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Promotion of Girls Reproductive Knowledge Through a Health Camp Intervention

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Purpose: The importance of preconception understanding and monitoring of the female reproductive system is supported by the American College of Obstetricians and Gynecologists and the American Academy of Pediatrics. These organizations recommend that the evaluation of menstrual cycles should be included with an assessment of other vital signs, and that adolescent girls should be educated about normal menstrual cycles and the charting of the cycles (1). In addition, two of the goals of preconception care are to improve the knowledge, attitudes, and behaviors of women related to preconception health, and to reduce the disparities in adverse pregnancy outcomes (2). Women's general knowledge of the reproductive system, menstrual cycle, and its associated changes is needed for effective reproductive planning before pregnancy occurs. It is essential to start this education early, especially considering that the life course approach has been identified as one of the possible ways to address health disparities among ethnic minority women and promote reproductive health and positive birth outcomes (3-6). This study examined whether a one-week health camp integrated with reproductive health sessions can improve the girls' knowledge of ovulation, menstrual cycle and some of the negative consequences of sexually transmitted infections.

Methods: This is a simple descriptive pre- and post-assessments survey used to determine the impact of the HEALTH camp intervention. This study was guided by the Robert Wood Johnson Foundation (RWJF) Culture of Health Action Framework, with a focus on the first Action, which is to make health a shared value, with a driver of creating a mindset and expectations that value health promotion and well-being. The camps included two one-week health promotion day camps designed for young girls ages 9 -15 years from low socioeconomic and diverse racial backgrounds in an urban medically underserved area. The camps focused on promoting a culture of health, educating girls about their bodies, leadership, and the health professions. Week 1 included 49 girls ages 9 – 12 years, and week 2 included 42 girls ages 12-15 years, with a total of 91 girls who participated in the post-camp surveys. The reproductive health content span two sessions. Session 1 is on female reproductive anatomy and physiology, the female hormones, puberty and its associated changes. Session 2 focused on the importance of reproductive health for girls and young adults, including female hygiene due to the physiological changes associated with puberty such as body odor, use of menstrual pad, tampon, changes in PH and common body discharges associated with puberty. In addition to these, the older girls in week 2, are taught about risk and consequences of Sexually Transmitted Infections (STIs) such as HIV/AIDs, Chlamydia, genital warts etc. as well as how to be safe and prevent STI using the acronym ABC (Abstain, Be faithful, & use Condoms).

Results: The 91 girls from the two weeks did not know the life span of a woman's egg. In week 1, there was a significant increase ($p < 0.01$) in the girls' knowledge in 7 out of 8 questions on reproductive anatomy and physiology such as functions of the fallopian tubes, ovaries, uterus, ovulation, number of eggs released per month. In week 2, there was a significant increase ($p \leq 0.01$) in the older girls' (12-15 years) knowledge of reproductive anatomy and physiology, and sexually transmitted infections (7 out of 13 questions). Post-camp result shows that 83.3% of the girls knew the number of eggs released by a woman per month (versus 55% during pretest). Only 42.5% knew that fallopian tubes are needed for having a baby during pretest, but this significantly increased to 76.2% at post-test ($p = 0.00$). Pretest, some did not know the average number of days for a regular menstrual cycle (40%), what ovulation is (44%),

the ovulation timing (70%), the number of eggs released from an ovary each month (45%). During posttest, 71.4% (versus 37.5% pretest; $p=0.00$) knew that if a woman gets a STI that is caused by a virus, she will have that disease for the rest of her life, 83.3% (versus 52.5% pretest; $p=0.00$) STI's can cause cancer in your cervix.

Conclusion: Adolescent girls' knowledge about their reproductive health, namely, ovulation and ovulation time, menstrual cycle and some of the negative consequences of STIs can be improved in a one-week health promotion day camps. Nurses and health professionals need to avail of different community settings to equip young adolescents with relevant reproductive information to promote reproductive and sexual health.

Title:

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Keywords:

Adolescent girls, Health promotion and Reproductive Knowledge

References:

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Abstract Summary:

Two one-week health promotion day camps on promoting a culture of health and educating girls aged 9-15 years about their bodies was effective in increasing girls' knowledge about their reproductive health, namely, ovulation and ovulation time, menstrual cycle and some of the negative consequences of sexually transmitted infections.

Content Outline:

1. **Introduction/Background**

1. The importance of focusing on health promotion and reproductive health among the young people
 1. Knowledge of reproductive system and risk of unintended pregnancy
 2. Unintended pregnancy and its consequences
 3. Importance of starting reproductive and sexual health discussion early

2. **Objective of the study:** This study examined whether a one-week health camp integrated with reproductive health sessions can improve the girls' knowledge of ovulation, menstrual cycle and some of the negative consequences of sexually transmitted infections.
3. **Methods**
 1. Design- This is a simple descriptive study which employs a pre- and post-assessments approach to determine the impact of the HEALTH camp intervention among young girls.
 2. Framework: guided by the Robert Wood Johnson Foundation (RWJF) Culture of Health Action Framework, with a focus of the first Action, which is to make health a shared value, with a driver of creating a mindset and expectations that value health promotion and well-being (RWJF, 2016).
 3. Sample- A convenience sample of 100 girls, ages 9-15 years mostly from low socio-economic and diverse racial backgrounds. These girls were recruited to participate in a one-week day HEALTH camp from June 19 to 30, 2017.
 4. Present the schedule and detailed content for the HEALTH camps
 5. Present the content of reproductive sessions of the HEALTH camps
 6. Present the data collection process- The pretest survey was completed at the beginning of the camp, on the first day and the post-test survey at the completion of the camp, on the last day. To reduce participants' burden, the survey questions are few, short and specific to the content.
 7. Data Analysis: Used simple uni-variate and bi-variate analyses. Results will be presented in percentages, means, and chi-square test for bi-variate analyses. The test for statistical significance in difference of pretest and post-test percentage of correct answers is made at the 5% level of significance with the standard difference in proportions test for the following.
4. **Results:** Present Results from the analyses of the camps

For 12-15 years

Ovulation usually occurs 14-16 days before the onset of the next menstrual cycle.

