



EFFECTIVENESS OF THE NURSE-LED ADOLESCENT HEALTH OUTREACH KIOSK ON KNOWLEDGE, ATTITUDE AND LEVEL OF SATISFACTION AMONG GIRLS

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ABSTRACT

Background: Adolescence is a phase of rapid growth and development that occurs between childhood and adulthood. Adolescent girls constitute a more vulnerable group, particularly in developing countries like India, due to a lack of education, inadequate access to healthcare services, low socioeconomic status, poor dietary habits, cultural beliefs and poor family history. Therefore, it is of prime importance to address the health problems of adolescents by creating awareness and developing a positive attitude among girls for their healthy living. **Aim and objective:** To assess the effectiveness of the Adolescent Health Outreach Kiosk on knowledge, attitude and level of satisfaction among girls. **Materials and methods:** A quantitative approach with a quasi-experimental pre and post-test with control group design was chosen. A total of 60 adolescent girls were selected through the non-probability purposive sampling technique and were assessed using the Structured knowledge questionnaire, Modified 5-point Likert scale and Modified 4-point Rating scale. The Adolescent Health Outreach Kiosk was administered as an intervention and included physical health, exercise, menstrual health and reproductive health education. **Results:** The study findings revealed that in the experimental group, the calculated paired t-test value was 20.33 and 30.98 for knowledge and attitude, respectively, and the calculated post-test unpaired 't' value was 17.45 and 20.64 for knowledge and attitude respectively, showing a very high statistical significance at $p < 0.001$. A high level of satisfaction was found among the experimental group. **Conclusion:** The Adolescent Health Outreach Kiosk was effective in enhancing the knowledge, attitude and level of satisfaction regarding adolescent health among girls.

Keywords: Adolescent girls, Adolescent health outreach kiosk, knowledge, attitude.

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I INTRODUCTION

Adolescence is a complex period with rapid development in physical, cognitive and psychological domains. The rapidity of the development in multiple domains during this period provides little time for an adolescent to become aware, understand and adapt to the changes they experience in their body and mind that leads to healthy adulthood.¹

Adolescent period is a unique stage of development and an important time for laying the foundations for good health. During this period the demands and needs of the adolescents are more because of tremendous growth and development. A synergised multi-sectoral action is needed to make a difference in the health of the adolescents.² The transitions happening during this stage also carry significant new and critical risks but are also associated with opportunities to positively influence the immediate and future health of young people through proper education and practices. The good health of adolescents advances their reasoning skills, abstract thinking skills, meta cognition, developments in the ability to perceive, assess and manage emotions, social skills development.³

The prevalence of health problems among adolescents is on the rise among girls, especially in India. The common health problems faced by adolescent girls are anemia, Polycystic Ovarian Disorder (PCOD), teenage pregnancy and HIV/Sexually Transmitted Infection (STI), menstrual disorders and other infectious diseases.⁴ Education will serve as the platform for enhancing the knowledge and attitude among adolescent girls.⁵ Hence, the investigator felt the need for undertaking a study to assess the effectiveness of adolescent health outreach kiosk on knowledge, attitude and level of satisfaction which is a major key for creating awareness among adolescent girls.

Statement of the problem

A quasi-experimental study to assess the effectiveness of the Nurse-led Adolescent Health Outreach Kiosk on knowledge, attitude and level of satisfaction among girls at a selected setting.

Objectives

1. To assess and compare the pre and post-test level of knowledge and attitude regarding adolescent health among girls in the experimental and control groups.

2. To assess the post-test level of satisfaction among adolescent girls in the experimental group.
3. To assess the effectiveness of the Adolescent Health Outreach Kiosk on knowledge and attitude among girls.
4. To correlate the mean differed knowledge, attitude, and post-test level of satisfaction scores among girls.
5. To associate the selected background variables with mean differed knowledge, attitude, and post-test level of satisfaction scores among girls.

Null hypotheses

NH₁ - There is no significant difference between the pre and post-test level of knowledge and attitude among adolescent girls in the experimental and control group.

NH₂ - There is no significant correlation between the mean differed knowledge, attitude and post-test level of satisfaction scores among adolescent girls in the experimental and control group.

NH₃ - There is no significant association of selected background variables with mean differed knowledge, attitude and post-test level of satisfaction scores among adolescent girls in the experimental and control group.

