Assiut Scientific Nursing Journal
http://asnj.journals.ekb.eg http://www.arabimpactfactor.com
DOI: 10.21608/ASNJ.2023.193150.1522 http://olddrji.lbp.world/indexedJournals.aspx
https://vlibrary.emro.who.int/journals/assiut-scientific-nursing-journal

Effect of maternal insomnia on postpartum self-care efficacy among primiparous women

Ashour E.S.[1], Tahany El-Sayed El-Sayed Amr[2], Atallah Alenezi[3] & Howida Abo El-life Mohamed Awed[4]
[1.] Assistant Professors of Maternal and Newborn Health Nursing, Faculty of Nursing, Menoufia University, Egypt
[2.] Assistant Professors of Maternal and Newborn Health Nursing, Faculty of Nursing, Menoufia University, Egypt
[3.] RN, PhD, College of Applied Medical Sciences, Shaqra University, KSA.
[4.] Assistant Professors of Maternal and Newborn Health Nursing, Faculty of Nursing, Menoufia University, Egypt

Abstract:
Insomnia is a common sleep problem that mothers have after giving birth. It means that the mother has trouble falling asleep or staying asleep. A**im:** To determine the effect of maternal insomnia on postpartum self-care efficacy among primiparous women. **Design:** The research design was descriptive. **Setting:** The Menoufia Governorate's Kebly Maternal and Child Healthcare Center was the setting, which is in Shebin El-Kom, Egypt. The study sample consisted of one hundred postpartum primiparous women drawn from a purposive sample. An interviewing questionnaire, an insomnia assessment questionnaire, an insomnia severity index, and Orem's self-care recommendations were used to collect data. **Results:** There were low self-care efficacy scores among first-time mothers for meeting basic needs (97.3%), taking care of her developmental needs (82.3%), and taking care of her medical needs after giving birth (80.3%). Also, insomnia was linked to a low overall self-care efficacy score (r = 0.683), which means that the self-care efficacy score of primiparous women goes down as the severity of their insomnia increases. **Conclusion:** The overall self-care efficacy score of primiparous women in meeting their basic needs, developmental needs, and postnatal medical needs after giving birth was noticeably low. Also, a negative link was discovered between the overall severity of sleeplessness and the overall self-care efficacy score. **Recommendations:** Give all primiparous women mothering classes to teach them how to take care of themselves well after giving birth, both physically and psychologically, and provide in-service counseling programs for the primiparous women on how to reduce their degree of insomnia.

Keywords: Maternal insomnia, Postpartum self-care efficacy & Primiparous women

Introduction
Maternal insomnia is a significant indicator of motherhood and women's health, especially during the postpartum period **(Sakineh et al., 2022).** Women's postpartum sleep problems have been linked to hormonal changes in the first three months after giving birth, such as the decrease in estrogen and progesterone levels, an increase in monoamine oxidase, changes in sleep patterns, and other behavioral problems. The internal master clock of the brain regulates circadian rhythms, which this hormone disruption affects **(Belete & Misgan, 2019).** The need for sleep is an important part of a woman's body that affects her physical and mental health. Sleep is important for health because it makes sure that all of the body's physiological processes work as well as they can. Energy conservation, cell repair, immune system modulation, brain circuit optimization, memory consolidation, and learning consolidation are all functions of it. **El-Sherbeeny et al. (2022)** mentioned that a lot of healthy mothers have trouble sleeping after giving birth.

Insomnia was defined by **El-Sherbeeny et al. (2022)** as a disorder where an individual has trouble sleeping, remaining asleep, or having a restless night that is connected to daily distress that happens three times a week for one month. Meanwhile, **Edinoff et al. (2021)** added that sleeplessness can have a major negative impact on health, leading to a lower quality of life, frequent daytime naps, an increased risk of mistakes and accidents, and decreased productivity at work.

Also, **Swanson et al. (2020)** examined a sample of 1,480 Norwegian women eight weeks after giving birth. The prevalence of insomnia was 60% at eight postpartum weeks. In comparison, 11% of Norwegian women between the ages of 18 and 45 are thought to have an insomnia issue. Comparable results were seen in a cohort study of 486 Spanish women who had their postpartum insomnia symptoms examined.

Furthermore, **Quin et al. (2022)** clarified that the causes of 73.5% of mothers' nighttime awakenings are infant-related. Postpartum sleep-wake cycles are reported to have changed for 50% to 73% of expectant parents, and the prevalence of self-reported symptoms of insomnia is estimated to be between 17% and 30%. Additionally, 50% of women with clinically significant insomnia symptoms still experience these symptoms two years after giving birth.

Maternal insomnia can cause changes in mood, anxiety, and depression; changes in appetite; trouble losing weight or gaining weight after pregnancy; and an elevated incidence and intensity of chronic illnesses like hypertension, high blood sugar, and cardiovascular problems **(Liu et al., 2021)**.

Postpartum care is essential for avoiding adverse effects on the mother and the newborns. Improved maternal adaptability depends on the efficiency of the care and the degree of organizational support. Additionally, health care professionals frequently overlook psychotherapy and ego instruction during the postnatal period that match the requirements of mothers and their newborns **(Sakineh et al., 2022)**.

According to Orem's idea, "ego" is a basic regulatory activity that offers the materials required for the maintenance and upkeep of an individual's cognitive and emotional competence and seeks to motivate and educate an individual to improve identity. **Chamangasht et al. (2021)** defined self-care as something that people can do in their own time and can be learned to do to protect and enhance their own overall wellbeing.

A mother's ideas about her ability to plan and carry out the duties associated with parenting a newborn, which are influenced by her mental state and past experiences, are referred to as "maternal self-efficacy." A healthy mental state throughout growth and development is self-efficacy. Women who are pregnant and have high psychological capital display less tension and fear, less mood disorder, and more happiness **(Miranda et al., 2021).**

Nurses are well suited to determine the need for self-care, assess a woman's self-care deficiencies, and determine the need to plan and improve self-care practices. It is crucial to evaluate self-care practices and determinants before creating nursing interventions. To promote healthy and active lifestyles, many studies point out the importance of implementing and improving self-care practices **(Isik & Fredland, 2023)**. So, this study has been done to assess to what extent insomnia affects the self-care of women after giving birth.

Significance of the study

Postnatal sleeplessness is a frequent problem among expectant mothers, causing difficulty falling asleep, staying asleep, or both. Stress, exhaustion, impatience, emotional changes, and sorrow are consequences. Anemia, hormone imbalances, bodily abnormalities, emotional issues, and changes to the sleep routine are just a few of the causes of postnatal sleeplessness. Up to 57.7% of postpartum women reported having sleep problems in the first week, and 52% reported them in both the prenatal and postnatal periods **(Verma et al., 2021)**.