	Pretest		Post-test	
	Frequency	Percentage	Frequency	Percentage
Yes	12	30.0	33	78.6
No	4	10.0	5	11.9
Don't know	24	60.0	4	9.5
Total	40	100.0	42	100.0

There is a statistically significant difference between the percentage answering correctly from pretest to post-test. P-value = 0.00

A woman releases one egg from her ovary every month.

	Pretest		Post-test	
	Frequency	Percentage	Frequency	Percentage

Yes	22	55.0	35	83.3
No	8	20.0	6	14.3
Don't know	10	25.0	1	2.4
Total	40	100.0	42	100.0

There is a statistically significant difference between the percentage answering correctly from pretest to post-test. P-value = 0.01

A woman's egg lives for only 1 day.

	Pretest		Post-test	
	Frequency	Percentage	Frequency	Percentage
Yes	5	12.5	11	26.2
No	16	40.0	19	45.2
Don't know	19	47.5	12	28.6
Total	40	100.0	42	100.0

There is no statistically significant difference between the percentage answering correctly from pretest to post-test. P-value = 0.12

Fallopian tubes are needed for having a baby.

	Pretest		Post-test	
	Frequency	Percentage	Frequency	Percentage
Yes	17	42.5	32	76.2
No	6	15.0	5	11.9
Don't know	17	42.5	5	11.9
Total	40	100.0	42	100.0

There is a statistically significant difference between the percentage answering correctly from pretest to post-test. P-value = 0.00

Ovulation is when a matured egg is released from the woman's ovary.

	Pretest		Post-test	
	Frequency	Percentage	Frequency	Percentage
Yes	22	56.4	35	83.3
No	1	2.6	4	9.5
Don't know	16	41.0	3	7.1
Total	39	100.0	42	100.0

There is a statistically significant difference between the percentage answering correctly from pretest to post-test. P-value = 0.01

A woman's menstrual cycle (from the beginning of one period to the beginning of the next one) is between 20 and 36 days.

	Pretest		Post-test	
	Frequency	Percentage	Frequency	Percentage
Yes	24	60.0	38	90.5
No	6	15.0	3	7.1
Don't know	10	25.0	1	2.4
Total	40	100.0	42	100.0

There is a statistically significant difference between the percentage answering correctly from pretest to post-test. P-value = 0.00

Menstrual blood flow (your period) could last 2-8 days.

	Pretest		Post-test	
	Frequency	Percentage	Frequency	Percentage
Yes	37	92.5	42	100.0
No	2	5.0	0	0.0
Don't know	1	2.5	0	0.0
Total	40	100.0	42	100.0

There is no statistically significant difference between the percentage answering correctly from pretest to post-test. P-value = 0.07

If a woman gets a sexually transmitted infection (STI) that is caused by a virus, she will have that disease for the rest of her life.

	Pretest		Post-test	
	Frequency	Percentage	Frequency	Percentage
Yes	15	37.5	30	71.4
No	7	17.5	10	23.8
Don't know	18	45.0	2	4.8
Total	40	100.0	42	100.0

There is a statistically significant difference between the percentage answering correctly from pretest to post-test. P-value = 0.00

STI's can cause cancer in your cervix.

	Pretest		Post-test	
	Frequency	Percentage	Frequency	Percentage
Yes	21	52.5	35	83.3
No	2	5.0	6	14.3
Don't know	17	42.5	1	2.4
Total	40	100.0	42	100.0

There is a statistically significant difference between the percentage answering correctly from pretest to post-test. P-value = 0.00

STI's can cause heart disease.

	Pretest		Post-test	
	Frequency	Percentage	Frequency	Percentage
Yes	3	7.5	7	16.7
No	19	47.5	28	66.7
Don't know	18	45.0	7	16.7
Total	40	100.0	42	100.0

There is no statistically significant difference between the percentage answering correctly from pretest to post-test. P-value = 0.08

5. Discussion and Nursing Implications

1. Discuss preventive actions related to the result of the study- Providing opportunities for comprehensive reproductive health discussions/plans during annual physical exam visit to the clinic.
2. Discuss future research recommendations to continue to develop this area of research.

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Author Summary: Dr. Ayoola is an associate professor at Calvin College Department of Nursing. She has mentored many undergraduate students in research. In the last three years, she trained over 180 undergraduate nursing students to deliver an educational intervention in Grand Rapids. She is the Principal Investigator on an ongoing randomized control trial to promote women's reproductive knowledge in low-income medically underserved neighborhoods, funded by Robert Wood Johnson Foundation Nurse Faculty Scholar Program (2012-2015).

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