



EFFECTIVENESS OF A NEED-BASED SELF-INSTRUCTIONAL MODULE ON SELECTED ASPECTS OF REPRODUCTIVE HEALTH AMONG ADOLESCENT GIRLS IN SELECTED RURAL AREAS OF BANGALORE

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Abstract:

This study was undertaken to evaluate the effectiveness of a need-based self-instructional module on selected aspects of reproductive health among adolescent girls in selected rural areas of Bangalore. Adolescence is a critical developmental phase marked by rapid biological and psychosocial changes. In rural settings, limited access to structured reproductive health education contributes to misconceptions, poor menstrual hygiene practices, anaemia, and vulnerability to reproductive tract infections.

A quantitative pre-experimental one group pre-test post-test design was adopted. Sixty adolescent girls aged 13–16 years were selected using purposive sampling. A structured knowledge questionnaire was used to assess baseline knowledge regarding anatomy and physiology of the reproductive system, menstrual hygiene, nutrition, prevention of anaemia, and reproductive tract infections. Following the administration of the need-based self-instructional module, a post-test was conducted after seven days.

Descriptive statistics (frequency, percentage, mean, standard deviation) and inferential statistics (paired t-test and chi-square test) were used for analysis. The mean pre-test score was 9.84 ± 2.76 , which increased significantly to 18.92 ± 2.14 in the post-test. The calculated paired t-value (19.47) was statistically significant at $p < 0.001$. The findings indicate that the self-instructional module was highly effective in improving reproductive health knowledge among adolescent girls in rural areas.

Keywords: - Adolescent health, Reproductive health education, Self-instructional module, Rural health, Knowledge enhancement.

I. INTRODUCTION

Adolescence represents a transitional period between childhood and adulthood characterized by rapid physical growth, hormonal changes, emotional fluctuations, and development of secondary sexual characteristics. Reproductive health during adolescence is fundamental to overall well-being and safe motherhood outcomes. However, in many rural communities, reproductive health topics remain culturally sensitive and inadequately discussed.

Lack of accurate knowledge regarding menstruation, nutrition, anaemia prevention, and reproductive tract infections leads to unhealthy practices. Studies indicate that adolescent girls in rural India often rely on peers or informal sources for reproductive health information, which may result in misconceptions.

Structured, learner-centred educational interventions such as self-instructional modules can bridge this knowledge gap. These modules allow adolescents to learn at their own pace and improve retention. Therefore, this study aimed to evaluate the effectiveness of a need-based self-instructional module on selected aspects of reproductive health.

II RESEARCH METHODOLOGY

The methodology section outlines the design and procedure adopted for the study. It includes population, sample, data collection tools, intervention, and statistical analysis.

2.1 Population and Sample

The population of the study consisted of adolescent girls aged 13–16 years residing in selected rural areas of Bangalore. A total of 60 adolescent girls were selected for the study using a purposive sampling technique. The inclusion criteria comprised adolescent girls within the age group of 13–16 years, those who were willing to participate in the study, and those residing in the selected rural areas during the period of data collection. Only participants who met these criteria were included in the study sample.

2.2 Data and Sources of Data

Primary data were collected using a structured knowledge questionnaire developed by the investigator after reviewing relevant literature and consulting subject experts. The instrument consisted of two sections. Section A included demographic variables such as age, educational level, family income, and source of information regarding reproductive health. Section B comprised a structured knowledge questionnaire with a maximum score of 25 to assess knowledge related to selected aspects of reproductive health. The knowledge scores were categorized into three levels: inadequate (0–8), moderately adequate (9–16), and adequate (17–25). A pre-test was conducted prior to the intervention to assess baseline knowledge levels of the participants. Following the administration of the need-based self-instructional module, a post-test was conducted seven days later using the same questionnaire to evaluate the effectiveness of the intervention.

2.3 Theoretical Framework

The study was based on the concept that structured educational interventions significantly improve knowledge levels among adolescents. In this study, knowledge enhancement was considered the dependent variable, while the need-based self-instructional module served as the independent variable. The module was systematically developed to address identified learning gaps among adolescent girls and included comprehensive information on the anatomy and physiology of the

female reproductive system, menstrual hygiene practices, nutritional requirements during adolescence, prevention of anemia, prevention of reproductive tract infections, and awareness regarding early pregnancy and its associated consequences. The structured and learner-centered design of the module was intended to facilitate better understanding, retention, and application of reproductive health knowledge among participants.

2.4 Statistical Tools

The following statistical tools were used:

2.4.1 Descriptive Statistics

Descriptive statistics were used to summarize and describe the characteristics of the study participants and their knowledge levels. Frequency and percentage distribution were calculated to present the demographic variables such as age, educational status, family income, and source of information regarding reproductive health. These measures helped in understanding the distribution pattern of the sample. In addition, the mean and standard deviation were computed to determine the central tendency and dispersion of the pre-test and post-test knowledge scores. These statistical measures provided a clear understanding of the baseline knowledge levels and the extent of improvement following the intervention.