As a consequence, a high percentage of insomnia is not diagnosed and untreated due to general practitioners' slight training in sleep issues and limited awareness of sleep disorders **(Janson et al., 2001).** Many studies have shown that 60–64% of severe insomnia is not recognized by physicians during general clinical diagnosis and treatment, and that 70% of patients with chronic insomnia do not talk to their physicians about their sleep problems (Wang et al., 2021). At that juncture, the aggravation of many physical and mental diseases as well as increased early mortality from long-term insomnia complications were considered **(Wang et al., 2021**).

To prevent the detrimental effects of sleeplessness, including dysmorphic emotions and reduced mental performance, maternity nurses should determine the need for self-care, assess a woman's self-care deficiencies, and determine the need to make significant alterations to their sleep habits during the postpartum period **(Belete & Misgan, 2019).** According to the relevant literature review, there have been limited studies conducted to determine the effect of maternal insomnia on postpartum self-care efficacy among primiparous women. So, this study was conducted to determine the effect of maternal insomnia on postpartum self-care efficacy among primiparous women.

The aim of the study was to: Determine the effect of maternal insomnia on postpartum self-care efficacy among primiparous women.

Research questions

1) What is the effect of maternal insomnia on postpartum self-care efficacy among primiparous women?
2) What is the correlation between the total insomnia severity and total score of Orem's self-care efficacy among primiparous women?

Operational definitions

Maternal insomnia: A disorder in which an individual has trouble taking a nap, remaining asleep, or having a restless night that is linked to daytime distress and occurs three times a week for at least a month. Instrument two was used to measure it.

Self-care efficacy is a construct defined as a mother's beliefs about her abilities to plan and carry out the tasks associated with parenting a newborn, which are influenced by her mental state and past experiences. Self-care is a human regulatory function that provides the necessary resources for the survival and maintenance of a person's mental and physical performance. A third instrument was employed to measure it.

Method

Research Design: Using a descriptive research design, this study was conducted.

Setting:
The research was done at the Kebly Maternal and Child Healthcare (MCH) Center in Shebin El-Kom, Egypt, which is in the Menoufia Governorate.

Sample:
The research sample included 100 postpartum mothers drawn from a purposive sample. The following criteria were used to choose the study's participants: postpartum women with insomnia, whom the researchers assessed as having insomnia based on the symptoms involved in the Athens's insomnia scale. Furthermore, any woman with a history of or current chronic disease, an intellectual disability, a mood disorder, or other health issues that interfere with sleep was disqualified.

Sample Size:
Based on other studies (Quin, 2022) that looked at the same outcomes and found significant differences, the average sample size was 100. This gave us 80% power to find this difference at a significant level of 5%.

The sample size calculation formula is as follows:

$$n = \frac{Nz^2\, p(1-p)}{Ne2 + z^2\, p(1-p)}$$

n = sample size (100).
z=1.96
e=0.05
P=Population 0.5%

Tools of data collection:
After reading a lot about the topic **(Miranda, 2021)**, the researchers used three tools to get the information they needed.

Tool One: An interviewing questionnaire
The researchers used this instrument to collect the data from the postpartum primiparous women, and it is divided into two parts:

Part One: Sociodemographic factors, like age, education level, profession, and place of living.

Part Two: Obstetric history: It included the current gestational age, any complications during current pregnancy and the mode of delivery.

Tool Two: Insomnia assessment questionnaire: It contained two parts:

Part One: Athens's insomnia scale (AIS): This scale was adopted from **Belete & Misgan (2019)** to measure insomnia symptoms. The AIS is made up of six approved categories that evaluate the symptoms of insomnia observed over the previous month. The latter two questions ask about feeling well, one's physical and intellectual capacity daily, and sleep disturbances. The first four questions deal with induction, night awakenings, final waking sooner than planned, sleep length, and total sleeping quality. Every one of these questions is graded using a Likert scale, with scores ranging from zero (no daytime or sleep issues) to three. (Very delayed or did not sleep at all). The final symptoms score was determined by adding up all points and was presented as follows: (0-6 points) indicates **mild symptoms**, (7-12 points) indicates **moderate symptoms**, whereas (13 - 18 points) indicates **severe symptoms.**

Part Two: Insomnia Severity Index (ISI): It is a six-item validated scale adopted from **Lin et al., (2020)** to assess how severe the past two weeks' worth of insomnia had been. The sum of all the scores produced the final symptom score, which was then displayed as (0–6 points) for **mild insomnia**, (7–12 points) for **moderate insomnia**, and (13–18 points) for **severe insomnia**.

Tool Three: Self-Care Orem's Recommendations Checklist: It was adopted from Orem (2001) to assess the universal needs, developmental needs, and health requirements for postpartum women**.** It contained:

a. Self-care tips for women who have just given birth to help them meet their **basic needs**, like eating, sleeping, and resting
b. Self-care techniques to address the postpartum woman's **developmental needs,** including self-esteem, a troubled body image, and infection risk.
c. Self-care techniques to address the **postnatal female's medical needs.** Any transient postnatal unpleasant sensations, like bladder issues, perineal discomforts, and breast discomforts, are included in this.

Using a Likert scale with a maximum of three points, the self-care items from Orem were rated as follows: 3 for complete self-dependent, 2 for partial dependent, and 1 for fully dependent. It included 9 items. The total of all the points was used to calculate Orem's self-care score. The raw scores were used to determine percentages.

The total score of self-care was classified as follows:

- High self-care: > 75% of total self-care score which equal (20.5 – 27).
- Average self-care: 60- 75% of total self-care score which equal (16.2 – 20.4).
- Low self-care: < 60 % of total self-care score which equal (9 – 16.1).

Validity and reliability of the Tools:
Three experts—two from the Maternal and Newborn Health Nursing Department and one from the Obstetrics and Gynecology Department tested the tools ' content validity. They were then asked to rate the questions' thoroughness and clarity. When suggestions were provided, changes were made. In addition to the researchers evaluated the instrument's

internal consistency using test-retest reliability. It was accomplished by giving the identical instruments to the same subjects under similar circumstances. To assess the stability of the outcomes across time, scores from repeated tests were compared. Overall, the instruments had great internal reliability, with Cronbach's alpha values ranging from 0.70 to 0.97. Internal consistency reliability measures a scale's homogeneity, or how well its items are related to one another.

Pilot Study:

After the tools were revised and before the data collection began, they were implemented on 10 postpartum women (10% of the sample) to evaluate their applicability and determine the time required to complete the tools. To ensure the results were stable and adjustments could be made, all postpartum women who took part in the pilots' trial were excluded from the research sample to confirm that the results were stable and that modifications could be implemented. The final schedule and an interview questionnaire were improved by the pilot study, and the appropriate changes were implemented to exclude the pilots from the study population.

Ethical considerations:

The research and ethics committees of the nursing faculty actually gave their approval for research no. 898, and the college dean was told what it was for and why it was important. The director of the MCH center also provided signed consent. Women must give informed permission in writing to join the investigation. The participants were given descriptions of the research's goals and methodology. The study was optional, the researchers emphasized, and participants were guaranteed their privacy and confidentiality and had the ability to withdraw at any time.

