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MENSTRUAL IRREGULARITIES AND ITS ASSOCIATED FACTORS AMONG REPRODUCTIVE AGE GROUP WOMEN

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ABSTRACT:

Background: Menstrual irregularity can occur at any age, but it is most common among women under the age of 23 years. Menstrual irregularity is aforemost gynecological problem and a cause of anxiety to the females and thoseclose to them. Interruption of the hypothalamic-pituitary-ovarian (HPO) axis pathway results in an irregular menstrual cycle, Oligomenorrhea, Dysmenorrhea, Abnormal uterine bleeding are the Conditions related to irregular menstruation. Therefore, this study aimed to assess the of menstrual irregularity and its associated factors among reproductive age group women in selected tertiary care hospital, Chengalpattu district, Tamil Nadu, Indiain 2023.

Methods: A descriptive study was conducted at selected tertiary care hospital. Data was collected using self- administered questionnaires in 250 eligible female attending obstetrics and gynecological outpatient department at selected tertiary care hospital bypurposive sampling technique. Weight and height were measured andBody Mass Index (BMI) was calculated after data collection. Each questionnairewas checked for completeness, cleaned, coded, entered into EPI-DATA, and then transported to SPSS software. descriptive and inferential statistics analyses were employed to determine the association of eachindependent variable with the dependent variable. $P \leq 0.05$ were used to declare association and select predictors.

Results: The result showed that the common menstrual problems reported were Dysmenorrhea (70.8%), Oligomenorrhea (58.8%), Menorrhagia (13.6%), and Polymenorrhea (74.4%), Polymenorrhagia (54.8%), The findings revealed that there was a significant association of menstruation irregularities with the selected demographic variables such as Age, Marital status, Educational status, Residence, Respondent monthly income.

Conclusion and recommendation: Menstrual irregularities can significantly impact women's quality of life, affecting their physical health, emotional well-being, and social functioning. As such, healthcare professionals, including nurses, play a pivotal role in providing education, support, and access to appropriate healthcare services for women experiencing menstrual irregularities.

It's important for women experiencing menstrual irregularities to consult with a health care professional such as a gynecologist or primary care physician. Making certain lifestyle modifications can help improve menstrual irregularity includes maintaining a healthy weight, engaging in regular exercise, managing stress through techniques like yoga and meditation, and ensuring adequate sleep. Eating a balanced diet that includes a variety of fruits, vegetables, whole grains, lean proteins, and healthy fats is important for overall health and may also contribute to more regular menstrual cycle.

Keywords: menstrual irregularity, associated factor, reproductive age.

Introduction

Menstruation is a natural biological process that occurs in the reproductive system of females. It is a monthly cycle in which the lining of the uterus thickens in preparation for a potential pregnancy. If pregnancy does not occur, the body sheds this uterine lining, resulting in the discharge of blood and other materials from the body through the vagina. This process typically occurs in a regular, cyclical pattern and is controlled by hormones such as estrogen and progesterone.

Normal menstruation can last from 2 to 7 days and can happen every 21–35 days. However, 14–25 percent of women have irregular menstrual cycles, which means their periods areheavier or lighter than usual, longer than 35 days or shorter than 21 days, or they have other issues, such as abdominal cramps. In addition, bleeding or spotting in between periods, bleeding or spotting after sex, menstrual cycle length varying by more than 7–9 days, and/or not having a period for 3–6 months are menstrual irregularities.

Hormones are secreted in a negative and positive feedback manner to control the menstrual cycle. Hormone secretion begins in the hypothalamus where gonadotropin-releasing hormone (GnRH) is secreted in an increased, pulsatile fashion once puberty starts. GnRH is then transported to the anterior pituitary, where it activates its 7- transmembrane G-protein receptor. This provides a signal to the anterior

pituitary to secrete stimulating follicle hormone (FSH) and luteinizing hormone (LH). FSH and LH provide input to the ovaries.

Women under the age of 23 were the most likely to have menstrual irregularity (5). Menstrual irregularity was reported to be widespread in 35.7 and 64.2 percent of women in India and Nepal, respectively, according to several studies (8, 9).In addition, the prevalence of menstrual irregularity in Sudan was 55 percent (10). Furthermore, menstrual irregularity was

reported to be prevalent in Ethiopia at 26.5–32.6 percent. Lackof adequate sleep, alcohol intake, stress, Anemia, hereditary factors, and being underweight are major contributing factors to menstrual irregularity (11–13).

