

# Effectiveness of instructional module on knowledge, perception on early menarche among adolescent girls – A Pilot study

Motcha Rakkini L<sup>1</sup>, Hema V.H<sup>2</sup>

<sup>1</sup> Ph.D Scholar cum Professor, Faculty of Nursing, Dr. M.G.R. Educational and Research Institute

Email.ID: [motcharakkinil.nurse@drmgrdu.ac.in](mailto:motcharakkinil.nurse@drmgrdu.ac.in)

<sup>2</sup>Research supervisor cum Principal, Faculty of Nursing, Dr. M.G.R. Educational and Research Institute

## Abstract

**Introduction:** Menarche is the first menstrual bleeding in humans. The aim of the study was to determine the effectiveness of instructional module on knowledge, perception on early menarche among adolescent girls. **Methods:** A pre-experimental one group pre and post-test research design of 15 adolescent girls by non-probability purposive sampling technique. A structured knowledge questionnaire and five-point rating scale was administered. **Results:** Among 15 adolescent girls, in pre-test 66.7% had moderately adequate and 33.3% had insufficient amount of knowledge. In post-test 60% had fairly sufficient and 40% had sufficient amount of knowledge. In pre-test 73.3% had moderate and 26.7% had good level of perception. In post-test 60% had good and 40% had moderate level of perception. **Conclusions:** The instructional module had a greater impact on enhancing the knowledge, perception on early menarche among adolescent girls.

**Keywords:** Knowledge, Perception, Early Menarche, Adolescent Girls

## 1. Introduction

In the era between childhood and adulthood known as adolescence, pubertal development and sexual maturation take place [1]. Menarche is the term used to describe the first menstrual cycle or first menstrual bleeding in humans. From a social and medical standpoint, it is frequently seen as the key moment in the development of female puberty because it denotes the potential for conception. Menstruation is the uterine endometrium's monthly vaginal bleeding that occurs at intervals of around 28 days. Menstrual blood has a dark colour and ranges in volume from 60 to 150 ml. typically, it lasts for four to five days [2].

Menarche is a midlife health outcome that has an impact on a woman's wellbeing later in life. In clinical terms, the age at menarche is crucial for the diagnosis of pathological and hormonal problems, as well as delayed puberty. One of the few known risk factors for breast cancer is an early menarche. Overweight and the metabolic syndrome have both been linked to it. Additionally, because it might cause earlier beginning of sexual activity, it indirectly poses a public health risk [3].

There are an estimated 1.2 billion adolescents globally, who make up around 21% of the Indian population. Precocious puberty affects 1 in 5000 children today, with girls being affected 10 times more frequently than boys. In India, premature puberty is unknown to 90% of mothers and 80% of adolescent girls [4]. The average age of menarche in India is 13.4 years, although 50% of girls between the ages of 12 and 15 do not know what menstruation is.

Menarche is shrouded in secrecy, which accounts for the paucity of knowledge [5].

In order to avoid the negative impacts of poor menstrual hygiene practises, which can result in cancer, toxic shock syndrome, miscarriages, infertility, and reproductive tract infections, learning about menstruation hygiene is an essential component of health education. The majority of teenage girls find it awkward to talk about their periods, thus they don't have access to enough information about this taboo topic. Furthermore, a girl's daily activities are further hampered by her ignorance, which also has an impact on her college attendance and, ultimately, her academic achievement. In order to directly impact the prevalence of sexually transmitted diseases and reproductive tract infections in primary care settings, teenage girls in a given community must have adequate awareness about menstruation and menstrual hygiene [6]. Hence, the current research focused to exhibit the efficacious of instructional module on knowledge, perception on early menarche among adolescent girls.

## 2. Materials & Methods

**Design:** This study opted pre-experimental one group pre and posttest approach. **Sample size:** A sample of 15 adolescent girls who attained menarche one year prior to data collection at selected schools in Chennai. **Sampling technique:** Nonprobability purposive sampling technique was used to select the sample [1].

**Data collection Process:** The formal permission obtained from the concerned authorities. Ethics

approval was obtained from the Institute Ethical Committee (IEC). The study objective was described to adolescent girls. Demographic variables were collected using interview schedule. Structured Knowledge questionnaire are used for assessing the knowledge on early menarche and five point rating scale are used for assessing the perception on early menarche. After one month of instructional module intervention, post-test was assessed the effectiveness knowledge, perception on early menarche among adolescent girls. The data were evaluated by means of descriptive statistics and inferential statistics. All the statistical analysis were carried out at 5% level of significance with P-value <0.05.

