

ORIGINAL ARTICLE

A Study to assess the Effectiveness of Information Booklet Regarding Knowledge of Menstrual Hygiene among Adolescent Girls in Selected School District Surajpur (C.G.)

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ABSTRACT

Background: Menstrual hygiene is a crucial component of adolescent health, particularly in developing countries where cultural taboos, lack of education, and poor access to sanitary products often lead to inadequate menstrual hygiene practices. This can result in serious health consequences such as urinary tract infections, reproductive tract infections, and even long-term complications like pelvic inflammatory disease.

Objectives: The study aimed to assess the effectiveness of an information booklet in improving knowledge regarding menstrual hygiene among adolescent girls in selected high schools in Surajpur district, Chhattisgarh.

Methods: A pre-experimental one-group pre-test post-test design was employed. The study was conducted among 40 adolescent girls aged 12–19 years using a purposive sampling technique. Data were collected through a self-structured knowledge questionnaire. A pre-test was administered, followed by distribution of an information booklet, and a post-test was conducted after 7 days. Statistical analysis included descriptive (mean, SD, percentage) and inferential statistics (Chi-square test, paired t-test).

Results: In the pre-test, 57.5% of participants had poor knowledge, 35% had average knowledge, and only 7.5% had good knowledge. After the intervention, 77.5% achieved good knowledge scores, 22.5% had average knowledge, and none remained in the poor knowledge category. The mean pre-test score was 9.92 and post-test score was 23.75, showing a significant improvement. A significant

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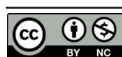
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association was observed between knowledge scores and variables such as age, education, mother's education, and previous awareness about menstrual hygiene.

Conclusion: The information booklet was found to be effective in significantly improving the knowledge of adolescent girls regarding menstrual hygiene. Educational interventions like booklets are simple yet impactful tools in promoting adolescent reproductive health.

KEYWORDS

• Reproductive • Health • Menstrual hygiene

INTRODUCTION

Menstruation is a natural physiological process that signifies the onset of reproductive maturity in adolescent girls. According to the World Health Organization (WHO), adolescence is the transitional phase between 10 and 19 years of age, marked by rapid physical, emotional, and social development. During this period, adolescent girls often face various challenges related to menstrual hygiene due to limited access to accurate information, cultural taboos, and socio-economic constraints.¹

In many developing countries, menstrual hygiene management remains an under-recognized public health issue. Inadequate knowledge and poor practices related to menstruation can lead to severe health complications, including reproductive tract infections, urinary tract infections, bad odor, genital irritation, and even long-term conditions such as pelvic inflammatory disease and toxic shock syndrome. Cultural stigmas and misconceptions surrounding menstruation further hinder adolescent girls from adopting proper hygiene practices, especially in rural areas.²

Research indicates that access to affordable and hygienic menstrual products is still limited in India. According to the author, a significant percentage of adolescent girls and their families are unable to afford sanitary napkins, leading them to use unhygienic alternatives.³ The lack of education and communication regarding menstrual hygiene also contributes to misconceptions and unsafe practices, highlighting the urgent need for structured awareness programs.⁴

Effective educational interventions are essential to address this gap. Providing adolescents with accurate, accessible, and age-appropriate information can empower them to manage menstruation safely and confidently.⁵

among various educational strategies, the use of information booklets has emerged as a cost-effective and impactful tool. These booklets offer detailed guidance on hygienic practices, the correct use of sanitary materials, and methods for disposal, all of which are crucial to promoting menstrual health.⁶

This study was undertaken to evaluate the effectiveness of an information booklet on menstrual hygiene knowledge among adolescent girls in selected high schools in the Surajpur district of Chhattisgarh. The goal is to promote informed, hygienic practices among young girls, thereby contributing to their overall health, school attendance, and psychological well-being.

Need of the Study

Menstrual hygiene is a critically yet often neglected aspect of adolescent health, particularly in low and middle-income countries where cultural taboos and insufficient awareness persist. Despite menstruation being a normal physiological phenomenon, many adolescent girls lack access to appropriate knowledge and resources for its safe management.⁷ This gap results in poor hygiene practices, leading to health issues such as urinary tract infections, reproductive tract infections, skin irritation, and in severe cases, pelvic inflammatory disease and toxic shock syndrome.⁸

The problem is exacerbated in rural areas, where access to sanitary products and menstrual health education is limited. Social stigma and traditional beliefs further restrict open discussions, reinforcing misconceptions and perpetuating unhygienic practices. Studies have consistently reported that a significant number of adolescent girls remain unaware of the importance of menstrual hygiene and proper sanitary practices.⁹

Educational interventions are crucial to

breaking these barriers. Providing adolescent girls with structured, accessible information can improve their awareness, reduce health risks, and promote positive attitudes toward menstruation.¹⁰ among the various strategies, the use of information booklets has proven to be a simple yet effective tool for disseminating essential knowledge.¹¹

This study was conceptualized to evaluate the effectiveness of an information booklet in enhancing knowledge about menstrual hygiene among adolescent girls in selected high schools in Surajpur district, Chhattisgarh. By addressing knowledge gaps and empowering young girls, the study aims to contribute to improved menstrual health outcomes and overall well-being.

