Original Research Article

Nurse-Led Intervention on Reproductive health among young women in India

Princey Shaji[1]*, Dr. Maharaj Singh, RN, BSN, MSN, PhD[2], Dr. Bharti Sahu, MS, FICOG[3]

*[1]Jabalpur institute of nursing science and research, Opposite Victoria hospital Jabalpur, Madhya Pradesh, India. Phone No: +91 9753218998. Email: princeyshaji@gmail.com

[2]Professor & Research Head, NIMS Nursing College, Nims University, Rajasthan, Jaipur, India**.** Phone No: +91 9888166279, Email: maharaj2009@yahoo.com

[3]Associate Professor, Department of Obg & Gynae, Netaji Subhash Chandra Bose Medical College, Jabalpur, Madhya Pradesh, India. Phone No: +91 7612481533, Email: bhartisahu26@gmail.com

*Corresponding Author: - Princey Shaji

*Jabalpur institute of nursing science and research, Opposite Victoria hospital Jabalpur, Madhya Pradesh, India. Phone No: +91 9753218998. Email: princeyshaji@gmail.com

Abstract
Background
Historically, developed nations with high incomes have had the majority of the world's obese people. In low-income nations, the prevalence of overweight or obesity has recently increased dramatically. Over 30 million people in India are either overweight or obese. Women are more likely to have it than men. This study examines the results for obese women's reproductive health among women. For the investigation of the prevalence of overweight or obesity and its correlation with female reproductive health outcomes, the National Family Health Survey (NFHS), 2005−2006, was used. Overweight/obesity prevalence among women has significantly increased over time. Compared to women with a normal BMI, obese and overweight women had worse outcomes for their reproductive health.
Objectives
The study determined the effectiveness of the Nurse − Led intervention approach to improving the reproductive health in young women from selected rural communities in Jabalpur, Madhya Pradesh
Methods
A quasi-experimental, pre-interventional, and post-interventional control group design study was conducted in selected communities of Jabalpur, Madhya Pradesh, India. Using a non-probability purposive sample method, young obese women were selected for the study.300 young obese women were chosen, 150 were placed in a research group, and the remaining 150 were placed in a control group. After receiving exercise instruction from an investigator for 30 minutes, three times per week for 24 weeks, participants were urged to carry out the exercises on their own for the following 12 weeks. The researcher developed a meal menu plan with the assistance of a dietitian as a component of the lifestyle change programme. A low-calorie diet plan (often 1200−1500 kcal/d) is advised for young obese women. To make sure that lifestyle adjustments were made on a regular basis, a practice diary was maintained. The subjects were called once every seven days. Young obese women in the control group received five days of lifestyle change package training after the trial, but they did not participate in the program.
Results
After 12, and 24 weeks of the nurse-led intervention, there was a very statistically significant difference (P=0.001) between the study group and the control group. At weeks 12 and 24, the study group's average gain score was high. In comparison to the control group, the study group's total

mean gain score was 30 as opposed to 28. The overall mean gain score difference between the study group and the control group throughout all of the nurse-led intervention life was 2. The study group had significant improvements in reproductive health after putting a 24-week lifestyle change programme into practise. Following the implementation of the lifestyle modification package, the women reported no negative side effects.

Key words: Obesity, Reproductive health, diet, physical activity, Women

Introduction
In India, obesity among women in the reproductive age range is becoming an increasingly serious issue. Women who were overweight or obese made up 12.6% of the population, according to the most recent National Family Health Survey (NFHS-3). This increased from the NFHS-2 survey by about 25%. In India's cities, where 23.5% of the female population is already overweight or obese, the situation is much worse (1.) Obesity and the rise of non-communicable diseases have historically been a problem for the wealthy who reside in urban areas of emerging nations. However, in a little more than three decades, the risk of obesity has started to spread into the rural hinterland. Between 1985 and 2017, the increase in the global mean body mass index (BMI) was 55 percent higher in rural areas. (2). Obesity is a proven long-term risk factor for a variety of noncommunicable diseases.