Female students face many problems that challenge their quality of life and academic performance. Of the problems thataffect the quality of life of female students, menstrual cycle irregularity is a foremost gynecological problem and a causeof anxiety to students and those close to them (14). It affects the different day-to-day events of students (15, 16). Different studies revealed that menstrual irregularities can also affect issues later on in life, such as osteoporosis, infertility, future diabetes mellitus, and cardiovascular disease (14, 17, 18).

College students have reported menstrual discomfort, feelings of guilt and sadness, and difficulty containing menses asbad menstrual experiences. These factors adversely affect their education through absenteeism, reduced engagement, and poor academic performance. Menstruation, on the other hand, can be a pleasant experience for some students, and their capacity to adjust to dysmenorrhea's problems indicates their perseverance and ingenuity. Monthly absenteeism, premenstrual symptoms,and lack of concentration cause issues in studies (19). As a result, this study aimed to assess the magnitude of menstrual irregularity using the International Federation of Gynecology and Obstetrics menstrual guidelines parameters for normaland abnormal uterine bleeding 2018's standard of menstrual irregularity definition (20).

Methods and materials

Study design, settings, and participants

A Descriptive design was conducted at selected tertiary care hospital in the Chengalpattu district, Tamil Nadu, India. The setting of study is physical location where the research shall be carried out systematically. It can be a nature place or laboratory (artificial) setting. This study was carried out at a selected Tertiary care Hospital, Kelambakkam, Chengalpattu district, Tamil Nadu, India. Females attending obstetrics and gynecological outpatient department at selected tertiary care hospital.

Population

The universe / totality or aggregate (entire set) of all individuals, subjects or objects with a specified common characteristic in a given study area. The population may be homogeneous (all elements has similar characteristics) and heterogeneous (elements has dissimilar characteristics). The study comprises population of reproductive age group women who attend the OPD in Tertiary care hospital, kelambakkam, Chengalpattu district, Tamil Nadu, India.

Sample size and sampling procedures

The number of individual or observations in the Sample, based on the number of samples, the size is termed as small sample size (less than 30) and large sample size (more than 30). The total sample size was 250. When a large proportion of individuals have to be studied, we take a sample. It is easier and more economical to study the sample than the whole population of the universe. Great care therefore is required to obtain a sample. It is important to ensure that the groups included in the sample are representative of the whole population to be studied. Purposive sampling is judgmental or selective sampling that involves the conscious selection by the researcher of certain subjects or 48 elements to include in a study. The sampling strategy is used most frequently in qualitative research. In this study used Purposive sampling techniques.

Data collection procedures

The data was collected using an interview followed by self-administeredquestionnaire. Anthropometric measurements were performedto calculate the body mass index (BMI) of the participants.The height of participants was measured in meters and weightwas recorded close to 100 g (least count of electronic weighing scale = 100 g). After analyzing several works of literature, the questionnaire was first written in English, then translated into Tamil to ensure that it was appropriate for females attending obstetrics and gynecological outpatient department at selected tertiary care hospitaland then back to English to ensure consistency by a third party.To meet the study's aims, the questionnaire was built based onthe variables. Sociodemographic information, menstrual-related questions, lifestyle and employment factors, medical & gynecological history inquiries, dietary factors, family factors and anthropometric measurements are all included in the questionnaire (height and weight).

Data quality control and analysis

Every questionnaire was checked for completeness andconsistency. As data collectors and supervisors, 5 nursing experts from various nursing institutions and the suggestion given by the experts were included. The principal investigator provided data collectors and supervisors with training to address the study's relevance, objectives, and confidentiality concerns. Epi-Data was used to enter, edit, and

clean data before being exported to SPSS version 21 for analysis. Frequencies were also subjected to descriptive and inferential statistics analyses were employed to determine the association of eachindependent variable with the dependent variable. $P \leq 0.05$ were used to declare association and select predictors.

Outcome measurement

The International Federation of Gynecology and Obstetrics(FIGO) 2018 criteria for menstrual irregularity definition have been used to establish if the menstrual cycle is regular orirregular. As a result, in the current investigation, a regular menstrual cycle was defined as having a frequency of 24–38 days, a duration of bleeding of less than or equal to 8 days, a cycle-to-cycle variance of fewer than 10 days during the previous year, and a normal individual assessment of the quantity. Menstrual irregularity, on the other hand, refers to anything that occurs outside of the normal menstrual cycle.