II MATERIALS AND METHODS

A quantitative approach with a quasi-experimental research design was adopted in this study. The independent variable was the Nurse-Led Adolescent Health Outreach Kiosk and the dependent variables were knowledge, attitude and level of satisfaction. The study was conducted at the selected School, Pattabiram, Tiruvallur District. The sample size consisted of 60 adolescent girls who fulfilled the inclusion and exclusion criteria, with 30 each in the experimental and control group, selected by using the non-probability purposive sampling technique. The samples were selected based on the following:

Inclusion criteria: Adolescent girls who are

- 13 – 18 years of age
- studying in the selected school
- able to understand, read and write Tamil/English

Exclusion criteria: Adolescent girls who

- have already attended adolescent health kiosk
- have physical, mental and sensory impairment

Development and description of the tool

The tool constructed in this study had two parts:

Section A: Assessment of background variables: It consisted of –

- **Demographic variables-** Age, education, religion, type of family, family monthly income, education status of father and mother, occupation of father and mother, dietary pattern, age at menarche, menstrual history, source of information
- **Anthropometric variables-** Height, weight and BMI

Section-B: A Structured Knowledge Questionnaire regarding adolescent health formulated by the investigator was used to assess knowledge. It consisted of 25 questions with one correct answer each. It was categorised under the following components:

Content	Number of Questions
General information on adolescents	2
Physical health	10
Exercise	2
Menstrual and reproductive health	11
Total	25

Scoring key

Each item was an objective type and closed ended with a single correct answer. Each correct answer carries “1” mark and wrong answer carries “0” mark. The total score of the tool was 25. The raw score was converted into percentage to interpret the level of knowledge.

Interpretation

Score in Percentage	Level of Knowledge
≥ 75	Adequate knowledge
51 - 74	Moderately adequate knowledge
≤ 50	Inadequate knowledge

Section-C: The Modified 5-point Attitude Scale regarding adolescent health formulated by the investigator was used to assess attitude, and consisted of 10 statements, of which 5

statements were positively stated and 5 statements were negatively stated. Participants were asked to select a suitable answer from the five rating options given.

Scoring key

Questions	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
Positive (5)	5	4	3	2	1
Negative (5)	1	2	3	4	5

It consisted of 10 items, the minimum score was “1” and the maximum score was “5”.

Interpretation

Score in Percentage	Level of Knowledge
≥ 75	Favourable attitude
51 - 74	Moderately favourable attitude
≤ 50	Unfavourable attitude

Section-D: 4-point rating scale was used to assess the level of satisfaction regarding the Adolescent Health Outreach Kiosk

Scoring key

It consisted of 15 items, the minimum score was “1” and the maximum score was “4”. The level of satisfaction was interpreted as highly satisfied, moderately satisfied, satisfied and dissatisfied with the score value of 4,3,2,1 respectively. The total score was 60. The raw score was converted into percentage to interpret the level of satisfaction.

Interpretation

Score in Percentage	Level of Knowledge
≥ 75	High level of satisfaction
51 - 74	Moderate level of satisfaction
≤ 50	Low level of satisfaction

Data collection procedure

The study was conducted for a period of 4 weeks. A total of 60 adolescent girls (30 samples each in the experimental and control group) were selected based on inclusion criteria, using non probability purposive sampling technique from the selected school.

After obtaining formal permission and informed written consent, the investigator obtained the demographic details from the samples, following which the pre-test level of knowledge and attitude was assessed using the above-mentioned tools. Following this, the intervention was given to the experimental group for 5 days. Reinforcement was given with the same package. The post-test assessment of knowledge and attitude toward adolescent health was conducted 7 days after the intervention. The level of satisfaction was assessed 15 days after the intervention. The Nurse-Led Adolescent Health Outreach Kiosk was administered to the control group on completion of the post-test.

Ethical considerations

The study proposal and plan were granted formal ethical approval by the International Centre of Collaborative Research which is the official ethics review board of Omayal Achi College of Nursing, Chennai, India. Consent was obtained from the Principal of Holy Infant Jesus Mat. Hr. Sec. School, Pattabiram. Consent from parents and assent from students were obtained after a clear explanation of the study purpose, type of data required, nature of commitment, participation, procedure and potential benefits, and the right to withdraw from the study at any point in time was explained. Confidentiality and full privacy of personal details revealed by the samples was assured.

III RESULTS

Distribution of background variables of adolescent girls

- **Demographic variables**

The demographic variables of adolescent girls in the experimental group revealed that 19(63.33%) of them were 15–16 years of age, 20(66.66%) were doing higher secondary education, 23(76.67%) were Hindus, 14(46.67%) were from nuclear families, 11(36.67%) had monthly incomes of Rs. >20,000, 13(43.33%) of their fathers and 14(46.67%) of their mothers had completed the high school education, 15(50.00%) of the fathers were semi-skilled workers, 17(56.67%) of the mothers were housewives, 26(86.67%) were non vegetarians and they used to take non vegetarian food 1-2 days in a week, 23(76.66%) attained menarche between 12–13 years of age, 30(100.00%) had regular menstrual cycles and 15(50.00%) received health information through health personnel.

In the control group, 17(56.67%) were 15– 16 years of age, 18(60.00%) were doing higher secondary education, 22(73.33%) of them were Hindus, 17(56.67%) were from nuclear families, 13(43.33%) had monthly incomes of Rs. 6001-10,000, 14(46.67%) of their fathers and 15(50.00%) of their mothers had completed high school education, 12(40.00%) of their fathers were semi-skilled workers, 12 (40.00%) were skilled workers, 16(53.34%) mothers were housewives, 27(90.00%) were non vegetarian and they used to take non vegetarian food 1-2 days in a week, 19(63.33%) attained menarche between 12–13 years of age, 30(100.00%) had regular menstrual cycles and 16(53.33%) received health information through health personnel.

