen on the endometrium in a way that causes the glands to be twisted and the lumens to enlarge significantly and become full of secretions. Concurrently, the endometrium has an increase in blood flow, resulting in its vascular and succulent nature. The spiral arteries are twisted as they continue to expand into the endometrium's superficial layer. The

purpose of these effects is to provide the fertilized ovum a place for implantation .secretory phase or premenstrual phase as it also called lasts about 14 days of the cycle (after ovulation until next menstrual cycle) (Raman, 2019).

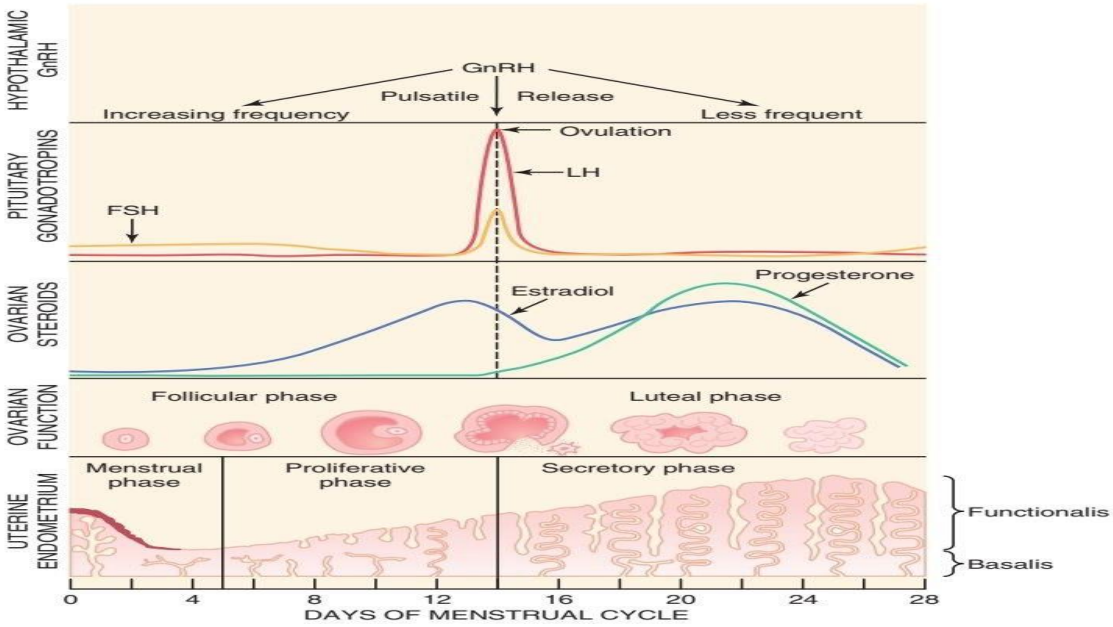

Figure (2-1) menstrual cycle (Hacker et al., 2015).

2.3. Historical View of PMS

The historical history of gender relations has been intricately linked to the PMS and related phenomena for millennia, and this relationship persists today. Early in the 1980s, PMS spread throughout society. Women were given advice in popular news stories on how to "beat the Blues," "overcome the menstrual uglies," and handle social situations when they were menstruating (Zaka & Mahmood, 2012).

Robert T. Frank brought attention to the severe agony women went through before their menstruation began in 1931 when he gave a presentation to the New York Academy of Medicine. This pain he referred to as "premenstrual tension." The same year, psychologist Karen Horney

published an article relating similar symptoms to rejected maternal dreams (Profiti, R. 2001).

Greene and Dalton, (1953) Declared Among the minor endocrine illnesses, "premenstrual tension," as it has been known historically, is the most frequent. It is common knowledge that many women have a wide range of symptoms during the final seven to ten days of the menstrual cycle, some of which are uncomfortable at best and severely incapacitating at worst.

Though it focused on a national level, PMS research in the 1950s and 1960s shared common foundations throughout France, Britain, and the United States. It was seen as troublesome more and more starting in the 1970s, partly because of unsolved issues and partly because research methods were drastically shifting (Knaapen & Weisz, 2008).

Some psychologists started creating social theories in the 1980s to explain PMS, partly due to their dissatisfaction with the biological models that were unable to identify the cause(s) of the condition or give useful therapies. The emergence of feminist ideologies from the women's movement in the late 1960s and early 1970s coincided with this trend. Feminism has impacted psychology researchers' beliefs and approaches to differing degrees; this is seen in the research projects under consideration. The prior research conducted between 1983 and 1985 by Holly Prochnau, Judith Youdale, and Jessica McFarlane acknowledged the pervasiveness of male bias in social science research and attempted to dissect the information generated within that framework. Their research strengthened the tiny but expanding corpus of psychology that focused on feminist explanations of PMS (Clark, 2000).

The World Health Organization (WHO) assigned a diagnostic code for PMS to the International Classification of Diseases (ICD) in 1982 (Kathleen et al., 2010).

The fourth edition of the Diagnostic and Statistical Manual of Mental Disorders, which was published in 1994, listed PMS in an appendix for further research, indicating that it was not yet accepted as a psychiatric condition but that it warranted further study. The labeling of PMS as a psychiatric condition remained controversial well into the 1980s and 1990s (Reid & Soares, 2018).

PMS is one of the few diagnoses that has generated as much debate as PMS. The diagnosis's uniqueness stems only from its correlation with the menstrual cycle. However, the diagnosis of this condition is made more difficult by this same aspect. The notion that one should anticipate difficulties during the premenstrual period stems from the widespread perception that women are more irritable and moody throughout their menstrual cycle (Robinson, 2002).

2.4. Etiology of PMS

There is no one cause for PMS; rather, a variety of factors contribute to its development, including underlying psychological, environmental, and genetic factors. This is true for all mood disorders, of course, but in PMS, ovulation is most likely the primary factor influencing the reproductive cycle (Lees & Bourne, 2018).

Although the exact cause of these premenstrual disorders is unknown, it has been suggested that progesterone and the neurotransmitter gamma aminobutyric acid (GABA) abnormalities, abnormal serotonergic activity, and sensitivity to hormonal fluctuations during the luteal phase of the menstrual cycle may all be involved. (Itriyeva, 2022).

It is still unclear what causes PMS, but certain women are more susceptible to the typical hormonal fluctuations that take place during the menstrual cycle. Ovulation inhibitors are frequently used to treat premenstrual symptoms throughout pregnancy and after menopause, which offers compelling evidence of their connection to cyclic ovarian activity. Moreover, the use of antidepressant or anxiolytic medications can help alleviate PMS symptoms by stabilizing neurotransmitters like serotonin and altering the effects of gamma-aminobutyric acid (GABA). Thus, it would seem that these neurotransmitters are crucial for the emergence of premenstrual symptoms (Rezende, et al. 2022).

The causes of PMS are unidentified. Due to the fact that PMS symptoms coincide with menstrual cycle variations, hormonal imbalances such as excess estrogen and insufficient progesterone have been suggested. Serotonin is linked to symptoms as a major etiological factor (Gudipally & Sharma, 2020).

The reduced estrogen levels, according to molecular biology research, induce the hypothalamus to produce norepinephrine, which in turn causes acetylcholine, dopamine, and serotonin levels to drop. This results in sleeplessness, exhaustion, and depression—common PMDD and PMS symptoms (Bu L, et al. 2019).

One of the hypothesized causes of PMS is related to the cyclical changes in progesterone and estrogen levels that occur during the menstrual cycle, especially in the late luteal phase when the body is getting ready to menstruate. Interestingly, the relationship between ovarian steroid variations and central neurotransmitter function—specifically, serotonin, GABA, and beta-endorphins—has also been hypothesized as a cause of PMS. Consequently, it is possible to argue that neurotransmitters contribute to

premenstrual changes, although it may also There could be more affecting elements, thus this is only a connection. (Sanchez and others, 2023)

The exact cause of PMS is still unknown, but since the symptoms align with the menstrual cycle's hormonal variations, theories involving hormonal imbalances such as progesterone shortage and excess estrogen have been put forth. Serotonergic involvement is widely acknowledged as a major contributing element (Khalesi et al., 2019).

Variations in estrogen and progesterone levels are one of the hypothesized reasons for PMS, which has a multifactorial etiology. In addition, improper aldosterone and neurotransmitter secretion, as well as environmental variables including stress and alcohol usage, might contribute to it (Shobeiri et al., 2018).

While the cause of PMS remains unknown, many factors appear to be involved, such as the interplay between biological (hormonal imbalance and neurotransmitter changes, for example) and psychosocial (menstruation attitude and stress, for example) factors, as well as routine health behaviors (smoking, length of sleep, drinking, exercise, nutrient intake, and diet) (Yi, et al., 2023).

Inflammation may play a part in the genesis of common gynecological issues, including PMS and primary dysmenorrhea (Talebpour et al., 2023).

The primary obstacle to treating PMS is a lack of knowledge regarding its etiology. Throughout the menstrual cycle, a woman's body tissues become sensitive to fluctuations in hormone levels, specifically those of estrogen and progesterone. These fluctuations may impact brain chemicals, particularly serotonin, which is known to affect mood. The cyclic action of these

hormones on the dopamine, aminobutyric acid, and serotonin systems may be the source of mood swings (Nworie, K. 2018).

The endocrine, neurological, and mental systems are all involved in the genesis of PMS. Many theories have been put forth in the literature to explain the intricate pathophysiology of PMS irritability. Hypothalamic-pituitary-adrenal (HPA) axis dysfunction is assumed to be the cause of PMS, as it results in inadequate nutrition and issues with adrenal hormone production. The physiopathological process of PMS is also explained by the endocrine system hypothesis. Conversely, it is believed that central neurochemical responses resulting in symptom disclosure are triggered by physiological alterations in gonadal hormones in the case of PMDD's hormonal etiology. Additionally, there are explanations that emphasize the function of hormones. Another alternative is the concept of central nervous system (CNS) sensitivity. Additionally, research points to a genetic component (Ayhan, et al. 2021).

As of right now, the cause of PMS is the subject of two theories. In both, the ovarian hormone cycle is involved. The hypotheses are: Since the levels of progesterone and estrogen in the blood are the same in women with and without PMS, certain women are more sensitive to the effects of progesterone and progestogene. According to the second idea, progesterone and estrogen lower serotonin levels, which are known to control mood. By raising serotonin levels, selective serotonin reuptake inhibitors (SSRIs) have been shown to reduce PMS symptoms, supporting this notion. Depression and anxiety are also linked to low serotonin levels (Gnanasambanthan & Datta, 2019).

PMS may manifest as a result of psychological stress, genetic predisposition, or reproductive hormones. Experts have concluded that

altered sensitivity to normal hormonal changes, rather than perturbations of circulating ovarian hormones, is what elicits PMDD symptoms after searching for many years about differences in circulating hormone profiles between unaffected and affected women (Reid & Soares, 2018).

2.5. Diagnosis of PMS

Since the symptoms of PMS might resemble those of other illnesses, including depression and anxiety disorders, a precise prospective assessment of the symptoms is necessary in order to establish the diagnosis. The International Society for Premenstrual Disorders (ISPMD) advises against making the diagnosis until after the data from two consecutive menstrual cycles have been reviewed (Henz, et al. 2017).

An accurate diagnosis using DSM-V criteria is essential for managing PMS, PMDD, and other PMDs effectively. If there is a difference in symptoms between the two cycles, a third cycle of rating should be carried out (Cary & Simpson, 2023).

An obstetrician-gynecologist (ob-gyn) must validate a pattern of symptoms in order to diagnose PMS. The symptoms must interfere with certain regular activities and be present at least for three menstrual cycles in a row, in the five days before the onset of the period (ACOG 2011).

Establishing a diagnosis requires a thorough medical history as well as daily symptom tracking over the course of two menstrual cycles (Yonkers & Simoni, 2018).

A precise diagnosis of PMS is possible with the use of the Daily Record of Severity for Problems (DRSP). The frequency and severity of mental and physical symptoms related to the menstrual cycle are recorded in this chart (Ryu & Kim, 2015).

An extensively used prospective daily chart for PMD diagnosis and assessment is the Daily Record of Severity for Problems (DRSP). It was created to support the DSM criteria-based evaluation of PMDD. Since Endicott created the DRSP in English, it has been translated into several other languages, such as German, Portuguese, and Chinese (Takeda et al., 2021).

Although PMS has been the subject of many studies, comprehensive assessments of the existing data have proven challenging due to variations in diagnosis and available treatments. The National Institute of Health conference didn't start working on developing diagnostic standards until 1980. The DSM-IV diagnostic criteria have now taken the place of the DSM-III criteria, which were initially presented for the disease (Chin & Nambiar, 2017).

PMS symptoms must start within the luteal phase and last a few days after the onset of menstruation in order to meet the diagnostic criteria. It is best obtained by a prospective gathering of clinical and symptom data (Ryu & Kim. 2015).

Different criteria for PMS have been published by academic authorities.

1. According to the American College of Obstetrics and Gynecology (ACOG), this syndrome is at least associated with a physical or mental symptom that manifests before menstruation. Once menstruation begins, the symptoms may go away on their own without the need for medication.
2. The presence of at least five of the eleven symptoms listed for PMDD is necessary, according to the Diagnostic and Statistical Manual of Mental Disorders-IV (DSM-IV), which classifies PMDD and places a strong emphasis on mood disorders. Ten signs and symptoms include

tension and anxiety, mood swings, depression, ongoing rage or interpersonal conflicts, diminished interest in work and social interactions, a sense of being engulfed or out of control, altered eating, trouble sleeping, loss of focus, exhaustion, and lethargic behavior. As well as physical symptoms (headache, joint or muscle pain, bloating in the abdomen, acne, nausea, weight gain, back discomfort, chest pain, and chest sensitivity) (Naeimi, N. 2015) (ACOG 2000).

2.6. Symptoms of PMS

PMS symptoms are well-documented and encompass physical, psycho-emotional, and behavioral aspects. Abdominal cramps, bloating, breast tenderness and discomfort, back, head, muscle, and joint pain, hand and foot swelling , variations in weight, change in bowel habit and exhaustion are among the most frequent physical symptoms. A depressed mood, a propensity to cry, irritation, emotional instability, anxiety, trouble focusing, rage, and mood swings are examples of psycho-emotional symptoms. Behavioral symptoms may be the result of psychological and emotional difficulties resulting from physical symptoms, or they may be the result of PMS symptoms itself. Changes in sexual desire and libido, social isolation from friends, family, and partners, sensitivity, increased hunger, less interest in activities, restlessness, social anxiety, and an increase in interpersonal conflict are a few examples(Sanchez et al.2023).

PMS is an entity characterized by the presence of psychiatric symptoms such as mood swings, depression, loss of confidence, anxiety and irritability, without any underlying psychiatric disorder, accompanied by physical symptoms. Typical complaints include bloatedness and mastalgia encountered at the luteal phase of the menstrual cycle (LPMC), that

deteriorates the well-being of the women and then subsides or disappears with menstruation (Dilbaz & Aksan.2021).

Symptoms of PMS constitute backache, breast tenderness, abdominal bloating, weight changes, headache, mood swings, irritability, acne, stomach upset, fatigue, cravings, or loss of appetite. With almost 98.4% of the participants experiencing more than one symptom of PMS (Abbas et al. 2020).

depressive feelings, anxiety, fatigue, irritability, depressive thoughts, pain, changes in appetite, changes in sleeping habits, swelling in the premenstrual period is the most common symptoms among female students (Akın & Erbil, 2024)

Table (2-1) most frequent symptoms of PMS

Physical symptoms	Headache
	Mastalgia
	Backache and/or abdominal pain
	Bloating, weight gain
	Swollen ankles, hands and feet
	Nausea
	Muscle and joint pain
Psychological symptoms	Nervousness
	Anger
	Depressive mood changes
	Anxiety
	Mood changes
	Difficulty in concentrating
	Confusion
	Forgetfulness

	Emotional sensitivity
	Poor self-esteem
	Emotional insensitivity
	Agitation
	Restlessness
Behavioral symptoms	Fatigue
	Insomnia or needing more sleep
	Dizziness
	Sexual dysfunction
	Overeating

2.7. Management of PMS

Despite the severity of the PMS issue, there is still a great deal of misunderstanding in the medical community about the best ways to manage PMS. This theoretical diversity is reflected in the variety of therapies that are now accessible (Malik & Bhat, 2018).

Reducing the scope and intensity of symptoms, as well as how they affect interpersonal interactions and daily activities, is one of the treatment goals for PMS, along with enhancing life quality. Many therapies, including non-pharmacological therapy, medication, and surgery, have been suggested to control the illness because the underlying reason is unknown. The American College of Obstetricians and Gynecologists states that the intensity of PMS symptoms determines the best course of treatment (Alimoradi et al., 2022).

Pharmacotherapy is the recommended initial course of treatment for premenstrual dysphoric disorder, according to ACOG; however, non-

pharmacological methods should be tried first for those with mild symptoms. (Askari and others, 2018).

2.7.1. Non-pharmacologic management

2.7.1.1. Life style changes

A) Diet:

According to (Mohebbi et al., 2017), leading a healthy lifestyle can lessen the severity of PMS. The findings have practical implications in that they suggest that modifying one's lifestyle to include good eating practices, dietary adjustments, reducing harmful behavior, reducing stress, and other safe treatments might help lessen PMS symptoms.

There are a number of potentially modifiable variables positively related to PMS, including stress, mental anguish, and nutrition (consumption of high-sugar meals and Arabic coffee) (AlQuaiz et al., 2022).

According to (Rad et al., 2018), there is a substantial correlation between PMS and anthropometric indices (such as BMI and hip circumference), way of life, and food consumption. We may decrease the PMS by maintaining a healthy lifestyle and nutrition, which will help us reach our target weight and markers.

According to (Naraoka et al., 2023) eating enough protein—with an emphasis on fish, vitamin B12, vitamin D, and zinc—as part of meals every day and participating in warm-weather activities that raise body temperature, like taking a warm bath and having breakfast, may help prevent and treat PMS and menstrual pain.

Whole grain-based, vegetable, and fruit-based diets have been shown to alleviate menstrual discomfort and treat mild cases of PMS (Farasati et al., 2015).

B) Sleep

Women who suffer from PMS often have sleep disturbances. These people sleep more, but the quality and refreshment of their sleep is low. (Nicolau & Associates, 2018).

Physical and emotional changes in the premenstrual period of the menstrual cycle are frequently accompanied with sleep disturbance and poor quality sleep. Up to one-third of women who are of reproductive age say that their menstrual cycle causes sleep disturbances. Physical symptoms like dysmenorrhea discomfort can interfere with sleep, have a detrimental effect on mood, and interfere with other aspects of everyday life (Nowakowski & Meers, 2020).

Women are more likely than males to experience sleep issues, and evidence suggests that adhering to a certain sleeping and waking schedule might help alleviate the PMS symptoms. In patients who experienced PMS, also yoga was found to alleviate sleep disruptions. The results suggest that yoga may help women with PMS who experience sleep problems, although in more extreme cases, medical care may be required (Ghaffarilaleh et al., 2019).

C) Exercise

Systematic review done by (Pearce et al., 2020) finds that exercise may be a useful PMS therapy. It was in a line with other research that found exercise to be a successful primary dysmenorrhea intervention.The American College of Sports Medicine and NICE (National Institute for

Health and Care Excellence) both advocate exercise to complement primary care and guidance on other lifestyle conditions, such obesity and depression, that are known to be related with PMS.

Regardless the forms and duration of exercise so it varies across individuals, exercise is a beneficial strategy for reducing premenstrual symptoms in women with PMS, (Sağlam & Örsal, 2020).

People with PMS see a substantial reduction in several of their physical symptoms after 8 weeks of consistent aerobic exercise (Dehnavi et al., 2018).

2.7.1.2. Cognitive Behavioral Therapy (CBT)

A type of psychological treatment called cognitive behavioral therapy (CBT) has shown promise in treating a number of diseases, such as anxiety disorders, eating disorders, depression, marital issues, serious mental illness, and alcohol and drug abuse related issues. Numerous studies have demonstrated that cognitive behavioral therapy (CBT) significantly improves functioning and quality of life. Several studies have shown that cognitive behavioral therapy (CBT) is just as beneficial as other psychological treatments or psychiatric drugs, if not more so ("What Is Cognitive Behavioral Therapy?," 2017).

One practical tool for managing PMS-related psychosocial problems is cognitive behavioral training. It also works well for PMS physical symptoms. CBT strengthens female students' capacity to recognize issues that have solutions and aids in their success in taking greater control of their life by providing them with fresh perspectives about themselves, their symptoms, and the people in their environment. Although this kind of treatment is not commonly available, it is the best option for students with

PMS symptoms who are unable to take pharmaceutical therapy or who utilize over-the-counter medications (Maddineshat et al., 2016).

2.7.1.4. Herbal Products

For women who suffer from PMS, complementary and alternative treatments (CATs) are quite popular. Since ancient times, the usage of herbal remedies has grown rapidly. The Egyptians employed garlic, peppermint, cinnamon, and other plants to cure a variety of ailments. Overall, the results showed that consuming cinnamon packet supplements on a daily basis had a very significant favorable effect on reducing the intensity of physical symptoms associated with PMS, and the majority of womens expressed high levels of satisfaction with this effect (Hashim et al., 2016).

Herbal remedies have been used extensively to treat a broad range of illnesses, including the PMS. Overall, this research has demonstrated that the following substances may help reduce PMS symptoms: chamomile, curcumin, saffron, zataria, valerian root extract, wheat germ extract, zingiber, citrus sinensis, and flax seed (Maleki-Saghooni et al., 2018).

It is recommended to treat premenstrual psycho-behavioural and somatic problems using herbal medicine and nutritional supplements since they are both safe and effective (Sultana et al., 2022).

According to (Uzunçakmak & Alkaya, 2018), using inhalation aromatherapy can help with PMS symptoms. It is advised that adolescents experiencing PMS issues be made aware of the benefits of lavender oil inhalation treatment.

Due to their antioxidant, analgesic, antianxiety, anti-inflammatory, antihistamine, antispasmodic, and antidepressant properties, as well as their

neuroprotective qualities, chamomile tea and curcumin are helpful, natural options to treat PMS symptoms (Sultana et al., 2022).