Operational definition

Menstrual irregularity

Menstrual irregularity refers to missed or delayed periods. The study undertakes Oligomenorrhea (periods that occurs more than 35 days apart) Dysmenorrhea (have painful menstruation) Abnormal uterine bleeding except Amenorrhea (Absence of menstruation) pregnant women.

Associated factors

In this study it defines an association between the menstrual irregularity and life style factors dietary factors employment factors etc.

Reproductive age group

In this study it defines the women with age group of 15 – 49 with menstrual irregularities.

Prevalence

In this study, it is the proportion of a population who have Menstrual irregularities among reproductive age group women's who attends OPD in tertiary Care Hospital kelambakkam,chengalpattu District, India

Result

Socio-demographic characteristics

In this study shows that Age-Majority 54.8% of reproductive age group women were in the age group of 26-32 years, whereas 18% were in the age group of 17-25 years. Marital status-Majority 82% of reproductive age group women had married 18 % were unmarried. Educational status-Majority 29.6% of the reproductive age group women where illiterate 18% had only primary education. Residence-Majority 70.4% of reproductive age group women reside in urban area where as 29.6% reside in rural area. Monthly income-Majority 29.6% of reproductive age group womenmonthly income of 6k-9k where as 18% women were unemployed. (Table-1)

Life style related factors

For all study respondents, body mass index was calculated and Majority 72.8% of reproductive age group women have BMI OF 18.5-25.0 where as 27.2% of women have BMI<18.5 is there. Number of births-Majority 52.4% of reproductive age group women have 1child where as 18% of reproductive age group women doesn't have 1 child. Smoking habits-Majority 100% of reproductive age group women doesn't have habit of smoking. Habit of consumption of alcohol-Majority 100% of reproductive age group women doesn't have habit of consumption of alcohol. Sleeping hours-Majority 72.8% of reproductive age group women had sleeping 6-8hours where as 27% of women had sleeping less than 5 hours. Pattern of menstrual cycles-Majority 56.8% of reproductive age group women have irregular menstrual pattern where as 43.2 % of women have regular menstrual pattern. (Table-2)

Employment factors

It shows that Working Hours-Majority 82 % of reproductive age group women had working for 9-12hours where as 18% of women working in 6-8hours. Employment status-Majority 54.8% reproductive age group women were part time employee where as 45.2% of women were regular employee. Work style-Majority 72.8% reproductive age group women were working in daytime where as 27.2% of women working in nighttime. Type of occupation-Majority 56.8% of reproductive age group women working in dust environment where as18% of women working in low temperature environment. Stress-18% of women had extreme stress where as 29.6% of women were very stressful. (Table-3)

Medical and gynecological factors

The study shows that Majority 52.4% of reproductive age group women have gynecological problem. (Table-4)

Dietary factors

It shows Majority 56.8% of reproductive age group women were vegetarian and 74.8 % of women had no history of allergic reaction to food. (Table-5)

Family factors

It shows Majority 56.8% of reproductive age group women had no family history of menstrual irregularity and 56.8 % of women were living away from the family. (Table-6)

Prevalence of the menstrual irregularities among the reproductive age group women:

It shows that Among 250 reproductive age group women 74.4%,70.8%,58.8%,54.8% had menstrual irregularities like polymenorrhea, dysmenorrhea, oligomenorrhea, polymenorrhagia respectively and minority 13.6% had menorrhagia. (Table-7)

Association of menstrual irregularities with selected demographic variables:

The study shows that there is an significant association of demographic variables like age, marital status, educational status, monthly income 7.836,3.995,7.839,0.180,7.839(P=0.05) with dysmenorrhea respectively. There is an no significant association with menorrhagia. there is an no significant association with polymenorrhagia. there is an significant association of demographic variables like age, educational status, residence, monthly income 6.086,8.908,4.114,8.908(P=0.05) with oligomenorrhea respectively. there is an no significant association with polymenorrhea. (Table-8)

TABLE-1 Frequency and percentage distribution of the demographic variables among reproductive age group women. (N=250)