Anthropometric variables

In the experimental group, 16(53.33%) were 150 -155 cm tall, 10(33.33%) weighed between 45-50 kg and 17(56.67%) had a BMI of 18.5-24.9 kg/m². In the control group, most samples, 11(36.67%) were <150 cm tall, 11(36.67%) weighed between 45-50 kg and 21(70.00%) kg/m² had a BMI of 18.5-24.9.

All the above stated background variables, when compared between experimental and control group using the chi square test inferred no statistical significance, thus indicating homogeneity between the groups.

Level of knowledge regarding adolescent health in the experimental and control group

N=60

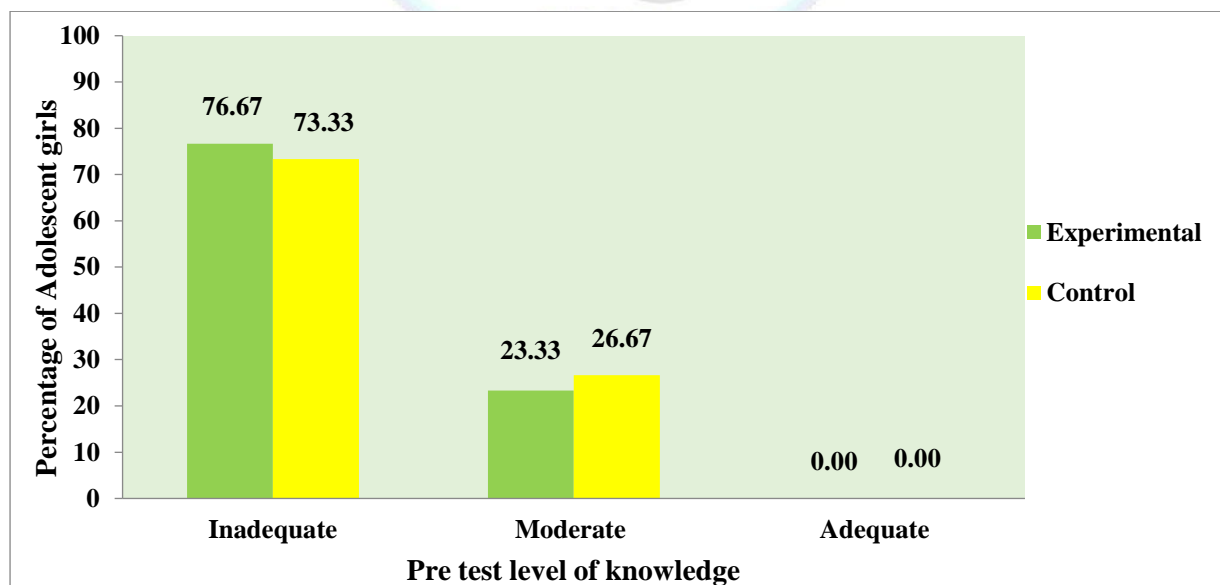


Figure 1: The overall pre-test level of knowledge

Figure 1 reveals that the majority, 23(76.67%) of adolescent girls in the experimental group, had an inadequate level of knowledge and the remaining 7(23.33%) had a moderate level of knowledge. In the control group, 22(73.33%) had an inadequate level of knowledge and 8(26.67%) of them had moderate level of knowledge. None of the samples in both groups had adequate knowledge, which indicated the need for educating the adolescent girls regarding adolescent health.

