

Effectiveness Of Educational Intervention On Knowledge And Attitude Of Sexual And Reproductive Health Among Adolescents In Selected Public Schools Of Jhapa, Nepal

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Abstract:

Background: Sexual and reproductive health is important aspect of adolescent's health. Development of knowledge and attitude take place during this period carries many positive aspects as well as negative consequences especially in area of sexual and reproductive health. Proper education in this age group is necessary to enable them to prevent from different sexual and reproductive health problems. The objectives of the study is to find out effectiveness of educational intervention in improving the knowledge and attitude of adolescent on sexual and reproductive health

Materials and Methods: A quasi experimental study design using cluster sampling was carried out in two selected public schools with similar settings in Jhapa, Nepal. All the subjects were divided into two groups: experimental and control, each comprised 70 students. Structured self-administered questionnaires, Likert scale and educational intervention package consisting information on sexual and reproductive health were used as a tool of investigation. Pre-test were taken in both group. Educational intervention was implemented in experimental group and after 15 days post-test was carried out in both groups. Paired t-test and independent t-test were used for data analysis and p value < 0.05 was considered as significance.

Results: The mean (\pm sd) pre-test score of experimental group on knowledge of sexual and reproductive health was (45.14 \pm 8.90) and control group was (43.18 \pm 7.84) (p value: 0.17). After educational intervention changes in mean score of knowledge and attitude were observed. In experimental group (94.67 \pm 1.91) was statistically significant (p value: <0.001) whereas no significant change was seen in control group (43.86 \pm 7.84). Similarly, post-test scores of attitude were favourable in experimental group than in control group (p < 0.001)

Conclusion: This study found that educational intervention is effective in improving knowledge and attitude of sexual and reproductive health.

Key Word: Sexual and Reproductive Health, Adolescent, Knowledge, Attitude, Effectiveness

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I. Introduction

World health organization (WHO) defines an adolescent as age between 10 to 19 years. During this period, adolescents acquire many positive aspects such as develop one's identity, autonomy as well as potential negative consequences especially in area of sexual and reproductive health.¹ Today, adolescents comprise almost 20% of the world's population, and 24% of Nepalese population.^{2,3,4} Adolescent sexual and reproductive health (ASRH) comprises a major component of global burden of sexual ill-health.⁵ Sexual health and reproductive health is a state of physical, emotional, mental and social well-being in relation to sexuality, it is not merely the absence of disease, dysfunction or infirmity in all matters relating to the reproductive system and to its functions and processes.^{6,7}

During this period, adolescents are vulnerable to engage in risky sexual behaviour resulting in poor reproductive health outcomes such as unwanted pregnancy, unsafe abortion, sexually transmitted infection like HIV/AIDS.⁸ Finding of a study in Pakistan demonstrated that rural adolescents had low knowledge, attitude and misconceptions regarding reproductive health issues.⁹ ASRH is now growing concern in developing country because there are increasing trend in sexual activities and unwanted pregnancy. Study suggested that there are increasing numbers of sexual activities among Nepalese adolescents.¹⁰ Modernization, expansion of communication and transportation, urbanization and migration provide more conducive environment for social interactions between young girls and boys and opportunity for pre-marital and unsafe sexual activity among young people in Nepal.¹¹

Inadequate knowledge in this area may lead to serious consequences in Sexual and reproductive health. Therefore, complete and accurate sexual and reproductive health education for healthy sexuality and prevention of many related problems is necessary.^{1,2} Effectiveness of reproductive health education among adolescents in Karnataka concluded that an educational intervention program brings desirable change in knowledge among adolescent girls regarding reproductive health.²

Research and interventions on young people's sexual and reproductive health have been given a high priority in the world, through extensive review it was noticed that there is low and very few educational interventional studies were carried out in matter related to adolescent sexual and reproductive health in the context of Nepal. Thus, the researcher wants to provide educational intervention to the adolescents and find out the difference in knowledge and attitude regarding ASRH in experimental and compare it with a control group.

II. Material and methods

Quasi experimental research design was carried out on students of Kankai and Bhrikuti public school at Jhapa district, Nepal from September 2020 to March 2021. A total 140 students (both male and female) of aged between 14 to 19 years were selected for this study.