Zigiber Officinale, the scientific name for ginger, is one of the plants that has been traditionally used to relieve painful menstruation. The fresh or dried root of the tropical plant ginger is utilized in traditional medicine. Vitex agnus-castus is another herb that grows in Central Asia and Mediterranean nations. Vitex agnus-castus is a hormone-free plant that controls women's menstrual cycles by raising progesterone levels and is effective in reducing pituitary hormone production, especially luteinizing hormone, through a novel mechanism (Shoaee et al., 2020).

Saffron can be regarded as a suitable supply for a variety of uses. It possesses a variety of pharmacological actions, including anticancer, antidiabetic, antihypertensive, antibacterial, hepatoprotective, renoprotective, and antioxidant qualities. The majority of the pharmacological actions of saffron petals are attributed to their active ingredients, the majority of which have antioxidant properties. In medicine, saffron petals can be utilized as an additional or substitute medication. Women (20–45 years old) who had symptoms of PMS for at least six months were given saffron petal twice a day in double-blind clinical research. Two capsules of a placebo were given to the control group each day. Two menstrual cycles were completed using the procedure. As compared to the control group, the results indicated that saffron petals improved PMS (Hosseini et al., 2018).

2.7.1.5. Nutritional Supplements

According to the analysis of the chosen research, taking supplements of vitamin D and calcium, or eating a diet high in these two micronutrients, may raise blood levels during the luteal phase and reduce or even eliminate PMS

symptoms. When weighed against the therapies listed in the studies—yoga, cognitive behavioral therapy, fluoxetine, and others—vitamin D and calcium can be a convenient, affordable, safe, and acceptable way to lessen the frequency and severity of PMS symptoms and enhance female's quality of life (Abdi et al., 2019).

Treatment with calcium supplements is an excellent way to reduce mood problems during PMS, according to (Shobeiri et al., 2017).

In addition to being crucial in avoiding osteoporosis, calcium is also a reasonably cheap, easy, safe, and effective way to relieve PMS symptoms (Bharati, M. 2016).

The production of neurotransmitters and hormonal balance are dependent on a number of vitamins and minerals, including calcium, magnesium, vitamin D, and vitamin B. These processes may be connected to the underlying pathophysiology of PMS. It has been observed that women with diets high in vitamins or minerals had lower incidences of PMS, suggesting that mineral and vitamin supplements may be useful in reducing symptoms of the condition (Kaewrudee et al., 2018).

2.7.2. Pharmacological Treatment:

A) Selective Serotonin Reuptake Inhibitors (SSRIs)

When treating core PMD, the use of selective SSRIs—fluoxetine, paroxetine, citalopram, and sertraline in particular—has been proven to significantly reduce emotional, behavioral, and physical symptoms. Because SSRIs function quickly in women with PMS, it is possible to start taking them 14 days before menstruation (Walsh et al., 2015).

B) Combined Oral Contraceptives:

Synthetic estradiol and progestin are used in combined oral contraceptives to block the hypothalamic-pituitary-ovarian axis. For this reason, a lot of women use them to attempt to lessen PMS symptoms additionly to seeking their contraceptive impact. A research conducted in the Netherlands found that the use of combination oral contraceptives was only moderately beneficial in easing PMS symptoms. Furthermore, there was no discernible difference in the usage of various combinations of oral contraceptives, negating the need to focus on a particular medication composition. (Silva, 2023).

C) Gonadotrophin-Releasing Hormone (GnRH) Analogues:

For many years, the synthesis of ovarian steroids has been effectively suppressed with the use of GnRH hormone analogues. It is not advised to use GnRH treatment for PMS symptoms early on because of the negative effects and expense. For women who have the worst symptoms, prolonged usage should be continued (Malik & Bhat, 2018).

D) Hormone therapy:

Progesterone replacement treatment and complementary therapies can be used, as PMS can be brought on by high estrogen levels or deficiencies in progesterone. For example, administering a 20-mg intramuscular progesterone shot every other day for a total of five times. Oral norethinnes (5 mg) or megestrel (5 mg) can also be taken 14 days prior to menstruation, starting on the 16th day of menstruation. Androgens have an estrogenic impact and have the ability to suppress gonadotropin release, which indirectly lowers estrogen levels. Consequently, 5–10 mg of

methyltestosterone were administered orally every day for 10–14 days, beginning on the 15th day of menstruation (Fan, et al. 2022).

2.7.3. Surgical Therapy (Hysterectomy and bilateral salpingo-oophorectomy (BSO))

As they fully eliminate the ovarian cycle, total abdominal hysterectomy and bilateral salpingo-oophorectomy represent the gold standard for ovulation suppression and the sole effective treatment for PMS. It is important to utilize GnRH analogs preoperatively to guarantee that HRT is tolerated and to test for cure when treating women with PMS. These patients should only get such therapy if they have very severe PMS and no other effective therapeutic options. women who have undergone a hysterectomy with ovarian conservation frequently have cyclical symptoms even when they are not menstruating (Malik & Bhat. 2018).

2.8. Overview of Coping

Since change is unavoidable, Stress is the body's normal response to pressures and changes. Everyone will encounter stress at some point in their life. While many stressors pass quickly, persistent stress can result in chronic stress and have negative long-term effects on an individual. Coping strategies are classified based on how pressures are identified, evaluated, and managed. Coping strategies are quite different from person to person, and what is considered helpful in one situation might be seen negatively in another (Aloka & Mukuna, 2023).

Coping was defined as the behaviors and thoughts used to deal with stressful events, both internal and external. It is a phrase used specifically to describe the mobilization of conscious and deliberate behaviors, as opposed to "defense mechanisms," which are adaptive subconscious or unconscious reactions that both seek to lessen or accept stress (Algorani, & Gupta. 2022).

The act of using behavioral and cognitive techniques to deal with difficult or dangerous circumstances is known as coping, and it is essential to maintaining one's physical and mental health (Altbach et al, 2019).

Coping methods may be categorized as either emotion- or problem-focused and involve both behavioral and cognitive attempts to deal with stressful situations (Duraku & Hoxha, 2018)

Stallman, (2020) mentioned Each response to cope is adaptive, can reduce distress initially, and is considered one of the coping strategies, which in turn are divided based on the possibility of undesirable or negative consequences occurring into healthy and unhealthy categories, within which all coping strategies fall: healthy categories such as relaxation, self-soothing activities, professional and social support, and distraction. The unhealthy categories are harmful activities, social withdrawal, negative self-talk, and suicide.

The effectiveness of coping is considered one of the most difficult ideas in research because it depends on two main axes: how effectively the person was assessed and how successfully the chosen coping method produced a favorable result. In general, the essence of any coping mechanism cannot be viewed as positive or negative, as some mechanisms give better results in certain circumstances than they do in other circumstances (Ajayi, O. 2023).

2.9. Coping Styles

Many studies, including (Forster et al., 2022), divide coping into two styles: Emotion-focused style and problem-focused style. while (Algorani & Gupta 2022) concluded that there are four main categories into which coping is often classified: problem-focused, Emotion-focused, Meaning-focused and social coping (support-seeking) Pang and Thomas (2020) discuss avoidance-focused coping as a fifth coping technique.

2.9.1. Emotion-Focused Coping Style:

This coping strategy entails lowering stress-related feelings without confronting the issue. However, it could be advantageous to lessen the effects of stressors, which might be more advantageous in the long term for circumstances over which we have no control (Millacci, & Lancia. 2017).

To put it another way, the goal is to control emotional suffering by only changing the emotional reaction, which might not deal with the real stressor. Some claim that because emotion-focused coping is linked to behavioral issues that might lead to mental health issues, it can be risky (Yang. F, 2021).

2.9.2. Problem-Focused Coping Style

According to (Van den Brande, et al. 2020), is an effort to manage work-related stresses through stressor identification and interpretation, planning for solutions, and decision-making.

Problem-focused coping is seen to be the most successful strategy for handling life's challenges; nonetheless, it only works when the person has control over the result (Zaman & Ali, 2019).

2.9.3. Meaning-Focused Coping Style

This specific coping strategy uses cognitive techniques to analyze and interpret a circumstance. Similar to emotion-focused coping, this tactic works best in situations where one has little control. A person's propensity to utilize a meaning-focused coping strategy may be influenced by their religion, spirituality, views on values, existential objectives, and justice (Leipold et al., 2019), (Dieker & Qualls. 2022).

2.9.4. Social Coping (support-seeking)

A person is using a social coping strategy known as support-seeking coping when they go to the community for emotional or practical help (Algorani & Gupta, 2022).

Adolescents start asking their classmates or themselves for support, whereas younger children could turn to their parents for assistance (Leipold et al., 2019).

2.9.5. Avoidance-Focused Coping Style

An avoidance coping strategy is when a person pursues a different person or job in order to escape the stressor. Another way to exhibit avoidance coping is to look for a distraction. Even if this approach entails removing oneself or withdrawing from a stressful circumstance, maintain that these tactics are connected to a person's maladaptive behavior (Millacci, & Lancia. 2017).

2.10. Types of Coping Mechanisms

Coping with stress may be difficult because worry and overload can impair rationality and judgment; thus, not all coping strategies are beneficial. Some may even be dangerous, in actuality. Coping strategies can be classified as either maladaptive (unhealthy) or adaptive (healthy). Positive coping skills are adaptive coping mechanisms, whereas negative coping skills are maladaptive coping processes. In certain situations, it may be simpler to adopt maladaptive coping mechanisms than to address the issue head-on. Nonetheless, the best course of action is to apply adaptive methods (Aubrey Bailey, et al. 2022).

2.10.1. Adaptive Coping Mechanisms

It is called a positive coping mechanisms because it works to improve performance levels and reduce stress. It makes a person's emotional response to stress more disciplined. Those who have adaptive coping strategies typically have optimistic attitudes, and taking on obstacles head-on increases self-assurance and self-worth. Rather than running away from their troubles, they accept them as they are and proceed with a plan to fix them. These people can grow as a result of stress, which means that their stress helps them get better at controlling their emotions and lessen negative self-talk. Deep breathing, exercise, meditation, journaling, positive thoughts, talking with a friend, reading a book, taking a bath, and aromatherapy are examples of adaptive coping mechanisms (Crowe & Van Puymbroeck. 2019)

2.10.2. Maladaptive Coping Mechanisms

A negative ways for handling stress. It is do not reduce the real stressor, but it decreases the feelings associated with stress for a short time and can cause future problems. It commonly occurs in people who have experienced childhood trauma or abuse. Some examples of this coping type are hostility, manipulation, aggression, recognition seeking, compliance, aggressive behavior, dependence, social withdrawal, denial, isolation, and fantasy (Niedzwiecki & Pepper, 2022).

2.11. Coping Mechanisms and PMS

A considerable percentage of women may experience distress as a result of a negative premenstrual alteration. According to much research, women use a variety of coping methods to control and lessen premenstrual misery. As a result, coping mechanisms are crucial in lowering PMS-related stress (Read et al., 2014).

PMS is a widespread issue that lowers female's quality of life. Encouraging women with PMS to develop coping mechanisms can improve their quality of life and safeguard their mental and physical well-being. Accordingly, understanding the degree of coping and the coping mechanisms used by women with PMS is crucial for research and therapeutic settings (Derya YA, et al. 2019)

Based on the findings of previous research and the current study, it is advised that students' level of PMS awareness be increased and that they be taught coping techniques. This will enhance their quality of life and lessen the psychosocial losses brought on by PMS (Alzubaidi, M., 2024).

As coping strategies provide people with the right amount of tolerance to deal with life's obstacles, the most effective approach is really the one that eases anxiety, promotes relaxation, and adopts a positive outlook. Thus, a strong correlation exists between the participants' mental health and their coping strategies. Coping mechanisms lessen stress and its impending negative effects on the body and mind. Without adequate coping mechanisms, PMS girls will not be able to comprehend their own emotions or those of others. As a result, they will be brittle in the face of adversity and may exhibit aggressive, depressive, or anxious behaviors (Motavalli et al., 2021).

2.11. Most Common Coping Mechanisms

There is a great deal of variation in coping mechanisms, which maybe impacted by individual characteristics, personality features, and the stressor itself. In order to handle stress, certain distinctive behaviors or ways of thinking are adopted in reaction to difficult and upsetting circumstances. Research has demonstrated that stress reduction measures might be a useful initial step in controlling PMS (Pandey & Dubey, 2023).

Listening to music, taking shower & taking caffeinated drinks were the most frequently applied coping mechanisms of premenstrual symptoms (Zeleke, *et al* 2023).

Dietary changes, applying hot bag, increasing the fluid intake, taking warm showers and getting psychological support were the effective methods used by students to reduce the symptoms of PMS (Cetin et al, 2022).

also, sleeping, getting a massage, resting, listening to music, self-medication, herbal intake , nutritional supplements, receiving massage therapy, diet alteration, crying, drinking coffee and soft drinks, yoga, physical activity, hot bath and meditation was reported in previuos research as a most applied mechanisms to cope with PMS (Alzubaidi, M., 2024).

2.13. Previous Studies

First Study

Abdel Hafez, et al. (2015) conducted study to evaluate the PMS and behavioral coping of female students at Minia University's Nursing College, Egypt. The study's descriptive design was applied. 120 female students were selected in the purposive (non-probability) sample. Most of the participants had premenstrual symptoms. Students aged 18 to 24 had the highest prevalence of PMS. Lower abdominal discomfort, headaches, and backaches were the most prevalent physical symptoms among female nursing students. As coping mechanisms, students would consume hot or cold liquids, hide their rage from others, focus on their studies, and eventually forget things.

Second Study

Majeed-Saidan et al., (2020) conducted study aimed to assess the prevalence of PMS in medical and not medical students, as well as its

management and potential correlations with stress, anxiety, and depression. At King Saud University Female Campus and King Khalid University Hospital, a cross-sectional research was carried out. In the investigation, 414 samples were utilized. Just 8% of female students report severe PMS, whereas the rest have mild symptoms. Remarkably, 1.7% and 0.7% of students, respectively, suffer severe and extremely severe anxiety, while 8.9% of students have moderate anxiety. Additionally, 1.7% of the students have severe depression, while 11.8% and 3.4% of the students, respectively, have moderate depression and stress. The findings indicate a favorable relationship between PMS and stress, anxiety, and sadness. There are notable differences in depression and stress ratings between students studying medicine and those study other branches.

Third Study

Bharti, et al. (2020) conducted study to determine the prevalence of PMS and the different coping mechanisms used during it. At Mullana's Maharishi Markandeshwar Institute of Medical Science and Research, a cross-sectional descriptive study was carried out. Out of 520 participants, 493 were enrolled in total. Findings show from the respondents, 453 (91.9%) employed coping mechanisms to manage their PMS symptoms, whereas 253 (51.3%) exhibited symptoms. Menarche age, marital status, employment, family history, and analgesic usage all had a strong correlation with PMS. The most often reported symptoms were restlessness, mood changes, irritability, pelvic pain, and stomach cramps. The participants' most popular coping strategy was rest (69.6%), which was followed by hot packs (62.8%).

Fourth Study

Rani and Buvaneshwari, (2021) conducted this study to evaluate teenage girls' premenstrual symptoms and coping mechanisms. This study used a non experimental descriptive research approach. By the convenience

strategy 30 students was selected. The findings indicate that 90% of the samples displayed behavioral symptoms, and the majority (93.3%) of the samples occasionally experienced psychological and physiological issues. The majority of samples (43.3%) consistently used coping mechanisms, followed them sometimes (16.7% of samples), and never used any coping mechanisms at all (40% of samples). Students between the ages of 18 and 24 frequently had PMS. Adolescent females most frequently reported headache, backache, and lower abdomen discomfort as physical symptoms. Adolescent females turned to studying and forgetting things, drank hot or cold beverages, avoided expressing their displeasure to others, listened to music, and used medicine as coping mechanisms.

Fifth Study

Qalawa et al., (2022) conducted study it purpose was to ascertain the health beliefs and coping strategies related to PMS among Qassim University's health college students. In order to conduct this study on convenience sampling from all enrolled students at the healthy colleges between the ages of 18 and 25, a cross-sectional descriptive research design was applied. The findings showed a statistically significant relationship (Ps=0.000) between the level of coping strategies used by students and their health perceptions. Additionally, a statistically significant relationship (p= (0.001, 0.002)) respectively was discovered between the student's level of coping strategies and their socio-demographic information. More than two thirds of students have effective coping mechanisms for PMS, and they have positive health beliefs, particularly in relation to exercise and diet.

Sixth Study

Cetin, et al. (2022) conducted study to identify how the PMS prevelance influenced by coping strategies that used by sudents, Turkey. There were 102 students in the cross-sectional and descriptive study. the

outcome discovered With a mean age of 21.35±1.77 (min:18, max:29), the mean PMSS score was found to be 143.89±25.76 in 70% (n=72) of the participants, above the scale cut-off point of ≥111. It was shown that there was a difference of statistical significance (p<.05) between the PMSS score and the dietary modifications and happiness level. The study concluded that, in comparison to the other coping strategies examined, taking warm baths, changing one's diet, increasing fluid intake, and receiving psychological support all reduced the PMSS score (p<.05). The PMSS total score was positively and significantly impacted by the dietary change variable, as demonstrated by an analysis of the regression coefficients.

Seventh Study

Treesa et al., (2022) conducted this study to determine the coping mechanisms and interfering variables associated with PMS in South Indian college students, as well as to evaluate the prevalence of the condition. A six-month online survey including questionnaires was administered to South Indian college students. The questionnaire was prepared and distributed, resulting in the collection of 225 samples. PMS was reported to be 40% common. Anger episodes ranked as the most common somatic symptom (50.7%) and joint and muscular pain as the most effective symptom (50%). Approximately (39%) of the individuals reported having major unfavorable connections with their school experiences. The two most popular coping mechanisms were consuming hot or cold beverages (37.8%) and lying down with a cushion (53.8%).

Eighth Study

Akpoigho and Ukamaka, (2022) conducted this study on 310 female student whom study at Basic Medical Sciences, University of Benin's School in Benin City, in Nigeria. The purpose of the study was to identify the commonly premenstrual symptoms, different coping mechanisms, and

health-seeking behaviors used by students at this investigation, a cross-sectional design was used. The findings indicated that mood swings (77.7%), irritability (59.5%), fatigue (59.5%), and breast discomfort (55.3%) were the most prevalent symptoms. PMS was found to be mild in (78.0%) and moderate in (66.7%). sleeping, acceptance the process as normal, and taking rest were common coping mechanisms were used. The majority engaged in negative health-seeking behavior. The results of the hypothesis testing showed no significant correlation between the age of the students and PMS, nor between PMS and course of study.

Ninth Study

Eshetu, et al., (2022) conducted this cross-sectional study to determine the extent of PMS, related factors, and coping mechanisms among female students at Wolkite University, involving 591 participants was carried out. Multivariable logistic regression was used to find the factors linked to PMS, and variables that showed a P value of less than 0.05 in the multivariable analysis were deemed statistically significant. Just 591 out of the 631 research participants had finished the questionnaire, yielding a 93.7% response rate. PMS affected (37.9%) of the 591 research participants. Students often reported experiencing fatigue, sadness, and abdominal cramps before menstruation. PMS was significantly correlated with a number of factors, including family history of PMS, never having had sex, severe periods pain intensity, irregularity of menstrual cycle, early menarche age (< 13 years), long menstrual duration (~ 7 days) , and using a lot of pads (> 8) during menstruation. 93.4% of students use a coping strategies (at least one mechanism) for PMS. Resting (67.6%) and sleeping (60.7%) being the most popular mechanisms.

Tenth Study

Mahmood, K. (2023). Conducted a quantitative cross-sectional study was In order to determine the frequency of PMS symptoms experienced by students, as well as their knowledge and attitudes regarding the condition, The study also sought to determine the students' perceptions on the potential effects of PMS on the academic life of female university students. Female students at the College of Nursing/Hawler Medical University participated in an online survey administered via Google Form. In all, 222 students took part in the present study. The students' mean age was found to be 20.77 (+1.876) years. 86% of the students had moderate menstrual blood flow, and the majority of them (70.3%) had regular menstrual cycles. Of the students who stated, 54.7% said they did not experience PMS, and over half (53.6%) said they do. Approximately (70.3%) of the students said that PMS interferes with their daily routine. The most common ways of PMS self-management among students were using heat packs (59.5), consuming hot beverages (72.1%), and getting lots of sleep (75.2%).

Eleventh Study

Al-Khazrajy and Hameed. (2023) conducted a cross-sectional research on 400 women between the ages of 15 and 49 to evaluate premenstrual symptoms in a sample of women who visited primary healthcare centers in Baghdad in 2022. Additionally, to determine if premenstrual symptoms are related to any of the following: family history of premenstrual symptoms, menstrual history, education, employment, marital status, number of children, or socioeconomic status 52.8 % of the research participants were in the 15–25 age range. Of the participating females, 183 (46%) had an abnormal anxiety score. Fifty-one (51%) of the subjects showed abnormal depression ratings. Of the subjects, 77% experienced sleep disturbances, 57.8% had insomnia, and 57% had hypersomnia. Approximately 68.3%

struggle with forgetfulness and concentration issues. 92.5% of people have pain in their joints or muscles. 83.5% report having swollen or painful breasts. 67.8% of people experience weight increase. Of the subjects, headaches and dizziness affected 75.3% and 70%, respectively. In 95.8% of the subjects, fatigue and a sense of lassitude were prevalent. Abdominal discomfort and cramps affect 97.3% of participants, backaches affect 94.8, acne flare-ups affect 76.8%, nausea and vomiting affect 51.3%, hot flashes affect 74.85, and palpitations affect 64.2% of individuals.

Twelfth Study

Zeleke et al., (2023) conducted study to evaluate PMS, behavioral coping strategies, lifestyle choices, and related characteristics among female students enrolled in public high schools in Bahir Dar, Northwest Ethiopia, in 2020. 408 respondents—or 96.7% of the 422 study participants—participated in the research. PMS was present in 41.2% of the participants. PMS was positively correlated with family history of the PMS and taking hormonal contraceptives. The respondents' most common behavioral and lifestyle coping techniques for PMS were having a shower, going to clinics, and listening to music.

Chapter Three

Methodology

Chapter Three

Methodology

The method used to conduct this study will be discussed in this chapter, which includes: study design, administrative arrangements, ethical considerations, setting of the study, sample design and size, tools used, questionnaire reliability and validity, pilot study, and statistical analysis for data.