N=60

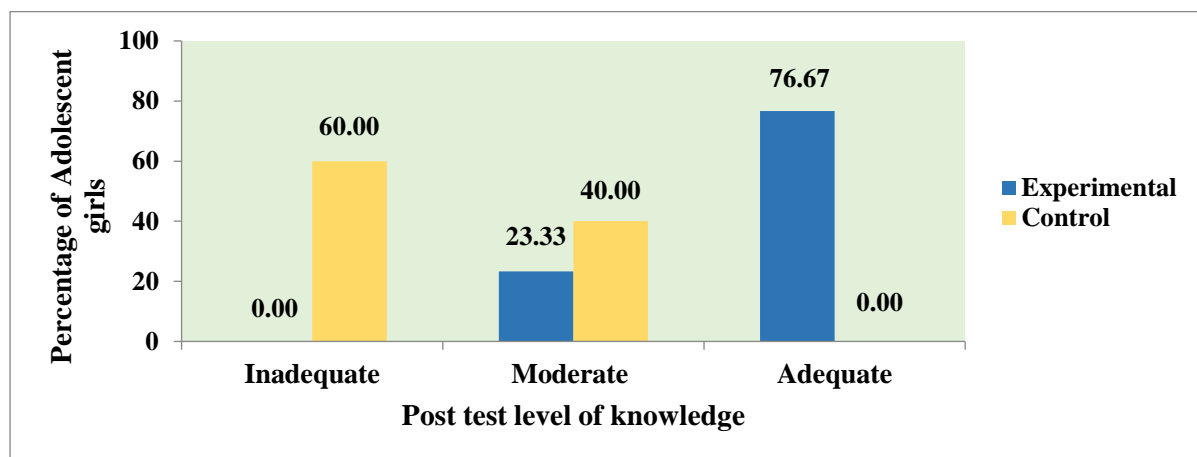


Figure 2: The overall post-test level of knowledge

Figure 2 reveals that 23(76.67%) had an adequate level of knowledge and 7(23.33%) of them had moderate level of knowledge in the experimental group and in the control group 18(60.00%) of them had inadequate level of knowledge and 12(40.00%) of them had moderate level of knowledge.

Level of attitude to adolescent health in the experimental and control group

N=60

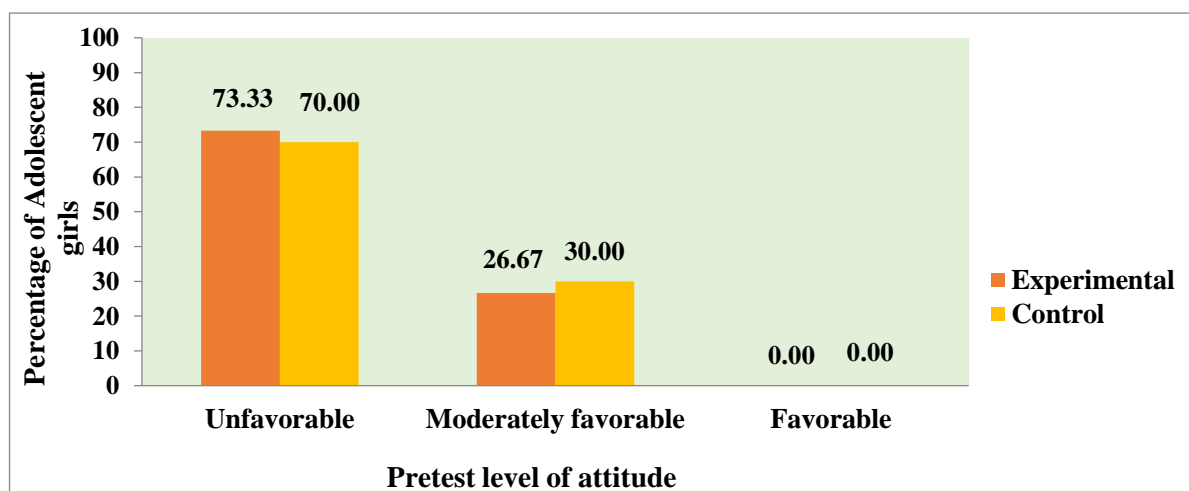


Figure 3: The overall pre-test level of attitude

Figure 3 depicts that 22(73.33%) and 21(70.00%) of adolescent girls in the experimental and the control group respectively had an unfavourable attitude towards adolescent health.

N=60

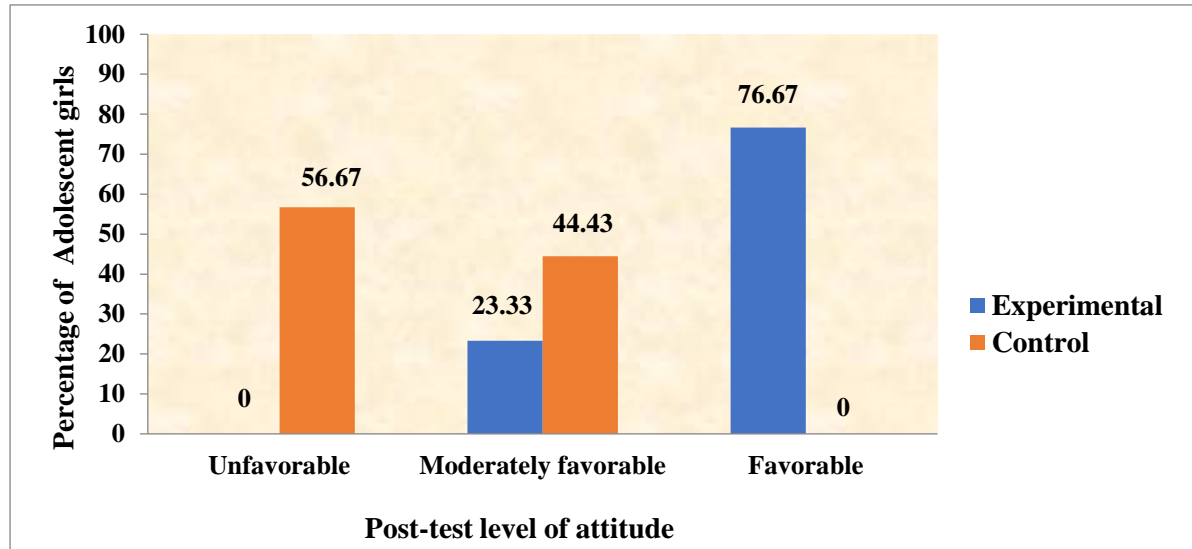


Figure 4: The overall post-test level of attitude

Figure 4 depicts that 23 (76.67%) adolescent girls had a favourable attitude towards adolescent health in the experimental group and 13 (44.43%) of them had a moderately favourable attitude in the control group.