However, the immediate worry for women in the reproductive age range should be its consequences on reproductive results. Studies have shown that obesity increases the chance of infertility during the prenatal period (3). Preterm birth, gestational diabetes, preeclampsia, and miscarriage. Obesity in the prenatal and postnatal periods results in issues such as an increased incidence of cesarean sections, longer labor, and postpartum anemia. Prior research also discovered that obesity contributes to gynaecological issues like the risk of breast cancer and endometrial cancer as well as neonatal abnormalities like stillbirths, congenital malformations, and macrosomia (4).

Since lifestyle factors are ultimately within one's own control, they can be changed to improve overall well-being. Numerous factors, such as , mobile phones, foods, physical activity, obesity, and age of paternity, can have an impact on reproductive health (5). According to the World Health Organization, up to 80 million women worldwide are affected by the illness, and almost 50% of all women in poor nations are infertile. About 20–30% of couples worldwide are infertile (Ombelet et al. 2008) (6). Obviously, under the control of the individual, lifestyle choices can be changed to enhance human well-being.

Lifestyle choices may have a favourable or negative impact on reproductive health (Ilacqua et al. 2018) (7) All people's overall health and well-being are impacted by regular exercise, which may also offer some protection from obesity, cardiovascular disease, type 2 diabetes, psychological stress, etc. Exercise enhances ovarian function, boosts insulin sensitivity, and may increase the likelihood of conceiving. 2019 (Silvestris et al.) (8).

The present study evaluated the effectiveness of the lifestyle modification package approach to improving the reproductive health in young women from selected rural communities in Jabalpur, Madhya Pradesh

Materials and methodsResearch approach
A quantitative research approach was adopted in the study.

Research design
The study adopted a quasi-experimental pre and post-test control group research design.

Setting
The study was carried out in the identified rural areas of Jabalpur, Madhya Pradesh, India.

Population
The population for this study included all obese young women whose BMI was more than 24.9.

Sample size
The sample size was calculated and was also computed by power analysis.
The estimated sample size was 287. Considering an attrition rate of 10%, the sample size was rounded to 300, consisting of 150 in each group.

Sampling technique
For the study, a non-probability convenient sampling method was utilized to choose young obese women.Ten villages were chosen by lottery in the first stage, five from Panagar and five each from Shahpura. A list of addresses for all women between the ages of 20 and 40 was received from the Primary Health Center during the second stage of sampling (PHC).
The central health centre was the designated meeting place for all the young women.
Following measurements of height and weight, young women with BMIs greater than 24.9 were selected for the study. Women who met the pre requisites for inclusion were chosen for the third stage. Approximately 20-25 young obese women from each village participated in the study. Panagar block was chosen as the study group and Shahpura block as the control group

Inclusion criteria
The study included obese young women who had a BMI of more than 24.9; were in the age group of 20 to 40 years; available during data collection and who were able to understand and speak Hindi, an Indian language.

Exclusion criteria
The study excluded young women with Gynaecological problems such as uterine fibroids, dysfunctional uterine bleeding, prolapsed uterus, and having any surgical incision; pregnant women or women up to 6 weeks' postpartum period.

Ethical considerations The review board and ethics committee of NIMS University granted formal ethical approval. Women were requested to sign up willingly. The consent form included explanations of the study's goals, its advantages, and the time required to put the Nurse – Led intervention into practice. Women who accepted to take part in the study had the option to stop at any point. Participants' names and other identifying information were not gathered. The data collection forms were coded, and only the study's researchers had access to the information gathered.

Data collection instruments Socio-demographic information, clinical profile, and WHO Asian Pacific Body Mass Index (BMI) Scale and structured reproductive-health rating scale were the tools used in the study. The following BMI classification was used to determine the BMI of the study participants.

Nutritional status	BMI (Kg/m^2)
Underweight	< 18.5
Normal range	18.5- 22.9
Overweight	23-24.9
Obese I	25- 29.9
Obese II	> 30

Description of Nurse-led Intervention

The two key components of this approach were diet and exercise. It was an organized training regimen created with a physiotherapist's assistance. To lower body fat, the following floor exercises were used: Plank: 30 seconds x 5 sets of five repetitions of the leg raise exercise. Holding the leg at a 45-degree angle for five sets of 20 to 30 seconds in a side plank. Knee chest exercise: five sets of 10- to 15-reps. 3 sets of 10-15 sit-ups.