3.1. The Study Design

A descriptive correlational design is used as it is the most appropriate with the study goals to determine whether premenstrual symptoms are influenced by the coping mechanisms used, and also to find out the relationship between premenstrual symptoms and demographic and reproductive characteristics among female students at the University of Kerbala from September 26th, 2023, to May 27th, 2024.

3.2. Administrative Agreement

After the College of Nursing Council approved the study and before beginning to collect the data necessary to complete the study, a letter facilitating the task was taken, and signed from the post-graduated studies division in the nursing college to the colleges included in the study. Their consent was obtained through their signature on the aforementioned letter, as shown in the (appendix A-I)

Another facilitating letter addressed the department of registration and student affairs at the university to obtain statistics on the total number of female students at the University for calculating the sample size (appendix

A-II). The researcher was provided with the statistics required to calculate the sample size as mentioned in the appendix (A-III).

3.3. Ethical Consideration

In the form for the Ethics Committee, the researcher confirmed his ethical commitment towards the participants, as in Appendix B, where the researcher explains the study and its objectives to the female students, while stating that it will maintain their confidentiality and not mention their names or any information that indicates them. After explaining the objectives of the study to the female students, they have the freedom to agree to participate in the study or not, and the student's consent was obtained orally and in writing through the partecepant's consent paragraph located on the first page of the instrument.

3.4. Setting of the Study

A sample was selected from Kerbala University from five colleges: the Nursing College, the Applied Medical Sciences College, the Physical Education and Sports Sciences College, the Tourism Sciences College, and the College of Law. The University of Kerbala contains 17 colleges, and the above colleges were selected randomly through a simple sampling procedure.

Table (3-1) Colleges of Kerbala University

Kerbala University		
College of Medicine	College of Nursing	College of Agriculture
College of Dentistry	College of Applied Medical Sciences	College of Education for Pure Sciences
College of Science	College of Law	College of Education for Humane sciences
College of Engineering	College of Physical Education and Sports Sciences	College of management and Economics
College of Pharmacy	College of Tourism Sciences	College of Computer Science and Information Technology
College of Veterinary Medicine	College of Islamic Sciences	

3.5. Sample and Sample Size

Using a non-probability (convenience) sample, 372 female students were selected. The sample size was calculated through using the following formula according to Cochran (2006) to obtain a feasible sample with a 95% confidence interval (z) with a 5% marginal error (d): N is the total population, while p is the coefficient of variation among the population members, and its percentage is 0.5.

$$n = \frac{\left(\frac{z}{d}\right)^2 p^2}{1 + \frac{1}{N}\left[\left(\frac{z}{d}\right)^2 p^2 - 1\right]}$$

$$n = \frac{\left(\frac{1.96}{0.05}\right)^2 (0.5)^2}{1 + \frac{1}{11022}\left[\left(\frac{1.96}{0.05}\right)^2 (0.5)^2 - 1\right]} = 372$$

The total sample size is 372 female students, who were divided into the colleges included in the study by using the sample percentage, which is the percentage of the sample size required out of the total number of female students in the five colleges using this equation ($n_h = \left({}^{N_h}/_{N}\right) \times n$)

Where (n_h) means the size of the subsample (the sample required from each college), (N_h) means the population size of that college (the number of female students in that college), (N) is number of the female student in the colleges participating in the study and (n) means the total sample size.

Table (3-2) Distribution of female students according to Colleges

Colleges	Number of Total Female Student	Number of Samples
Nursing College	255	78
Applied Medical Sciences College	247	76
Physical Education and Sports Sciences College	186	58
Tourism Sciences College	154	47
College of Law	368	113
Total	1210	372

3.6. Study Instruments

In this study, the researcher used the questionnaire as a scientific means to collect data in order to analyze these data and reach certain results

that give an answer to the research question. This questionnaire is divided into the following three parts (Appendix E).

Part I: Socio-Demographic and Reproductive Characteristics:

This part is divided into two subsections: the socio-demographic characteristics section, which contains the student's personal information such as age, marital status, residency, college, stage of study, who she lives with (family, friends, or others), the mother's level of education, and the family's monthly income.

The other section contains the student's reproductive characteristics, such as family history of PMS, age at first menstrual period, menstrual cycle duration, menstrual cycle interval, regularity of the menstrual cycle, and amount of bleeding during the menstrual cycle.

Part II: Premenstrual Syndrome Questionnaire

The scale for PMS from (Padmavathi et al., 2014) was used. It is consisting of 40 items divided into three subsections, 16 items under the name of physical symptoms, 12 items called psychological symptoms, and finally behavioral symptoms, which are 12 items. The scale has been modified to be 3 instead of 5 according to the Likert scale

Part III: Coping Mechanisms Questionnaire

This scale has been used in several previous research, including (Yoon et al., 2015), which is a scale that determines the coping mechanisms used by women in the premenstrual period. The original scale contains 24 items, but it was modified to suit our culture, where the following was changed.

- The item of alcohol intake has been replaced by useful herbal intake to reducing symptoms
- item about smoking was deleted after conducting the pilot study, as it gave negative results
- The item related to controlling feelings in any way has been modified to include listen to the Qur'an or perform prayer and supplications to feel psychological comfort and calm
- The two items of home exercises and changing position have been combined into one item
- The item of expressing anger and annoyance in any other way has been reformulated, as it is incomprehensible, to expressing student's pain by crying, to become more clear.

After modefication the scale became 22 item instead 24 item, this modefications were made according to the opinion of the experts and the supervisor

3.7. The Validity of the Study Instrument

To determine the validity of the instrument content of the study, the tool was presented to 17 experts to assess the validity of the content. They are: one from faculty members from the Kerbala University, College of Medicine; one from faculty members from the Al-Kut University, College of Management and Economics; one from Al Furat Al Awsat Technical University; two from the University of Kufa, Nursing College; three from faculty members from the Babylon University, Nursing College; four from Baghdad University, Nursing College; and five from the Kerbala University, College of Nursing (Appendix F).

Those experts provided some advice and comments on the instruments to make them more clear and appropriate for the participants, and all their comments and recommendations were taken into consideration.

3.8. Pilot Study

Scientifically, the pilot study should be about 10% of the total sample size (Connelly, 2008). Therefore, 37 female students were taken from the five colleges included in the study in the period between the 24th and 27th of December 2023 to conduct study on them in order to

1. Determine if the questionnaire is reliable or not and what is the modification needs to make it more reliable.
2. Determine the time which taken by each female students to complete questionnaire answer.
3. Determine whether the items of the questionnaire is clear and easy for students to understand.

The Results of the Pilot Study

1. The contents were comprehensible and clear.
2. Between 17 and 25 minutes were needed to complete the questionnaire.
3. The questionnaire is reliable.

3.9. Questionnaire's Reliability

Reliability in nursing research refers to the capacity of a research tool, such as an interview or questionnaire, to consistently yield similar results when used again in a same setting. (NSF Consulting, 2021). Valid findings can only be obtained with a trustworthy instrument that measures the things it is supposed to measure. (Nicoll et al., 2023).

The internal consistency type of reliability was determined in the current study; consistency between different items of the instrument was measured by internal consistency reliability. Edwin stated that "It measures the consistency within the instrument and questions on how well a set of items measures a particular characteristic of the test. Single items within a test are correlated to estimate the coefficient of reliability" (Edwin, 2019).

The Alpha Cronbach coefficient was applied to determine internal consistency for items, which was calculated through version 26.0 of the IBM SPSS (Statistical Package for Social Science) application, as referred to in (Table 3-1) on a (37) female students that were randomly selected.

Table (3-3) Instruments Reliability analysis (N= 37)

Scale	No. of Items	Cronbach`s alpha	Evaluation of Internal Consistency
Premenstrual syndrome	40	.920	Excellent
Coping strategies	23	.701	Good

The Cronbach's alpha shows excellent evaluation for PMS scale (0.920), and shows good evaluation for coping mechanisms scale (0.701); these findings mean that the questionnaires' levels of internal consistency and equivalency measurability were sufficient.

3.10. Data Collection Time and Method

The collection of data occurred during January 2024. Colleges were visited five days per week between 8:30 a.m. and 2:30 p.m. A self-report questionnaire was used to collect data after taking the agreement from students to participate in the study the researcher explaining the purpose of

the study to the students and collected data. each student took roughly 17 to 25 minutes filling out the questionnaire form.

3.11. Inclusion and Exclusion Criteria

3.11.1. Inclusion Criteria

- Female morning study students those were present during data collection.
- Female students who suffer from PMS.

3.11.2. Exclusion Criteria:

- Female students who do not have the PMS.
- Female students who withdrew from the study after starting to answer the questionnaire.
- The sample of pilot study

3.12. Limitation of the study

The examinations were the main limitation of this study. The sample was collected during the first semester examination period which delay in collecting the sample

3.13. Rating and Scoring:

3.13.1. Premenstrual Symptoms

For the PMS scale, a 3-Likert scale was used, which scored as: never (1), sometimes (2), and always (3).

To estimate the total score of symptoms, the range score was first calculated from the least and highest values. The range score was then

divided into three levels and scored as follows: Physical symptoms: Mild= 16 – 26.66, Moderate= 26.67 – 37.33, and Severe= 37.34 – 48.

- Psychological and behavioral domains: Mild = 12 – 20, Moderate = 21 – 28, and Severe = 29 – 36.
- Overall symptoms: Mild= 40 – 66.66, Moderate= 66.67 – 93.33, and Severe= 93.34 – 120.
- The level of symptoms for each item: Mild (1– 1.66), Moderate (1.67 – 2.33), and Severe (2.34 – 3).

3.13.2. Coping Mechanisms

A 3-Likert scale was used for coping mechanisms scale and scored as follows : never (1), sometimes (2), and always (3). Except items 19, 20, and 21 that are reversed score.

The range score was divided into three levels and scored as follows in order to determine the overall score: This was done by first calculating the range from the minimum and maximum scores.

Poor= 22 – 36.66, Moderate= 36.67 – 51.33, and Good= 51.34 – 66.

The each item level is scored and rated into three levels also as follow: Poor= 1 – 1.66, Moderate= 1.66 – 2.33, and Good= 2.34 – 3.

3.14. Statistical Analysis of Data

In nursing research, data analysis is a crucial stage whereby a range of techniques are utilized to characterize and evaluate the information that the researcher has collected. The type of data gathered will determine which analysis approach is used; for quantitative research, numerical data is analyzed using both descriptive and inferential statistics (O'Connor, 2020)

Version 26.0 (SPSS) was used to interpret and analyze the data.

3.14.1. Descriptive Statistical Tests

- **Frequency (f):**

  The number of times an event happened during an experiment or research is its frequency in statistics. (Kenny & Keeping, 2022). It has been used because it is statistically suitable for describing reproductive and demographic characteristics.

- **Percentage (%):**

  In mathematics, percentage is a ratio or value expressed as a fraction of hundred. One may compute a percentage by multiplying a given value by 100 and dividing it by the entire. Consequently, % may be thought of as a portion per hundred. The % sign is used to symbolize. (Shwetha, 2023). It was used to describe the sociodemographic and reproductive health characteristics of female students.

- **Mean (M):**

  In biostatistics, the term "mean" refers to the arithmetic average for a number of variables. All the values are gathered, and the result is divided by the number of values to get the final result. It is a measure of central tendency. The average value of a given collection of data is represented by the symbol (\bar{x}), which stands for mean. (Taylor, 2003). It was used to determine the levels of PMS symptoms and coping mechanisms among female students.

- **Standard Deviation (S.D):**

  How much a random variable is expected to fluctuate or scatter about its mean is measured in statistics and is called the "standard deviation". It is a tally of how much each observation deviates from the mean (Bland & Altman, 1996). It was used to determine the levels of PMS symptoms and coping mechanisms among female students.

3.14.2. Inferential Statistical Tests

• Cronbach Alpha (α):

This statistic evaluates a set of survey questions' dependability or internal consistency. Using a standard scale of 0 to 1, it is determined whether a group of items measures the same characteristics consistently, and the degree of agreement is also measured through it. According to (Polit and Hungler 2013), larger numbers suggest greater agreement between the items. It was applied to evaluate the research instrument's internal consistency.

• Simple Linear Regression:

A statistical technique for modeling the connection among two continuous variables. In order to forecast the dependent variable based on the independent variable, a linear function must be fitted to the data, involving a single independent and dependent variable. It is computed through the small squares method, which reduces the summation of squared differences between the foreseen and observed values. It's formula is "y=B_0+ B_(1x)+e", x is the independent variable and y is the dependent variable's projected value. (B_0) refers to the intercept, and (e) means the estimate error (Montgomery et al., 2013). It was used to determine the influence of coping mechanisms on symptoms associated with PMS.

• Independent sample t-test:

To ascertain wether there is significant difference statistically between means of two unrelated groups, an independent sample t-test, also called a two-sample t-test, is an inferential statistical test. When there are differences between the instances (i.e., participants) in each group and

the groupings are unrelated to one another, the test is utilized (SPSS Statistics, 2021). It was used to determine the significant association among symptoms of PMS among female students with some sociodemographic characteristics of them.

- **One-way analysis of variance (ANOVA):**

A statistical way that compares more than two independent groups means to see if there is any difference between them are noteworthy. The purpose of the test is to determine whether changes in a single independent variable with varying levels have a measurably distinct impact on a dependent variable. (Statistical Knowledge Portal, 2024). It was used to determine the significant association among symptoms of PMS among female students with some of their socio-demographic characteristics

Chapter Four

Result of the Study

Chapter Four

Results of the Study

This chapter presents the descriptive analysis of the sample related to socio-demographic and reproductive health characteristics for female adolescents; and describes the severity of premenstrual syndrome symptoms as well as students' coping mechanism related to premenstrual syndrome, and to determine the influence of coping mechanism on those symptoms. This chapter also investigates the relationships among female students' symptoms with their sociodemographic and reproductive characteristics included in this study.

In order to analyze and understand the current study's results, statistical processes were used; the results were manipulated and interpreted, Based on sample answers to the research questionnaire, those findings were produced.

Table (4-1): Distribution of Female Students according to their Socio-demographic Characteristics

List	Characteristics		F	%
1	**Age (year)** **M±SD= 20.9 ± 1.7**	18 – 20	163	43.8
		21 – 23	178	47.8
		24 – 26	31	8.4
		Total	***372***	***100***
2	**Marital status**	Unmarried	273	73.4
		Married	86	23.1
		Widowed	1	.3
		Divorced	12	3.2
		Total	***372***	***100***

f: Frequency, %: Percentage, M: Mean, SD: Standard deviation

Table (4-1): Continued

List	Characteristics		F	%
3	**Residency**	Rural	81	21.8
		Urban	291	78.2
		Total	***372***	***100***
4	**College**	Law	113	30.4
		Nursing	78	21
		Tourism science	47	12.6
		Applied medical sciences	76	20.4
		Physical education and sport science	58	15.6
		Total	***372***	***100***
5	**Grade**	First	84	22.6
		Second	95	25.5
		Third	110	29.6
		Fourth	83	22.3
		Total	***372***	***100***
6	**Living with**	Family	312	83.9
		Friends	60	16.1
		Total	***372***	***100***
7	**Mother's education**	Doesn't read & write	26	7
		Primary school	113	30.4
		Intermediate/secondary	116	31.2
		College and higher	117	31.5
		Total	***372***	***100***

8	**Perceived family income**	Adequate	253	68
		Partially adequate	113	30.4
		Inadequate	6	1.6
		Total	***372***	***100***

f: Frequency, %: Percentage, M: Mean, SD: Standard deviation

The analysis in table 4-1 find that the average age for female students is 2.9±1.7 years and the highest percentage of them is 47.8% who are seen with age group of 21- 23 years.

The marital status for female students refers that 73.4% of them are still unmarried and only 23.1% of them are married.

The residency reveals that 78.2% of female students are resident in urban while 21.8% of them are resident in rural.

Regarding college, 30.4% of female students are from Law College, 21% are from Nursing College, 20.4% from Applied Medical Sciences, 15.6% of them are from College of Physical Education and Sport Sciences, and 12.6% from College of Tourism Science.

Concerning scholastics grade, 29.6% of them are seen from third grade, 25.5% from second grade, 22.6% from first grade, and 22.3% from fourth grade.

More of female students reported that they living with their families (83.9%) and only 16.1% are living with their friends.

The level of education for students' mothers refers to college and higher among the highest percentage of 31.5% among them.

Regarding family monthly income, 68% of female students perceived adequate monthly income and 30.4% perceive partially adequate income.

Table (4-2): Distribution of Female Students according to their Reproductive Health Characteristics

List	Characteristics		F	%
1	**Family history of Premenstrual syndrome**	No	168	45.2
		Yes	204	54.8
		Total	***372***	***100***
2	**Age at first menstrual cycle** **M±SD= 12.6 ± 1.5**	9 – 11 year	83	22.3
		12 – 14 year	247	66.4
		15 year and more	42	11.3
		Total	***372***	***100***
3	**Menstrual duration**	Less than 3 days	28	7.5
		3 – 5 days	184	49.5
		More than 5 days	160	43
		Total	***372***	***100***
4	**Menstruation interval**	Less than 21 days	74	3.9
		21 – 35 days	247	66.4
		More than 35 days	51	13.7
		Total	***372***	***100***
5	**Regularity of menstruation**	No	117	31.5
		Yes	255	68.5
		Total	***372***	***100***

6	**Amount of bleeding during menstruation**	Light	43	11.6
		Medium	267	71.8
		Heavy	62	16.7
		Total	***372***	***100***

f: Frequency, %: Percentage, M: Mean, SD: Standard deviation

Table 4-2 reveals that 54.8% of students have positive family history of premenstrual syndrome.

The average age at first menstrual cycle refers to 12.6±1.5 years among female students and 66.4% of them seen with age group of 12-14 years as a first menstrual cycle started.

Regarding menstruation duration, 49.5% of female students associated with 3-5 days and 43% associated with more than 5 days duration.

The menstrual interval refers to 21-35 days among 66.4% of them while 13.7% of them are seen with interval of more than 35 days.

The regularity of menstruation is reported among 68.5% of female students while 31.5% reported irregular menstruation.

The amount of bleeding during menstruation refers to moderate among 71.8% of female students while 16.7% reported severe bleeding.

Table (4-3): Assessment of Physical Symptoms related to Premenstrual Syndrome among Female Students (N=372)

List	Physical symptoms	Scale	F (%)	M	Assess.
1	I have Breast tenderness and swelling in the days before my period	Never	89(23.9)	2.05	Moderate
		Sometime	177(47.6)		
		Always	106(28.5)		
2	I feel bloated in my abdomen in the days before my period	Never	50(13.4)	2.23	Moderate
		Sometime	185(49.7)		
		Always	137(36.8)		
3	I suffer from abdominal cramps in the days before my period	Never	32(8.6)	2.41	Severe
		Sometime	154(41.4)		
		Always	186(50)		
4	I experience a change in bowel habits, such as constipation or diarrhea, in the days before my period.	Never	131(35.2)	1.90	Moderate
		Sometime	148(39.8)		
		Always	93(25)		
5	My appetite increases in the days before my period	Never	110(29.6)	1.97	Moderate
		Sometime	164(44.1)		
		Always	98(26.3)		
6	I eat more foods rich in sugar or salt in the days before period.	Never	74(19.9)	2.15	Moderate
		Sometime	167(44.9)		
		Always	131(35.2)		
7	I gain a little weight in the days before my period	Never	149(40.1)	1.85	Moderate
		Sometime	131(35.2)		
		Always	92(24.7)		
8	I suffer from frequent nausea and vomiting before my period	Never	175(47)	1.71	Moderate
		Sometime	131(35.2)		
		Always	66(17.7)		
9	I suffer from recurring headaches in the days before my period.	Never	94(25.3)	2.09	Moderate
		Sometime	152(40.9)		
		Always	126(33.9)		

10	I suffer from dizziness and fainting in the days before my period	Never	155(41.7)	1.80	Moderate
		Sometime	136(36.6)		
		Always	81(21.8)		
11	I feel tired and fatigue in the days before my period.	Never	33(8.9)	2.39	Severe
		Sometime	161(43.3)		
		Always	178(47.8)		
12	I experience an increased and rapid heartbeat (palpitations) in the days before my period.	Never	132(35.5)	1.90	Moderate
		Sometime	147(39.5)		
		Always	93(25)		
13	I suffer from skin changes that affect me, such as the appearance of pimples and rashes in the days of my period.	Never	73(19.6)	2.27	Moderate
		Sometime	124(33.3)		
		Always	175(47)		
14	I feel discomfort and pain in the pelvic area in the days before my period.	Never	73(19.6)	2.41	Severe
		Sometime	124(33.4)		
		Always	175(47)		
15	I suffer from general pain throughout my body in the days preceding my menstrual period.	Never	37(9.9)	2.30	Moderate
		Sometime	146(39.2)		
		Always	189(50.8)		
16	I have a joints and muscles pain in the days before my period	Never	48(12.9)	2.33	Moderate
		Sometime	155(41.7)		
		Always	169(45.4)		

M: Mean, Assess: Assessment
Mild= 1 – 1.66, Moderate= 1.66 – 2.33, Severe= 2.34 – 3

The table 4-3 presents the physical symptoms associated with premenstrual syndrome among female students; the findings indicate that they associated with moderate physical symptoms among all except items (I suffer from abdominal cramps in the days before my period) and (I feel discomfort and pain in the pelvic area in the days before my period) that show severe.

Table (4-4): Assessment the Severity of Physical Symptoms among Female Students

Physical symptoms	F	%	M	SD	Ass.
Mild	47	12.6	33.74	5.952	Moderate
Moderate	215	57.8			
Severe	110	29.6			
Total	***372***	***100***			

f: Frequency, %: Percentage

M: Mean for total score, SD: Standard Deviation for total score, Ass: Assessment

Mild= 16 – 26.66, Moderate= 26.67– 37.33, Severe= 37.34 – 48

This table indicates that 57.8% of female students associated with moderate physical symptoms related to premenstrual syndrome while 28.6% of them associated with severe physical symptoms.