Level of satisfaction of adolescents regarding the Adolescent Health Outreach Kiosk in the experimental group

N=30

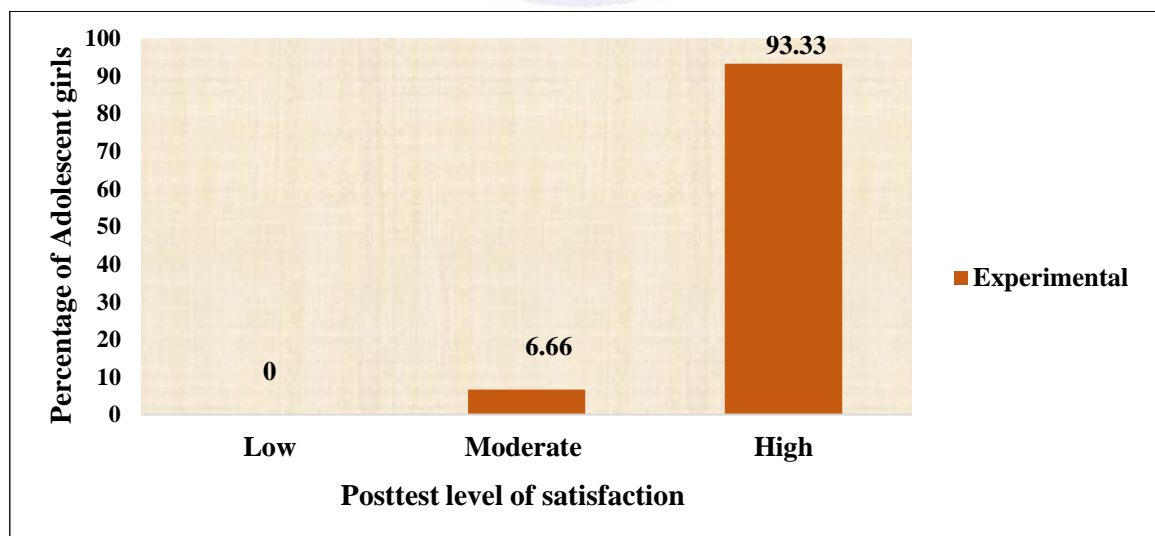


Figure 5: The overall post-test level of satisfaction

Figure 5 revealed that 28 (93.33%) adolescents had a high level of satisfaction and 2 (6.66%) of them had moderate level of satisfaction in the experimental group.

Assessment of the effectiveness of adolescent health outreach kiosk on knowledge and attitude regarding adolescent health

Table 1: Comparison of pre and post-test knowledge and attitude mean score in the experimental and control group

N=60

Variables	Group	Pre-test		Post-test		Mean Difference	Paired 't' value
		Mean	SD	Mean	SD		
Knowledge	Experimental	11.17	1.80	20.07	1.48	8.90	t=20.33 P=0.001*** df =29 (S)
	Control	11.33	1.58	12.23	1.96	0.90	t=1.91 P=0.06 df = 29 (NS)
Attitude	Experimental	23.00	1.41	39.97	2.68	16.97	t=30.98 P=0.001*** df =29 (S)
	Control	23.40	1.67	24.50	3.10	1.10	t=1.85 P=0.07 df = 29 (NS)

*** p<0.001 – Very highly significant, S – Significant, NS – Not Significant, df=Degrees of Freedom

Table 1 depicts that in the experimental group the pre-test mean score for knowledge and attitude was 11.17 and 23.00 which had increased to 20.07 and 39.97 respectively in the post- test. The calculated 't' value for knowledge and attitude was t=20.33 and t=30.98 respectively, which revealed that there was a high statistically significant difference at p<0.001 level.

In the control group, the pre-test knowledge and attitude mean score had increased minimally from 11.33, 23.40 to 12.23, 24.40 respectively in the post-test and no statistical significance was identified.