Procedure:

- Permission to do the study was requested in writing from the directors of MCH. To accomplish this, the Menoufia University nursing faculty dean sent a formal letter outlining the goals of the study and the procedures for gathering data.
- The researchers collected data from the previously mentioned setting. Data collection was pooled for six months, from January 2022 to June 2022, on two days per week (Monday and Wednesday). This study was divided into two parts: the interviewing and evaluation phase and the follow-up phase.

Interviewing and assessment phase:

The researchers introduced themselves to the women who had recently given birth and told them about the study's goals and how they would collect data. They also met postpartum women individually two days a week, beginning at 10:00 a.m. until 2:00 p.m. on both Mondays and Wednesdays, depending on when the women who met the criteria were available.

- The researchers interviewed each woman for 15 to 20 minutes, posted questions in Arabic, and recorded responses on a one-of-a-kind instrument to complete a structured interview questionnaire.
- The researchers collected the personal demographic data and past and present obstetric histories of the participants.

Following-up phase:

The Athens insomnia scale and the insomnia severity index were employed by the researchers to gather data from the participants at home during the first month following delivery. It took about 15 minutes.

- The causes of maternal insomnia during this period were also discussed with the participants, and finally, the Orem self-care questionnaire was filled out in 20 to 30 minutes.

Statistical analysis:

Following the completion of the data collection process, each response was coded and scored. The data were statistically analyzed using SPSS (Statistical Package of Social Science) version 22. The significance test is conducted with a p-value of 0.05. The following methods were used to tabulate the data: Qualitative data was expressed using numbers and percentages and was then analyzed using the chi-square. The chi-square test is the method used most frequently to compare frequencies or proportions.

Results

Table (1): Socio-demographic data for the Primiparous Women (N = 100)

Items	The Primiparous women	
	No.	%
Age		
• Under the age of 18.	10	10 %
• Between the ages of 18 and 30.	55	**55 %**
• Older than 30 years.	35	35 %
Level of education		
• Learn to read and write	25	25 %
• Secondary education or a diploma	45	**45 %**
• University	30	30 %
Occupation		
• Working	39	39 %
• Housewife	61	**61 %**
Residence		
• Rural	71	**71 %**
• Urban	29	29 %

Table (2): Distribution of primiparous women according to their obstetric history (N = 100)

Items	The primiparous women	
	No.	%
Pregnancy complications		
Yes	5	5 %
No	95	95 %
What are the complications of pregnancy?		
- Hypertension	5	100.0%
Gestational age		
37-40 weeks	83	83 %
> 40 weeks	17	17 %

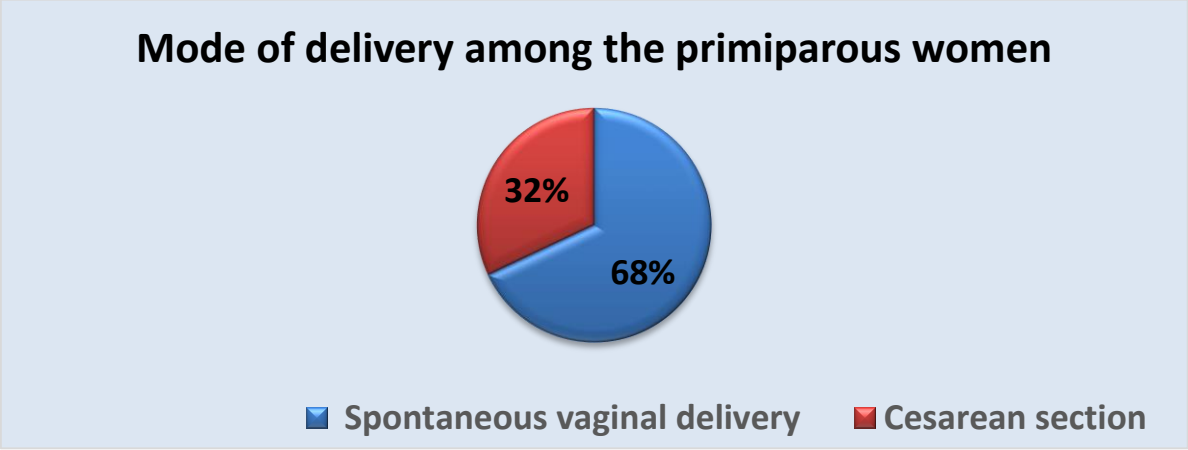

Figure (1): Mode of delivery among the primiparous women

Table (3): Levels of Insomnia Symptoms among the Primiparous Women (N = 100)

Items	The Primiparous Women	
	No	%
1: Sleep duration		
(1) Slightly delayed	37	37 %
(2) Markedly delayed	28	28 %
(3) Did not sleep at all	35	**35 %**
2: Awakening during the night		
(1) A minor problem	10	10 %
(2) A considerable problem	10	10 %
(3) Did not sleep at all.	80	**80 %**
3: Final awakening		
(1) A little earlier	15	15 %
(2) Markedly earlier	20	20 %
(3) Did not sleep at all.	65	**65 %**
4: Total sleep duration		
(1) Slightly sufficient	10	10 %
(2) Markedly insufficient	60	**60 %**
(3) Slept insufficiently or not at all.	30	30 %
5: Physical and mental functioning during the day		
(1) Slightly decreased	3	3 %
(2) Markedly decreased	55	**55 %**
(3) Slept very little or not at all.	42	42 %
6: Sleepiness during the day		
(1) Mild	40	40 %
(2) Considerable	25	25 %
(3) Intense	35	35 %

Table (4): Distribution of Scores of Insomnia Symptoms among the Primiparous Women (N = 100)

Items	Mild symptoms		Moderate symptoms		Severe symptoms	
	No.	%	No.	%	No.	%
1: Sleep duration	47	47	23	23	30	**30**
2: Awakening during the night	0	0	16	16	84	**84**
3: Final awakening	8	8	23	23	69	**69**
4: Total sleep duration	0	0	67	67	33	33
5:Physical and mental functioning throughout the day	0	0	57	57	43	43
6: Sleepiness during the day	41	41	22	22	37	37