Demographic variables	**Frequency (N)**	**Percentage (%)**
1. Age(years)		
A)17-25	45	18.0
B)26-32	137	54.8
C)33-45	68	27.2
2. Marital status		
A) Married	205	82.0
B) Unmarried	45	18.0
C) Divorced	0	0
3. Educational status		
A) Illiterate	74	29.6
B) Primary	45	18.0
C) Secondary	0	0
D) Higher secondary	63	25.2

E) Graduate	68	27.2
4. Residence		
A) Urban	176	70.4
B) Rural	74	29.6

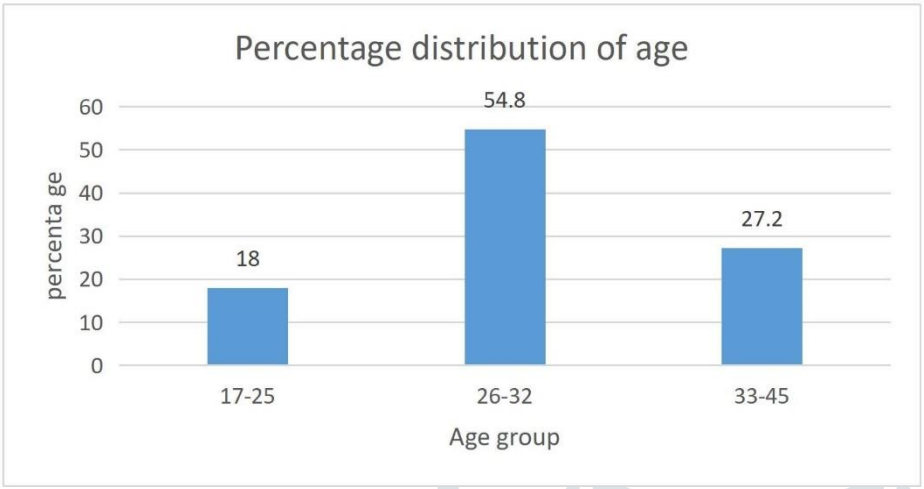

Figure 1 percentage distribution of the demographic variables among reproductive age group women (N=250)

Table-2 Frequency and percentage distribution of life style related factor associated with menstrual irregularities among reproductive age group women. (N=250)

LIFE STYLE RELATED FACTORS	FREQUENCY(N)	PERCENTAGE (%)
1.BMI		
A) <18.5	68	27.2
B) 18.5-25.0	182	72.8
C) 25.0≤	0	0
2.Number of births		
A) 0	45	18.0
B) 1	131	52.4
C) 1≤	74	29.6
3.Smoking habits		

A) Yes	0	0
B) No	250	100

4.Habit of consumption of alcohol		
A) YES	0	0
B) NO	250	100
C) Quit	0	0
5.Sleeping hours		
A) Less than 5 hours	68	27.2
B) 6 to 8 hours	182	72.8
C) More than 9 hours	0	0
6.Pattern of the menstrual cycles		
A) Regular	108	43.2
B) Irregular	142	56.8

Table 3 Frequency and percentage distribution of employment factor associated with menstrual irregularities among reproductive age group women. (N=250)

Employment factors	FREQUENCY(N)	PERCENTAGE (%)
1.Percentage of females in the workplace		
A) <10%	0	0
B) 10-30%	142	56.8
C) 30-50%	108	43.2
D) More than 50%	0	0
2.Working hours		

A)6-8hours	45	18.0
B)9-12hours	205	82.0
C)13-24hours	0	0
3.Employment status		
A) Regular employee	113	45.2
B) Part-time employee	137	54.8
C) Temporary workers	0	0
D) Others	0	0
4.Work style		
A) daytime	182	72.8

B) Night time	68	27.2
5.Type of occupation		
A) Daily wages	74	29.6
B) Government setting	131	52.4
C) Private setting	45	18.0
6. Working environment		
A) Noise	0	0
B) Dust	142	56.8
C) High temperature and humidity	63	25.2
D) low temperature	45	18.0
E) Ventilation	0	0
F) Others	0	0
7. Stress		
A) Extremely stress	45	18.0
B) Very stressful	74	29.6
C)Somehow stressful	63	25.2
D)Very little stress	68	27.2
E) No stress	0	0

Table- 4 Frequency and percentage distribution of medical and gynecological factor associated with menstrual irregularities among reproductive age group women. (n=250)