Table 2: Comparison of pre and post-test knowledge and attitude mean score regarding adolescent health between the experimental and control group **N=60**

Variables	Group	Experimental (n=30)		Control (n=30)		Mean Difference	Unpaired 't' value
		Mean	SD	Mean	SD		
Knowledge	Pre-test	11.17	1.80	11.33	1.58	0.16	t=0.38 P=0.71 (NS) df = 58
	Post-test	20.07	1.48	12.23	1.96	7.84	t=17.45 P=0.001***(S) df = 58
Attitude	Pre-test	23.00	1.41	23.40	2.68	0.40	t=1.00 P=0.32 df = 58, (NS)
	Post-test	39.97	2.68	24.50	3.10	15.47	t=20.64 P=0.001***(S) df = 58 (S)

*** p<0.001 – Very Highly significant, S – Significant, NS – Not Significant, df=Degrees of Freedom

Table 2 depicts that in the pre-test, there was no statistically significant difference related to the comparison of knowledge and attitude mean scores between the experimental and control group. In the post-test, the mean difference score was 7.84 and 15.47 with 't' value of t=17.45, t=20.64 for knowledge and attitude respectively. These values showed that there was a high statistical significance at p<0.001.

Correlation of the mean differed knowledge, attitude and post-test level of satisfaction score among adolescent girls

Table 3: Correlation of the mean differed knowledge, attitude and post-test level of satisfaction score regarding adolescent health in the experimental group

N=30

Group	Variables	Mean differed score		'r' value	Interpretation
		Mean	SD		
Experimental group	Knowledge	8.90	0.44	r=0.44 P=0.01**	Positive moderate correlation
	Attitude	16.97	0.55		
	Knowledge	8.90	0.44	r = 0.45 p = 0.01**	Positive moderate correlation
	Satisfaction	56.20	0.29		
	Attitude	16.97	0.55	r = 0.45 p = 0.01**	Positive moderate correlation
	Satisfaction	56.20	0.29		

** p<0.01 – Highly significant

Table 3 depicts the correlation between the mean differed knowledge, attitude and post-test satisfaction score among adolescent girls in the experimental group, assessed by using the Karl Pearson Correlation Coefficient. The calculated value was $r=0.44$, $r=0.45$, $r=0.45$ which revealed that there was a positive moderate correlation between the mean differed knowledge, attitude and post-test satisfaction score respectively, and that there was a statistically highly significant relationship between the variables.

The correlation between the mean differed knowledge and attitude score among adolescent girls in the control group revealed that there was no statistically significant relationship between the variables.

Association of selected background variables with the mean differed knowledge, attitude and post-test satisfaction score regarding adolescent health among girls

N=30

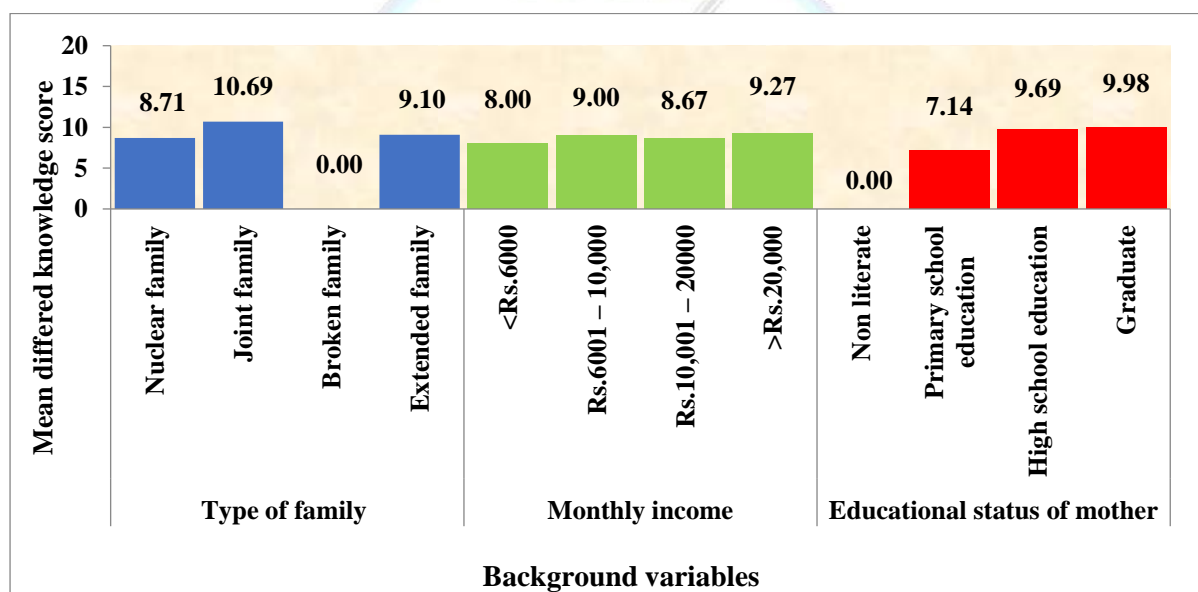


Figure 5: Association of selected background variables with the mean differed knowledge score among girls in the experimental group

Figure 5 depicts that there was a significant association of selected background variables like type of family, family monthly income, educational status of the mother in the experimental group. The mean differed knowledge score was high, 10.69 among adolescent girls who were from joint families, 9.27 among adolescent girls whose family monthly income was >20,000 and, 9.98 among adolescent girls had mothers who were graduates.