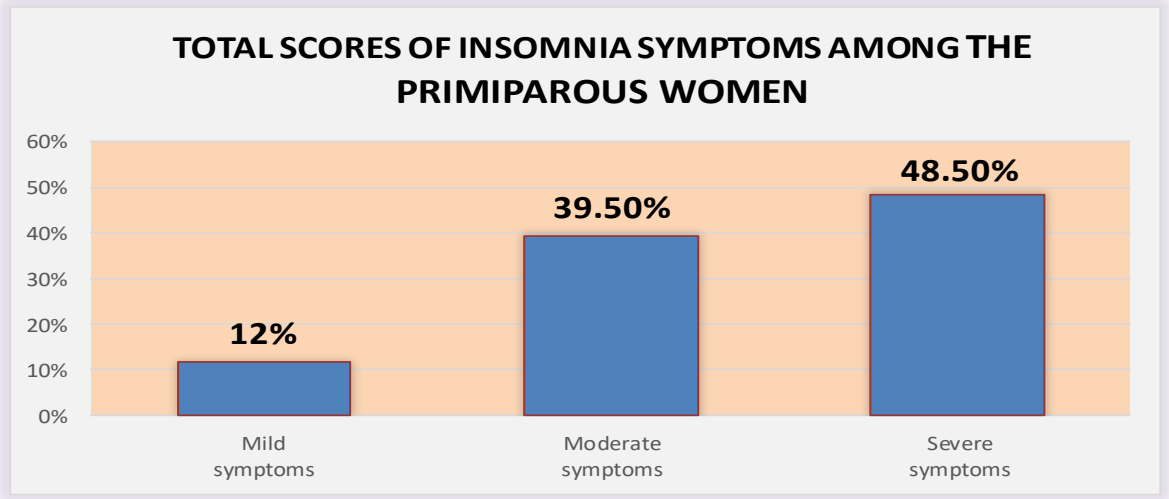

Figure (2): Total scores of insomnia symptoms among the primiparous women

Table (5): Distribution of Insomnia Severity among the Primiparous Women (N= 100)

Items	Primiparous Women		X^2	P. value
	No.	%		
1: Difficulty falling asleep				
Mild	4	4.0%	14.566	0.000*
Moderate	63	63.0%		
Severe	33	33.0%		
2: Difficulty staying asleep				
Mild	4	4.0%	10.067	0.000*
Moderate	30	30.0%		
Severe	66	66.0%		
3: Problems waking up too early				
Mild	58	58.0%	30.847	0.000*
Moderate	0	0.0%		
Severe	42	42.0%		
4: How satisfied or dissatisfied are you with your current sleep pattern?				
Satisfied	0	0.0%	13.830	0.000*
moderate satisfied	67	67.0%		
Dissatisfied	33	33.0%		
5: How obvious is your sleep problem to other people in terms of how it affects your life?				
A little	33	0.0%	703.597	0.000*
Somewhat	34	50.7%		
Much	33	49.3%		
6: How concerned are you about your current sleep problem?				
A little	4	4.0%	14.566	0.000*
Somewhat	63	63.0%		
Much	33	33.0%		
7: How much do you think your sleep problem affects your daily life (e.g., how tired you are during the day, your mood, your ability to do your job or daily chores, your ability to think, your memory, etc.)?				
A little	0	0.0%	5.391	0.000*
Somewhat	16	16.0%		
Much	84	84.0%		

**Statistically significant differences*

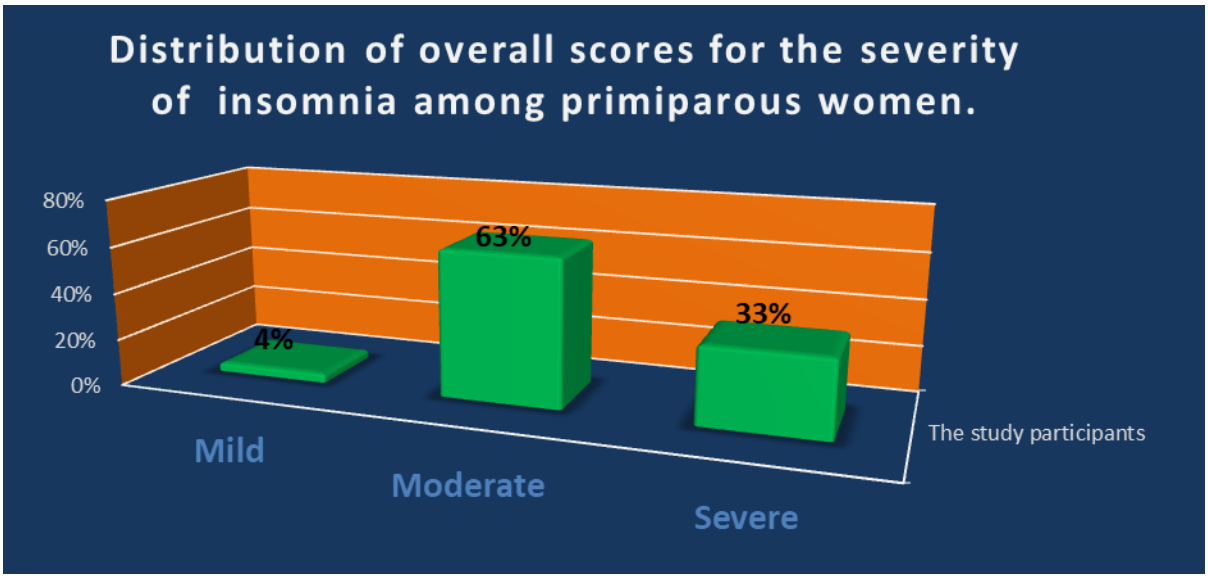

Figure (3): Distribution of overall scores for the severity of insomnia among primiparous women (N= 100).

Table (6): The self-care efficacy score in meeting the basic needs after giving birth among the primiparous women (N = 100)

Variables	The primiparous women	
	No.	%
A. Self-care tips for women who have just given birth to help them meet their basic needs, like eating, sleeping, and resting		
Problems with eating		
Yes	96	96
No	4	4
Problems with sleeping		
Yes	100	100
No	0	0
Problems with activity & rest		
Yes	96	96
No	4	4
Total scores of basic needs	97.3	97.3

Table (7): The self-care efficacy score to address the developmental needs after giving birth among the primiparous women (N = 100)

Variables	The primiparous women	
	No.	%
B. Techniques for self-care that address the maturation requirements, like poor self, concerns with self-image, and the likelihood of getting an infection		
A troubled self-esteem		
Yes	80	80
No	20	20
A troubled body image		
Yes	96	96
No	4	4
Infection risk		
Yes	71	71
No	4	4
Total scores of the maturation requirements	82.3	82.3

Table (8): The self-care efficacy score to address the postnatal medical needs after giving birth among the primiparous women (N = 100)

Variables	The primiparous women	
	No.	%
C. Self-care techniques to address the postnatal female's medical needs.		
Bladder issues		
Yes	71	71
No	4	4
Perineal discomforts		
Yes	75	75
No	25	25
Breast discomforts		
Yes	95	95
No	5	5
Total scores of the postnatal female's medical needs	80.3	80.3