Objectives

- To assess the pre-test knowledge on menstrual hygiene among adolescent girls.
- To provide an information booklet on menstrual hygiene.
- To assess the post-test knowledge after the intervention.
- To evaluate the effectiveness of the information booklet.
- To find the association between pre-test knowledge and selected socio-demographic variables.

MATERIALS AND METHODS

Study Design

A pre-experimental one-group pre-test & post-test design was adopted.

Study Setting

The study was conducted at a government higher secondary school in Surajpur District, Chhattisgarh.

Participants

A total of 40 adolescent girls aged 12–19 years were selected using a purposive sampling technique. Inclusion criteria included willingness to participate, the ability to read Hindi or English, and enrollment in the selected school.

Tool

Data were collected using a semi-structured

questionnaire consisting of 30 multiple-choice questions assessing knowledge related to menstrual hygiene. The tool's reliability was confirmed with a test-retest method yielding a **correlation coefficient of $r = 0.87$** .

Intervention

Participants first underwent a pre-test assessment. An **information booklet** on menstrual hygiene practices was then distributed, and the post-test was conducted after 7 days.

Data Analysis

Data were analyzed using descriptive (mean, SD, percentages) and inferential statistics (paired t-test, chi-square test) to assess effectiveness and association with socio-demographic variables. A significance level of $p < 0.05$ was considered statistically significant.

Hypothesis

H₁: There will be a significant difference between the pre-test and post-test knowledge scores regarding menstrual hygiene among adolescent girls after administration of the information booklet at the 0.05 level of significance.

H₂: There will be a significant association between pre-test knowledge scores on menstrual hygiene and selected socio-demographic variables among adolescent girls at the 0.05 level of significance.

Operational Definitions

Assess

In this study, *assess* refers to the process of evaluating the knowledge level of adolescent girls regarding menstrual hygiene through a self-structured knowledge questionnaire.

Effectiveness

Effectiveness refers to the measurable improvement in knowledge about menstrual hygiene, as determined by the difference in scores between the pre-test and post-test following the administration of the information booklet.

Information

Information in this study denotes the factual content related to menstrual hygiene provided to participants through an educational booklet, aiming to improve awareness and

understanding.

Booklet

A *booklet* is defined as a small, easy-to-read, printed educational material used in this study to deliver structured information on menstrual hygiene practices to adolescent girls.

Knowledge

Knowledge refers to the level of understanding demonstrated by adolescent girls regarding menstrual hygiene, as measured by correct responses to items in a semi-structured questionnaire.

Menstrual Hygiene

Menstrual hygiene refers to practices associated with the use of clean menstrual absorbents, proper washing of genital areas, and safe disposal methods during menstruation to maintain health and prevent infections.

Adolescent Girls

In this study, *adolescent girls* are defined as individuals aged between 12 to 19 years, in accordance with the World Health Organization (WHO) definition of adolescence.

High School

High school refers to an educational institution providing secondary education, typically including students in 9th and 10th grades. In this study, it denotes the selected government higher secondary school where participants were enrolled.

DELIMITATIONS

1. The study included only adolescent girls aged 12–19 years from a selected high school in Surajpur district, Chhattisgarh.
2. A purposive sample of 40 participants was selected based on availability and willingness to participate.
3. The study assessed only knowledge regarding menstrual hygiene, not practices or attitudes.
4. The intervention was administered once, with post-test conducted after seven days.

METHODOLOGY

Study Design

A pre-experimental one-group pre-test post-

test design was employed to evaluate the effectiveness of an information booklet on menstrual hygiene among adolescent girls.

Study Setting

The study was conducted at a government higher secondary school in Surajpur district, Chhattisgarh, India.

Study Population and Sampling

The population consisted of adolescent girls aged 12–19 years. A purposive sampling technique was used to select 40 participants who met the inclusion criteria: willingness to participate, ability to read Hindi or English, and regular school attendance during the data collection period.