N=30

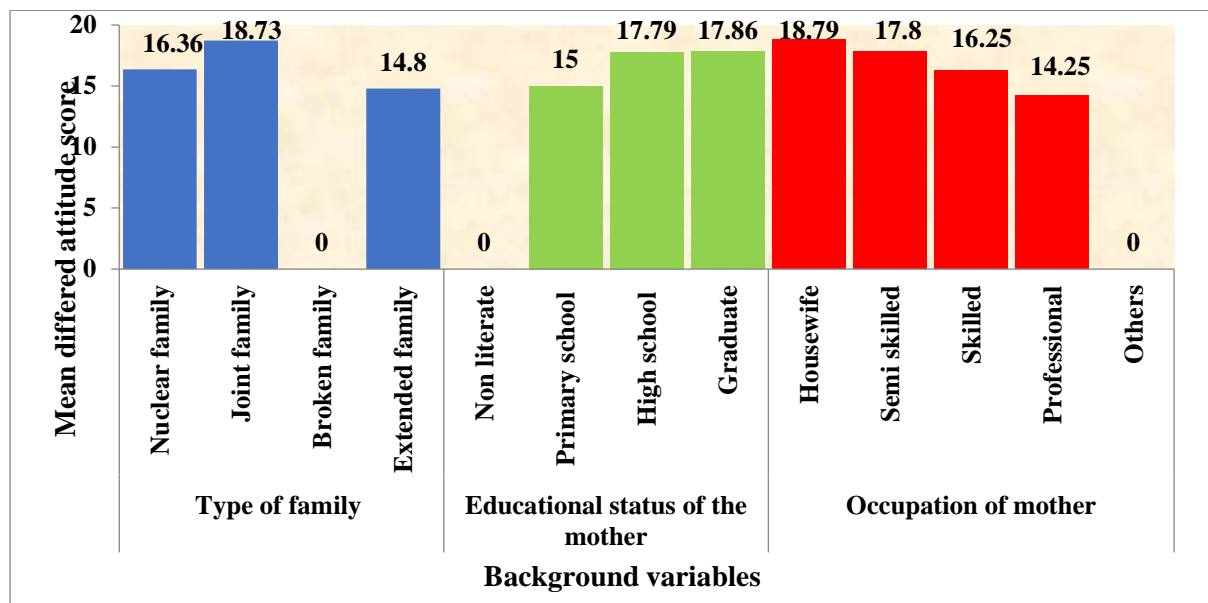


Figure 6: Association of selected background variables with the mean differed attitude score in the experimental group

Figure 6 depicts that there was a significant association of selected background variables like type of family, mother’s education status, mother’s occupation in the experimental group. The mean differed attitude score was high, 18.73 among adolescent girls were from joint families, 17.86 had graduate mothers and 18.79 had mothers who were housewives.

N=30

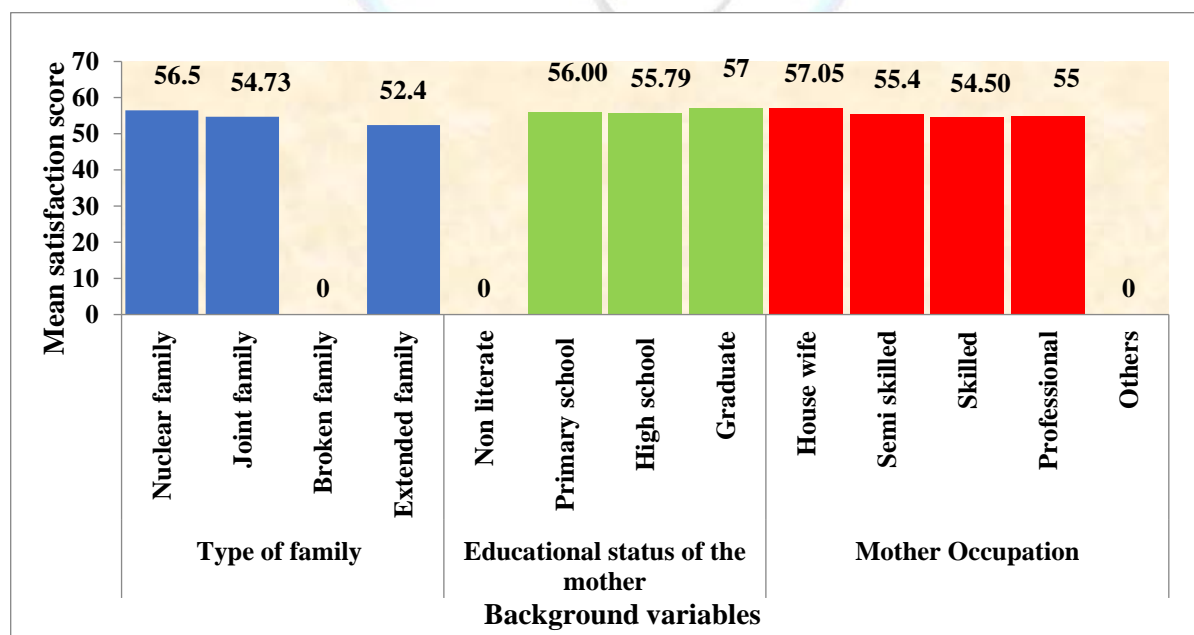


Figure 7: Association of selected background variables with the post-test mean satisfaction score in the experimental group

Figure 7 depicts that there was a significant association of selected background variables like type of family, mother's education status, mother's occupation in the experimental group, thus inferring that the mean satisfaction score was 56.50 among adolescent girls who come from nuclear families, 57.00 among adolescents with graduate mothers and 57.05 among adolescent girls with mothers who were housewives.