Study design: "Pre-test Post-test non- equivalent group" quasi experimental design was used

Study location: The study was conducted in two public schools: Kankai secondary school and Bhrikuti secondary school which is one of the well-known public school of located at Kankai municipality at Jhapa, Nepal

Study duration: September 2020 to March 2021

Sample size: 140 students

Sample size calculation:

The sample size was calculated by using sample size calculation formula. Total sample size were 140 students whereas 70 was considered as experimental group and 70 was control group which was selected randomly from respective group. We assumed that confidence interval of 95% and the level of significance of 5%.

Subjects & selection method:

Kankai municipality from Jhapa district was selected purposively. This municipality consist 9 ward. Within this there are 6 public secondary schools. Among 6 school 30 % was selected randomly by lottery method which came to be 2 schools: Kankai secondary school from ward no 3 and Bhrikuti secondary school from ward no 7. Kankai secondary school contain 216 students in class 10 having students in each section A (72), section B (72) and section C (72) who are studying Nepali medium and Bhrikuti secondary school contain 70 students who were also studying Nepali medium. To achieve the targeted sample size that is 140 (experimental group 70 and control group 70) Bhrikuti school's class 10 student was completely enumerated and from Kankai secondary school, the sample was selected randomly by lottery method. To reduce bias experimental and control group was selected randomly after pretesting by lottery method. Hand picking school was selected as experimental group where as next group was selected as control group. Two school are situated about 2 kilometer apart from each other which prevented contamination of the control group.

Inclusion criteria:

1. Class 10 students who were studying Nepali medium
2. Both male and female
3. Aged between 14-19 years.

Exclusion criteria:

1. Students who were not willing to participate.
2. Students who were absent during study.
3. Student who were studying English medium

Procedure methodology

Written informed consent was obtained from the adolescents (age above 18 years and parents of adolescent's age below 18 years and informed assent from the adolescent age below 18 years) was taken before data

collection. Self-administered questionnaire consisting of structure and semi structured question was used. The questionnaire was divided into three parts.

Part I: Questions related to demographic information of the respondents.

Part II: Questions related to knowledge regarding ASRH.

Part III: Questions related to attitude regarding ASRH

The educational intervention was given to the experimental group which includes information about meaning and component of reproductive health and safer sex (consistent and correct use of condom) and its advantage, safe motherhood (early marriage and early pregnancy), meaning and method of family planning, types of contraception and meaning, types, mode of transmission, prevention and management of STIs including HIV/AIDS. Content validity was established by literature review, consultation with research advisor, statistician, subject matter expert and valuable suggestion from colleagues. Language expert was consulted for translation from English to Nepali and back translation to English. The reliability of the research tool was maintained by pretesting of 10 % of sample size i.e. 14 students of class 10 in Sarswoti Secondary School. After that consultation was done with research advisor and then split half and Cronbach's alpha was tested. There was 0.76 consistency in attitude towards Adolescent sexual reproductive health (ASRH). Tool was reliable.

Data collection was divided into 4 phase

Phase I: (First day): Before starting data collection introduction was given and the purpose of the study was explained to the students of class 10 in both experimental and control group. Written informed consent and assent form was provided to the students and was informed to return next day

Consent: from student older than 18 years and parents of students younger than 18 years and Assent: from the student younger than 18 years. The student was not forced to participate in the study and was informed that they could willingly with-draw their participation at any time during investigation if they were not interested.

Phase II: (Second day): After returning consent and assent form from the students and their parents, the pre-test was done in both the experimental and control group on same day.

Phase III: (Third day): Educational intervention was provided in the experimental group.

Phase IV: (After 2 weeks): Post-test was carried out using the same tool in both groups, and educational intervention was provided in the control group.

Statistical analysis Questionnaire was checked for completeness and consistency after getting back from the respondents. The data was coded and entered into SPSS version 16 software. Both descriptive and inferential statistic were used to analyze the data. The data was analyzed and reported in terms of frequency, percentage, mean and standard deviation. To calculate the mean knowledge and attitude regarding Adolescent sexual and reproductive health, correct responses from all subject was counted separately for pre-test and post-test. Independent sample t test was computed to test the difference of mean knowledge and attitude in pre-test between control and experimental group and in post-test between control and experimental group at the 0.05 level of significance. Paired t-test was computed to find out the difference between pre-test and post-test mean knowledge and attitude score of the experimental and control group at the 0.05 level of significance to test the hypothesis and before t test Shapiro Wilk test was computed to test normality.