Table (4-5): Assessment of Psychological Symptoms related to Premenstrual Syndrome among Female Students (N=372)

List	Psychological symptoms	Scale	F (%)	M	Assess.
1	I feel irritable in the days before my period.	Never	36(9.7)	2.41	Severe
		Sometime	147(39.5)		
		Always	189(50.8)		
2	I suffer from anxiety in the days before my period.	Never	56(15.1)	2.26	Moderate
		Sometime	163(43.8)		
		Always	153(41.1)		
3	I feel tension in the days before my period.	Never	58(15.6)	2.20	Moderate
		Sometime	181(48.7)		
		Always	133(35.8)		
4	I suffer from frequent mood swings as my period approaches.	Never	24(6.5)	2.48	Severe
		Sometime	144(38.7)		

		Always	204(54.8)		
5	I have loss of concentration in the days before my period.	Never	81(21.8)	2.10	Moderate
		Sometime	172(46.2)		
		Always	119(32)		
6	I feel depressed in the days before my period	Never	46(12.4)	2.41	Severe
		Sometime	127(34.1)		
		Always	199(53.5)		
7	I suffer from forgetfulness in the days before my period	Never	133(35.8)	1.87	Moderate
		Sometime	154(41.4)		
		Always	85(22.8)		
8	I feel easy crying in the days before my period.	Never	80(21.5)	2.20	Moderate
		Sometime	136(36.6)		
		Always	156(41.9)		
9	I suffer from various sleep changes (such as insomnia or hypersomnia) during the days before my period.	Never	61(16.4)	2.15	Moderate
		Sometime	193(51.9)		
		Always	118(31.7)		
10	I feel confused and unclear in the days before my period	Never	119(32)	1.89	Moderate
		Sometime	176(47.3)		
		Always	77(20.7)		
11	Feel feelings of aggression toward situations, people, and things during the few days before your period.	Never	115(30.9)	2.05	Moderate
		Sometime	123(33.1)		
		Always	134(36)		
12	I feel hopeless in the days before my period.	Never	101(27.2)	2.05	Moderate
		Sometime	150(40.3)		
		Always	121(32.5)		

M: Mean, Assess: Assessment

Mild= 1 – 1.66, Moderate= 1.66 – 2.33, Severe= 2.34 – 3

The table 4-5 presents the psychological symptoms associated with premenstrual syndrome among female students; the findings indicate that they associated with moderate psychological symptoms among all except items (I feel irritable in the days before my period.), (I suffer from frequent

mood swings as my period approaches), and (I feel depressed in the days before my period) that show severe.

Table (4-6): Assessment the severity of Psychological Symptoms among Female Students (N=372)

Psychological symptoms	F	%	M	SD	Ass.
Mild	78	21	26.09	5.724	
Moderate	162	43.5			
Severe	132	35.5			
Total	***372***	***100***			

f: Frequency, %: Percentage

M: Mean for total score, SD: Standard Deviation for total score, Ass: Assessment

Mild= 12 – 20, Moderate= 21– 28, Severe= 29 – 36

This table depicts that 43.5% of female students associated with moderate psychological symptoms and 35.5% of them associated with severe psychological symptoms related to premenstrual syndrome.

Table (4-7): Assessment of Behavioral Symptoms related to Premenstrual Syndrome among Female Students (N=372)

List	Behavioral symptoms	Scale	F (%)	M	Assess.
1	I want to isolate myself from others in the days before my period.	Never	83(22.3)	2.19	Moderate
		Sometime	134(36)		
		Always	155(41.7)		
2	I feel restlessness in the days leading up to my period.	Never	74(19.9)	2.17	Moderate
		Sometime	161(43.3)		
		Always	137(36.8)		
3		Never	87(23.4)	2.10	Moderate
		Sometime	160(43)		

	I suffer from an loss of control myself in the days before my menstrual period	Always	125(33.6)		
4	I feel guilty about certain things in the days leading up to my period.	Never	100(26.9)	1.97	Moderate
		Sometime	185(49.7)		
		Always	87(23.4)		
5	I feel neglected and do not want to take care of myself or others in the days before my period.	Never	101(27.2)	2.03	Moderate
		Sometime	159(42.7)		
		Always	112(30.1)		
6	My interests and activities decrease in the days before menstruation	Never	55(14.8)	2.19	Moderate
		Sometime	191(51.3)		
		Always	126(33.9)		
7	I feel poor judgment in the days leading up to my period. These feelings may cause me to make unwise decisions or take rash actions.	Never	116(31.2)	1.92	Moderate
		Sometime	169(45.4)		
		Always	87(23.4)		
8	I suffer from an impaired to perform my work and these feelings cause my productivity to decrease in the days leading up to my period.	Never	79(21.2)	2.10	Moderate
		Sometime	178(47.8)		
		Always	115(30.9)		
9	I have some obsessional thoughts in the days leading up to my period that distract me from doing my tasks.	Never	131(35.2)	1.88	Moderate
		Sometime	156(41.9)		
		Always	85(22.8)		
10	In the days before my period, I suffer from compulsive behavior. This behavior makes me do certain things repeatedly, which affects my life.	Never	158(42.5)	1.76	Moderate
		Sometime	144(38.7)		
		Always	70(18.8)		
11	In the days before my period, I suffer from irrational thoughts that make me feel unrealistic things	Never	129(34.7)	1.87	Moderate
		Sometime	161(43.3)		
		Always	82(22)		
12	I being over sensitive in the days before my period and this feeling causes me pain and discomfort from things I used to tolerate	Never	78(21)	2.13	Moderate
		Sometime	167(44.9)		
		Always	127(34.1)		

M: Mean, Assess: Assessment

Mild= 1 – 1.66, Moderate= 1.66 – 2.33, Severe= 2.34 – 3

The table 4-7 presents the behavioral symptoms associated with premenstrual syndrome among female students; the findings indicate that they associated with moderate behavioral symptoms among all as seen with moderate mean scores.

Table (4-8): Assessment the Severity of Behavioral Symptoms among Female Students

Psychological symptoms	F	%	M	SD	Ass.
Mild	113	30.4	24.31	5.712	
Moderate	163	43.8			
Severe	96	25.8			
Total	***372***	***100***			

f: Frequency, %: Percentage
M: Mean for total score, SD: Standard Deviation for total score, Ass: Assessment
Mild= 12 – 20, Moderate= 21– 28, Severe= 29 – 36

This table reveals that 43.8% of female students associated with moderate behavioral symptoms and 25.8% of them associated with severe behavioral symptoms related to premenstrual syndrome

Table (4-9): Overall Assessment the Severity of Premenstrual Syndrome Symptoms among Female Students

Symptoms	F	%	M	SD	Ass.
Mild	45	12.1	84.15	14.898	
Moderate	213	57.3			
Severe	114	30.6			
Total	***372***	***100***			

f: Frequency, %: Percentage

M: Mean for total score, SD: Standard Deviation for total score, Ass: Assessment

Mild= 40 – 66.66, Moderate= 66.67– 93.33, Severe= 93.34 – 120

The above table presents the overall score of symptoms, which indicates that female students are associated with moderate to severe symptoms of premenstrual syndrome, as mentioned by 57.3% of them being moderate and 30.6% being severe (M±SD= 84.15 ± 14.898).

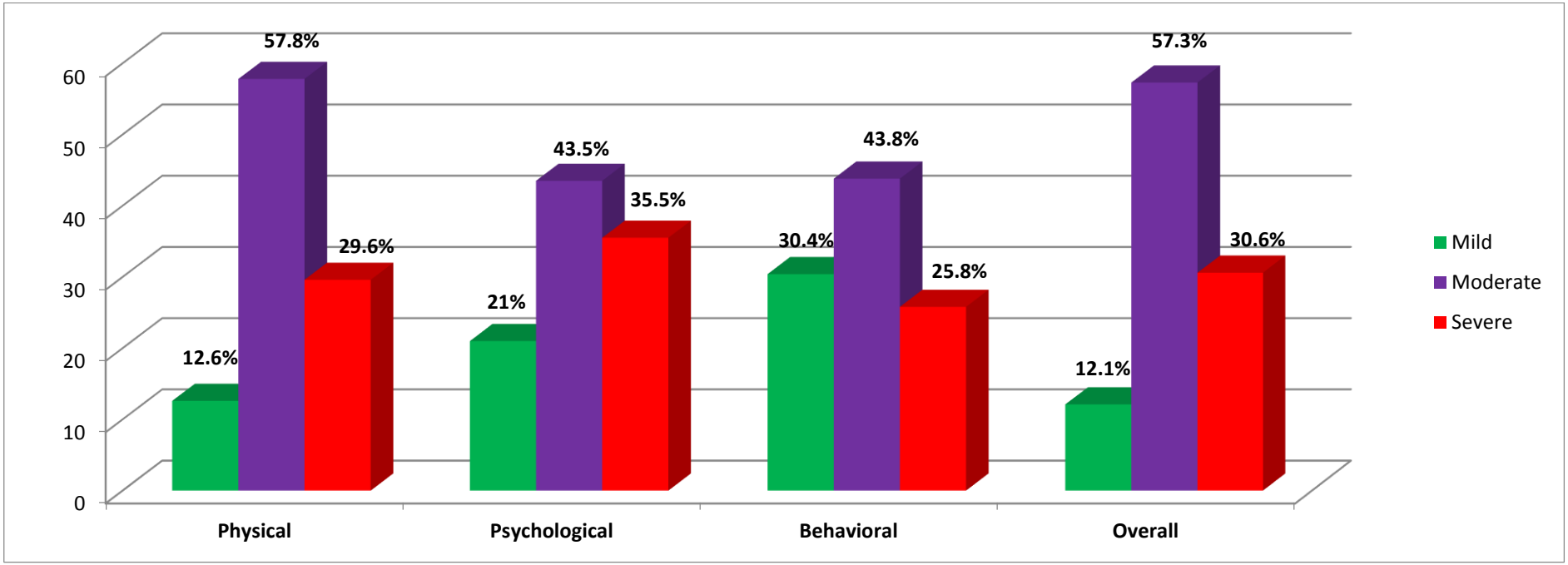

Figure (4-1): Severity of Premenstrual Syndrome Symptoms among Female Students (N=372)

This figure shows that female students experience moderate to severe symptoms related to premenstrual syndrome (moderate= 57.3% and severe= 30.6%); in which they associated with moderate severity of physical symptoms (57.8%), psychological symptoms (43.5%), and behavioral symptoms (43.8%)

Table (4-10): Assessment of Coping Mechanisms related to Premenstrual Syndrome among Female Students (N=372)

List	Coping mechanisms	Scale	F (%)	M	Assess.
1	I take vitamins and supplements to boost my immunity and improve my overall health, which may help with my pain	Never	152(40.9)	1.78	Moderate
		Sometime	148(39.8)		
		Always	72(19.4)		
2	I get enough rest and sleep to give my body time to heal	Never	38(10.2)	2.28	Moderate
		Sometime	191(51.3)		
		Always	143(38.4)		
3	I take pain-killer to relieve the symptoms	Never	113(30.4)	2.09	Moderate
		Sometime	114(30.6)		
		Always	145(39)		
4	I apply a hot water bag on the painful area to relieve the pain	Never	157(42.2)	1.84	Moderate
		Sometime	118(31.7)		
		Always	97(26.1)		
5	Take a warm shower to relieve pain and soothe muscles.	Never	88(23.7)	2.12	Moderate
		Sometime	152(40.9)		
		Always	132(35.5)		
6	I listen to soft music to help me relax and relieve stress, which may help relieve pain.	Never	161(43.3)	1.77	Moderate
		Sometime	135(36.3)		
		Always	76(20.4)		
7	Drink plenty of warm water and hot drinks to avoid dehydration, which can make your pain worse.	Never	65(17.5)	2.20	Moderate
		Sometime	166(44.6)		
		Always	141(37.9)		
8	I listen to the Qur'an or perform prayers and supplications to feel psychological comfort and calm	Never	49(13.2)	2.30	Moderate
		Sometime	161(43.3)		
		Always	162(43.5)		
9	Do some exercises that help reduce pain	Never	175(47)	1.72	Moderate
		Sometime	125(33.6)		
		Always	72(19.4)		
10		Never	97(26.1)	1.98	Moderate

	I try to keep myself busy with some housework in order to reduce my focus on the pain and the changes that are happening to me.	Sometime	184(49.5)		
		Always	91(24.5)		
11	I apply the massage mechanism to the painful point	Never	105(28.2)	2.02	Moderate
		Sometime	153(41.1)		
		Always	114(30.6)		
12	I distract myself from the pain by practicing some hobbies that I love (such as reading, drawing, etc.)	Never	93(25)	2.01	Moderate
		Sometime	181(48.7)		
		Always	98(26.3)		
13	I talk to myself and encourage myself to be patient and endure the pain.	Never	80(21.5)	2.09	Moderate
		Sometime	180(48.4)		
		Always	112(30.1)		
14	I talk to friends and family about my pain and feelings, which may make me feel better.	Never	131(35.5)	1.92	Moderate
		Sometime	138(37.1)		
		Always	103(27.7)		
15	I get the support of friends and family, which can help relieve my pain and improve my mood.	Never	116(31.2)	1.95	Moderate
		Sometime	160(43)		
		Always	96(25.8)		
16	I understand that the changes that happen to me are temporary, and that they will go away over time.	Never	51(13.7)	2.36	Good
		Sometime	136(36.6)		
		Always	185(49.7)		
17	Take useful herbal to relieve pain	Never	111(29.8)	2.00	Moderate
		Sometime	150(40.3)		
		Always	111(29.8)		
18	Drink coffee or some drinks rich in caffeine because it helps relieve pain	Never	96(25.8)	2.02	Moderate
		Sometime	173(46.5)		
		Always	103(27.7)		
19	I eat less and may skip some meals	Never	120(32.3)	1.93	Moderate
		Sometime	159(42.7)		
		Always	93(25)		
20	I eat more than usual	Never	125(33.6)	2.10	Moderate
		Sometime	158(42.5)		

		Always	89(23.9)		
21	I spend most of the time alone because of pain or feeling lonely	Never	68(18.3)	1.84	Moderate
		Sometime	176(47.3)		
		Always	128(34.4)		
22	I express my pains by crying	Never	157(42.2)	2.23	Moderate
		Sometime	145(39)		
		Always	70(18.8)		

M: Mean, Assess: Assessment

Poor= 1 – 1.66, Moderate= 1.66 – 2.33, Good= 2.34 – 3

The table 4-10 presents the coping mechanisms related to premenstrual syndrome among female students; the findings indicate that female students show moderate coping mechanisms among all except item (I understand that the changes that happen to me are temporary, and that they will go away over time) that show good coping mechanisms.

Table (4-11): Overall Assessment of Coping Mechanisms related to Premenstrual Syndrome among Female Students

Coping mechanisms	F	%	M	SD	Ass.
Poor	40	10.8	44.57	6.699	Moderate
Moderate	266	71.5			
Good	66	17.7			
Total	***372***	***100***			

f: Frequency, %: Percentage

M: Mean for total score, SD: Standard Deviation for total score, Ass: Assessment

Poor= 22 – 36.66, Moderate= 36.67 – 51.33, Good= 51.34 – 66

This table indicates that female students associated with moderate level of coping mechanisms related to premenstrual syndrome as reported by 71.5% of them (M±SD= 44.57±6.699).

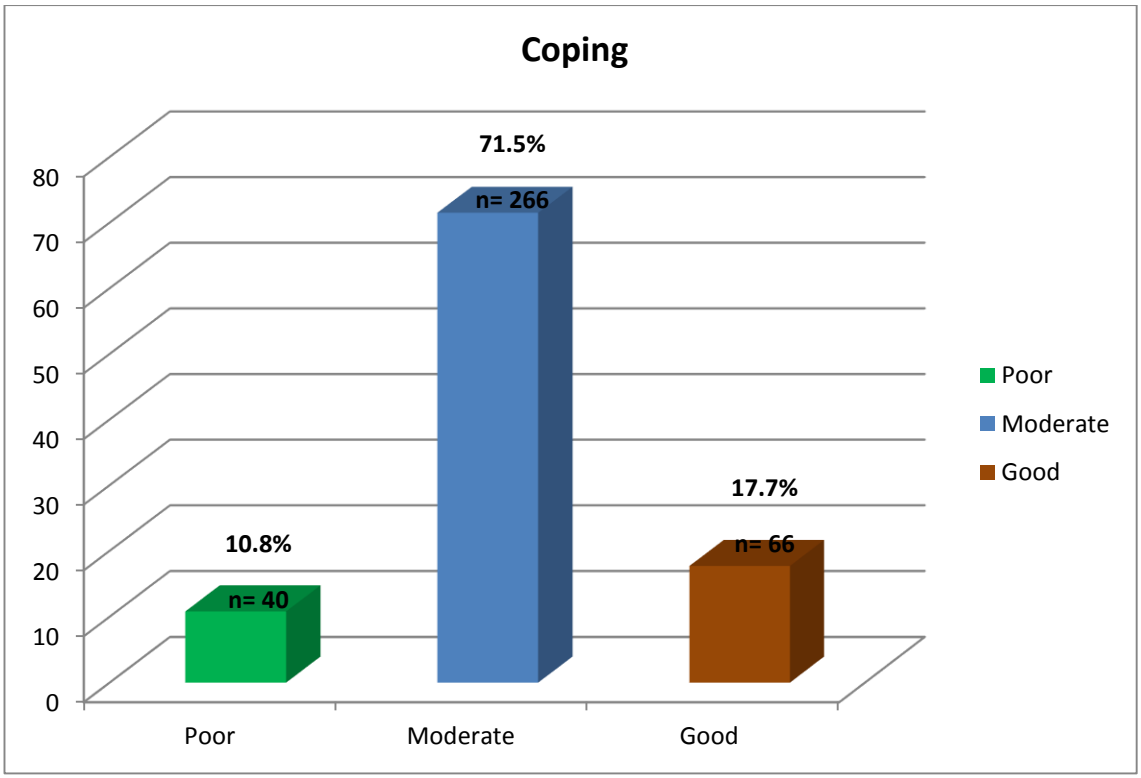

Figure (4-2): Levels of Coping Mechanisms among Female Students (N=372)

This figure reveals that 71.5% of female students have moderate coping mechanisms related to premenstrual syndrome.

Table (4-12): Influence of Coping Mechanisms on Symptoms of Premenstrual Syndrome among Female Students (N=372)

Coping / Symptoms	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
Physical	.306	.043	.344	7.058	**.001**
Psychological	.172	.044	.202	3.960	**.001**
Behavioral	.192	.043	.225	4.441	**.001**
Overall symptoms	.0670	.110	.301	6.080	**.001**

This table manifests that coping mechanisms among female students are highly influence the symptoms associated with premenstrual syndrome as indicated by high significant differences in physical symptoms, psychological symptoms, behavioral symptoms, and overall symptoms at p-values= .001, .001, .001, and .001.

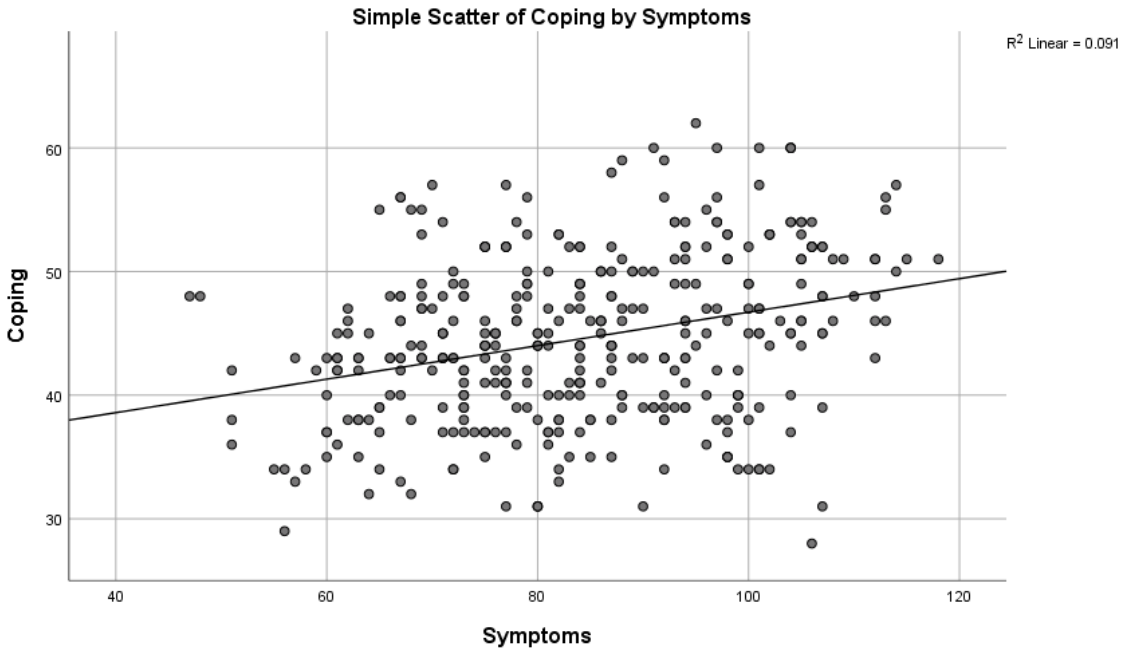

Figure (4-3): Scatter Plot for Coping Mechanisms by Symptoms

This figure reveals that female students show good coping mechanisms as increased symptoms' severity.