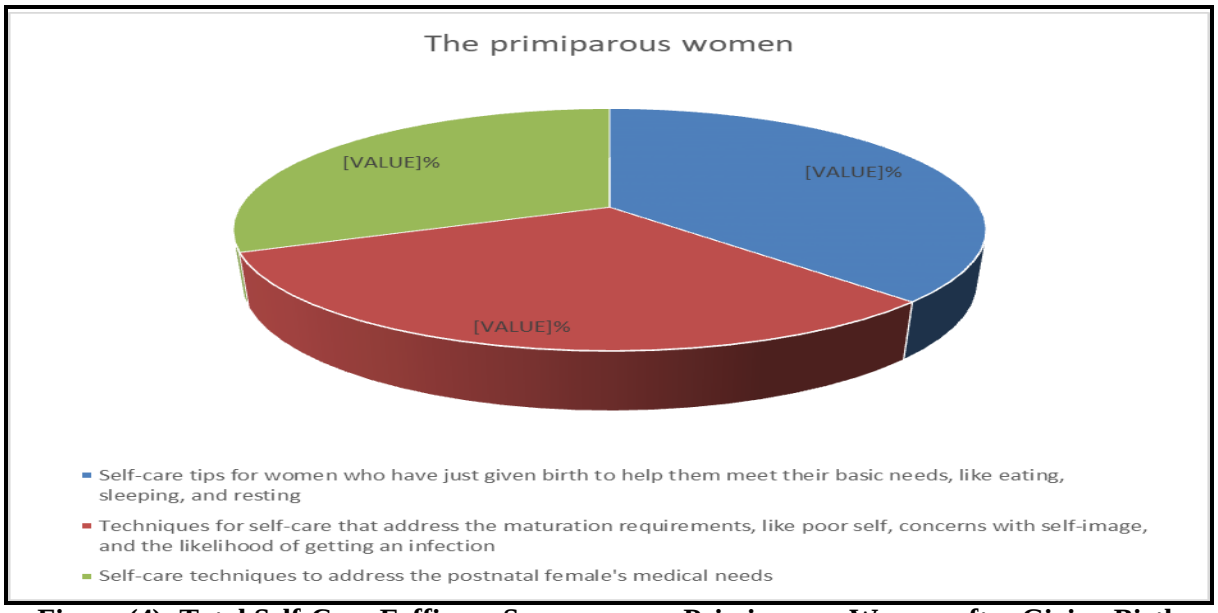

Figure (4): Total Self-Care Eefficacy Scores among Primiparous Women after Giving Birth

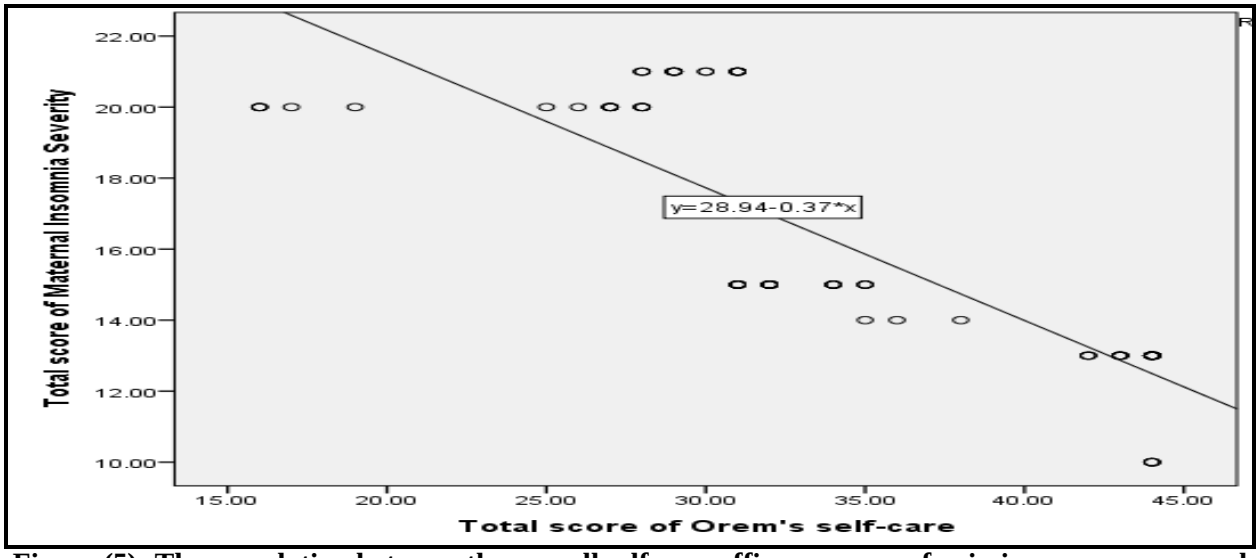

Figure (5): The correlation between the overall self-care efficacy scores of primiparous women and the severity of their sleeplessness after giving birth.

Table (1): Displays the sociodemographic traits of the primiparous women. More than one-half (55%) of the primiparous women were between the ages of 18 and 30 years, while only 10 percent of them were under the age of 18 years. Nearly one-half of women (45%) had completed secondary school, while one quarter (25% of the women) could read and write. In terms of occupation, nearly two-thirds (61%) were housewives. Finally, nearly three-quarters (71%) of the primiparous women are living in rural areas.

The distribution of primiparous women according to their obstetric history is shown in **Table (2)**. Most primiparous women (95%) had pregnancies without difficulties, while only five percent of them had pregnancies with hypertension-related issues. More than three-quarters (83%) of primiparous women had gestational ages between 37 and 40 weeks.

Figure (1): Clarifies the mode of delivery among primiparous women. More than two-thirds (68%) of the women delivered spontaneously through the vagina, and the other third (32%) of them had a cesarean section.

The prevalence of insomnia symptoms among the primiparous women is shown in **Table (3)**. In relation to sleep duration, awaking during the night, and final awakening, more than one-third, more than three-quarters, and more than two-thirds of women had the third level of symptoms or did not sleep at all (35%,

80%, and 65%, respectively). Meanwhile, regarding total sleep duration and physical and mental functioning during the day, nearly two-thirds of the women and more than one-half of the women had the second-highest levels of symptoms (60% and 55%, respectively). Finally, concerning sleepiness during the day, more than one-third of women had the mildest symptoms (40%).

Table (4): Shows the distribution of scores for insomnia symptoms among the primiparous women. The most severe insomnia symptoms were associated with waking during the night and final waking (84% and 69%, respectively). While the lowest percentage was concerned with sleep duration (30%).

Figure (2): Clarifies the total score of insomnia symptoms among the primiparous women. The highest percentage of primiparous women (48.50%) had severe symptoms of insomnia, while the lowest percentage of them (12%) had mild symptoms of insomnia.

Table (5): Explains the distribution of insomnia severity among the primiparous women. Regarding the intensity of the insomnia, there were differences that were extremely statistically significant ($P < 0.001$*).

Figure (3): Clarifies the distribution of overall scores for the severity of insomnia among primiparous women. About 4% of the primiparous women had mild insomnia, 63% had moderate insomnia, and 33% of them had severe insomnia.

Table (6): Shows the self-care efficacy score in meeting the basic needs after giving birth among primiparous women. There were low self-care efficacy scores to meet the basic needs like eating, sleeping, and resting among the primiparous women after giving birth (97.3%).

Table (7): Shows the self-care efficacy score to address the developmental needs after giving birth among primiparous women. There were self-care efficacy scores to address the postpartum woman's developmental needs, including self-esteem, a troubled body image, and infection risk among primiparous women after giving birth (82.3%).