MEDICALAND GYNECOLOGICAL FACTORS	FREQUENCY(n)	PERCENTAGE (%)
1. Do you have any history of gynecological problem		
A) YES	131	52.4
B) NO	119	47.6
2. Have you ever used any Emergency contraception		
A) Yes	45	18.0
B) NO	205	82.0
3. Do you have the history of Diabetes mellitus		
A) YES	63	25.2
B) NO	187	74.8
4. Do you have any history of Head injury		
A) YES	108	43.2
B) NO	142	56.8
5.Do you have any history of thyroid disease		
A) YES	68	27.2
B) NO	182	72.8
6. Do you have any history of anemia		
A) YES	45	18.0
B) NO	205	82.0

Table- 5 Frequency and percentage distribution of dietary factor associated with menstrual irregularities among reproductive age group women. (N=250)

DIETARY FACTORS	FREQUENCY(N)	PERCENTAGE (%)
1.Dietary Pattern		
A) Vegetarian	142	56.8
B) Non vegetarian	108	43.2
2. Do you have any history of allergic reaction to Food		
A) YES	63	25.2
B) NO	187	74.8

Table 6 Frequency and percentage distribution of family factor associated with menstrual irregularities among reproductive age group women. (N=250)

FAMILY FACTORS	FREQUENCY(N)	PERCENTAGE (%)
1.Family history of menstrual irregularity		
A) YES	**108**	**43.2**
B) NO	**142**	**56.8**
2.Are you living with your family		
A) YES	**108**	**43.2**
B) NO	**142**	**56.8**

Table-7 Prevalence of the menstrual irregularities among reproductive age group women. (N=250)

MENSTRUAL IRREGULARITIES	FREQUENCY (N)	PERCENTAGE (%)
Dysmenorrhea		
YES	177	70.8
NO	73	29.2
Menorrhagia		
YES	34	13.6
NO	216	86.4
Polymenorrhagia		
YES	137	54.8
NO	113	45.2
Oligomenorrhea		
YES	147	58.8
NO	103	41.2
Polymenorrhea		
YES	186	74.4
NO	64	25.6

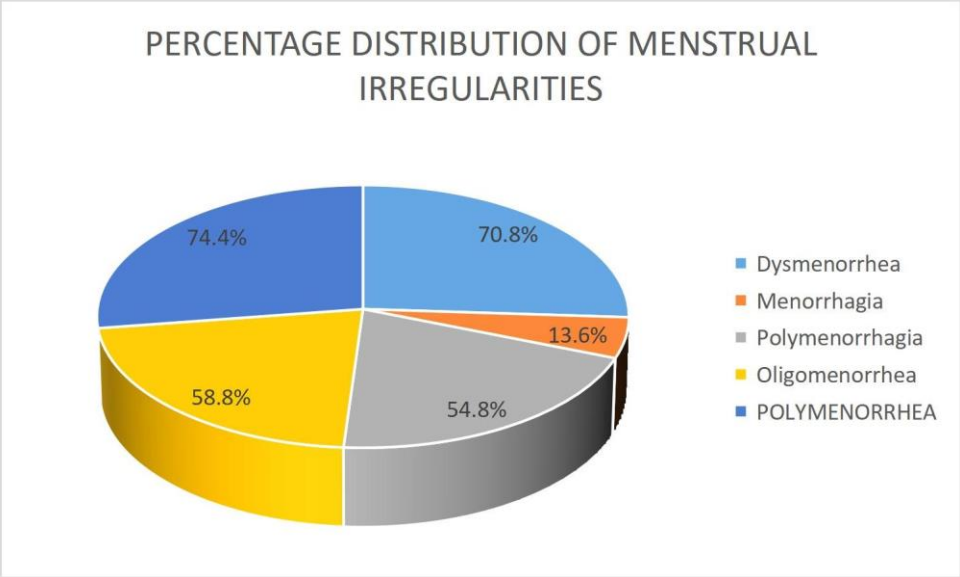

Figure 2 prevalence of the menstrual irregularities among reproductive age group women (n=250)

Table- 8 Association of dysmenorrhea with the selected demographic variables(N=250)

S.NO	DEMOGRAPHIC VARIABLES	CATEGORY	DYSMENORRHEA		X	P VALUE
			YES	NO		
1.	Age in years	17-25	27	19	7.836	.020 (S)
		26-32	94	42		
		33-45	56	12		
2.	Marital status	Married	150	54	3.995	.046 (S)
		Unmarried	27	19		
		Divorced	0	0		
3.	Educational status	Illiterate	51	23	7.839	.049 (S)
		Primary	27	19		
		Secondary	0	0		
		Higher secondary	43	19		