Table (4-13): Association among Female Students' Symptoms and their Socio-demographic Variables (N=372)

Variables		Symptoms				Association
		Mild	Moderate	Severe	Total	
Age (year)	18 – 20	24	89	50	163	**F= .240** **P-value= .787** **Sig= N.S**
	21 – 23	15	112	51	178	
	24 – 26	6	12	13	31	
	Total	45	213	114	372	
Marital status	Unmarried	34	144	95	273	**F= 1.052** **P-value= .370** **Sig= N.S**
	Married	9	60	17	86	
	Widowed	0	1	0	1	
	Divorced	2	8	2	12	
	Total	45	213	114	372	
Residency	Urban	19	40	22	81	**t= 2.498** **P-value= .013** **Sig= S**
	Rural	26	173	92	291	
	Total	45	213	114	372	
College	Law	16	54	43	113	**F= 1.777** **P-value= .133** **Sig= N.S**
	Nursing	8	50	20	78	
	Tourism science	6	32	9	47	
	Applied medical sciences	7	38	31	76	
	Physical education and sport science	8	39	11	58	
	Total	45	213	114	372	
Grade	First	13	40	31	84	**F= .348** **P-value= .791** **Sig= N.S**
	Second	10	62	23	95	
	Third	10	69	31	110	
	Fourth	12	42	29	83	
	Total	45	213	114	372	
Living with	Family	41	178	93	312	**t= 1.193**

	Friends	4	35	21	60	**P-value= .234**
	Total	45	213	114	372	**Sig= N.S**
Mother's education	Not read & write	5	14	7	26	**F= .105** **P-value= .957** **Sig= N.S**
	Primary school	13	64	36	113	
	Secondary or less	14	70	32	116	
	College and higher	13	65	39	117	
	Total	45	213	114	372	
Perceived family income	Adequate	0	2	4	6	**F= 4.030** **P-value= .019** **Sig= S**
	Partially adequate	10	67	36	113	
	Inadequate	35	144	74	253	
	Total	45	213	114	372	

F= F-statistics, t= independent sample t-test, p= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

This table reports that there is statistical correlation among female students' symptoms with their residency and perceived monthly income at p-values= .013 and .019. The findings did not reveal any significant relationship with other variables of age, marital status, college, grade, living status, and mothers' education.

Table (4-14): Association among Female Students' Symptoms and their Reproductive Variables (N=372)

Variables		Symptoms				Association
		Mild	Moderate	Severe	Total	
Family history of PMS	No	23	108	37	168	**t= 3.818**
	Yes	22	105	77	204	**P-value= .001**
	Total	45	213	114	372	**Sig= H.S**
Age at first menstrual cycle	9 – 11 year	12	43	28	83	**F= 1.973**
	12 – 14 year	26	145	76	247	**P-value= .141**
	15 year and more	7	25	10	42	**Sig= N.S**
	Total	45	213	114	372	
Menstrual duration	Less than 3 days	7	17	4	28	**F= 4.463**
	3 – 5 days	23	107	54	184	**P-value= .012**
	More than 5 days	15	89	56	160	**Sig= S**
	Total	45	213	114	372	
Menstruation interval	Less than 21 days	10	40	24	74	**F= .712**
	21 – 35 days	23	150	74	247	**P-value= .491**
	More than 35 days	12	23	16	51	**Sig= N.S**
	Total	45	213	114	372	
Regularity of menstruation	No	12	65	40	117	**t= .759**
	Yes	33	148	74	255	**P-value= .448**
	Total	45	213	114	372	**Sig= N.S**
Amount of bleeding during menstruation	light	5	23	15	43	**F= 8.756**
	Medium	38	158	71	267	**P-value= .001**
	Heavy	2	32	28	62	**Sig= H.S**
	Total	45	213	114	372	

F= F-statistics, t= independent sample t-test, p= Probability, Sig= Significance, N.S= Not significant, S= Significant, H.S= High significant

As reveals in this table that there is statistical relationship among female students' symptoms with their family history, menstrual duration, and amount of bleeding at p-values= .001, .012, and .001 respectively. The findings did not reveal any significant relationship with other variables of age at first menstruation, menstruation interval, and regularity of menstruation.

Chapter Five

Discussion of the results,

Conclusions and

Recommendations

Chapter Five

Discussion, Conclusions and Recommendations

After finding the results in the previous chapter, it is necessary to discuss and compare them with other similar studies and find out whether those studies support these results that investigated the assessment of PMS symptoms, coping mechanisms used by university female students, and the effect of these mechanisms on symptoms, in addition to finding out the relationship of PMS with some socio-demographic and reproductive characteristics. This chapter will discuss the results of this study. Finally, the conclusion of this study and some recommendations based on the results will be mentioned.

5.1. Discussion:

5.1.1. Socio-demographic characteristics discussion

The socio-demographic information of (372) female students participating in this study showed that the highest percent (47.8%) among them had an average age of 21 to 23 years, as shown in Table (4-1). This is in agreement with research done in Egypt by Abdel Hafez et al. (2015) to evaluate PMS and coping strategies among female students in Minia University's Nursing College. That shows the average age of 71% of the female students was 21 to 23 years, which is higher than the average for other ages.

Regarding marital status, the results of this study agreed with the results of another study conducted in Iraq by Al-Khazrajy and Hameed. (2023). To assess physical, psychological, and behavioral symptoms of PMS among women who visit primary healthcare centers Additionally, to see whether any correlation exists between certain factors and premenstrual

symptoms, where the majority of samples in the two studies were single. The results in this study showed that (273) female students were single out of (372) students, which is equivalent to (73.4%), while (258) female students were single out of (400) students, which is approximately 64.5%.

The study showed that most of the female students lived in urban areas (78.2%) and in rural areas (21.8%). These results are considered supportive of the study (Ali & Al-Saffar, 2014) conducted to assess the health behaviors and knowledge of adolescent students regarding PMS, whose result was that about (79.1%) live in urban areas.

Regardless of the college, the study showed that female students in the second and third stages achieved the highest participation rates of 25.5 and 29.6 percent, respectively. Which is consistent with the result of the Ethiopian study conducted by (Likasa & Tiki, 2020), which aimed to examine the impact and prevalence of PMS among university female students, where the participation of female students in the second stage was (33.3%) and the third stage was (40.6%).

It was found in this study that 83.9% of female students live with their families, which is the largest percentage, and this is what several studies also found, including (Al-Khamis, et al., 2021), where (87.2%) was the percentage of girls who live with their families.

As for the mother's educational level, the percentages were very close between those who completed university education and those who obtained a secondary degree. In first place came mothers who graduated from university, at a rate of 31.5%, and in second place were mothers who obtained only a secondary degree, at a rate of 31.2%. This result is matched with (Al- & Al-Dabbagh, 2020), as their results were about 51.5% and 32.5%

for those with a university degree and those with a secondary degree, respectively.

According to the perceived family income, this study showed that the monthly income is adequate from the point of view of 68% of the female students. This is a result consistent with the study conducted by (Hassan, et al. 2022), as its purpose was to compare the effects of the Benson relaxation method and Pilates activities on the menstrual cycle, as the family income of the majority in both groups was sufficient (92% and 98%, respectively).

5.1.2. Reproductive characteristics discussion

Table (4-2) show the results of the reproductive characteristics of the female students. The most prominent of these characteristics was the family history of PMS, age at first menstrual cycle, menstrual duration, menstrual interval, regularity of menstruation, and finally the amount of bleeding during menstruation.

It found that 54.8% of the female students had a family history of PMS, and this supports (Al-Khazrajy and Hameed, 2023) study that showed that 57.8% of the women participating in it had a family history of this syndrome.

According to the first menstrual cycle and the menstrual duration, the results of this study agreed with the study done by (Treesa et al., 2022) in India to determine the frequency of PMS, as well as the variables that interfere with it and the coping mechanisms used by students. The result indicated the average age when the first menstrual period occurred for most female students was between 12 and 14 years (66%), and the duration of menstruation for the largest number of them was 3-5 days (49%). While, in the Indian study mentioned above, the average age of most female students

at the first period (89.7%) ranged between 12 and 15 years of age, and the duration of menstruation was 3-5 days (68.9%).

Regarding menstruation interval, the results showed that (66.4%) was 21 to 35 days, which is an identical result with what was shown in the study that aimed to evaluate the prevalence of PMS, risk factors, and coping strategies among female students at Wolkite University, which was conducted by (Eshetu, et al. 2022) in which it was found that (69.2%) of the female students had the same menstrual interval as the above.

(68.5%) of female students had regular periods, this is what this study showed, and it is a result consistent with the results of other studies, including (Mahmood, K. 2023), where 70.3% had regular periods.

This study showed that the amount of blood flowing during menstruation for 71% of female students was moderate, which is a very close percentage to the (Raddi et al., 2020) study, which showed that 70% had a moderate amount of bleeding.

5.1.3. Discussion of premenstrual syndrome symptoms:

The overall score of PMS symptoms as reported in table (4-9) indicates that female students are associated with moderate to severe symptoms of PMS(57.3%) of them with moderate symptoms and 30.6% with severe symptoms. Which is in agreement with (Abdelazim et al., 2024) that found (58.7%) of physicians who work in port said city had "moderate to severe PMS.

According (Soliman, et al. 2022) a moderate degree of PMS was present in 53.4% of the study sample, whereas 34.3% of them had severe PMS. Just 11.2% of the female participants in the study experienced mild PMS meaning that these results supportive for this study.

Jadhav et al. (2022) found that out of the 132 cases of PMS, 89 (63%) had moderate PMS and 43 (31%) had severe PMS, which is also a study that matches the results of this study.

As shown in table (4-4) 57.8% of female students were associated with moderate physical symptoms related to PMS, while 28.6% of them were associated with severe physical symptoms (abdominal cramps, feeling tired and fatigue, and feeling discomfort and pain in the pelvic area were the most common severe physical symptoms among girls, at 50%, 47.8%, and 47%, respectively).

In much of the literature, abdominal cramps or abdominal bloating were the most frequently reported physical symptoms of PMS, as found by (Bharti, et al. 2020) and (Al-Khamis, et al., 2021). Other studies, such as those by Yilmaz-Akyuz and Aydin-Kartal (2019) mentioned pelvic pain and discomfort is the most common symptom among females; another common somatic symptom was fatigue, as shown by (Raddi et al., 2020) and (Budarapu et al. 2018). All these findings are consistent and support this study.

Table (4-6) depicts that 43.5% of female students are associated with moderate psychological symptoms and 35.5% are associated with severe psychological symptoms related to PMS. The more frequent severe psychological symptoms were 54.8% suffering from mood swings, 53.5% feeling depressed, and 50.8% feeling irritable.

In agreement with this study, (Shahbazi et al., 2020) reveal that mood swings is one of the most common psychological symptoms (64.9%), also (Rani & Buvaneshwari, 2021) found 90% of participants had mood swings. According to (Likasa & Tiki, 2020) depressed mood is a major symptom of females with PMS, additionally, depression (40.2%) was the most frequently

experienced symptom as a result of (Zeleke et al., 2023). (Aara, et al. 2018) showed the majority of nursing and medical students participating in their study felt irritability, and (Bilir, et al. 2021) reported one of the more prevalent symptoms was irritability.

In addition, table (4-8) reveals that 43.8% of female students are associated with moderate behavioral symptoms and 25.8% of them are associated with severe behavioral symptoms related to PMS.

The most common behavioral symptoms were social withdrawal, decreased interests and activities, restlessness, and being more sensitive. A similar result was stated by (Bałanda-Bałdyga et al., 2023) and (Bharti, et al. 2020).

5.1.4. Discussion of coping mechanisms:

Approximately seventy-one percent of girls follow moderate coping mechanisms with premenstrual symptoms, as shown in table (4-11), which is the majority percent, and this is what was shown in previous studies, including (Badkur et al., 2023) where it was shown that majority of girls use some coping mechanisms to get rid of or reduce the symptoms of this syndrome. Also, 93.4% of females participating in (Eshetu, et al. 2022) study were applying at least one strategy to deal with PMS symptoms.

Understanding that the changes are temporary and will go away over time was a good coping mechanism, which is a matched result for (Rani & Buvaneshwari, 2021) who reported that 71% accept change as a normal temporary condition and acknowledge that there is nothing that can be done.

To assess the symptoms of PMS and the behavioral coping strategies used, (Bhagat & Bhura, 2016) found that most of the participants used

healthy coping mechanisms, as (75.4%) of them accepted the condition as normal and nothing could be done.

Rest and sleep, a hot shower, drinking warm water and hot drinks, praying and listening to the Qur'an, eating more than usual, and crying were also more frequent strategies used to relieve or reduce symptoms. In agreement with this finding were the results of (Akpoigho & Ukamaka, 2022) which found that the most widely used coping mechanisms among women are: resting, sleeping, accepting the changes as the normal process, listening to music, painkillers, diverting attention, exercising, taking hot showers, eating more, and praying.

The most widely used coping strategy was resting and sleeping enough, which was followed by regarding changes as a temporary process, taking a warm shower, and controlling feelings as (Yoon, et al. 2015) found.

5.1.5. Influence of Coping Mechanisms on Symptoms PMS discussion:

Table (4-12) shows that female students' coping mechanisms have a significant impact on the symptoms associated with PMS (P=0.001), which means that female students show good coping mechanisms as the severity of symptoms increases. This is consistent with the results of (Akpoigho & Ukamaka, 2022), which it revealed a strong positive correlation ($p < 0.001$) between coping mechanisms and premenstrual symptoms. This suggests that females develop more strategies for managing the PMS the more severe it gets.

Also, this result is supported by (Treesa et al., 2022) which found a positive association (at $P<0.05$) between PMS symptoms and coping

techniques, which means employing certain coping mechanisms helps to alleviate premenstrual symptoms.

5.1.6. Relationship between PMS among Female Students and Their Socio-Demographic and Reproductive Characteristics:

5.1.6.1. According to socio-demographic characteristics:

The study did not show a relationship between PMS and age, marital status, educational level, living with, and educational level of the female student's mother , but it did show that there is a statistically significant relationship between residency and family income with PMS.

According to residency (p = 0.013), this was proven by (Arslantaş et al. 2018) at (p = 0.033) and (Soliman, et al. 2022) (p = 0.016) too, while with regard to monthly income, it was (p = 0.019), which is a result supported by (Farahmand et al., 2017) and (Aktas, et al. 2018).

5.1.6.2. According to reproductive characteristics:

This study reveals that there is a high significant correlation among female students' PMS symptoms and their family history (p-values =0.001), which is in attachment with a Turkish study applied by (Boyacioglu et al., 2021) that said there is a relationship between premenstrual problems and participants family history of premenstrual tension. Also, study conducted by (Kamat et al., 2019) in India found that PMS in females is significantly associated with their mother's history of PMS an d menstrual abnormality (P = 0.020). Additionally, there is an Iranian study conducted by (Boustani et al., 2019) that reported that a positive family history of symptoms of PMS increases the chances of symptoms of this syndrome occurring among participants. In this study, the duration of menstruation was significantly

associated with PMS (p = 0.012), as other studies, including (Bayomy, et al. 2022) and (Tolossa & Bekele, 2014) showed the same finding.

As for the amount of bleeding during the menstrual cycle, this study showed that it is highly statistically associated with PMS (p = 0.001), which is the same result presented by (Shrestha et al., 2019), and this study also agreed with (Doriraj and Ramamurthy, 2019) and (Yi et al., 2023)

The findings did not reveal any significant relationship with other variables of age at first menstruation, menstruation interval, and regularity of menstruation.

5.2. Conclusions:

Based on the result's discussion and interpretation, it is possible to conclude the following:

1. The age group of 21–23 years is the majority of the study sample. Most of them are urban residents who live with their families. Most of them were single, and their monthly income was sufficient.
2. The severity of PMS symptoms among female students ranged from moderate to severe.
3. The students showed moderate coping mechanisms for the symptoms of PMS.
4. As the severity of the symptoms increased, the students showed good coping mechanisms, which means that the coping mechanisms have a significant influence on the symptoms of the syndrome.
5. There is a statistically significant correlation between PMS and residency, family income, family history, menstrual duration, and amount of bleeding.

6. Age, marital status, college, grade, living status, mother's education, age at first menstruation, menstruation interval, and regularity of menstruation are not correlated with PMS.

5.3. Recommendations:

The researcher wrote down some of the recommendations mentioned below based on the findings and conclusions of the study:

1. Improve female students' awareness of the changes that occur to them during the premenstrual period and how to deal and cope with these changes in a healthy way by holding courses and workshops. Modern means, such as social media, can be used to hold these programs online so that the largest possible number of females can participate.
2. Educating the community about this syndrome to know what females suffer from during this period is necessary in order to accept their changes and reduce the burden on them from their family, husband, or friends.
3. Cooperating with the Ministry of Education to hold courses for high school students on premenstrual syndrome and the most appropriate mechanisms for adapting to the changes that have occurred to thim as a result so it is very necessary to increase young women's awareness of this syndrome.
4. Find out the reason behind the relationship between PMS and residence, duration of menstruation, amount of bleeding, and monthly income through conducting studies that are more extensive.
5. The researcher also recommends conducting other studies on PMS and coping mechanisms to find out whether there are new and effective coping mechanisms that girls will develop over time.

References

- القران الكريم، سورة البقرة، الآية (٢٢٢)، ص ٣٥
- Aara, S., Nazeer, M., & Rasool, M. (2018). Premenstrual syndrome and its effects. Journal of Medical Science and Clinical Research, 6(1). https://doi.org/10.18535/jmscr/v6i1.116
- Abbas, K., Usman, G., Ahmed, M., Qazi, R., Asghar, A., Shah, A. M. & Usama, S. M. (2020). Physical and psychological symptoms associated with premenstrual syndrome and their impact on the daily routine of women in a low socioeconomic status locality. Cureus, 12(10).
- Abdel Hafez, A., Ahmed, S., & Makhlouf, E. (2015). Assessing the premenstrual syndrome and coping behavior among female nursing students. Al-Azhar Assiut Medical Journal AAMJ, 13(4), 179.
- Abdelazim, S. A., Ibrahim, A. A., & Eldahshan, N. A. (2024). Prevalence and Severity of Premenstrual Syndrome and Premenstrual Dysphoric Disorder among Physicians in Port Said City. Suez Canal University Medical Journal, 27(1), 1-13.
- Abdi, F., Ozgoli, G., & Rahnemaie, F. S. (2019). A systematic review of the role of vitamin D and calcium in premenstrual syndrome. Obstetrics & gynecology science, 62(2), 73-86.
- Abeje, A., & Berhanu, Z. (2019). Premenstrual syndrome and factors associated with it among secondary and preparatory school students in Debremarkos town, North-west Ethiopia, 2016. BMC research notes, 12(1), 1-5.
- Adnan, M. N. A. H. M., & Razzak, A. (2020). The Differentiation between Premenstrual Tension Syndrome and Dysmenorrhea in Young Age Group in Kerballa City: Cross-Sectional Study. Indian Journal of Forensic Medicine & Toxicology, 14(1), 710-715.

- Ajayi, O. B. (2023). Proactive Coping Strategies Among First-Years in Higher Education Institutions. In Handbook of Research on Coping Mechanisms for First-Year Students Transitioning to Higher Education (pp. 363-382).
- Akbarzadeh, M., Dehghani, M., Moshfeghy, Z., Emamghoreishi, M., Tavakoli, P., & Zare, N. (2015). Effect of Melissa officinalis capsule on the intensity of premenstrual syndrome symptoms in high school girl students. Nursing and midwifery studies, 4(2).
- Akın, Ö., & Erbil, N. (2024). Investigation of coping behaviors and premenstrual syndrome among university students. Current Psychology, 43(2), 1685-1695.
- Akpoigho, E. C., & Ukamaka, N. C. (2022b). Assessment of Premenstrual Syndrome and Coping Strategies among Female Students of the School of Basic Medical Sciences, University of Benin, Benin City, Nigeria. Bayero Journal of Nursing and Health Care, 4(1), 927–938.
- Aktas, D., Öztürk, E., & Gökalp, G. (2018). Prevalence and factors affecting premenstrual syndrome in university students. Health Sciences Research in the Globalizing World, 75.
- Al-Ameri, M. H. I., Hasan, R., & Fadhil, S. (2017). Assessment of levels of premenstrual psychological and physical problems (premenstrual syndrome-PMS) of students of the colleges of Bab Al-Mua'dham complex/university of Baghdad. Iraqi National Journal of Nursing Specialties, 30(2), 25-34.
- Algorani, E. B., & Gupta, V. (2022).Coping Mechanisms. Westerly, 63(1), 102. https://doi.org/10.2307/j. ctvp7d4ft.13
- Ali, F. H., & Al-Saffar, F. A. A. (2014). Assessment Of Adolescent Student's Knowledge Toward Premenstrual Syndrome In Nursing

Secondary Schools At Al-Diwanyia Governorate. Journal of Kufa for Nursing Science, 4(1).

- Ali, F. H., & Al-Saffar, F. A. A. (2014). Assessment Of Adolescent Student's Knowledge Toward Premenstrual Syndrome In Nursing Secondary Schools At Al-Diwanyia Governorate. *Journal of Kufa for Nursing Science*, *4*(1).
- Alimoradi, Z., Rajabalipour, S., Rahmani, K., & Pakpour, A. H. (2022). The effect of a social network-based cognitive behavioral therapy intervention on the severity of premenstrual syndrome symptoms: a protocol of a randomized clinical trial study. Trials, 23(1), 346.
- Al-Juhaishi, A. M. R (2017). The efficacy of Omega-3 fatty acid for management of affective and somatic symptoms in obese women with Premenstrual syndrome in Kerbala province. Scholars Academic Journal of Pharmacy (SAJP), 6(5), 197-202
- Alkhamis, F., Almzraq, L. A. A., Alshayeb, Z. K., & AL-Jaziri, Z. Y. (2021). Prevalence of premenstrual syndrome among medical students in King Faisal University in Alahssa-Saudi Arabia. Med Sci, 25, 1971-83.
- Al-Khazrajy, L. A., & Hameed, H. S. (2023). Premenstrual Related Symptoms among Women Attending Primary Health Care Centers During 2022. IRAQI JOURNAL OF COMMUNITY MEDICINE, 36(2).
- Aloka, P. J., & Mukuna, K. R. (2023). Handbook of Research on Coping Mechanisms for First-Year Students Transitioning to Higher Education.
- Al-Qazaz, H. K., & Al-Dabbagh, R. O. (2020). Menstrual disorder: Cross-sectional study on prevalence and self-care practice among

adolescents in Iraq. Annals of Tropical Medicine and Public Health, 23(4).