Walking: Brisk walking for 10 minutes every day and gradually increases the time from 10 to 30 minutes.

For a period of 24 weeks, the investigator observed the exercises for 30 minutes per day, three times per week. They were then encouraged to repeat these exercises on their own for the following 12 weeks.

Diet: The structured Nurse-led intervention included the number of calories recommended by ICMR 2010 (i.e., 25 kcal/kg/day for BMR plus energy for daily physical activity plus energy for SDA) (7). According to their pre-study weight and BMI, it was recommended. For obese young women, a diet plan (usually 1200–1500 kcal/day) was suggested. This consisted of cereals every day, pulses every day, meat with an egg, vegetables with green leaves and skimmed milk, sprouts and salads, and snacks at 4 o'clock that included fruit and sugar-free biscuits. Additionally, it was advised to keep sugar consumption to a minimum and limit oil intake to 20 grams per day. There were pulses and legumes in the vegetarian diet. and advised to consume at least 2000 liter of drinking water each day. To prove the regular practise, a practise journal was kept. Every seven days, subjects were followed up with via phone.

Data collection procedure

The chief medical officer and block medical officer gave their prior approval, and the participants gave their consent. Before the intervention began, the baseline characteristics of the individuals were noted. 300 obese young women were chosen for the trial after the Pre interventional BMI evaluation. 150 of them were included in the study, while 150 were placed in the control group.

By determining the young woman's height and weight, the BMI of the person was calculated. A stadiometer that can measure with an accuracy of 0.1 cm was used to measure height. The young lady was made to stand without shoes, with her feet parallel, her heels, buttocks, and occiput touching the measuring rod, her hands hanging by her sides, and her head kept pleasantly upright. With a 100 gm precision, weight was determined using a portable balance instrument. Young women were instructed to stand on balance with their feet apart, barefoot, and looking straight ahead.

After the pre-test, the obese young women in the study group were taught about the nurse-led intervention The exercise was demonstrated to the study group by the investigator. The exercise session was conducted in a public hall. The investigator remained with the young women while they completed the questionnaire and answered the questions. It took 30-35 minutes to collect the pre-test data from each sample. After the pre-test, no specific attention was given to the participants of the control group. The participants of the study group received Nurse led intervention. However, the participants of control group received the Nurse led intervention after the post test was conducted for both the study and control group considering the principle of beneficence.

Data analysis

Statistical Package for the Social Sciences version 16 software (SPSS Inc., 2012) was used for the data analysis. The student's independent t-test was used to compare values between the study and control groups. The chi-square test was used for determining association between the variables. A P-value less than 0.05 was considered to be statistically significant.

Results

Demographic Distribution of the subject among young women in Experimental and Control Groups.