2.4.2 Inferential Statistics

Inferential statistics were applied to test the effectiveness of the need-based self-instructional module and to examine relationships between variables. The paired t-test was used to compare the mean pre-test and post-test knowledge scores in order to determine whether the observed difference was statistically significant. Furthermore, the chi-square test was employed to assess the association between pre-test knowledge levels and selected demographic variables. The level of significance was set at 0.05, and statistical conclusions were drawn accordingly to determine the impact of the intervention.

III RESULTS AND DISCUSSION

3.1 Frequency and percentage distribution of demographic variables of adolescent girls

(N = 60)

S.No	Demographic Variables	Frequency	Percentage (%)
1	Age of Adolescent Girls		
a	13–14 years	34	56.7
b	15–16 years	26	43.3
2	Educational Status of Girls		
a	VIII standard	37	61.7
b	IX standard	23	38.3
3	Religion		
a	Hindu	40	66.7
b	Muslim	6	10.0
c	Christian	12	20.0

d	Others	2	3.3
4	Type of Family		
a	Nuclear family	39	65.0
b	Joint family	14	23.3
c	Extended family	7	11.7
5	Educational Status of Mother		
a	No formal education	8	13.3
b	Primary education	12	20.0
c	Higher secondary education	30	50.0
d	Graduation and above	10	16.7
6	Occupational Status of Mother		
a	Employed	37	61.7
b	Unemployed	16	26.7
c	Self-employed	7	11.7
7	Family Monthly Income (Rs.)		
a	Less than 5000	25	41.7
b	5001–7000	23	38.3
c	8000–10,000	6	10.0
d	>11,000	6	10.0
8	Medium of Instruction		
a	Kannada	44	73.3
b	English	16	26.7
9	Source of Information		
a	Mother	15	25.0
b	Relative	26	43.3
c	Friends	13	21.7
d	Mass media	6	10.0

Table 3.1 shows the demographic characteristics of the adolescent girls included in the study. The majority of participants (56.7%) were aged 13–14 years and most were studying in VIII standard (61.7%). Most of the girls belonged to Hindu religion (66.7%) and nuclear families (65.0%). Half of the mothers had completed higher secondary education (50.0%), and 61.7% were employed. A large proportion of participants studied in Kannada medium (73.3%) and reported relatives (43.3%) as their primary source of information.

3.2 Pre-Test Knowledge Level

Table 3.2: Pre-Test Knowledge Level

(N = 60)

Knowledge Level	Frequency	Percentage
Inadequate	38	63.3
Moderately Adequate	17	28.3
Adequate	5	8.4

Table 3.2 shows the pre-test knowledge levels of adolescent girls regarding selected aspects of reproductive health. The majority of participants (63.3%) had inadequate knowledge before the intervention. About 28.3% demonstrated moderately adequate knowledge, while only 8.4% had adequate knowledge. These findings indicate that most adolescent girls lacked sufficient baseline knowledge prior to the administration of the self-instructional module.

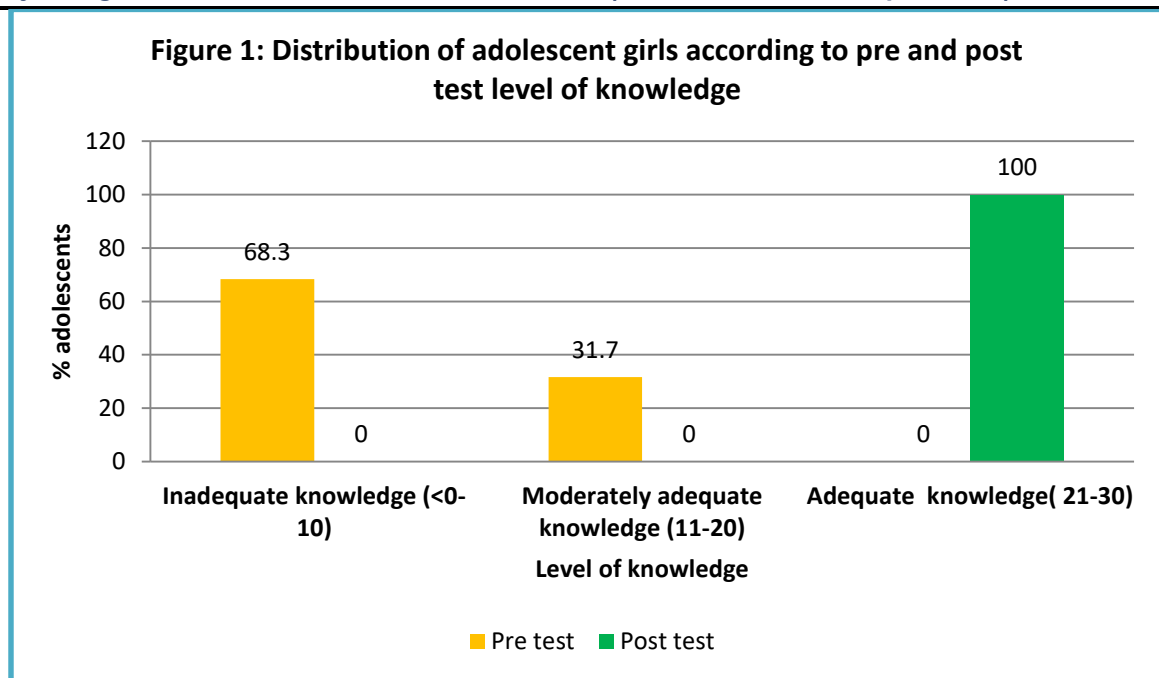
3.3 Post-Test Knowledge Level

Table 3.3: Post-Test Knowledge Level

(N = 60)