Table (8): Shows the self-care efficacy score to address the postnatal medical needs after giving birth among the primiparous women. The primiparous women had low scores on how well they could take care of their own medical needs, such as bladder problems, pain in the perineum, and pain in the breasts (80.3%).

Figure (4): The shows the total elf-care efficacy scores among primiparous women after giving birth. There were total low self-care efficacy scores to meet the basic needs like eating, sleeping, and resting (97.3%); to address the postpartum woman's developmental needs, including self-esteem, a troubled body image, and infection risk (82.3%); and to address the postnatal medical needs, like bladder issues, perineal discomforts, and breast discomforts among the primiparous women after giving birth (80.3%).

Figure (5): Depicts the correlation between the overall self-care efficacy scores of primiparous women and the severity of their sleeplessness after giving birth. Also, insomnia was linked to a low overall self-care efficacy score ($r = 0.683$), which means that the self-care efficacy score of primiparous women goes down as the severity of their insomnia increases.

Discussion

Discussion of the results of this study handled two main sections, first socio–demographic characteristics and obstetric history of the primiparous women, while Second section concerned to the effect of maternal insomnia on post-partum self-care efficacy among primiparous women.

First Section: socio–demographic characteristics and obstetric history of the primiparous women. The mean sample age was thirty years, more than one-half of the women varied from eighteen to thirty years old. This clarified that they were first-time mothers at this mature age. While, **Osnes et al. (2020)** evaluated current and future correlations involving prenatal sleeplessness and postnatal stress. Their findings corroborate this conclusion. Additionally, this result was consistent with **Miranda et al. (2021)** during assessment of postnatal psychosis, sleeplessness, and intellectual disability during the COVID-19 outbreak in Portugal's social isolation with connection to several characteristics with a mean age of thirty years. Education of the sample, more than one-third of the sample had a secondary level of education or a diploma. According to cultural norms, the girls were more interested in getting married than in learning and finishing school, and because many women are from rural areas, they may be uninterested in education. This outcome agrees with **the study of Mercan & Tari (2021)** after investigation of the relationship between early postnatal psychosis, social protection, lactation beliefs, and postnatal females' nursing ego scores.

More than two-thirds of women were work who lived in rural areas and were unable to find work, owing to their lack of education. This finding is supported by **Ozdemir et al. (2018),** who studied mothers' postpartum life quality and self-care abilities. Also, more than three-quarters of the sample lived in rural areas. This was supported by **Salama et al. (2022),** who evaluated the impact of a clinical preventive strategy for post-cesarean delivery mothers with

reference to psychosocial functioning and post-operative complications and provided support for this. The current study showed that most of the samples' gestational age fell within acceptable norms. A small percentage of women who were pregnant at the time suffered difficulties as well. To prevent difficulties during gestation, delivery, and postnatal care, prenatal counselling and support were stressed throughout the entire publication. This outcome was justified by the Ministry of Health's increased attention and concern over the significance of prenatal care as a tactical strategy to enhance females' wellbeing.

This most recent discovery was verified with **Mulat et al. (2020),** who assessed a low percentage of women having complications during their current pregnancy in the Eastern Zone of Tigray. Also, more than two-thirds of the sample had been delivered via spontaneous vaginal delivery (SVD), and one-third of them had been delivered by cesarean section (CS) operation. This finding could be attributed to an uncomplicated pregnancy, with most women following up on their pregnancy. This finding is linked to the research by **Aydin et al. (2022),** which clarified that two-thirds of the sample delivered naturally through the birth canal and thirty percent did so through cesarean delivery. Cesarean deliveries have been linked to an increased risk of postpartum insomnia due to increased stress **(Cénat et al., 2021).**

Second section concerned to the effect of maternal insomnia on post-partum self-care efficacy among primiparous women. According to the findings of this study, less than fifty percent of the sample's sleeping duration was slightly delayed, while the majority of them either did not sleep at all or awoke during the night. Meanwhile, more than two-thirds of them had much earlier final awakenings. Meanwhile, two-thirds of their total sleep duration was markedly insufficient. Furthermore, more than half of women's daytime emotional and cognitive activity was significantly reduced. Additionally, slightly more than two-fifths of them had mild sleepiness during the day. These results are consistent with those of **Miranda et al. (2021),** who found that postnatal sleeplessness can adversely affect a mother's recovery, her conduct as a mother, and how she cares for her newborn after giving birth. Mothers who experience postpartum sleeplessness should then receive expert nursing care.

Regarding the insomnia severity index, more than three-quarters of the sample had moderate difficulty falling asleep. Also, two-thirds of them had severe difficulty staying asleep. Meanwhile, three-fifths of them had a mild problem waking up too early. Otherwise, more than two-thirds of them were moderately satisfied with their current sleeping pattern. Furthermore, more than one-half of them had some indication of how obvious their sleep problem is to other people in terms of how it affects the life of them. In addition, slightly more than three-fifths of them had some indication of how obvious their sleep problems are to other people in terms of how it affects their life, while many of them had much.

Moreover, this study discovered that the level of the insomnia severity index (ISI) was higher in cesarean women than in vaginal birth women. This could be because pain is higher in cesareans than in vaginal deliveries, and primiparous women have less experience. The manner of birth is another occurrence that impacts the mother's and the newborn's health. Healthcare practitioners can also improve compliance with lactation by managing and supporting postnatal sleeplessness intensity. This finding contradicts the findings of **Edinoff et al. (2021)**, who discovered that puerperal mothers who gave birth naturally experienced more severe sleeplessness than puerperal women who had a cesarean section. As a result, by providing expert healthcare and education courses beginning with the preconception phase, it is possible to ensure that mothers learn about vaginal childbirth and that potential lactation issues associated with cesarean delivery are minimized.

Also, **Belete & Misgan (2019)** discovered a strong correlation between maternal sleep disorders and education level but also found that women without access to education are more likely to experience sleeping problems. Mothers' knowledge of sleep habits and how to develop healthy sleep routines may be influenced by their education, and it is typical for knowledgeable women to even have good sleeping practices. All postpartum women also require their husband's support or attention, and if they don't get it, they could seem unqualified to properly care for their newborn and experience trouble sleeping. When compared to mothers who had high social support, there was a substantial correlation between insomnia and social support. Additionally, women with a history of psychosis were more likely to experience sleeplessness than others. Additionally, women with poorer husband assistance than those with better husband assistance were more likely to experience sleeplessness.

According to Orem's nursing philosophy, ego is a practice that women carry out to preserve, enhance, or regain their health. Postpartum women are not seen by nurses as passive consumers of healthcare; rather, they are seen as **dependable**, able to make decisions, and able to take care of their own health. Three nursing—compensating, somewhat compensating, and compassionate scheme—were described by Orem. The nurse assumes the woman's place in the supportive educational system when she is prepared to acquire something else but is unable to do so

without assistance and direction **(Khademian et al., 2020).**

The findings of the current study revealed that more than thirty percent of the subjects used self-care techniques for postpartum women to meet their universal needs; the techniques addressed the postpartum woman's developmental needs, including self-esteem, a troubled body image, and infection risk; and the techniques addressed the postpartum women's health requirements.