		Graduate	56	12		
4.	Residence	Urban	126	50	.180	.671 (NS)
		Rural	51	23		

5.	Respondants monthly income	Unemployed	3	43	7.839	.049 (S)
		6k-9k	8	66		
		10k-12k	14	48		
		13k-18k	10	58		

(NS=Non-significant, S=Significant)

Discussion

In 2019, Jayanthi srikanth et al, conducted a study on obesity and menstrual abnormalities among women of reproductive age in urban field practice area of kempegowda institute of medical sciences, Bangalore, it was a cross- sectional study. This study was conducted by doing house to house survey among 250 women of reproductive age residing in the urban field practice area of KIMS. Bangalore for a period of 3 months from June to august 2018.the common menstrual problems reported were dysmenorrhea (52.8%), oligomenorrhea (20.4%), menorrhagia (13.6%), and polymenorrhagia (1.6%). The difference between perception of their body image and their actual weight was found to be statistically significant.

In 2022, urge gerema et al, conducted a study on abnormal uterine bleeding and associated factors among reproductive age women in jimma town, Oromia region, southwest Ethiopia, it was a cross- sectional study. This study was conducted by the data from the municipality of the jimma town 2018, employed from 1 January to 30 April. Out of 660 participants 225 (34.1%) had abnormal uterine bleeding, the prevalence of metrorrhagia, heavy periods, oligomenorrhea, inter-menstrual bleeding, polymenorrhea, and dysmenorrhea was 59 (26.2%), 54(24%),53(23.5%), 46(20.4%),35(15.5%), and 25(11.1%).

This present study results also replicate the same.

Limitation of the study

1. The reproductive age group women may not have menstrual irregularities.
2. Sample may hesitate to participate in this study.
3. The data collection period is only a week.

Conclusion

The common menstrual problems reported were dysmenorrhea (70.8%), oligomenorrhea (58.8%), menorrhagia (13.6%), polymenorrhea (74.4%), and polymenorrhagia (54.8%), Therefore the result showed that there is association between amenorrhea and oligomenorrhea with the selected demographic variables.

Recommendations

It's important for women experiencing menstrual irregularities to consult with a health care professional such as a gynecologist or primary care physician.

Making certain lifestyle modifications can help improve menstrual irregularity includes maintaining a healthy weight, engaging in

regular exercise, managing stress through techniques like yoga and meditation, and ensuring adequate sleep.

Eating a balanced diet that includes a variety of fruits, vegetables, whole grains, lean proteins, and healthy fats is important for overall health and may also contribute to more regular menstrual cycles.

NURSING IMPLICATION

The findings of the study have implicated is different branches of nursing profession, i.e. nursing practice, nursing education, nursing administration, and nursing research.

NURSING EDUCATION

Menstrual irregularities can significantly impact a women's quality of life and may be indicative of an underlying health issue.

Providing education to nurses ensures that they are equipped to identify, educate, and support women experiencing menstrual irregularities.

The curriculum should cover a range of areas, including the normal menstrual cycle, common causes of menstrual irregularities, associated symptoms, potential health implications, and management options.

NURSING ADMINISTRATI0N

Nursing administration should ensure that student nurses receive comprehensive education and training on menstrual health, including menstrual irregularities. This can be achieved through the development of targeted educational programs, workshops, and continuing education opportunities.

Nursing administration should emphasize the importance of patient- centered care in addressing menstrual irregularities. This involves creating environments that are welcoming, non- judgmental, and sensitive to the unique needs and experiences of women.

Nursing administrations should emphasize the collection and analysis of data related to menstrual irregularities. By leveraging data analytics, nursing administrations can gain insights into the prevalence of menstrual irregularities, patient outcomes, and the effectiveness of different interventions.

NURSING RESEARCH

This research could help to identify the scope of the issue and better understand the demographic, lifestyle, and health-related factors that may contribute to menstrual irregularities. By identifying high- risk populations, health care providers can target interventions and support resources more effectively.

Research in this area can explore the impact of patient education and empowerment initiatives on women's ability to recognize, manage, and seek help for menstrual irregularities.

Nursing researchers can develop and evaluate educational interventions aimed at increasing women's knowledge about menstrual health, promoting self-care strategies, and fostering informed decision- making regarding treatment options.

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