Inclusion Criteria

- Adolescent girls aged 12–19 years
- Able to read and understand Hindi or English
- Willing to participate

Exclusion Criteria

- Students not enrolled in the selected school
- Individuals unable to read or write
- Unwell participants at the time of data collection

Tool for Data Collection

A self-structured knowledge questionnaire with 30 multiple-choice items was used to assess knowledge on menstrual hygiene. Each correct response was scored as 1, and incorrect as 0. Knowledge levels were categorized as:

- Poor (1–10 correct answers)
- Average (11–20)
- Good (21–30)

Validity and Reliability

The tool's content validity was established through expert review by gynecologists and nursing professionals. Reliability was tested using the test-retest method, yielding a correlation coefficient of $r = 0.87$, indicating high reliability.

Data Collection Procedure

A pre-test was administered on Day 1 to assess baseline knowledge. This was followed by distribution of an information booklet on menstrual hygiene. A post-test using the same

questionnaire was conducted on Day 7.

Ethical Considerations

Ethical clearance was obtained from the institutional review board. Written permission was secured from the school principal, and informed consent was obtained from all participants. Confidentiality and anonymity were strictly maintained.

Data Analysis

Data were analyzed using descriptive statistics (mean, standard deviation, frequency, percentage) and inferential statistics, including the paired t-test to assess effectiveness and the chi-square test to evaluate associations between knowledge and demographic variables. A significance level of $p < 0.05$ was used.

RESULT

Table 1: Distribution of Sociodemographic Variables of Adolescent Girls

(N = 40)		
Variable	Frequency (n)	Percentage (%)
Age (in years)		
12-13 years	2	5.0
14-15 years	15	37.5
16-17 years	15	37.5
18-19 years	8	20.0
Education Level		
9th class	20	50.0
10th class	20	50.0
Monthly Family Income (INR)		
< 6000	5	12.5
6001-8000	15	37.5
8001-10000	14	35.0
> 10001-12000	6	15.0
Mother's Education		
Illiterate	16	40.0
Primary Education	11	27.5
Middle School	4	10.0
High/Higher secondary	7	17.5
Graduate and above	2	5.0

Variable	Frequency (n)	Percentage (%)
Age at Menarche (in years)		
< 12	6	15.0
12-13	19	47.5
14-15	13	32.5
16-17	2	5.0
Mother's Occupation		
Government job	2	5.0
Private job	8	20.0
Housewife	20	50.0
Others	10	25.0
Type of Family		
Joint family	18	45.0
Nuclear family	22	55.0
Knowledge on Menstrual Hygiene		
Yes	14	35.0
No	26	65.0
Source of Information on Menstrual Hygiene		
Family	9	22.5
Friends	11	27.5
Teacher	13	32.5
Mass media	7	17.5
Other	0	0.0
Residence Type		
With parents	28	70.0
With relatives	12	30.0

among the 40 adolescent girls surveyed, the majority (37.5%) were aged between 14-15 years and another 37.5% were aged 16-17 years. An equal proportion (50%) of participants were studying in the 9th and 10th classes. Most of the participants belonged to families with a monthly income between ₹ 6001-8000 (37.5%). Regarding maternal education, the majority of mothers were illiterate (40%). Nearly half of the participants (47.5%) reported attaining menarche at the age of 12-13 years. Most mothers were housewives (50%), and the majority of participants belonged to nuclear families (55%). A significant number (65%) had no prior knowledge of menstrual hygiene. among those aware, teachers were the most common source of information (32.5%). Lastly, the majority of participants resided with their parents (70%).