Also, **Lambermon et al., (2020)** study revealed that the mother's ego requirements already in the first few days postpartum extend to the mother's mental well-being and emotional health. However, the focus of postnatal counseling is mostly on physiological ego requirements, placing moms' emotional ego requirements at risk of neglect.

The present study findings confirmed that the mean overall score of Orem's ego was significantly low among the study participants. Because all the samples were primiparous, these results came with no prior experience about how to handle their needs with insomnia, which aggravates extra stress in their daily requirements and requires increased awareness of how to deal with insomnia for better comfort time and space that allow them to meet these needs.

This finding is consistent with the findings of a study conducted in **Turkey** by **Belete & Misgan, (2019),** who discovered that home nursing care based on Orem's self-care increases the self-efficacy of patients with chronic obstructive pulmonary disease. Also, **Dahmardeh et al. (2016)** found in their results that the Orem-based strategy may be a helpful instrument to enhance the quality of sleep for patients suffering from multiple sclerosis. In addition, **Shakouri et al. (2018)** found that a helpful intervention focused just on the Orem ego paradigm lowers stress for period-stretching primigravidas. As well as, **Ozdemir et al. (2018)** discovered that educational status, economic status, family type, and postpartum week all had a significant impact on self-care ability and postpartum life quality in Turkey.

Besides, **Borri et al. (2020)** showed the effectiveness of ego counseling in lowering stress and despair in expectant women with a history of abortion. **Khorramabad's (2022)** research in Iran on breast cancer patients who got training based on the Orem model, especially on anxiety and related problems like sleep disorders and phobias, in the initial stages of the disease showed that the patients were able to take better care of themselves and were happier with their lives.

The results of **Chamangasht et al. (2021)** showed that a program for early self-care instruction was successful and improved the women's postpartum adaptability. A midwife therefore advises using the self-care paradigm for postpartum mothers who had typical vaginal or caesarean births. A nurse-led postpartum self-care intervention (NLPPSC) was also shown by **Khatun et al. (2021)** to be feasible and effective in reducing fatigue and enhancing maternal functioning in Bangladeshi mothers by 6 weeks postpartum, supporting the use of the NLPPSC intervention for new mothers following childbirth. Even though melancholy and anxiety are more suggestive of insomnia than demographic factors, according to **Wang et al. (2021),** maternal insomnia has been linked to several preventable risk factors; thus, it is important to focus on mother's sleep health during the postpartum period.

Furthermore, **Sivertsen et al. (2021)** have shown a substantial correlation between insomnia, short sleep duration, and a variety of different illnesses and conditions. The mental illnesses and physical ailments that exhibit some psychological or psychosomatic characteristics are the ones most strongly linked to insomnia. **El-Sherbeeny (2022)** added that perinatal women experienced sleeplessness more frequently than non-perinatal women. The study also demonstrated how these adjustments had a major impact on maternal quality of life.

Additionally, there was a substantial inverse relationship between Orem's self-care and maternal sleeplessness, with maternal insomnia's overall score rising while Orem's overall self-care score fell. This is justified by the possibility that postpartum nursing, physical activity, and baby care may cause mother sleeplessness. According to a study of the literature, there have only been a few studies conducted in Egypt on the impact of maternal insomnia on primiparous women's ability to successfully care for themselves after giving birth. This study's purpose was to close a knowledge gap on the efficacy of self-care for insomnia.

Conclusion

Based on the results of this study, the overall self-care efficacy score of women who had never given birth before was low in terms of meeting their basic needs, addressing their developmental needs, and meeting their postnatal medical needs. This answered the first research question. Also, a negative link was discovered between the overall severity of sleeplessness and the overall self-care efficacy score. This answered the second research question. Therefore, all research questions are answered.

Recommendations

- Give all primiparous women mothering classes to teach them how to take care of themselves well after giving birth, both physically and psychologically.

- Provide in-service counseling programs for primiparous women on how to reduce their degree of insomnia.
- Advice to all women is to avoid all causes and precipitation factors that lead to insomnia and keep a quiet environment for postpartum women.
- Further studies should focus on different maternal demographics to generalize the findings.

Conflict of interest: The Authors declare that there is no conflict of interest.

References

- **Aydin, E., Glasgow, K., Weiss, S., Khan, Z., Austin, T., Johnson, M., Barlow, J., & Lloyd-Fox, S. (2022):** Giving birth in a pandemic: women's birth experiences in England during COVID-19. *BMC pregnancy and childbirth*, *22*(1), 304. https://doi.org/10.1186/s12884-022-04637-8
- **Belete, H., & Misgan, E. (2019):** Determinants of Insomnia among Mothers during Postpartum Period in Northwest Ethiopia. *Sleep disorders*, *2019*, 3157637. https://doi.org/10.1155/2019/3157637
- **Borri, T., Navidian, A., & Zehi, F. (2020):** Assessing the effect of self-care education on anxiety and depression among pregnant women with a history of spontaneous abortion. Journal of education and health promotion, 9, 347.
- **Cénat, J., Blais-Rochette, C., Kokou-Kpolou, C. K., Noorishad, P., Mukunzi, J., McIntee, S., Dalexis, R., Goulet, M., & Labelle, P. (2021):** Prevalence of symptoms of depression, anxiety, insomnia, posttraumatic stress disorder, and psychological distress among populations affected by the COVID-19 pandemic: A systematic review and meta-analysis. *Psychiatry research*, *295*, 113599. https://doi.org/10.1016/j.psychres.2020.113599
- **Chamangasht M, Kamrani M & Farid M (2021):** Efficacy of an Early Self-care-Based Education Program on the Self-evaluation of Primiparous Postpartum Mothers: A Randomized Controlled Clinical Trial. Shiraz E-Med J.,22(9): e108132. doi: 10.5812/semj.108132
- **Dahmardeh H, Seyyed A, Vagharseyyedin S, Rahimi H, Amirifard H, Akbari O, & Sharifzadeh G (2016):** Effect of a Program Based on the Orem Self-Care Model on Sleep Quality of Patients with Multiple Sclerosis. Jundishapur J Chronic Dis Care, 5(3): e36764
- **Edinoff, A., Wu, N., Ghaffar, Y., Prejean, R., Gremillion, R., Cogburn, M., Chami, A., Kaye, A., & Kaye, A. (2021):** Zolpidem: Efficacy and Side Effects for Insomnia. *Health psychology research*, *9*(1), 24927. https://doi.org/10.52965/001c.24927
- **El-Sherbeeny N, El Tantawy A, Ibrahim O, Elsayed M, El-Okda N & Hassan H. (2022):** Insomnia and sleep quality among women during the perinatal period Middle East Current Psychiatry 29:41 https://doi.org/10.1186/s43045-022-00209-w
- **Isik, E., & Fredland, N. (2023):** Orem's Self-Care Deficit Nursing Theory to Improve Children's Self-Care: An Integrative Review. The Journal of school nursing: the official publication of the National Association of School Nurses, 39(1), 6–17. https://doi.org/10.1177/10598405211050062
- **Janson C, Lindberg E, Gislason T, Elmasry A, & Boman G (2001):** Insomnia in men-a 10-year prospective population-based study. Sleep 24:425–430
- **Khademian, Z., Kazemi Ara, F., & Gholamzadeh, S. (2020):** The Effect of Self Care Education Based on Orem's Nursing Theory on Quality of Life and Self-Efficacy in Patients with Hypertension: A Quasi-Experimental Study. International journal of community-based nursing and midwifery, 8(2), 140–149. https://doi.org/10.30476/IJCBNM.2020.81690.0
- **Khatun, F., Lee, T., Lee, H., Park, J., Song, J., & Kim, S. (2021):** Does a nurse-led postpartum self-care program for first-time mothers in Bangladesh improve postpartum fatigue, depressive mood, and maternal functioning? a non-synchronized quasi-experimental study. Korean journal of women health nursing, 27(3), 196–208. https://doi.org/10.4069/kjwhn.2021.09.08
- **Khorramabad N. (2022):** Implementation of Orem's self-care model in early stages of breast cancer. Indian journal of cancer, 59(1), 142–143. https://doi.org/10.4103/ijc.IJC_1115_20
- Lambermon, F., Vandenbussche, F., Dedding, C., & van Duijnhoven, N. (2020). Maternal self-care in the early postpartum period: An integrative review. Midwifery, 90, 102799. https://doi.org/10.1016/j.midw.2020.102799
- **Liu, Z., Qiao, D., Xu, Y., Zhao, W., Yang, Y., Wen, D., Li, X., Nie, X., Dong, Y., Tang, S., Jiang, Y., Wang, Y., Zhao, J., & Xu, Y. (2021):** The Efficacy of Computerized Cognitive Behavioral Therapy for Depressive and Anxiety Symptoms in Patients With COVID-19: Randomized Controlled Trial. Journal of medical Internet research, 23(5), e26883. https://doi.org/10.2196/26883
- **Mercan, Y., & Tari S. (2021):** Association between postpartum depression level, social support level and breastfeeding attitude and breastfeeding self-efficacy in early postpartum women. PloS one, 16(4), e0249538. https://doi.org/10.1371/journal.pone.0249538