S.No.	Criteria	Controlled Group		Experimental Group		p-value	X2
		Frequency=n	Percentage%	Frequency=n	Percentage%		
1	AGE						
a	20-25 years	40	26.66	43	29	0.9	0.96 (NS)
b	26-30 years	38	25.33	35	23		
c	31-35 years	39	26	37	25		
d	36-40 years	33	22	35	23		
2	EDUCATION QUALIFICATION						
a	No formal education	10	6.66	8	5	0.95	5 (NS)
b	Primary School	44	29.33	42	28		
c	Middle school	32	21.33	36	24		
d	High School	50	33.33	40	27		
e	Intermediate	10	6.66	20	13		
f	Graduation	4	2.66	4	3		
3	TYPE OF FAMILY						
a	Nuclear	2	2	1	1	0.95	1.41 (NS)
b	Joint	148	98	149	99		
c	Extended	0	0	0	0		
4	FAMILY INCOME (RS PER MONTH)						
a	Below Rs. 10,000	11	7.3	10	7	0.7	3.8 (NS)
b	Rs.10, 001-Rs.20, 000	52	34.66	55	36		
c	Above Rs. 20,000	87	58	85	57		
5	AGE OF MENARCHE						
a	10 years	15	10	12	8	0.95	2.6 (NS)
b	11years	24	16	28	19		
c	12 years	52	34.66	60	40		
d	13 and above years	59	39.33	50	33		
6	METHOD OF CONCEIVING						
a	Natural conception	76	50.6	108	72	0.95	1.46 (NS)
b	Conceived by treatment	37	24.6	24	16		
c	Not yet conceived	37	24.6	18	12		
7	HORMONAL CONTRACEPTIVE USE						
a	Yes	97	64	98	66	0.7	2.8 (NS)
b	No	53	36	52	34		
8	PARITY						
a	Nullipara	22	15	23	15	0.7	4.8 (NS)
b	First	54	36	55	37		
c	Second	58	38	58	39		
d	Third and above	16	11	14	9		
9	FAMILY HISTORY OF OBESITY						
a	Yes	27	18	30	20	0.8	1.4 (NS)
b	No	123	82	120	80		
10	MEAL FREQUENCY PER DAY						
a	Two times	25	17	26	18	0.9	2.13 (NS)
b	Three times	49	33	50	33		
c	More than four times	76	50	74	49		
11	TYPE OF FOOD CONSUMED						
a	Vegetarian	32	22	32	22	0.8	2.9 (NS)
b	Non-vegetarian	92	61	93	62		
c	Egg vegetarian	26	17	25	16		
12	FAST FOOD CONSUMPTION (JUNK FOOD)						

a	Once a week	15	10	15	10	0.9	1.19 (NS)
b	Two times a week	71	47	71	47		
c	more than three times	64	43	64	43		
13	**PERFORMING EXERCISES**						
a	Yes	6	4	9	6	0.7	2.01 (NS)
b	No	144	96	141	94		
14	**PRESENT LIFESTYLE PATTERN**						
a	Sedentary	106	70	106	70	0.7	3.19 (NS)
b	Moderately	35	24	33	22		
c	Active	9	6	11	8		
15	**SLEEP DURATION**						
a	More than 8 hours	40	26	42	28	0.8	1.5 (NS)
b	Less than 8 hours	110	74	108	72		
16	**Smoking habit**						
a	Yes	13	8	14	9	0.7	1.78 (NS)
b	No	137	92	136	91		

The baseline values were not significantly different between the study and control groups for any of the demographic variables, including age (P=0.96), educational qualification (P=5), type of family (P=1.41), family income (P=3.8), Age of menarche (P=2.6), method of conceiving (P=1.46), Hormonal contraceptive use (P=2.8), parity (P=4.8), family history of obesity (P=1.4), meal frequency per day (P=2.13), types of food consumed (P=2.9), fast food consumption (P=1.19), performing exercises (P=2.01), present lifestyle pattern (P=3.19), sleep duration (P=1.5), and smoking habits (P=1.78) (Table 1).

Distribution of sample according to the Reproductive Health Status (Controlled Group and Study Group)

S.No.	REPRODUCTIVE HEALTH STATUS	PRE SCORE				12TH WEEK				24TH WEEK			
		Control group		Study group		Control group		study group		Control group		study group	
		F	%	F	%	F	%	F	%	F	%	F	%
1	Mild Reproductive health issues	5	3	38	25	5	3	7	5	5	3	0	0
2	Moderate Reproductive health issues	44	30	51	34	43	29	89	59	49	33	22	15
3	Severe Reproductive health issues	74	49	56	37	69	46	45	30	69	46	2	1
4	No reproductive health issues	27	18	5		33	22	9	6	27	18	126	84

The Pre score maximum reading from the Severe Reproductive health issues was 49%, and 37% in the study group followed by 30% in the control group and 34% study group reading was from Moderate Reproductive health issues, then No reproductive health issue 18% and 33% from the study group and least reading was from Mild Reproductive health issues that were 3%   and 3% from study group respectively.

at 24th -week readings maximum reading was from Severe Reproductive health issues 46% and 1% from the study group, followed by 33% and 15% from the study group reading was from Moderate Reproductive health issues, then No reproductive health issues were 18% and 84% from the study group and least reading was from Mild Reproductive health issues that were 3% and 0 from study group respectively.