- AlQuaiz, A., Albugami, M., Kazi, A., Alshobaili, F., Habib, F., & Gold, E. B. (2022). Dietary, psychological and lifestyle factors associated with premenstrual symptoms. International Journal of Women's Health, 1709-1722.
- Altbach, P. G., Reisberg, L., & Rumbley, L. E. (2019). Trends in global higher education: Tracking an academic revolution. Brill.
- Alzubaidi, M, J. (2024). The correlation between coping mechanisms and premenstrual syndrome among female nursing students in Al-Najaf Provence. Journal of Advance Medical Sciences, 4(1):01-06
- Ameer, M. A., Fagan, S. E., Sosa-Stanley, J. N., & Peterson, D. C. (2022). Anatomy, Abdomen and Pelvis: Uterus. In StatPearls. StatPearls Publishing.
- American College Obstetricians and Gynecologists, ACOG (2011) Premenstrual syndrome 57(3). http://www.acog.org/Patients/FAQs/Premenstrual-Syndrome-PMS
- American College of Obstetricians and Gynecologists.(2000). Clinical management guidelines for obstetrician-gynecologists: Premenstrual syndrome. ACOG Practice Bulletin, 15,2, 1-9.
- Anderson, Z. (2023). Diagnosis and Treatment of Premenstrual Syndrome: Differentiating Premenstrual Syndrome PMS from Premenstrual Dysphoric Disorder PMDD and Premenstrual Exacerbation Disorder PMED. In Handbook of Gynecology (pp. 255-260). Cham: Springer International Publishing.
- Arslantaş, H., Abacıgil, F., & Çinakli, Ş. (2018). Relationship between premenstrual syndrome and basic personality traits: a cross-sectional study. Sao Paulo Medical Journal, 136(4), 339–345.

- Askari, S., Behroozi, N., & Abbaspoor, Z. (2018). The effect of mindfulness-based cognitive-behavioral therapy on premenstrual syndrome. Iran Red Crescent Med J, 20(2), 57538.
- Aubrey Bailey, PT, DPT, CHT. (2022, October 18). Coping mechanisms: everything you need to know. Verywell Health. https://www.verywellhealth.com/coping-mechanisms-5272135
- Ayhan, İ., Altuntaş, İ., Üzümcü, İ., & Erbaş, O. (2021). Premenstrual syndrome mechanism in the brain. Demiroglu Science University Florence Nightingale Journal of Medicine, 7(2), 213-224.
- Badkur, D., Singh, S., Arjaria, V., & Wanjpe, A. (2023). Study to assess the association of PMS with sociodemographic factors and various coping behaviors adopted for premenstrual symptoms. Asian Journal of Medical Sciences, 14(6), 135–141.
- Bałanda-Bałdyga, A., Pałucka, K., Niedźwiedź, J., Kęsik, J. J., & Pilewska-Kozak, A. B. (2023). Premenstrual syndrome symptoms in women of reproductive age–a preliminary report. Kwartalnik Naukowy Fides et Ratio, 55(3), 27-40.
- Bayomy, H. E., Alshubayni, B. M., Mohammad, A., Alkhaldi, A. S. A., Alazmi, Z. N., Alanazi, A. A., & Alshaheen, R. M. (2022). Premenstrual syndrome and premenstrual dysphoric disorder among female students in Northern Border University, Arar City, Saudi Arabia. Bioscience Research, 17(4).
- Bhagat, C., & Bhura, P. (2016). A descriptive study to assess the premenstrual syndrome and coping behaviour among women. International Journal of Physiotherapy and Research, 4(3), 1550-1553.
- Bharati, M. (2016). Comparing the effects of yoga & oral calcium administration in alleviating symptoms of premenstrual syndrome in medical undergraduates. Journal of caring sciences, 5(3), 179.

- Bharti, P., Mittal, A., Kaur, T., & Gupta, P. (2020). A Descriptive Study to Assess the Premenstrual Symptoms and Coping Mechanisms among Health Care Professionals. Indian Journal of Public Health Research & Development, 11(5).
- Bhuvaneswari, K., Rabindran, P., & Bharadwaj, B. (2019). Prevalence of premenstrual syndrome and its impact on quality of life among selected college students in Puducherry. Natl Med J India, 32(1), 17-9.
- Bhuvaneswari, K., Rabindran, P., & Bharadwaj, B. (2019). Prevalence of premenstrual syndrome and its impact on quality of life among selected college students in Puducherry. Natl Med J India, 32(1), 17-9.
- Bilir, F., Akdemir, R., & Bilir, C. (2021). Some, but not all of the premenstrual syndrome symptoms affect the medical exam scores in medical students. Pakistan Journal of Medical Sciences, 37(4), 1190.
- Bland, J.M.; Altman, D.G. (1996). "Statistics notes: measurement error". BMJ. **312** (7047): 1654.
- Boustani, F., Ziagham, S., Jahangirimehr, A., & Honarmandpour, A. (2019). Prevalence of premenstrual syndrome, premenstrual dysphoric disorder and associated factors among female high school students. Journal of Inflammatory Diseases, 23(4), 332-341.
- Boyacioğlu, N. E., Gökdemir, F., & Özcan, N. K. (2021). Investigation of factors related to menstrual and premenstrual symptoms. Arch Health Sci Res, 8(1), 46-55.
- Bu, L., Lai, Y., Deng, Y., Xiong, C., Li, F., Li, L., ... & Liu, C. (2019). Negative mood is associated with diet and dietary antioxidants in university students during the menstrual cycle: a cross-sectional study from Guangzhou, China. Antioxidants, 9(1), 23.

- Budarapu, S., Sadam, H., Harshitha, K., M, D. N., K, H. R., & Dhanekula, G. (2018). A Study to Assess the Prevalence of Premenstrual Syndrome and Premenstrual Dysphoric Disorder and Various Coping Strategies used by Students in A Womens Medical College from South India. International Journal of Contemporary Medical Research, 5(11), 11-18.
- Cary, E., & Simpson, P. (2023). Premenstrual disorders and PMDD-a review. Best Practice & research. Clinical Endocrinology & Metabolism, 101858-101858.
- Cetin, S., Yildiz, I., Bozyel, E., Gurcay, E., & Ustunkaya, B. G. (2022). The Effect of the Coping Methods Used by Nursing Students on the Prevalence of Premenstrual Syndrome. International Journal of Caring Sciences, 15(2), 805-814.
- Cetin, S., Yildiz, I., Bozyel, E., Gurcay, E., & Ustunkaya, B. G. (2022). The Effect of the Coping Methods Used by Nursing Students on the Prevalence of Premenstrual Syndrome. International Journal of Caring Sciences, 15(2), 805-814.
- Chin, L. N., & Nambiar, S. (2017). Management of premenstrual syndrome. Obstetrics, Gynaecology & Reproductive Medicine, 27(1), 1-6.
- Chou, B., Bienstock, J. L., & Satin, A. J. (2020). The Johns Hopkins Manual of Gynecology and Obstetrics 6th ed. Lippincott Williams & Wilkins, 503-580
- Clark, A. S. (2000). " That time of the month": the history of PMS research in Vancouver 1983-1997 (Doctoral dissertation, University of British Columbia).
- Cochran W, Sampling techniques. Wiley Asia 2006; 72-86.
- Connelly, M. (2008). Pilot studies. Medsurg Nursing, 17(6), 411-2.

- Coping mechanisms- GoodTherapy.org therapy blog. (2023, December) https://www.goodtherapy.org/blog/psychpedia/coping-mechanisms
- Crowe, B. M., & Van Puymbroeck, M. (2019). Enhancing problem- and emotion-focused coping in menopausal women through yoga. International Journal of Yoga Therapy, 29(1), 57-64.
- da Silva, M. F. O., de Azevedo, L. O., Campelo, M. G. D. O. C., Wanderley, N. C., Sobral, M. K. M., & de Albuquerque, G. P. M. (2023). Premenstrual syndrome: possibilities of care for symptom attenuation. Rev Med (São Paulo), 102(3), 196886.
- Davidson, M., London, M., & Ladewig, P. (2020). New Olds' Maternal-Newborn Nursing & Women's Health Across the Lifespan
- Dawood, K. S. (2020). Assessment of Premenstrual Syndrome (PMS) Symptoms among Female Students in Baghdad City. EXECUTIVE EDITOR, 11(02), 925.
- Dehnavi, Z., Jafarnejad, F., & Goghary, S. S. (2018). The effect of 8 weeks aerobic exercise on severity of physical symptoms of premenstrual syndrome: a clinical trial study. BMC Women's Health, 18(1).
- Derya YA, Erdemoğlu Ç, Özşahin Z. The status of having the menstrual symptom in university students and its effect on quality of life. A Acıbadem Univ Sağlık Bilim Derg.2019;10:176-81.
- Dieker, J., & Qualls, S. (2022). MEANING FOCUSED COPING: IMPLICATIONS FOR FAMILY CAREGIVER BURDEN AND POSITIVE ASPECTS OF CARE. Innovation in Aging, 6(Suppl 1), 696.

- Dilbaz, B., & Aksan, A. (2021). Premenstrual syndrome, a common but underrated entity: review of the clinical literature. Journal of the Turkish German Gynecological Association, 22(2), 139.

- Dilbaz, B., & Aksan, A. (2021). Premenstrual syndrome, a common but underrated entity: review of the clinical literature. Journal of the Turkish German Gynecological Association, 22(2), 139.

- Durairaj, A., & Ramamurthi, R. (2019). Prevalence, pattern and predictors of premenstrual syndrome (PMS) and premenstrual dysphoric disorder (PMDD) among college girls. New Indian J OBGYN, 5(2), 93-8.
- Duraku, Z. H., & Hoxha, L. (2018). Self-esteem, study skills, self-concept, social support, psychological distress, and coping mechanism effects on test anxiety and academic performance. Health Psychology Open, 5(2), 205510291879996.
- Edwin, Kubai. (2019). Reliability and Validity of Research Instruments Correspondence to kubaiedwin@yahoo.com. NMK conference
- Elnagar, R. R., Elmashed, H. A. M., & Kheder, N. F. H. (2017). Menstrual disorders: incidence and its effect on students' academic performance. International Journal of Nursing Didactics, 7(3), 27-37.
- Eshetu, N., Abebe, H., Fikadu, E., Getaye, S., Jemal, S., Geze, S., ... & Tesfaye, W. (2022). Premenstrual syndrome, coping mechanisms and associated factors among Wolkite university female regular students, Ethiopia, 2021. BMC Women's Health, 22(1), 88.
- Fan, D., Tong, L. I., Siqing, M. A., Qiao, L. I. U., Huiping, T. A. N., Xiaoyue, W. U., & Chunting, D. I. A. O. (2022). Review on the Research Progress of Premenstrual Syndrome. MEDS Clinical Medicine, 3(1), 79-86.

- Farahmand, M., Ramezani Tehrani, F., Khalili, D., Amin, G., & Negarandeh, R. (2017). Factors associated with the severity of premenstrual syndrome among Iranian college students. Journal of Obstetrics and Gynaecology Research, 43(11), 1726-1731.
- Farasati, N., Siassi, F., Koohdani, F., Qorbani, M., Abashzadeh, K., & Sotoudeh, G. (2015). Western dietary pattern is related to premenstrual syndrome: a case–control study. British Journal of Nutrition, 114(12), 2016-2021.
- Forster, M., Grigsby, T., Rogers, C., Unger, J., Alvarado, S., Rainisch, B., & Areba, E. (2022). Perceived discrimination, coping styles, and internalizing symptoms among a community sample of Hispanic and Somali adolescents. Journal of Adolescent Health, 70(3), 488-495.
- Gao, M., Gao, D., Sun, H., Cheng, X., An, L., & Qiao, M. (2021). Trends in research related to premenstrual syndrome and premenstrual dysphoric disorder from 1945 to 2018: a bibliometric analysis. Frontiers in Public Health, 9, 596128.
- Gao, M., Zhang, H., Gao, Z., Cheng, X., Sun, Y., Qiao, M., & Gao, D. (2022). Global and regional prevalence and burden for premenstrual syndrome and premenstrual dysphoric disorder: A study protocol for systematic review and meta-analysis. Medicine, 101(1), e28528.
- Ghaffarilaleh, G., Ghaffarilaleh, V., Sanamno, Z., Kamalifard, M., & Alibaf, L. (2019). Effects of yoga on quality of sleep of women with premenstrual syndrome. Altern Ther Health Med, 25(5), 40-47.
- Gnanasambanthan, S., & Datta, S. (2019). Premenstrual syndrome. Obstetrics, Gynaecology & Reproductive Medicine, 29(10), 281-285
- Greene, R., & Dalton, K. (1953). The premenstrual syndrome. British Medical Journal, 1(4818), 1007.
- Gudipally, P. R., & Sharma, G. K. (2020). Premenstrual syndrome.

- Hacker, N. F., Gambone, J. C., & Hobel, C. J. (2015). Hacker & Moore's Essentials of Obstetrics and Gynecology. Elsevier Health Sciences.
- Hamood, H. M., Alsaedi, M. A. Z., & Ayah, F. Al-Qrimli, Ali Q. Jawad (2024). Herbal Approach in Premenstrual Syndrome–A Review. South Asian Res J Pharm Sci, 6(1), 12-21.
- Haroun, H. S. W. (2016). Reproductive cycles in females. MOJ Womens Health, 2(2), 62-64.
- Hashim, S., El-Sayed, H., & Wasel, S. (2016). The Effect Of Cinnamon On Physical Symptoms Of Premenstrual Syndrome Among Adolescent Girls. Mansoura Nursing Journal, 3(2), 83-96.
- Hassan Ahmed, A., Mohamed Hassan, N., Hassan Shamekh, A., & S Badawy, A. (2022). Effect of pilates exercises versus Benson relaxation technique on premenstrual syndrome symptoms. Egyptian Journal of Health Care, 13(2), 39-53.
- Henz, A., Ferreira, C. F., Oderich, C. L., Gallon, C. W., Castro, J. R. S. D., Conzatti, M., ... & Wender, M. C. O. (2018). Premenstrual syndrome diagnosis: A comparative study between the daily record of severity of problems (DRSP) and the premenstrual symptoms screening tool (PSST). Revista Brasileira de ginecologia e obstetrícia, 40, 20-25.
- Hosseini, A., Razavi, B. M., & Hosseinzadeh, H. (2018). Saffron (Crocus sativus) petal as a new pharmacological target: A review. Iranian journal of basic medical sciences, 21(11), 1091.
- Itriyeva, K. (2022). Premenstrual syndrome and premenstrual dysphoric disorder in adolescents. Current Problems in Pediatric and Adolescent Health Care, 52(5), 101187.

- Itriyeva, K. (2022). The normal menstrual cycle. Current problems in pediatric and adolescent health care, 52(5), 101183.
- Jadhav, A., Chaudhury, S., & Saldanha, D. (2022). A study of prevalence and psychological correlates of premenstrual syndrome and premenstrual dysphoric disorder. Medical Journal of Dr. DY Patil University, 15(6), 895-905.
- Jasim, W. M. (2018). Assessment of the clinical features associated with premenstrual tension syndrome among Kirkuk Technical Institute students with possible preventive strategies. Medical Journal of Babylon, 15(1), 69-73.
- Kaewrudee, S., Kietpeerakool, C., Pattanittum, P., & Lumbiganon, P. (2018). Vitamin or mineral supplements for premenstrual syndrome. The Cochrane Database of Systematic Reviews, 2018(1).
- Kamat, S. V., Nimbalkar, A., Phatak, A. G., & Nimbalkar, S. M. (2019). Premenstrual syndrome in Anand District, Gujarat: A cross-sectional survey. Journal of Family Medicine and Primary Care, 8(2), 640-647.
- Kathleen, M., Lustyk, B., & Gerrish, W. G. (2010). 115 Premenstrual Syndrome and Premenstrual Dysphoric Disorder: Issues of Quality of Life, Stress and Exercise, 1951–1975.
- Kenney, J. F.; Keeping, E. S. (2016). Mathematics of Statistics, Part 1 (3rd ed.). Princeton, NJ: Van Nostrand Reinhold. Retrieved from http://onlinebooks.library.upenn.edu. Retrieved from https://en.wikipedia.org/wiki/Frequency_(statistics), accessed by July, 2022.
- Kenny, L. C., & Bickerstaff, H. (2017). Gynaecology by ten teachers. CRC Press, 27-34

- KETEN EDİS, E., & KETEN, M. (2023). Premenstrual Syndrome Experiences and Coping Levels of University Students: A Mixed Method Study. Bezmialem Science, 11(3), 308-314.
- Khalesi, Z. B., Beiranvand, S. P., & Bokaie, M. (2019). Efficacy of chamomile in the treatment of premenstrual syndrome: a systematic review. Journal of Pharmacopuncture, 22(4), 204.
- Kim, Y. J., & Park, Y. J. (2020). Menstrual cycle characteristics and premenstrual syndrome prevalence based on the daily record of severity of problems in Korean young adult women. Journal of Korean Academy of Nursing, 50(1), 147-157.
- Knaapen, L., & Weisz, G. (2008). The biomedical standardization of premenstrual syndrome. Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences, 39(1), 120-134.
- Lees, C., & Bourne, T. (2018). Dewhurst's Textbook of Obstetrics & Gynaecology. John Wiley & Sons, 663-672.
- Leifer, G. (2018). Introduction to Maternity and Pediatric Nursing - E-Book. Elsevier Health Sciences, 74-90.
- Leipold, B., Munz, M., & Michéle-Malkowsky, A. (2019). Coping and resilience in the transition to adulthood. Emerging Adulthood, 7(1), 12–20.
- Liguori, F., Saraiello, E., & Calella, P. (2023). Premenstrual syndrome and premenstrual dysphoric disorder's impact on quality of life, and the role of physical activity. Medicina, 59(11), 2044.
- Likasa, T., & Tiki, T. (2020). Prevalence of Premenstrual Syndrome and its Effects among Regular Female Students in Ambo University, West Shoa, Oromia Regional State, Ethiopia, 2019. Journal of

Psychiatry and Mental Health, 5(1). https://doi.org/10.16966/2474-7769.132

- Luesley, D. M., & Kilby, M. (Eds.). (2016). Obstetrics & Gynaecology: An evidence-based text for MRCOG. CRC Press, 543-551.
- Maddineshat, M., Keyvanloo, S., Lashkardoost, H., Arki, M., & Tabatabaeichehr, M. (2016). Effectiveness of group cognitive-behavioral therapy on symptoms of premenstrual syndrome (PMS). Iranian journal of psychiatry, 11(1), 30.
- Mahmood, K. I. (2023). Premenstrual Syndrome: Presence, Knowledge, and Attitude among Female University Students. Erbil Journal of Nursing and Midwifery, 6(1), 54-64.
- Majeed-Saidan, M. M. A., AlKharraz, N., Kaaki, K., AlTawil, N., Alenezy, S., & Ahamed, S. S. (2020). Prevalence of premenstrual syndrome levels and its management among female students of medical and non-medical colleges in Riyadh. Cureus, 12(11), 11595.
- Maleki-Saghooni, N., Karimi, F. Z., Moghadam, Z. B., & Najmabadi, K. M. (2018). The effectiveness and safety of Iranian herbal medicines for treatment of premenstrual syndrome: A systematic review. Avicenna journal of phytomedicine, 8(2), 96.
- Malhotra, P., Sharma, S. K., Kaur, R., Urvashi, V., Gaur, R., & Mugdal, S. K. (2019). Pre-menstrual syndrome and health related quality of life among young adult females at Northern India: A Cross-Sectional Study. Clin Psychiatry Journal, 6, 65.
- Malik, R., & Bhat, M. D. A. (2018). The management of Premenstrual syndrome: A review. Bangladesh Journal of Medical Science, 17(1), 16.

- Meers, J. M., & Nowakowski, S. (2020). Sleep, premenstrual mood disorder, and women's health. Current opinion in psychology, 34, 43-49.
- Millacci, T. S., & Lancia, G. (2017). Healthy coping: 24 mechanisms and skills for positive coping.
- Mohebbi, M., Akbari, S. A. A., Mahmodi, Z., & Nasiri, M. (2017). Comparison between the lifestyles of university students with and without premenstrual syndromes. Electronic physician, 9(6), 4489.
- Montgomery, D. C., Peck, E. A., & Vining, G. G. (2013), Introduction to Linear Regression Analysis (5th ed.). O'Reilly Media
- Moore, K. L., Persaud, T. V. N., & Torchia, M. G. (2015). The Developing Human E-Book: Clinically Oriented Embryology. Elsevier Health Sciences. P 24
- Motavalli, R., Sadrolmamaleki, V., & Ejder Apay, S. (2021). The effect of coping methods in reducing anxiety among girls with premenstrual syndrome. Journal of Research in Psychopathology, 2(4), 30-34.
- Naeimi, N. (2015). The prevalence and symptoms of premenstrual syndrome under examination. Journal of Biosciences and Medicines, 3(01), 1.
- Nappi, R. E., Cucinella, L., Bosoni, D., Righi, A., Battista, F., Molinaro, P., ... & Tiranini, L. (2022). Premenstrual syndrome and premenstrual dysphoric disorder as centrally based disorders. Endocrines, 3(1), 127-138.
- Naraoka, Y., Hosokawa, M., Minato-Inokawa, S., & Sato, Y. (2023, April). Severity of Menstrual Pain Is Associated with Nutritional Intake and Lifestyle Habits. In Healthcare (Vol. 11, No. 9, p. 1289).

- Nicolau, Z. F., Bezerra, A. G., Polesel, D. N., Andersen, M. L., Bittencourt, L., Tufik, S., & Hachul, H. (2018). Premenstrual syndrome and sleep disturbances: results from the Sao Paulo epidemiologic sleep study. Psychiatry research, 264, 427-431.
- Nicoll, Leslie H., and Suzanne C. Beyea. "Selecting research instruments to measure the reliability and validity of nursing research studies." AORN Journal, vol. 66, no. 5, Nov. 1997, pp. 927.
- Niedzwiecki, B., & Pepper, J. (2022). Kinn's The Medical Assistant - E-Book: Kinn's The Medical Assistant - E-Book. Elsevier Health Sciences.
- NSF Consulting. (2021). The reliability of qualitative research. NSF Consulting Pty Ltd. http://nsfconsulting.com.au/qualitative-research-reliability/
- Nworie, K. M. (2018). Premenstrual syndrome: etiology, diagnosis and treatment. A mini literature review. Journal of Obstetrics and Gynecological Investigations, 1(1), 41-46.
- O'Connor S. Secondary Data Analysis in Nursing Research: A Contemporary Discussion. Clin Nurs Res. 2020 Jun; 29(5):279-284.
- Padmavathi, P., Sankar, R., Kokilavani, N., Dhanapal, K., & Ashok, B. (2014). Validity and reliability study of premenstrual syndrome scale (PMSS). International Journal of Advances in Nursing Management, 2(1), 04-05.
- Pandey, A., & Dubey, A. (2023). Coping with Premenstrual Syndrome: The role of Psychological Immunity. Mind and Society, 12(04), 43-52.
- Pang, L. H. G., & Thomas, S. J. (2020). Exposure to domestic violence during adolescence: Coping strategies and attachment styles as early

moderators and their relationship to functioning during adulthood. Journal of Child & Adolescent Trauma, 13(2), 185-198.