None of the other selected background variables in the experimental group nor any of the variables in the control group showed any significant association with the level of knowledge, attitude and satisfaction.

IV DISCUSSION

Regarding the comparison of mean differed level of knowledge and attitude score within the experimental and control groups using the paired 't' test, the findings revealed that there was no statically significant difference between pre and post-test levels of knowledge and attitude in the control group. In the experimental group, the calculated 't' value of 20.33, and 30.98 for knowledge and attitude respectively, were found to be statistically very highly significant at $p=0.001$ level.

The comparison of mean differed knowledge and attitude scores between the experimental and control group calculated using the student independent 't' test showed that in the post-test, the t value of 17.45, and 20.64 respectively, was statistically highly significant at $p=0.05$. This infers that the Adolescent Health Outreach Kiosk had significantly improved the knowledge and attitude of adolescent girls in the experimental group.

Thus, the Nurse-Led Adolescent Health Outreach Kiosk proved to be highly effective in enhancing the knowledge and attitude among adolescent girls.

As an extended activity of the current research, the researcher had assessed the pre and post-test level of hemoglobin (Hb) among adolescent girls. The findings revealed that in the pre-test of the experimental group, 14(46.66%) samples had Hb between 10-12 g/dl, 15(50.00%) between 7.0-9.9 g/dl and 1(3.33%) had >12g/dl, whereas in the post-test 17(56.66%) samples had Hb between 10-12 g/dl, 12(40.00%) between 7-9.9 g/dl and 1(3.33%) had >12g/dl. Only a minimum variation was identified between pre-test and post-test Hb level in the experimental group.

The correlation between the mean differed knowledge, attitude and post-test satisfaction scores among adolescent girls in the experimental group was assessed using Karl Pearson Correlation Coefficient. A positive moderate correlation was identified between the mean differed knowledge, attitude and post-test satisfaction score with an 'r' value of 0.44, 0.45, 0.45 respectively at $p=0.01$ level of significance. No statistical relationship was identified between the variables in the control group.

The association of background variables with mean differed levels of knowledge among girls in the experimental group revealed that there was a statistically significant association for background variables like type of family, family monthly income, educational status of the mothers in the experimental group. No statistically significant association was found in the control group.

Similarly, the association of background variables with mean differed levels of attitude among girls in the experimental group revealed that there was a statistically significant association between background variables like type of family, mother's education status, mother's occupation in the experimental group. No statistically significant association was found in the control group.

Also, the association of background variables with the mean satisfaction score regarding adolescent health in the experimental group revealed that there was a statistically significant association between background variables like type of family, mother's education status, mother's occupation. However, in the control group none of the demographic variables were associated with the mean satisfaction score among adolescent girls.

Nursing implications

Nurse educators can incorporate the concept of adolescent health in the curriculum of undergraduate and post graduate Nursing curriculum. Nurses have the vital role of working with adolescent girls to build their knowledge, confidence, understanding about their health. Nurse administrators can formulate a new policy and protocol for adolescent awareness health assessment. The Nurse researcher implies on utilisation of evidence and research findings in planning, implementing and evaluating adolescent health. The research findings can be disseminated to stimulate further researchers to observe and manage the adolescent health for adolescent girls.

Limitations

The researcher found difficulty:

1. In getting setting permission to conduct the study
2. To get consent from the parents for Tab. Iron and Folic acid supplementation.

V CONCLUSION

The study concluded that the Adolescent Health Outreach Kiosk was an effective interventional strategy in enhancing the level of knowledge, attitude and level of satisfaction among girls regarding adolescent health. Hence, the study recommended the utilisation of Adolescent Health Outreach Kiosks by nurses working in the hospital, community health centre, Nurse educators and healthcare professionals to improve the knowledge and attitude of adolescent girls and motivate adolescent girls to enhance their self-efficacy.

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VIII CONFLICT OF INTEREST: None declared

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X CONTRIBUTORS

ES: Conceptualisation of the study, collection, analysis of the data, writing the manuscript, finalised the manuscript and will act as the guarantor of the paper; **AT:** Conceptualisation of the study, writing the manuscript, finalised the manuscript, edited and critically evaluated the manuscript; **KS, CD:** Edited and critically evaluated the manuscript.