Comparison of Reproductive Health Status (Controlled Group at 12th week and 24th week)

S.No.	Test	Mean	Mean Difference	SD	t-value	Inf.
1	Pre-test	15.65	0.16	±4.172	0.33	NS
	Post-test (12th week)	15.49				
2	Pre-test	15.65				
	Post-test (24th week)	14.85	0.8	±0.49	1.61	NS

* NS=Non-Significant

By using the t-test method with a 0.05% significance level, the pre-test and post-test reproductive health status of the control group at the 12th week were statistically compared.
The non-significant difference between the two conditions occurred when the estimated value of t (0.33) was smaller than the table value (1.98), demonstrating the ineffectiveness of blended learning on the test results for reproductive health status and the same at the 24-week mark.

Comparison of Reproductive Health Status (Study Group at 12th week and 24th week)

S.No.	Test	Mean	Mean Difference	SD	t-value	Inf.
1	Pre- test	15.27	3.55	±0.578	6.14	HS
	Post- test (12th week)	11.72				
2	Pre- test	15.27				
	Post- test (24th week	3.9	11.37	±4.26	23.12	HS

*HS=Highly Significant

The t-test method with a 0.05% level of significance was used to statistically compare the study group's pre- and post-test reproductive health status. The benefit of blended learning on the test Reproductive Health Status scores at the 12th and 24th week was demonstrated the estimated value of t (6.14) was greater than the table value (1.98).

Comparison of sample according to the Reproductive Health Status (Controlled Group and Experimental Group 24th week)

S.No.	Body Mass Index	Control Group 24TH WEEK		Experimental Group 24th WEEK	
		F	%	F	%
1	Mild Reproductive health issues	5	3	0	0
2	Moderate Reproductive health issues	49	33	22	15
3	Severe Reproductive health issues	69	46	2	1
4	No reproductive health issues	27	18	126	84
	Mean	14.85		3.9	
	Mean Difference	10.95			
	SD	4.42		2.62	
	SD Difference	1.8			
	T-Test(Calulated)	37.75(S*)			
	T-Test (Tabulated)	1.98			

 S*=Significant at 0.05 Level of Significance

Severe reproductive health issues made up 46% of the readings in the Control Group, compared to 1% in the Study Group. Moderate reproductive health issues made up 33% of the Control Group readings and 15% in the Study Group, and the remaining 18% and 84% of the Study Group readings were from participants who had no reproductive health issues and 3% and 0 from the Study Group had mild reproductive health issues, respectively.
Additionally, there was a statistically significant difference between the study group and the control group's post-intervention level of reproductive health among young women.

Maximum readings in the Experimental Group were 84% for No Reproductive Health Issues, 15% for Moderate Reproductive Health Issues, 1% for Severe Reproductive Health Issues, and 0 for Mild Reproductive Health Issues, respectively.

Comparison of sample according to the Reproductive Health Status (Controlled Group and Study Group Pre Test)