Knowledge Level	Frequency	Percentage
Inadequate	0	0
Moderately Adequate	8	13.3
Adequate	52	86.7

Table 3.3 presents the post-test knowledge levels of adolescent girls following the intervention. None of the participants (0%) had inadequate knowledge after the administration of the self-instructional module. A majority of the participants (86.7%) achieved adequate knowledge, while 13.3% demonstrated moderately adequate knowledge. These findings indicate a substantial improvement in knowledge levels after the intervention.



3.4 Comparison of Pre-Test and Post-Test Scores

Table 3.4: Comparison of Knowledge Scores

(N = 60)

Test	Mean	SD	Mean Difference	t-value	p-value
Pre-Test	9.84	2.76			
Post-Test	18.92	2.14	9.08	19.47	<0.001

Table 3.4 shows the comparison between pre-test and post-test knowledge scores among adolescent girls. The mean pre-test score (9.84 ± 2.76) increased substantially to 18.92 ± 2.14 in the post-test, with a mean difference of 9.08. The calculated paired t-value (19.47) was highly significant at $p < 0.001$ level. These findings clearly indicate that the need-based self-instructional module was highly effective in improving knowledge regarding reproductive health among adolescent girls.

3.5 Effectiveness of Need-Based Self-Instructional Module on Knowledge Regarding Reproductive Health Among Adolescent Girl

(N = 60)

S.No	Aspects of Knowledge	Max Score	Mean Difference	SD	Mean %	t-value	p-value
1	General Information	10	4.91	1.90	49.1	19.970*	$p < 0.05$
2	Menstrual Health	10	5.16	1.53	51.6	26.137*	$p < 0.05$
3	Sexual Health	10	4.51	1.60	45.1	21.870*	$p < 0.05$
4	Nutrition	10	3.11	1.73	31.1	13.892*	$p < 0.05$
	Overall	40	17.71	3.99	44.3	34.378*	$p < 0.05$

Note: * Significant at $p < 0.05$

Hypothesis Testing

H₀: There is no significant difference between the pre-test and post-test knowledge regarding reproductive health among adolescent girls.

H₁: There is a significant difference between the pre-test and post-test knowledge regarding reproductive health among adolescent girls.

Table 3.5 shows the aspect-wise and overall mean difference in knowledge scores between pre-test and post-test. The paired t-test was applied to determine the statistical significance of the observed differences. The results revealed that the calculated t-values for all aspects of reproductive health knowledge, including general information, menstrual health, sexual health, and nutrition, were statistically significant at $p < 0.05$ level. The overall mean difference score was 17.71 with a highly significant t-value of 34.378.

Since the obtained p-value was less than 0.05, the null hypothesis (H₀) was rejected, and the research hypothesis (H₁) was accepted. These findings provide strong evidence that the Need-Based Self-Instructional Module was significantly effective in enhancing knowledge regarding reproductive health among adolescent girls.

IV. CONCLUSION

The present study concludes that the need-based self-instructional module was highly effective in improving knowledge regarding selected aspects of reproductive health among adolescent girls in rural areas of Bangalore. The significant increase in post-test scores clearly demonstrates that structured and systematic educational interventions can bridge existing knowledge gaps among adolescents. Prior to the intervention, the majority of participants had inadequate knowledge, reflecting the limited availability of reliable reproductive health information in rural settings. However, after exposure to the module, most participants achieved adequate knowledge levels, indicating the positive impact of the intervention.

Adolescence is a crucial stage for establishing lifelong health behaviors, and empowering girls with accurate reproductive health knowledge contributes to better menstrual hygiene practices, prevention of anemia, reduction of reproductive tract infections, and informed decision-making. The findings highlight the importance of integrating structured educational modules into school and community health programs. Therefore, similar educational strategies can be implemented on a larger scale to promote adolescent reproductive health and overall well-being in rural communities.

Acknowledgment

The author expresses sincere gratitude to all the adolescent girls who willingly participated in the study and contributed their valuable time and cooperation. Special thanks are extended to the institutional authorities of Koshys College of Nursing for granting permission and providing necessary support to conduct the research. The author is also deeply thankful to the school authorities and community leaders of the selected rural areas for their cooperation and coordination during data collection. Heartfelt appreciation is conveyed to the subject experts for their guidance in validating the research tool. The encouragement and support received from colleagues and well-wishers are also gratefully acknowledged.

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