### 3. Results

Out of the 15 adolescent girls who were interviewed, Majority 7 (46.7%) were in the age group 11 and 12 years, 11(73.4%) age at onset of menarche in 10 years, 8 (53.3%) have one sibling, 11 (73.3%) under nuclear family, 12 (80%) followed Hindu religion, 7 (46.7%) father studied high school, 6 (40%) mother studied high school, 8 (53.3%) were first birth order of child, 9(60%) family monthly income rs.10001-50000, 15 (100%) belongs urban, 11 (73.3%) of mother and father was respondents living arrangements and 8 (53.3%) received Sources of information regarding menarche through mother. In pre-test majority of the adolescent girls 10 (66.7%) had moderately adequate and 5 (33.3%) had inadequate level of knowledge. In post-test most of the adolescent girls 9 (60%) had fairly sufficient and 6 (40%) had sufficient level of knowledge. (Figure 1)

Pretest and posttest level of Knowledge on early menarche among adolescent girls

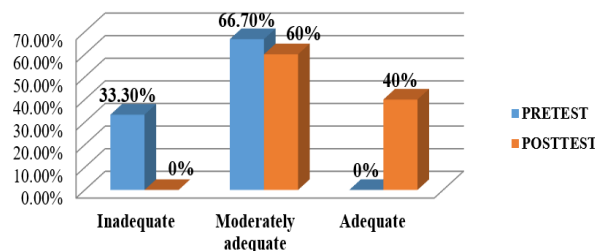


Figure 1: Frequency and percentage wise distribution of pretest and posttest level of Knowledge on early menarche among adolescent girls

In pre-test majority of the adolescent girls 11 (73.3%) had moderate and 4 (26.7%) had good level of perception. In post-test majority of the adolescent girls 9 (60%) had good and 6 (40%) had moderate level of perception. (Figure 2)

Pretest and posttest level of perception on early menarche among adolescent girls

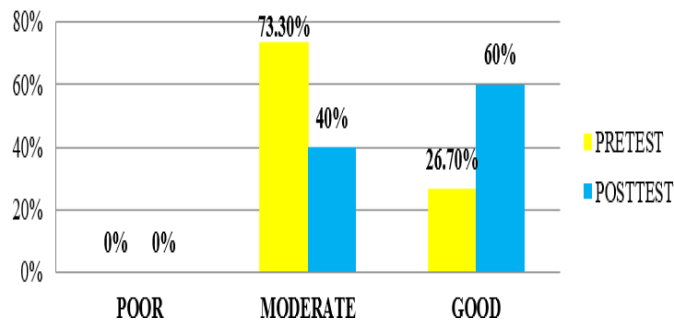


Figure 2: Frequency and percentage wise distribution of pretest and posttest level of perception on early menarche among adolescent girls

Effectiveness of instructional Module		MEAN	STANDARD DEVIATON				
Knowledge	Pretest	10.73	3.239	-5.666	-5.906	14	0.000** HS
	Posttest	16.4	2.585				
Perception	Pretest	37.8	4.945	-2.666	-1.367	14	0.193 NS
	Posttest	40.46	5.578				

NS-Non-significant\* \*p < 0.001 Highly significant

The knowledge score calculated paired 't' test value of t = -5.906 shows statistically highly significant difference between comparison of the effectiveness of instructional module on knowledge on early menarche among adolescent girls. The perception Correlation between pretest knowledge and perception indicates the positive correlation which shows the pearson correlation r- value is (0.246), p-value is (p=0.377) are statistically not significant. Correlation between posttest knowledge and perception indicates the positive correlation which shows the pearson correlation r- value is (0.051), p-value is (p=0.858) are statistically not significant. The demographic variable had not shown statistically significant association between pre-test level of

score calculated paired 't' test value of t = -1.367 shows statistically not significant difference between comparison of the effectiveness of instructional module on perception on early menarche among adolescent girls. (Table 1) knowledge and perception on early menarche among adolescent girls at p 0.05.

### 4. Discussion

Nearly one-half of children born in the early 2000s reached menarche before the age of 12 years. Despite the fact that the proportion of children with age at menarche less than 12 years reached a record high, the odds of un healthy diet, high psychological stress, and sexual initiation were still higher in girls

who reached menarche at the age of 10 or 11 years compared to those with age at menarche more than 12 years. This high rate of early menarche is assumed to mainly due to greater availability of fast food and subsequent overweight in early childhood in recent generations. Higher and fluctuating levels of reproductive hormones occurring at the time of menarche may cause more physical and psychological changes.