- Pearce, E., Jolly, K., Jones, L. L., Matthewman, G., Zanganeh, M., & Daley, A. (2020). Exercise for premenstrual syndrome: a systematic review and meta-analysis of randomised controlled trials. BJGP open, 4(3).
- Perry, S. E., Hockenberry, M. J., Cashion, K., Alden, K. R., Olshansky, E., & Lowdermilk, D. L. (2022). Maternal Child Nursing Care - E-Book: Maternal Child Nursing Care - E-Book. Elsevier Health Sciences, 39-40.
- Polit, D.F. and Hungler, B.P. (2013). Essentials of Nursing Research: Methods, Appraisal, and Utilization (8th Ed.). Philadelphia: Wolters Kluwer/Lippincott Williams and Wilkins.
- Prasad, D., Wollenhaupt-Aguiar, B., Kidd, K. N., de Azevedo Cardoso, T., & Frey, B. N. (2021). Suicidal risk in women with premenstrual syndrome and premenstrual dysphoric disorder: a systematic review and meta-analysis. Journal of Women's Health, 30(12), 1693-1707.
- Profiti, R. (2001). THE HISTORY OF PMS AS A REFLECTION OF CHANGING HISTORICAL CONCEPTS OF HEALTH, ILLNESS, AND DISEASE. HISTORY OF MEDICINE DAYS, 164.
- Qalawa, S. A. A., Alsuhaibani, H. O., Alluhaydan, A. A., & Alghaidani, A. A. (2022). Health beliefs and coping strategies regarding premenstrual syndrome among health college students at Qassim University. International Journal of Health Sciences, 6, 4264-4277.
- Rad, M., Sabzevary, M. T., & Dehnavi, Z. M. (2018). Factors associated with premenstrual syndrome in female high school students. Journal of education and health promotion, 7.

- Raddi, S., Muragod, S. S., Raikar, S., & Carvalho, G. A. (2020). PREVALENCE AND ADAPTIVE COPING BEHAVIOUR OF PREMENSTRUAL SYNDROME AMONG ADOLESCENT GIRLS. International Education & Research Journal, 6(01), 2454-991.
- Raman, A. (2019). Reeder's maternity nursing. Wolters kluwer india Pvt Ltd, 83.
- Rani, E., & Buvaneshwari. (2021). Assess the Premenstrual Symptoms and Coping Strategies Among Adolescent Girls. International Advanced Research Journal in Science, Engineering and Technology, Vol. 8,(Issue 4,), 8456.
- Read, J. R., Perz, J., & Ussher, J. M. (2014). Ways of coping with premenstrual change: development and validation of a premenstrual coping measure. BMC women's health, 14, 1-15.
- Reid, R. L., & Soares, C. N. (2018). Premenstrual dysphoric disorder: contemporary diagnosis and management. Journal of obstetrics and gynaecology Canada, 40(2), 215-223.
- Rezende, A. P. R., Alvarenga, F. R., Ramos, M., Franken, D. L., Costa, J. S. D. D., Pattussi, M. P., & Paniz, V. M. V. (2022). Prevalence of premenstrual syndrome and associated factors among academics of a university in midwest Brazil. Revista Brasileira de Ginecologia e Obstetrícia, 44, 133-141.
- Ricci, S. (2020). Essentials of maternity, newborn, and women's health. Lippincott Williams & Wilkins, 72.
- Ricci, S. S., Ricci, S., Kyle, T., Kyle, T., Carman, S. (2020). Maternity and Pediatric Nursing. United Kingdom: Lippincott Williams & Wilkins, 91-98.
- Robinson, G. E. (2002). The problem with premenstrual syndrome. Canadian Family Physician, 48, 1753.

- Ryu, A., & Kim, T. H. (2015). Premenstrual syndrome: A mini review. Maturitas, 82(4), 436-440
- Saglam, H. Y., & Orsal, O. (2020). Effect of exercise on premenstrual symptoms: A systematic review. Complementary therapies in medicine, 48, 102272.
- Sanchez, B. N., Kraemer, W. J., & Maresh, C. M. (2023). Premenstrual Syndrome and exercise: a narrative review. Women, 3(2), 348-364.
- Sanchez, B. N., Kraemer, W. J., & Maresh, C. M. (2023). Premenstrual Syndrome and Exercise: A Narrative Review. Women, 3(2), 348-364.
- Sanchez, B. N., Kraemer, W. J., & Maresh, C. M. (2023). Premenstrual syndrome and exercise: a narrative review. Women, 3(2), 348-364.
- Shahbazi, F., Eslampanah, Z., & Niaparast, M. (2020). Prevalence of symptoms and medication use among female medical students and pharmacy clients with premenstrual syndrome: a cross-sectional study in Iran. Journal of Pharmacy Practice and Research, 50(1), 55–60.
- Shoaee, F., Pouredalati, M., Dadshahi, S., Parvin, P., Bolourian, M., Kiani, A., ... & Vafisani, F. (2020). Evaluation of non-pharmacological strategies, therapeutic and cognitive-behavioral interventions in the treatment of premenstrual syndrome: a review study. International Journal of Pediatrics, 8(2), 10929-10939.
- Shobeiri, F., Araste, F. E., Ebrahimi, R., Jenabi, E., & Nazari, M. (2017). Effect of calcium on premenstrual syndrome: A double-blind randomized clinical trial. Obstetrics & gynecology science, 60(1), 100-105.

- Shobeiri, F., Ebrahimi, R., Arasteh, F. E., Nazari, S., & Nazari, S. (2018). Frequency of premenstrual syndrome and effec-tiveness of group counseling in reducing the se-verity of symptoms in female students. Journal of Postgraduate Medical Institute, 32(1), 80-6.
- Shrestha, D. B., Shrestha, S., Dangol, D., Aryal, B. B., Shrestha, S., Sapkota, B., & Rai, S. (2019b). Premenstrual syndrome in students of a teaching hospital. Journal of Nepal Health Research Council, 17(2), 253–257.
- Shwetha B.R, Uses of Percentage: Definition, Formulas, Methods, Last Modified 22-06-2023, available at, accessed on December, 2023.
- Sodouri, M., Alavi, N. M., Fathizadeh, N., Taghizadeh, M., Azarbad, Z., & Memarzadeh, M. (2013). Effects of Zataria multi-flora, Shirazi thyme, on the severity of premenstrual syndrome. Nursing and midwifery studies, 2(4), 57.
- Soliman, F. E. S., Essa, H. A. E. G., & Elbialy, A. (2022). The Effect of Premenstrual Syndrome among Adolescent Nursing Female Students on Their Quality of Life. Tanta Scientific Nursing Journal, 24(1), 252-273.
- SPSS Statistics, Independent sample t-test, available at https://www.ibm.com/docs/en/spss-statistics/25.0.0?topic=tests-independent-samples-t-test, 2021.
- Srivastava, M. (2020). Pre-menstrual Syndrome. AOGD BULLETIN, 38.
- Stallman, H. M. (2020). Health theory of coping. Australian Psychologist, 55(4), 295-306.
- Statistical Knowledge Portal, One Way ANOVA, available at https://www.jmp.com/en_be/statistics-knowledge-portal/one-way-anova.html, accessed on January, 2024.

- Sultana, A., Heyat, M. B. B., Rahman, K., Kunnavil, R., Fazmiya, M. J. A., Akhtar, F., ... & De La Torre Díez, I. (2022). A systematic review and meta-analysis of premenstrual syndrome with special emphasis on herbal medicine and nutritional supplements. Pharmaceuticals, 15(11), 1371.
- Sultana, A., Rahman, K., Heyat, M. B. B., Akhtar, F., & Muaad, A. Y. (2022). Role of inflammation, oxidative stress, and mitochondrial changes in premenstrual psychosomatic behavioral symptoms with anti-inflammatory, antioxidant herbs, and nutritional supplements. Oxidative Medicine and Cellular Longevity, 2022.
- Takeda, T., Kai, S., & Yoshimi, K. (2021). Psychometric testing of the Japanese version of the daily record of severity of problems among Japanese women. International Journal of Women's Health, 361-367.
- Talebpour, A., Mohammadifard, M., Zare Feyzabadi, R., Mahmoudzadeh, S., Rezapour, H., Saharkhiz, M., ... & Bahrami, A. (2023). Effect of curcumin on inflammatory biomarkers and iron profile in patients with premenstrual syndrome and dysmenorrhea: A randomized controlled trial. Physiological Reports, 11(13), e15763
- Taylor S, Mean, available at https://corporatefinanceinstitute.com/resources/data-science/mean/, accessed on December, 2023.
- Thiyagarajan, D. K., Basit, H., & Jeanmonod, R. (2022). Physiology, menstrual cycle. In StatPearls [Internet]. StatPearls Publishing.
- Tolossa, F. W., & Bekele, M. L. (2014). Prevalence, impacts and medical managements of premenstrual syndrome among female students: cross-sectional study in college of health sciences, Mekelle University, Mekelle, Northern Ethiopia. BMC women's health, 14, 1-9.

- Treesa, B. B., Akbar, A., Suresh, A., Raju, R., Alphonse, I. S., J, S. D., & Venkatanarayanan, R. (2022b). Prevalence of premenstrual syndrome and various coping strategies used by students in South India. International Journal of Pharmaceutical Sciences Review and Research, 72(1), 150-154.
- Trieu, V. N. D., Bui, P. L., Hoang, L. B., Tran, M. T. T., Nguyen, H., Tran, L. M., & Pham, T. T. (2023). Associated factors with Premenstrual syndrome and Premenstrual dysphoric disorder among female medical students: A cross-sectional study. PloS One, 18(1), e0278702.
- Turney S, Pearson Correlation Coefficient (r) | Guide & Examples, available at https://www.scribbr.com/statistics/pearson-correlation-coefficient/, Revised on June 22, 2023, accessed on December, 2023.
- Uzunçakmak, T., & Alkaya, S. A. (2018). Effect of aromatherapy on coping with premenstrual syndrome: A randomized controlled trial. Complementary therapies in medicine, 36, 63-67.
- Van den Brande, W., Baillien, E., Elst, T. V., De Witte, H., & Godderis, L. (2020). Coping styles and coping resources in the work stressors–workplace bullying relationship: A two-wave study. Work & Stress, 34(4), 323-341.
- Walsh, S., Ismaili, E., Naheed, B., & O'Brien, S. (2015). Diagnosis, pathophysiology and management of premenstrual syndrome. The Obstetrician & Gynaecologist, 17(2), 99-104.
- What is Cognitive Behavioral Therapy? (2017, July 31). https://www.apa.org. https://www.apa.org/ptsd-guideline/patients-and-families/cognitive-behavioral
- Yang, F. (2021). Coping strategies, cyberbullying behaviors, and depression among Chinese netizens during the COVID-19 pandemic:

a web-based nationwide survey. Journal of affective disorders, 281, 138-144.

- Yi, S. J., Kim, M., & Park, I. (2023). Investigating influencing factors on premenstrual syndrome (PMS) among female college students. BMC Women's Health, 23(1), 592.
- Yi, S. J., Kim, M., & Park, I. (2023). Levels and Factors of Premenstrual Syndrome (PMS) among Female College Students. Research Square (Research Square), 1-18.
- Yilmaz-Akyuz, E., & Aydin-Kartal, Y. (2019). The effect of diet and aerobic exercise on Premenstrual Syndrome: Randomized controlled trial. Revista de Nutrição, 32, e180246.
- Yonkers, K. A., & Simoni, M. K. (2018). Premenstrual disorders. American journal of obstetrics and gynecology, 218(1), 68-74.
- Yonkers, K. A., Casper, R. F., Barbieri, R., Crowley Jr, W. F., & Martin, K. A. (2016). Clinical manifestations and diagnosis of premenstrual syndrome and premenstrual dysphoric disorder.
- Yoon, J. A., Kim, M. H., & Jeon, H. W. (2015). Perimenstrual distress and coping responses among college women. International Journal of Bio-Science and Bio-Technology, 7(4), 265-276.
- Zaka, M., & Mahmood, K. T. (2012). Pre-menstrual syndrome-a review. Journal of Pharmaceutical Sciences and Research, 4(1), 1684.
- Zaman, N. I., & Ali, U. (2019). Autonomy in university students: Predictive role of problem focused coping. Pakistan Journal of Psychological Research, 34(1), 101-114.
- Zeleke, B., Workineh, Y., Melese, A., Semachew, A., & Yigizaw, M. (2023). Premenstrual Syndrome, Life Style & Behavioral Coping Mechanisms and Associated Factors Among Public High School Regular Female Students at Bahir Dar City, Northwest, Ethiopia, 1-19.

Appendix A -I

Administrative Agreements

Republic of Iraq
Ministry of higher education & scientific research
University of Karbala
College of Nursing
Graduate studies Division

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جـــامعة كربلاء
كـلية التـمريـض
شعبة الدراسات العليا

التاريخ: 2023/11/19

العـدد : د.ع/ 361

الى / جامعة كربلاء– الكليات كافة

م/ تسهيل مهمة

تحية طيبة...

يرجى التفضل بالموافقة على تسهيل مهمة طالبة الدراســات العليــا / الماجستير (خديجة حيدر حسين) في كليتنا للعام الدراسي (2023-2024) لغرض جمع العينات الخاصة برسالتها الموسومـــة :

"متلازمة ماقبل الطمث واليات التكيف بين طالبات الجامعة"

" Premenstrual syndrome and coping mechanisms among university female students"

** مـع التقديـر **

أ. د. علي كريم خضير
العميد وكالة
2023/11/19

نسخة منه الى :
- مكتب السيد المعاون العلمي المحترم .
- شعبة الدراسات العليا .

العنوان : العراق - محافظة كربلاء المقدسة – حي الموظفين مجامعة كربلاء
Mail: nursing@uokerbala.edu.iq website:

Appendix A – II

Republic of Iraq
Ministry of higher education & scientific research
University of Karbala
College of Nursing
Graduate studies Division

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جـــامعة كربلاء
كـلية التـمريـض
شعبة الدراسات العليا

العـدد : د.ع/ 365
التاريخ: 26/ 11 / 2023

الى / جامعة كربلاء– قسم التسجيل و شؤون الطلبة

م/ تسهيل مهمة

تحيــة طيبــة...

يرجى التفضل بالموافقة على تسهيل مهمة طالبة الدراســات العليــا / الماجستير (خديجة حيدر حسين) في كليتنا للعام الدراسي (2023-2024) لغرض تزويدها بالإحصائيات المطلوبة لإتمام رسالتها الموسومــة :

"متلازمة ماقبل الطمث واليات التكيف بين طالبات الجامعة"

" Premenstrual syndrome and coping mechanisms among university female students"

** مــع التقديــر **

أ.م.د. سلمان حسين فارس الكريطي
العميــد
2023 / 11 / 26

نسخة منه الى :
- مكتب السيد المعاون العلمي المحترم .
- شعبة الدراسات العليا .

العنوان : العراق - محافظة كربلاء المقدسة – حي الموظفين - جامعة كربلاء
Mail: nursing@uokerbala.edu.iq website:

Appendix A – III

عدد الطلبة الاناث للعام الدراسي 2022-2023		
ت	الكلية	اناث
1	الادارة و الاقتصاد	1668
2	التربية البدنية و علوم الرياضة	186
3	التمريض	255
4	الزراعة	212
5	السياحة	154
6	الصرفة	1049
7	الصيدلة	676
8	الطب	952
9	الطب البيطري	157
10	العلوم	711
11	العلوم الطبية التطبيقية	247
12	قانون / صباحي	368
13	الهندسة	642
14	طب الاسنان	490
15	العلوم الاسلامية	765
16	علوم الحاسوب وتكنلوجيا المعلومات	226
17	التربية للعلوم الانسانية	2264
	المجموع	11022

Appendix B

Ethical Consideration

Ministry of Higher Education and Scientific Research
University of Karbala / College of Nursing
Scientific Research Ethics Committee

UOK.CON.23.010
Ethical Committee Code:
Date: 12 / 11 /2023

Research Ethical Approval Form

Title of the research project	
In the English language	In the Arabic language
Premenstrual Syndrome and Coping Mechanisms among university Female Students	متلازمة ما قبل الطمث واليات التكيف بين طالبات الجامعة

Data About the Main Researcher /Student:			
Full Name	Scientific Title	Mobile Number	Email
خديجة حيدر حسين	BSN	07742226046	ddoojia@gmail.com

Data About the Co-author /Supervisor:			
Full Name	Scientific Title	Mobile Number	Email
Dr. Haqi Ismael Mansoor	Dr. instructor	07823511521	Haqi.i@uokerbala.edu.iq

Study objectives

1-To assess the symptoms of premenstrual syndrome among female students
2-To identify the coping mechanisms that used to reduce the symptoms of premenstrual syndrome among female students
3-To determine the influence of coping mechanisms on symptoms of premenstrual syndrome among female students
4-To identify relationship between premenstrual syndrome among female students and their demographic data

Time and Setting of the Study

Time: From August 2023 to August 2024
The samples will be collected from Female students at the university of kerbala

Study Design

Quantitative/Descriptive study

Sampling method and sample size

Random sampling /500

Statement of Ethical Commitment

I am Khadijah Haider Hussein pledge to conduct the research in accordance with what was mentioned in the protocol above and to commitment that all rules set by the ethical policy are followed in my research process. I also make a commitment to abide by ethical principles, moral values, law and instruction of the institutions. My research carries no bias for ethnicity, gender, regional aspects and is totally impartial and objective. I will have taken an informed consent from participants, and to provide clarifications and information about the study to the sample members. I deal with the data of the sample members in complete confidentiality.

Name and signature of the researcher

Recommendation of the College's Research Ethical Committee

☐ Agreement to conduct the study ☐ Disagreement to conduct the study

Instructor Dr. Sajidah Saadoon Oleiwi
Member

Ass. Prof. Dr. Zeki Sahah Musihb
Member

Ass. Prof. Dr. Ghazwan Abdalhussein
Member

Ass. Prof. Dr. Hassan Abdullah Athbi
Chairman of the Committee

Appendix C

Statistician's opinion

Republic of Iraq
Ministry of higher education & scientific research
University of Karbala
College of Nursing
Graduate studies Division

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جـــامعة كربلاء
كـلية التـمريـض
شعبة الدراسات العليا

إقرار الخبير الإحصائي

أشهد بأن الرسالة الموسومة :

"متلازمة ما قبل الطمث واليات التكيف بين طالبات الجامعة "

" Premenstrual Syndrome and Coping Mechanisms among University Female Students"

قد تم الإطلاع على الإسلوب الإحصائي المتّبع في تحليل البيانات و إظهار النتائج الإحصائية وفق مضمون الدراسة و لأجله وقعت .

توقيع الخبير الإحصائي

الإسم و اللقب العلمي :

الإختصاص الدقيق :

مكان العمل : جامعة كربلاء / كلية

التاريخ : 13 / 3 / 2024

العنوان : العراق ـ محافظة كربلاء المقدسة ـ حي الموظفين ـ جامعة كربلاء
Mail: nursing@uokerbala.edu.iq website: nursing.uokerbala.edu.iq

Appendix D

Linguists' Opinion

Republic of Iraq
Ministry of higher education & scientific research
University of Karbala
College of Nursing
Graduate studies Division

جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جـــامعة كربلاء
كـلية التـمريـض
شعبة الدراسات العليا

إقرار الخبير اللغوي

أشهد بأن الرسالة الموسومة :

" متلازمة ما قبل الطمث واليات التكيف بين طالبات الجامعة "

" Premenstrual Syndrome and Coping Mechanisms among University Female Students "

قد جرى مراجعتها من الناحية اللغوية بحيث أصبحت بإسلوب علمي سليم خالٍ من الأخطاء اللغوية و لأجله وقعت .

توقيع الخبير اللغوي :

الإسم و اللقب العلمي : م.د. عامر كظام جواد

الإختصاص الدقيق : علم اللغة

مكان العمل : جامعة كربلاء / كلية التربية - قسم اللغة العربية

التاريخ : 5 / 6 / 2024

العنوان : العراق - محافظة كربلاء المقدسة - حي الموظفين - جامعة كربلاء
Mail: nursing@uokerbala.edu.iq website: nursing.uokerbala.edu.iq

Appendix E – I

" الاستبانة "

عزيزتي الطالبة يسعدني ان تكوني احدى المشاركات في دراستي

متلازمة ما قبل الطمث واليات التكيف بين طالبات الجامعة

Premenstrual Syndrome and Coping Mechanisms among University Female Students

لغرض الحصول على درجة الماجستير في علم التمريض وما بين يديك هو وسيلة علمية مستخدمة في هذه الدراسة راجية منك ملئها بحرص وعناية، وان تكون الإجابة على جميع الأسئلة وضرورة عدم ترك اي سؤال لأنه سيؤدي الى اهمال الاستمارة وعدم اكمال الدراسة علما أنه سيتم التعامل مع البيانات الواردة فيها بسرية تامة وستكون مجهولة المصدر ولا تحتوي على فقرة الاسم وتستخدم لأغراض البحث العلمي حصراً مع فائق الود والاحترام.