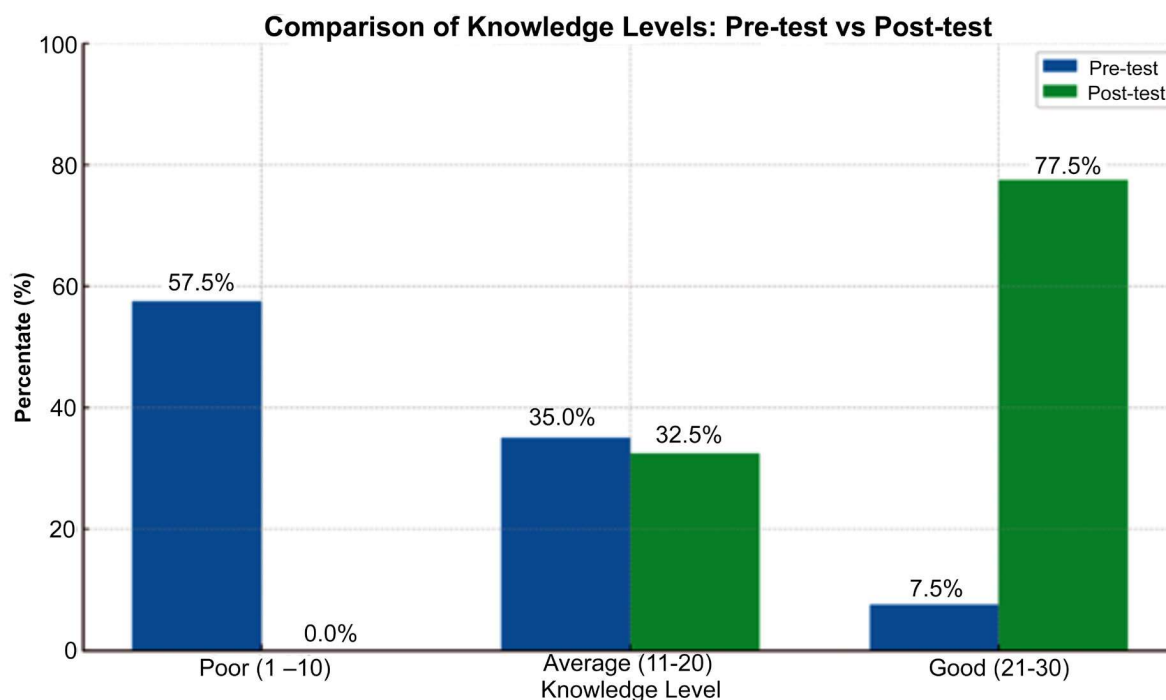


Figure 1: Comparison of Knowledge Levels: Pre-test vs Post-test

Table 2: Chi-Square Analysis of Pre-Test Knowledge vs Demographics

Sociodemographic Variable	Chi-square Value	df	Table Value	Inference
Age of the student	9.95	6	12.59	Significant
Education of student	3.66	2	5.99	Significant
Monthly income of family	1.89	6	12.59	Significant
Education of mother	2.21	8	15.51	Significant
Age at menarche	2.11	6	12.59	Significant
Occupation of mother	13.99	6	12.59	Not Significant
Type of family	19.66	2	5.99	Not Significant
Knowledge about menstrual hygiene	3.94	2	5.99	Significant
Source of information	2.86	8	15.51	Significant
Residence type	3.54	2	5.99	Significant

The chi-square analysis revealed statistically significant associations between pre-test knowledge scores and several sociodemographic variables, including age of the student, education level, monthly family income, mother's education, age at menarche, prior knowledge about menstrual hygiene, source of information, and residence type. However, no significant association was found with mother's occupation and type of family. These findings suggest that factors such as age,

education, and exposure to menstrual hygiene information play a crucial role in influencing adolescents' baseline knowledge levels.

DISCUSSION

The present study assessed the effectiveness of an information booklet on menstrual hygiene among adolescent girls in a selected school in Surajpur district. A pre-experimental one-group pre-test post-test design was employed

with a sample size of 40 participants. Findings revealed that the majority of girls had poor knowledge before the intervention (57.5%) and good knowledge after the intervention (77.5%), indicating a significant improvement in post-test scores. The mean knowledge score increased from 9.92 (33.06%) to 23.75 (79.16%), confirming the effectiveness of the booklet.

Chi-square analysis showed a significant association between pre-test knowledge and variables such as age, education level, mother's education, monthly income, age at menarche, prior awareness, source of information, and residence type. However, mother's occupation and type of family did not show significant associations. These findings highlight the role of socio-demographic factors in shaping menstrual hygiene awareness and reinforce the utility of targeted educational tools like booklets to enhance adolescent health literacy.

CONCLUSION:

The information booklet was found to be effective in significantly improving the knowledge of adolescent girls regarding menstrual hygiene. Educational interventions like booklets are simple yet impactful tools in promoting adolescent reproductive health.

SUMMARY

The study aimed to evaluate the effectiveness of an information booklet on menstrual hygiene among adolescent girls in a selected school in Surajpur district, Chhattisgarh. A one-group pre-test post-test pre-experimental design was used, with 40 adolescent girls selected through purposive sampling. Data were collected using a validated semi-structured knowledge questionnaire and analyzed using descriptive and inferential statistics. Results showed a significant improvement in post-test knowledge scores, confirming the effectiveness of the booklet. The study also found significant associations between knowledge levels and variables such as age, education, and prior awareness. Findings have implications for nursing practice, education, administration, and research. Limitations included a small sample size and a restricted focus on knowledge only. Future studies with larger samples and diverse educational tools are recommended.

Conflict of Interest

The author declare that there is no conflict of interest related to this study.

Funding

This research received no specific grant or financial support from any funding agency in the public, commercial, or not-for-profit sectors.

Ethical Considerations: Ethical approval was obtained from the Institutional Ethics Committee prior to data collection. Informed consent was taken from all participants. Confidentiality, anonymity, and voluntary participation were ensured. Participants were informed of their right to withdraw at any stage without any consequences.

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