So, the present study is a pre-experimental one group pre and posttest research design, a total 15 adolescent girls were selected by non-probability purposive sampling technique. The aim of the study was to evaluate the effectiveness of instructional module on knowledge, perception on early menarche among adolescent girls. Considering the distribution of samples based on their demographic variables, 46.7% have being in the age group of 11 and 12 years, 73.4% age at onset of menarche in 10 years, 53.3% had one sibling, 73.3% belong nuclear family, 80% followed Hindu, 46.7% father studied high school, 40% mother studied high school, 53.3% were first birth order of child, 60% family monthly income rs.10001-50000, 100% belongs urban, 73.3% of mother and father was respondents living arrangements and 53.3% of Sources of information regarding menarche through mother.

The first objective of the study was to assess the pre and post-test knowledge and perception on early menarche among adolescent girls shows in pre-test 66.7% had fairly sufficient and 33.3% had insufficient level of knowledge. In post-test 60% had fairly sufficient and 40% had sufficient level of knowledge. In pre-test 73.3% had moderate and 26.7% had good level of perception. In post-test 60% had good and 40% had moderate level of perception. This finding of the present study was supported by the study conducted by S Kala Barathi et al., (2020) showed that in pre-test, 26% had inadequate, 64% had moderate and 10% have adequate knowledge. In post-test, 80% had adequate, 20% had moderate and none had inadequate knowledge among pre-adolescent girls [7]. Another supportive study was conducted by Charmaine Crystal Salins et al., (2018) shows Out of 200 teenagers, 88% had average understanding, 95.5% had negative perceptions, and 52.5% were ready for menarche in the majority of cases. Adolescents have suffered as a result of social bans and limits on participating in religious rites, which have also prevented them from accessing the appropriate information [8]. A study was conducted by Jaya John Varghese (2021) shows that at 12 years old, the age group had the highest percentage (46%) and the lowest percentage (4%). When compared to other topics on the pre-test, the students' knowledge of menstruation was lower (61.6%). Their knowledge expanded (82.2%) as a result of the health education. Therefore, the comparison of the pre-test and post-test yields a knowledge increase of 25.6% [9].

The second objective of the study was to assess comparison of the effectiveness of instructional

module on knowledge and perception on early menarche among adolescent girls shows knowledge paired 't' = -5.906 shows statistically highly significant. The mean knowledge of pre-test score was 10.73 and post-test score was 16.4. The perception paired 't' = -1.367 shows statistically not significant. The mean perception of pre-test score was 37.8 and post-test score was 40.46. This finding is closely in line with the result finding of the study by Sarika Samson et al., (2021) showed the mean knowledge of pre-test score was 11.33 and mean knowledge of post-test score 18.81 [10]. Another supportive study was conducted by Purnima Sahoo et al., (2021) shows as between the pre-test and post-test knowledge score, the estimated t value (13.79) was higher than the tabulated t value (2.00) [11]. A study was conducted by Shweta Handa and Rashmi Negi (2017) shows the average knowledge score before the test was 4.1, and it increased to 16.9 after the test. The majority of adolescents are not familiar with the normal physiology of menstruation. As a child health nurse, it is important that educating children about the complications of early menarche. The use of sanitary pads should be encouraged, and thorough information should be distributed through formal and informal interactions. Teenagers should often learn about reproductive infection and how to prevent it in school [12]. Similarly, L Anusha et al shows the mean knowledge of pre-test score was 20.1 and post-test score was 29.8 [13].

The third objective of the study was to assess the correlation between pretest knowledge and perception indicates the positive correlation r- value 0.246, p-value 0.377 are not significant. Correlation between posttest knowledge and perception indicates the positive correlation r- value 0.051, p-value 0.858 are not significant. A supportive study was conducted by Anugrah Charan (2017) shows adolescent girls' post-test knowledge scores had a 0.28 correlation coefficient [14].

The fourth objective of the study was to assess the pre-test level of knowledge and perception on early menarche among adolescent girls indicates The demographic variable had not shown statistically significant association between pre-test level of knowledge and perception on early menarche among adolescent girls. Similar results noted in a study done by Surya Meenakshy et al., (2018) shown pre-adolescent girls' knowledge level and a few socio-demographic factors did not significantly associate [15]. Another supportive study was conducted by Jyoti kiran Gaikwad et al., (2018) shows their pre-test and post-test knowledge scores have no association with any of the demographic factors [16].