متلازمة ما قبل الطمث (متلازمة ما قبل الحيض): هي مجموعة من الاعراض والتغيرات الجسدية والنفسية والسلوكية التي تحدث للمرأة في الفترة السابقة للدورة الشهرية وتحدث بانتظام في فترة معينة في كل دورة شهرية (الاسبوعين السابقين لنزول الحيض) ويختفي أثرها تدريجيا عند زوال الحيض

هل تعانين من هذه المتلازمة

نعم ☐

كلا ☐

إذا كنتي تعانين من المتلازمة هل توافقين على المشاركة في هذه الدراسة؟ نعم ☐

كلا ☐

إذا كانت الإجابة نعم الرجاء اكمال الاستبيان

رقم الاستبانة ☐

الجزء الأول: الخصائص الديموغرافية والخصائص الإنجابية

يرجى وضع علامة (√) في المربع المناسب وإعطاء إجابات حيثما تم تحديد ذلك

الخصائص الديموغرافية		الاستجابة	
١	العمر		
٢	الحالة الاجتماعية	عزباء	
		متزوجة	
		ارملة	
		منفصلة	
٣	السكن	ريف	
		مدينة	
٤	الكلية	القانون	
		التمريض	
		العلوم السياحية	
		العلوم الطبية التطبيقة	
		التربية البدنية وعلوم الرياضة	
٥	المرحلة الدراسية	المرحلة الأولى	
		المرحلة الثانية	
		المرحلة الثالثة	
		المرحلة الرابعة	
٦	تعيشين مع	العائلة	
		الأصدقاء	
		أخرى (اذكريها)	
٧	التحصيل الدراسي للام	لا تقرأ ولا تكتب	

		ابتدائية	
		متوسطة	
		جامعة او اعلى	
٨	الدخل الشهري للعائلة	يكفي	
		بالكاد يكفي	
		لا يكفي	
الخصائص الإنجابية			
٩	هل هناك تاريخ عائلي للإصابة بمتلازمة ما قبل الدورة الشهرية	نعم	
		كلا	
١٠	العمر عند اول دورة الشهرية		
١١	مدة الحيض	اقل من ٣ أيام	
		من ٣ الى ٥ أيام	
		أكثر من ٥ أيام	
١٢	الفترة بين كل دورتين شهريتين	اقل من ٢١ يوم	
		من ٢١ يوم الى ٣٥ يوم	
		أكثر من ٣٥ يوم	
١٣	هل الدورة الشهرية منتظمة	نعم	
		كلا	
١٤	كمية النزيف اثناء الدورة الشهرية	خفيفة	
		متوسطة	
		ثقيلة	

الجزء الثاني: التغيرات التي تحدث في الفترة السابقة للدورة الشهرية

تعاني النساء من تغيرات نفسية وجسدية وسلوكية في الأيام السابقة للدورة الشهرية لذا الرجاء وضع علامة (√) في المربع الذي يمثل التغيير الذي تعانين منه في فترة ما قبل الدورة الشهرية

الاعراض الجسدية		ابدا	احيانا	دائما
١	يحدث لدي انتفاخ والآم في الثديين خاصة عند لمسهما في الأيام السابقة للدورة الشهرية			
٢	اشعر بانتفاخ في البطن في الأيام السابقة للدورة الشهرية			
٣	اعاني من تشنجات (تقلصات) في البطن في الأيام السابقة للدورة الشهرية			
٤	يحدث لدي تغيير في وظائف الأمعاء كالإمساك او الاسهال في الأيام السابقة للدورة الشهرية.			
٥	تزداد شهيتي في الأيام السابقة للدورة الشهرية			
٦	أكثر من تناول الأطعمة الغنية بالسكريات او الاملاح في الأيام السابقة للدورة الشهرية.			
٧	يزداد وزني قليلا في الأيام السابقة للدورة الشهرية			
٨	اعاني من الغثيان المتكرر والتقيؤ قبل حدوث الدورة الشهرية			
٩	اعاني من الصداع المتكرر في الأيام السابقة للدورة الشهرية.			
١٠	اعاني من حالات الدوار (الدوخة) والإغماء في الأيام السابقة للدورة الشهرية			
١١	اشعر بالإعياء والتعب والخمول في الأيام السابقة للدورة الشهرية.			
١٢	يحدث لي زيادة وتسارع بضربات القلب (خفقان) في الأيام السابقة للدورة الشهرية.			
١٣	اعاني من تغيرات جلدية تصيبني كضهور الحبوب والبثور والطفح الجلدي في الأيام السابقة للدورة الشهرية.			
١٤	اشعر بعدم الراحة والآم في منطقة الحوض في الأيام السابقة للدورة الشهرية.			
١٥	اعاني من الآم عامة في جميع الجسم في الأيام السابقة للدورة الشهرية.			

١٦	اشعر بألآم في المفاصل والعضلات في الأيام السابقة للدورة الشهرية			
الأعراض النفسية		ابدا	احيانا	دائما
١٧	اشعر بالهيجان والانزعاج وسرعة الانفعال في الأيام السابقة للدورة الشهرية.			
١٨	اعاني من القلق في الأيام السابقة للدورة الشهرية.			
١٩	اشعر بالتوتر والارتباك في الأيام السابقة للدورة الشهرية.			
٢٠	اعاني من تقلب المزاج بشكل متكرر كلما قربت ايام الدورة الشهرية.			
٢١	اواجه صعوبة في التركيز في الأيام السابقة للدورة الشهرية.			
٢٢	اشعر بالاكتئاب في الايام السابقة للدورة الشهرية			
٢٣	اعاني من النسيان في الأيام السابقة للدورة الشهرية			
٢٤	أشعر برغبة في البكاء في الايام السابقة للدورة الشهرية.			
٢٥	اعاني من اضطرابات النوم المختلفة (كالأرق او فرط النوم) خلال الأيام السابقة للدورة الشهرية.			
٢٦	اشعر بالتشويش وعدم الوضوح في الأيام السابقة للدورة الشهرية			
٢٧	اشعر بمشاعر العدوانية والعنف تجاه المواقف والأشخاص والاشياء خلال الأيام القليلة السابقة للدورة الشهرية.			
٢٨	اشعر باليأس وفقدان الامل في الأيام السابقة للدورة الشهرية.			
الأعراض السلوكية		ابدا	احيانا	دائما
٢٩	ارغب في الانعزال عن الأخرين في الايام السابقة للدور الشهرية.			
٣٠	اشعر بنفاذ الصبر والاندفاعية في الأيام السابقة للدورة الشهرية.			
٣١	اعاني من عدم القدرة على ضبط النفس او التحكم في الذات في الأيام السابقة للدورة الشهرية			
٣٢	يراودني الشعور بالذنب والندم على أشياء معينة في الأيام السابقة للدورة الشهرية.			

٣٣	اشعر بالإهمال وعدم الرغبة بالاهتمام بنفسي او بالأخرين في الأيام السابقة للدورة الشهرية.				
٣٤	تقل اهتماماتي ونشاطاتي في الايام السابقة للدورة الشهرة				
٣٥	اشعر بسوء او ضعف القدرة على الحكم واتخاذ القرارات في الأيام السابقة للدورة الشهرية وقد تجعلني هذه المشاعر اتخذ قرارات غير حكيمة أو اقوم بإجراءات متسرعة.				
٣٦	اعاني من عدم القدرة على القيام بالواجبات وتتسبب هذه المشاعر في انخفاض الإنتاجية لدي في الأيام السابقة للدورة الشهرية.				
٣٧	تراودني بعض الأفكار الوسواسية في الأيام السابقة للدورة الشهرية التي تجعلني انشغل بها عن أداء المهام الخاصة بي.				
٣٨	في الأيام السابقة للدورة الشهرية اعاني من السلوك القهري ويجعلني هذه السلوك أقوم بأشياء معينة بشكل متكرر، مما يؤثر على حياتي				
٣٩	في الايام السابقة للدورة الشهرية اعاني من الأفكار غير المنطقية التي تجعلني أشعر بأشياء غير واقعية				
٤٠	اشعر بالحساسية الزائدة في الأيام التي تسبق الدورة الشهرية ويسبب لي هذا الشعور الألم والانزعاج من أشياء كنت اتسامح معها				

الجزء الثالث: مقياس اليات التكيف.

تتعامل النساء مع تجربة ما قبل الحيض بعدة طرق. نحن مهتمون بما تفعلين خلال فترة ما قبل الحيض

ضعي علامة (√) امام الاختيار الذي يشير الى كيفية تعاملك مع التغيرات التي تحدث لك في تلك الفترة.

ت	الية التكيف	ابداً	أحيانا	دائماً
١	اتناول الفيتامينات والمكملات الغذائية لتقوية مناعتي وتحسين صحتي العامة، مما قد يساعد في تخفيف الألم			
٢	أحصل على قسط كافٍ من الراحة والنوم لمنح جسدي الوقت الكافي للشفاء			
٣	اتناول الحبوب المسكنة للألم والأمنه في نفس الوقت للتخفيف من الاعراض			
٤	أضع كيسًا من الماء الساخن على المنطقة المؤلمة لتخفيف الألم			
٥	استحم بماء دافئ لتخفيف الألم وتهدئة العضلات.			
٦	أستمع للموسيقى الهادئة لتساعدني على الاسترخاء وتخفيف التوتر، مما قد يساعد في تخفيف الألم.			
٧	أشرب الكثير من الماء الدافئ والمشروبات الساخنة لتجنب الجفاف، والذي يمكن أن يزيد من الألم.			
٨	استمع إلى القرآن أو أؤدي الصلاة والدعاء لأشعر براحة نفسية وهدوء			
٩	امارس بعض التمارين الرياضية التي تساهم في تقليل الألم			
١٠	أحاول اشغال نفسي ببعض اعمال المنزل لكي اقلل من تركيزي على الألم والتغيرات التي تحدث لي			
١١	أقوم بتطبيق الية التدليك (المساج) على مناطق الألم			
١٢	أقوم بتشتيت انتباهي عن الألم بممارسة بعض الهوايات التي أحبها (كالقراءة والرسم وغيرها)			
١٣	اتحدث مع نفسي وأشجعها على التحلي بالصبر والتحمل للألم.			
١٤	أتحدث مع الأصدقاء والعائلة عن ألمي ومشاعري، مما قد يجعلني اشعر بتحسن.			

١٥	أحصل على دعم الأصدقاء والعائلة، مما قد يساعدني في تخفيف الألم وتحسين حالتي المزاجية.			
١٦	أفهم أن التغيرات التي تحدث لي هي تغيرات مؤقتة، وأنها ستزول بمرور الوقت.			
١٧	اتناول العلاجات المنزلية العشبية المفيدة للتخفيف من الألم			
١٨	تناول القهوة أو بعض المشروبات الغنية بالكافيين لأنها تساعد في تخفيف الألم			
١٩	يقل تناولي للطعام وربما اتخطى بعض الوجبات			
٢٠	اتناول الطعام أكثر من المعتاد			
٢١	قضي معظم الوقت بمفردي بسبب الألم أو شعوري بالوحدة			
٢٢	أقوم بالتنفيس عما في داخلي من الأم بالبكاء			

Appendix E – II

Part 1: Socio demographic and Reproductive characteristics

Socio demographic variable		Answer	
1	**Age**		
2	**Marital status**	Single	
		Married	
		Widowed	
		Divorced	
3	**Residency**	Urban	
		Rural	
4	**College**	Law	
		Nursing	
		Tourism science	
		Applied medical sciences	
		Physical education and sport science	
5	**Grade**	First stage	
		Second stage	
		Third stage	
		Fourth stage	
6	**Living with**	Family	
		Friends	
		Others	
7	**Mother educational status**	Cannot read and write	
		Primary school	
		Secondary school	
		College and above	
8	**Perceived family income**	Adequate	
		Partially adequate	

		Inadequate	
Reproductive characteristics			
9	**Family history of PMS**	Yes	
		No	
10	**Age at menarche**		
11	**Menstrual duration**	Less than 3 days	
		3_ 5 days	
		More than 5 days	
12	**menstruation interval**	Less than 21 days	
		21 – 35 days	
		More than 35 days	
13	**regularity of menstruation**	Yes	
		No	
14	**Amount of bleeding during menstruation**	Light	
		Medium	
		Heavy	

Part 2: premenstrual syndrome scale

Physical symptoms		Never	Sometimes	Always
1	I have Breast tenderness and swelling in the days before my period			
2	I feel bloated in my abdomen in the days before my period			
3	I suffer from abdominal cramps in the days before my period			
4	I experience a change in bowel habits, such as constipation or diarrhea, in the days before my period.			
5	My appetite increases in the days before my period			
6	I Eat more foods rich in sugars or salts in the days before period.			
7	I gain a little weight in the days before my period			
8	I suffer from frequent nausea and vomiting before my period			
9	I suffer from recurring headaches in the days before my period.			
10	I suffer from dizziness and fainting in the days before my period			
11	I feel tired and fatigue in the days before my period.			
12	I experience an increased and rapid heartbeat (palpitations) in the days before my period.			
13	I suffer from skin changes that affect me, such as the appearance of pimples and rashes in the days before my period.			
14	I feel discomfort and pain in the pelvic area in the days before my period.			
15	I suffer from general pain throughout my body in the days preceding my menstrual period.			

16	I have a joints and muscles pain in the days before my period			
Psychological symptoms				
17	I feel irritable in the days before my period.			
18	I suffer from anxiety in the days before my period.			
19	I feel tension in the days before my period.			
20	I suffer from frequent mood swings as my period approaches.			
21	I have loss of concentration in the days before my period.			
22	I feel depressed in the days before my period			
23	I suffer from forgetfulness in the days before my period			
24	I feel easy crying in the days before my period.			
25	I suffer from various sleep changes (such as insomnia or hypersomnia) during the days before my period.			
26	I feel confused and unclear in the days before my period			
27	Feel feelings of aggression toward situations, people, and things during the few days before your period.			
28	I feel hopeless in the days before my period.			
Behavioral symptoms				
29	I want to isolate myself from others in the days before my period.			
30	I feel restlessness in the days leading up to my period.			

31	I suffer from an loss of control myself in the days before my menstrual period			
32	I feel guilty about certain things in the days leading up to my period.			
33	I feel neglected and do not want to take care of myself or others in the days before my period.			
34	My interests and activities decrease in the days before menstruation			
35	I feel poor judgment in the days leading up to my period. These feelings may cause me to make unwise decisions or take rash actions.			
36	I suffer from an impaired to perform my work and these feelings cause my productivity to decrease in the days leading up to my period.			
37	I have some obsessional thoughts in the days leading up to my period that distract me from doing my tasks.			
38	In the days before my period, I suffer from compulsive behavior. This behavior makes me do certain things repeatedly, which affects my life.			
39	In the days before my period, I suffer from irrational thoughts that make me feel unrealistic things			
40	I being over sensitive in the days before my period and this feeling causes me pain and discomfort from things I used to tolerate			

Part 3: coping mechanisms scale

Items		Never	Sometimes	Always
1	I take vitamins and supplements to boost my immunity and improve my overall health, which may help with my pain			
2	I get enough rest and sleep to give my body time to heal			
3	I take pain-killer to relieve the symptoms			
4	I apply a hot water bag on the painful area to relieve the pain			
5	Take a warm shower to relieve pain and soothe muscles.			
6	I listen to soft music to help me relax and relieve stress, which may help relieve pain.			
7	Drink plenty of warm water and hot drinks to avoid dehydration, which can make your pain worse.			
8	I listen to the Qur'an or perform prayers and supplications to feel psychological comfort and calm			
9	Do some exercises that help reduce pain			
10	I try to keep myself busy with some housework in order to reduce my focus on the pain and the changes that are happening to me.			
11	I apply the massage mechanism to the painful point			
12	I distract myself from the pain by practicing some hobbies that I love (such as reading, drawing, etc.)			

13	I talk to myself and encourage myself to be patient and endure the pain.			
14	I talk to friends and family about my pain and feelings, which may make me feel better.			
15	I get the support of friends and family, which can help relieve my pain and improve my mood.			
16	I understand that the changes that happen to me are temporary, and that they will go away over time.			
17	Take useful herbal to relieve pain			
18	Drink coffee or some drinks rich in caffeine because it helps relieve pain			
19	I eat less and may skip some meals			
20	I eat more than usual			
21	I spend most of the time alone because of pain or feeling lonely			
22	I express my pains by crying			

Appendix F

Expert's Panel

ت	اسم الخبير	اللقب العلمي	الشهادة /الاختصاص العلمي الدقيق	مكان العمل	سنوات الخبرة
١	د. سلمى كاظم جهاد	أستاذ	دكتوراه تمريض صحة المجتمع	جامعة بابل /كلية التمريض	٣٩
٢	د. اركان بهلول ناجي	أستاذ	دكتوراه تمريض صحة المجتمع	جامعة بغداد/ كلية التمريض	٣٨
٣	د. امين عجيل ياسر	أستاذ	دكتوراه تمريض صحة المجتمع	جامعة بابل/ كلية التمريض	٣٦
٤	د. شكرية شدهان جياد	أستاذ	دكتوراه تمريض صحة الام والطفل	جامعة الفرات الأوسط التقنية	٣٥
٥	د. وفاء احمد امين	أستاذ مساعد	دكتوراه تمريض صحة الام والطفل	جامعة بابل/ كلية التمريض	٣٥
٦	د. علي كريم خضير	أستاذ	دكتوراه تمريض الصحة النفسية والعقلية	جامعة كربلاء / كلية التمريض	٣٢
٧	د. سلمان حسين فارس	أستاذ مساعد	دكتوراه تمريض صحة المجتمع	جامعة كربلاء/ كلية التمريض	٣٢
٨	د. وسام جبار قاسم	أستاذ	دكتوراه تمريض صحة المجتمع	جامعة بغداد/ كلية التمريض	٣٠
٩	د. ساجدة سعدون عليوي	أستاذ مساعد	دكتوراه تمريض صحة الام والطفل	جامعة كربلاء/ كلية التمريض	٢٩
١٠	د. جاسم ناصر حسين	أستاذ	دكتوراه الإحصاء التطبيقي	كلية الكوت الجامعة	٢٥
١١	د. علي عبد الرضا أبو طحين	أستاذ	طب اسرة	جامعة كربلاء / كلية الطب	٢٥
١٢	د. صافي داخل نوام	أستاذ مساعد	دكتوراه تمريض الصحة النفسية والعقلية	جامعة كربلاء / كلية التمريض	٢٠
١٣	د. منصور عبد الله فلاح	أستاذ مساعد	دكتوراه تمريض صحة المجتمع	جامعة الكوفة/ كلية التمريض	١٩

١٤	د. حوراء حسين غافل	أستاذ مساعد	دكتوراه تمريض صحة الام والطفل	جامعة بغداد/ كلية التمريض	١٨
١٥	د. قحطان قاسم محمد	أستاذ مساعد	دكتوراه تمريض الصحة النفسية والعقلية	جامعة بغداد/ كلية التمريض	١٤
١٦	حسين منصور علي	أستاذ مساعد	دكتوراه تمريض صحة المجتمع	جامعة الكوفة / كلية التمريض	١٢
١٧	د. غزوان عبد الحسين عبد الواحد	أستاذ مساعد	دكتوراه تمريض صحة المجتمع	جامعة كربلاء/ كلية التمريض	٩

المستخلص

متلازمة ما قبل الطمث هي مرض نسائي شائع تظهر أعراضه وتتضمن مجموعة من التغيرات السلوكية والجسدية والنفسية لدى الإناث أثناء المرحلة الأصفرية، وتنتهي ببدء الدورة الشهرية. تعتبر هذه المتلازمة من الاضطرابات المعقدة التي تصيب النساء في سن الإنجاب.

تستخدم النساء مجموعة متنوعة من أساليب التأقلم مثل التدليك والاسترخاء والاستحمام بالماء الساخن والاستماع إلى الموسيقى والأدوية العشبية وغيرها من الاستراتيجيات للسيطرة على البؤس الذي يسبق الحيض وتقليله.

أجريت الدراسة الارتباطية الوصفية على ٣٧٢ طالبة في خمس كليات من جامعة كربلاء. لتقييم أعراض متلازمة ما قبل الطمث، وتحديد آليات المواجهة التي تستخدمها الطالبات وتحديد تأثير آليات المواجهة المستخدمة بين الطالبات على الأعراض، تم جمع البيانات خلال الفترة من ١ يناير إلى ٣١ يناير ٢٠٢٤. تم اختيار الطالبات باستخدام عينة غير احتمالية (ملائمة).

تم جمع البيانات من خلال استخدام استبيان التقرير الذاتي، وتم استخدام الإصدار ٢٦,٠ من الحزمة الإحصائية للعلوم الاجتماعية (SPSS) لتحليل وتفسير البيانات المجمعة. تم تقسيم أداة جمع البيانات إلى ثلاثة أجزاء: الخصائص الاجتماعية والديموغرافية والإنجابية، والتي تحتوي على (العمر، الحالة الاجتماعية، الإقامة، الكلية، مرحلة الدراسة، تعيش مع، مستوى تعليم الأم، الدخل الشهري، التاريخ العائلي لمتلازمة ما قبل الطمث، العمر عند البلوغ، مدة الدورة الشهرية، فترة الدورة الشهرية، انتظام الدورة الشهرية، وكمية النزيف أثناء الدورة الشهرية)، ومقياس متلازمة ما قبل الطمث الذي يحتوي على ٤٠ بندًا، ومقياس آليات التكيف الذي يتكون من ٢٢ بندًا.

تكشف نتائج الدراسة عن ارتباط الطالبات بأعراض متوسطة إلى شديدة لمتلازمة ما قبل الطمث. تظهر الطالبات آليات تكيف متوسطة. تؤثر آليات التكيف بين الطالبات بشكل كبير على الأعراض المرتبطة بمتلازمة ما قبل الطمث كما هو موضح من الاختلافات المهمة في الأعراض الجسدية والنفسية والسلوكية والكلية عند قيم (٠،٠٠١). وقد وجدت علاقة ذات دلالة إحصائية بين أعراض الطالبات مع مكان إقامتهن، والدخل الشهري، والتاريخ العائلي، ومدة الحيض، وكمية النزيف عند قيم (.٠١٣، .٠١٩، .٠٠١، .٠١٢، و.٠٠١) على التوالي. ولم تكشف النتائج عن علاقة ذات دلالة إحصائية مع متغيرات أخرى مثل العمر عند أول حيض، وفترة الحيض، وانتظام الحيض.

ومن أهم التوصيات التي أوصت بها الباحثة تثقيف المجتمع وزيادة وعي الطالبات بالتغيرات التي تحدث خلال فترة ما قبل الحيض وكيفية التعامل والتأقلم مع هذه التغيرات بطريقة صحية من خلال عقد ورش عمل ودورات خاصة للطالبات.

جامعة كربلاء / كلية التمريض

متلازمة ماقبل الطمث واليات التكيف بين طالبات الجامعة

رسالة مقدمة الى مجلس كلية التمريض / جامعة كربلاء وهي جزء من متطلبات نيل درجة الماجستير في علوم التمريض

بواسطة

خديجة حيدر حسين

إشراف

مدرس. د. حقي إسماعيل منصور

حزيران ٢٠٢٤ م **ذو الحجة ١٤٤٥**