S.No.	Statement	TEST	ALWAYS		SOMETIME		NEVER		t-Test
			F	%	F	%	F	%	
A.	**REPRODUCTIVE HEALTH PROBLEM**								
1	Do you have the problem of itching at perineal area	Control	43	28.6	49	32.6	58	38.6	3.1 S
		Experimental	63	42	36	24	51	34	
2	Do you have lower abdominal pain not related to menses	Control	48	32	44	29.3	58	38.6	3.6 S
		Experimental	65	43.3	34	22.6	51	34	
3	Do you have burning or painful passage of urine	Control	4	2.6	23	15.3	123	82	3.7 S
		Experimental	22	14.6	38	25.3	90	60	
4	Do you have frequent urination	Control	4	2.6	12	8	134	89.3	5.1 S
		Experimental	19	12.6	41	27.3	90	60	
5	Do you have involuntary escape of urine while coughing or sneezing	Control	5	3.3	36	24	109	72.6	6.1 S
		Experimental	15	10	35	23.3	100	66.6	
B.	**SEXUAL FUNCTION**								
6	Lack of sexual desire or interest	Control	18	12	50	33.3	82	54.6	3.4 S
		Experimental	22	14.6	34	22.6	94	62.6	
7	Lack of satisfaction with your overall sexual life.	Control	15	10	58	38.6	77	51.3	3.7 S
		Experimental	28	18.6	35	23.3	87	58	
8	Do you have difficulty in lubrication (discharge/wet) during sexual activity or intercourse?"	Control	11	7.3	35	23.3	104	69.3	5.3 S
		Experimental	21	14	33	22	96	64	
9	Do you have pain during intercourse	Control	27	18	37	24.6	86	57.3	6.1 S
		Experimental	16	10.6	26	17.3	108	72	
C.	**MENSTRUAL LENGTH**								
10	Is your menstrual length Less than 3 days	Control	82	54.6	6	4	62	41.3	3.3 S
		Experimental	63	42	10	6.6	77	51.3	
11	Do you have your menstrual cycle More than 7 days	Control	0	0	115	76.6	35	23.3	3.9 S
		Experimental	103	68.6	20	13.3	27	18	
D.	**MENSTRUAL CYCLE REGULARITY**								
12	Is your menstrual cycle (< 28days)	Control	90	60	4	2.66	56	37.3	5.1 S
		Experimental	72	48	11	7.33	67	44.6	
13	Is your menstrual cycle (>35days)	Control	112	74.6	1	0.66	37	24.6	6.3 S
		Experimental	107	71.3	21	14	22	14.6	

S*=Significant at 0.05 Level of Significance

Comparison of sample according to the Reproductive Health Status (Controlled Group and Experimental Group 24th week Test)

S.No.	Statement	TEST	ALWAYS		SOMETIME		NEVER		t-Test
			F	%	F	%	F	%	
A.	**REPRODUCTIVE HEALTH PROBLEM**								
1	Do you have the problem of itching at perineal area	Control	51	34	51	34	48	32	5.1 S
		Experimental	2	1.33	15	10	133	88.6	
2	Do you have lower abdominal pain not related to menses	Control	52	34.6	47	31.3	51	34	3.7 S
		Experimental	1	0.66	14	9.3	135	90	
3	Do you have burning or painful passage of urine	Control	97	64.6	43	28.6	10	6.6	3.9 S
		Experimental	4	2.6	42	28	104	69.3	
4	Do you have frequent urination	Control	98	65.3	42	28	10	6.6	8.8 S
		Experimental	4	2.6	46	30.6	100	66.6	
5	Do you have involuntary escape of urine while coughing or sneezing	Control	103	68.6	40	26.6	7	4.66	8.9 S
		Experimental	7	4.66	53	35.33	90	60	
B.	**SEXUAL FUNCTION**								
6	Lack of sexual desire or interest	Control	77	51.3	58	38.6	15	10	9.2 S
		Experimental	15	10	65	43.3	70	46.6	
7	Lack of satisfaction with your overall sexual life.	Control	70	46.6	69	46	11	7.3	10.1 S
		Experimental	13	8.6	59	39.3	78	52	
8	Do you have difficulty in	Control	76	50.6	61	40.6	13	8.6	2.7

	lubrication (discharge/wet) during sexual activity or intercourse?"	Experimental	9	6	50	33.3	91	60.6		S
9	Do you have pain during intercourse	Control	80	53.3	58	38.6	12	8		7.9 S
		Experimental	12	8	53	35.3	85	56.6		
C.	**MENSTRUAL LENGTH**									
10	Is your menstrual length Less than 3 days	Control	61	40.6	6	4	83	55.3		9.4 S
		Experimental	12	8	4	2.6	134	89.3		
11	Do you have your menstrual cycle More than 7 days	Control	35	23.3	0	0	115	76.6		8.3 S
		Experimental	2	1.3	1	0.66	147	98		
D.	**MENSTRUAL CYCLE REGULARITY**									
12	Is your menstrual cycle (< 28days)	Control	49	32.6	4	2.6	97	64.6		4.1 S
		Experimental	10	6.6	3	2	137	91.3		
13	Is your menstrual cycle (>35days)	Control	38	25.3	0	0	112	74.6		11.1 S
		Experimental	1	0.66	4	2.66	145	96.6		