- **Miranda, A., MD, Scotta, A., MD, Cortez, M., PhD, & Soria, E., PhD (2021):** Triggering of postpartum depression and insomnia with cognitive impairment in Argentinian women during the pandemic COVID-19 social isolation in relation to reproductive and health factors. Midwifery, 102, 103072. https://doi.org/10.1016/j.midw.2021.103072
- **Mulat, A., Kassa, S., Belay, G., Emishaw, S., Yekoye, A., Bayu, H., & Kebede, S. (2020):** Missed antenatal care follow-up and associated factors in the Eastern Zone of Tigray, Northern Ethiopia. African health sciences, 20(2), 690–696. https://doi.org/10.4314/ahs.v20i2.20
- **Orem D.E. (2001):** Nursing Concepts of Practice. (5th ed.). St Louis: Mosby Year Book
- **Osnes, R. S., Eberhard-Gran, M., Follestad, T., Kallestad, H., Morken, G., & Roaldset, J. O. (2020).** Mid-pregnancy insomnia is associated with concurrent and postpartum maternal anxiety and obsessive-compulsive symptoms: A prospective cohort study. Journal of affective disorders, 266, 319–326. https://doi.org/10.1016/j.jad.2020.01.140
- **Özdemir, F., Öztürk, A., Karabulutlu, Ö., & Tezel, A. (2018):** Determination of the life quality and self-care ability of the mothers in the postpartum period. JPMA. The Journal of the Pakistan Medical Association, 68(2), 210–215
- **Quin, N., Tikotzky, L., Stafford, L., Fisher, J., & Bei, B. (2022):** Preventing postpartum insomnia by targeting maternal versus infant sleep: a protocol for a randomized controlled trial (the Study for Mother-Infant Sleep "SMILE"). Sleep advances: a journal of the Sleep Research Society, 3(1), zpab020. https://doi.org/10.1093/sleepadvances/zpab020
- **Salama E Helmy H Mohammed A & Mahmoud O (2022):** Effect of Nursing Intervention Program for Women post-Caesarean Section regarding Self-care on their Psychological status and Postoperative Pain. Assiut Scientific Nursing Journal http://asnj.journals.ekb.eg http://www.arabimpactfactor.com http://olddrji.lbp.world/indexedJournals.aspx DOI: 10.21608/ASNJ.2022.124954.1331
- **Sakineh, N., Sepideh, H., Zohreh, A., & Hamid, A. (2022):** Effect of participatory care model on postpartum quality of life and performance during the covid-19 pandemic. Oman medical journal, 37(3), e382.
- **Shakouri N, Mohammad Noroozi H, Ryhani T, Tafazzoli M, & Mazlom S (2018):** Effect of the "Orem Self Care Model"-based Educational-Supportive Intervention on the Anxiety of Primigravida. Horizon of Medical Sciences, 24(1):41-46
- **Sivertsen B, Hysing M, Harvey AG & Petrie KJ (2021):** The Epidemiology of Insomnia and Sleep Duration Across Mental and Physical Health: The SHoT Study. Front. Psychol. 12:662572. doi: 10.3389/fpsyg.2021.662572
- **Lin, C., Cheng, A., Nejati, B., Imani, V., Ulander, M., Browall, M., Griffiths, M., Broström, A., & Pakpour, A. (2020):** A thorough psychometric comparison between Athens Insomnia Scale and Insomnia Severity Index among patients with advanced cancer. Journal of sleep research, 29(1), e12891. https://doi.org/10.1111/jsr.12891
- **Swanson, L., Kalmbach, D., Rayan, G., & O'Brien, L. (2020):** Perinatal Insomnia and Mental Health: A Review of Recent Literature. Current psychiatry reports, 22(12), 73. https://doi.org/10.1007/s11920-020-01198-5
- **Verma, S., Rajaratnam, S., Davey, M., Wiley, J. F., & Bei, B. (2021):** Cognitive Behavioural Therapy and Light Dark Therapy for Maternal Postpartum Insomnia Symptoms: Protocol of a Parallel-Group Randomised Controlled Efficacy Trial. Frontiers in global women's health, 1, 591677. https://doi.org/10.3389/fgwh.2020.591677
- **Wang, J., Zhou, Y., Qian, W., Zhou, Y., Han, R., & Liu, Z. (2021):** Maternal insomnia during the COVID-19 pandemic: associations with depression and anxiety. Social psychiatry and psychiatric epidemiology, 56(8), 1477–1485. https://doi.org/10.1007/s00127-021-02072-2