## 5. Conclusion

The study concluded that the instructional module had a greater impact on enhancing the knowledge, perception on early menarche among adolescent girls.

## Acknowledgement

The authors would like to thank the adolescent girls for support to carry out this research.

## 6. Conflicts Of Interest

The authors report no conflicts of interest in this work.

## References

- Thompson S, Compton L. Pharmacologic Treatment of Antidepressant-Induced Excessive Sweating: A Systematic. *Archives of Clinical Psychiatry*. 2021;48(1):57-65. <https://doi.org/10.15761/0101-60830000000279>
- Bhattarai S, Subedi S and Acharya SR. Factors Associated with Early Menarche among Adolescents Girls: A Study from Nepal. *SM J Community Med*. 2018; 4(1): 1028.
- Shivani Sharma, Kiran. B. A Descriptive study to assess the knowledge and preparedness for menarche among pre-adolescent girls studying at selected Schools, of Kurali Punjab. *Int. J. Nur. Edu and Research*. 2019; 7(2):271-275.
- Solanki S, Soni A, Randa V, Choudhary R. A study to determine age at menarche in adolescent schoolgirls of Indore city, M. P. India. *Int J Med Res Rev*. 2021; 9(2):72-77.
- Israel Jeba Prabu. D, Janet Anbumani. W. A Descriptive Study to assess the knowledge regarding early Menarche among school going girls (9-11 years) at Carmel Convent Hr. Sec. School, Kunjwani, Jammu. *International Journal of Nursing Education and Research*. 2022; 10(2):109-2.
- Kusuma ML, Ahmed M. Awareness, perception and practices of government pre-university adolescent girls regarding menstruation in Mysore city, India. *Int J Community Med Public Health* 2016; 3:1593-9.
- Parikh V, Nagar S. Menstrual hygiene among adolescent girls studying in a university of Gujarat. *J Family Med Prim Care* 2022; 11:3607-12.
- S Kala Barathi, Jesintha Esther Rajathi A, Joy Lovis, Kalpana Devi V. A study to assess the effectiveness of structure teaching programme on knowledge regarding eating habits leads to early puberty among pre-adolescent girls residing at Koyembedu. *International Journal of Obstetrics and Gynaecological Nursing* 2020; 2(2): 76-79.
- Charmaine Crystal Salins et al. Knowledge, Perception and Psychosocial Preparedness for Menarche among Adolescent Girls of Udupi District, Karnataka. *Indian Journal of Public Health Research and Development*. 2018; 9(7):13
- Jaya John Varghese. A Study to Assess the Effectiveness of Teaching Program on Knowledge Regarding Pubertal Changes among Pre-pubertal Girls in Selected Urban Schools. *Home*. 2021; 4(1).
- Samson S, Singh Chundawat D, Paliwal H. A study to evaluate the effectiveness of a planned teaching program on the knowledge regarding menarche among pre-pubertal girls at selected high schools in urban area at Udaipur. *Innovare J Med Sci [Internet]*. 2021 Jan. 1; 9(1):1-4.
- Purnima Sahoo et al. Effectiveness of planned teaching program on knowledge regarding menstrual hygiene, use of sanitary pads and its disposal management among the adolescent girls in a selected school, bhubaneswar, odisha. *European Journal of Pharmaceutical and Medical Research*. 2021; 8(2): 448.
- Shweta Handa and Rashmi Negi. Effectiveness of Planned Teaching Programme on menstruation and menstrual hygiene in terms of Knowledge, Attitude & Practice of Adolescent School Girls in a Selected Government School of Delhi. *International journal for innovative research in multidisciplinary field*. 2017; 3(7): 66.
- L Anusha, Radhika M, Indira S. Effectiveness of structured teaching programme on knowledge regarding pubertal changes among pre-adolescent girls. *International Journal of Applied Research* 2015; 1(12): 679-682.
- Anugrah Charan. A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge and Attitude of Adolescent Girls Regarding Menstrual Hygiene Management. *SSRG International Journal of Nursing and Health Science*. 2017; 3(2): 1-6.
- Surya Meenakshy, Saramma. N. B, D. Santhakumari. Effect of Structured Teaching Programme on Knowledge regarding Puberty among Pre-Adolescent Girls. *Asian J. Nursing Education and Research*. 2018; 8(4):519-524.
- Jyoti kiran Gaikwad. A study to assess the effectiveness of planned teaching programme on knowledge regarding menstrual hygiene among adolescent girls in selected school. *IOSR Journal of Nursing and Health Science*. 2018; 7(4): 31-38.