S*=Significant at 0.05 Level of Significance

DISCUSSION :

The present study has thrown light into the current scenario of the burden of obesity in Indian context. In India, obesity and overweight have been on rise over the years and have surpassed the global average [9] This study examined the reproductive health problems among young Indian women. Reproductive health problems like itching or irritation, pain or burning sensation while urinating ,and menstrual irregularities were found considerably higher among obese women. Our results commensurate with the findings of other studies conducted by Praween Agrawal (8) suggested Itching or irritation was reported by 12% Pain or burning while urinating was reported by 6% Pain during intercourse was also reported by a relatively higher percentage of obese women (6%) compared to less than 3% among overweight and normal women. [9]. There is an extensive literature on the reproductive health risks associated with overweight and obesity with a little or no empirical evidence for the developing countries.in a another studies .Swaarere (9) concluded that Twenty-six percent of women reported no sexual desire and 33% of women reported no sexual activity. About half of women (49%) were moderately or very dissatisfied with their sexual life. Physical health limited sexual activity at least moderately in 38% of women . According to Mahboobeh Kafaei-Atrian, the average age of students was 21/295 (or approximately 1/585 persons), and the average menstrual cycle lasted 3–7 days (87/2%, or 218 people). No participant's menstrual bleeding lasted less than three days, and 32 participants (12/800%) had bleeding that lasted longer than seven days. Menstrual cycle timing was found to be significantly correlated with obesity(10). Shuying Wei , Mustaqeem et al., stated that An irregular menstrual cycle was substantially correlated with both total and central obesity(11,12). Obesity has been linked to increased testosterone and decreased sex hormone-binding globulin (SHBG) in both central and peripheral adiposity.A population-based study that included 611 women between the ages of 25 and 50 examined the relationships between testosterone levels and body composition and discovered a favourable dose-response connection.Higher testosterone levels have been linked to polycystic ovary syndrome, a condition characterized by irregular menstrual cycles and ovulatory failure.In obese women with amenorrhea or oligomenorrhea, clinical trials have also revealed higher total and free testosterone levels and lowered sex hormone-binding globulin .These findings imply that the development of menstrual irregularity in obese women may be significantly influenced by testosterone and sex hormone-binding globulin (13).

In order to help young women who are overweight and obese and are experiencing issues with their reproductive health, the researchers advise healthcare professionals and health systems to promote healthy lifestyle modifications.

Limitations of the study

While assessing the results of this study, there are a few things that should be kept in mind.In order to quantify overweight and obesity among young women in India, the study first took simply the

subjects' weight and height into account.Second, the survey only gathered a limited amount of data on dietary habits, physical activity, and lifestyle.Future research that cover these topics in greater detail may aid in better understanding the factors that contribute to overweight and obesity.

Conclusion: The Nurse-Led Reproductive Health Intervention, according to the authors, has significantly decreased young women's reproductive health difficulties. In order to help women achieve good energy, both physically and emotionally, the researcher suggests a combination of exercise and a balanced diet. Such programs can significantly impact young obese women and help to stop the growing obesity and reproductive health issue. The freedom, happiness, and energy it brings can be enjoyed and experienced by women who regularly exercise and follow a balanced diet and exercise routine.   This research demonstrates that Nurse – Led intervention can be used as a complementary therapy to help young obese women to improve their lifestyles and reproductive health.

Recommendations
The author recommends comparing the impact of a lifestyle modification intervention on reproductive health in young rural and urban women, the authors advise conducting the same trial with a bigger sample and in an urban setting.
Future research can be done to evaluate the effectiveness of Nurse-Led interventions on young women's reproductive outcomes.

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