III. Result

Table no. 1 shows that the mean age of the respondents was 16.10 ± 1.25 (S.D.) and 16.14 ± 1.29 (S.D.) in control and experimental group respectively. Based on sex (54.3% & 52.9%) of the respondents were male in control and experimental group respectively. Regarding ethnicity, majority of respondents from both groups were Brahmin/Chhetri (65.7%) in control and (62.9 %) in experimental group. Majority of the respondents (88.6 %) in control and (85.7%) in experimental group follows Hinduism. Majority of the respondents belongs to joint family in both groups (61.4% & 62.9%) in control and experimental respectively.

Table no 1: Socio-demographic information of respondents

Group	Control(n=70)	Experimental(n=70)	Total
Variables	N (%)	N (%)	
Age			
14-16 years	46(65.7)	42(60.0)	88
17-19 years	24(34.3)	28(40.0)	52
Mean age	16.10±1.25	16.14±1.29	
Sex			
Male	38(54.3)	37(52.9)	75
Female	32(45.7)	33(47.1)	65
Ethnicity			
Bramhin/Chhetri	46(65.7)	44(62.9)	90
Dalit	11(15.7)	8(11.4)	19
Janajati	11(15.7)	15(21.4)	26
Madhesi	1 (1.4)	2(2.9)	3
Muslim	1(1.4)	1(1.4)	2
Religion			
Hindusim	62(88.6)	60(85.7)	122
Buddism	3(4.3)	6(8.6)	9
Chistianity	5(7.1)	4(5.7)	9
Type of Family			
Nuclear	27(38.6)	26(37.1)	53
Joint	43(61.4)	44(62.9)	87

Table no 2 shows that majority (60%) respondent's mother in both groups can read and write. Regarding level of education majority (52.4% & 45.2%) had elementary education in control and experimental group respectively. Majority of respondent's Father (71.4%) in control (70.0%) experimental group and can read and write. Based on education level of father, 40.0% had secondary and above in control group where as 42.8% had elementary education in experimental group.

Table no 2: Education status of respondent' parents

Group	Control(n=70)	Experimental (n=70)	Total
Variables	N (%)	N (%)	
Education Status of Mother			
Can read and write	42(60.0)	42(60.0)	84
Cannot read and write	28(40.0)	28(40.0)	56
Education level of Mother (n=42)			
Informal	8(19.0)	10(23.8)	18
Elementary	22(52.4)	19(45.2)	41
Secondary	12(28.6)	13(31.0)	25
Education Status of Father			
Can read and write	50(71.4)	49(70.0)	99
Cannot read and write	20(28.6)	21(30.0)	41
Education level of Father			
	n= 50	n= 49	
Informal	11(22.0)	12(24.5)	23
Elementary	19(38.0)	21(42.8)	40
Secondary	20(40.0)	16(32.7)	36

Table no 3 shows that, regarding source of information about ASRH, Majority of the respondents 88.6% in control group and 91.4 % in experimental group had received information from teachers and minority of the respondents 22.9% in control group and 11.4% in experimental group received information from peer.

Table no 3: Source of information regarding ASRH

Groups	Control(n=70)	Experimental(n=70)
Variables	N (%)	N(%)
Mass Media	20(28.6)	18(25.7)
Peer	16(22.9)	8(11.4)
Parents/Family	27(38.6)	33(47.1)
Teachers	62(88.6)	64(91.4)

Multiple choice*

Table no 4 shows that in pre-test majority (81.4%) of the respondents of respondents had inadequate knowledge 18.6 % had moderately adequate and no one had adequate knowledge among control group similarly among experimental group 77.1 % of respondents had inadequate knowledge, 21.4 % had moderately adequate and only 1.4 % had adequate knowledge while after educational intervention in post-test among experimental group level of knowledge was increased to 100% whereas in control group without intervention level of knowledge remain nearly same(74.3% inadequate and 25.7% moderately adequate)

Table no 4 :Pre-test and Post -test Knowledge level in Control and Experimental group

Group	Control		Experimental	
	Pre	Post	Pre	Post
Type	Pre	Post	Pre	Post
Knowledge level	N (%)	N (%)	N (%)	N (%)
Inadequate (<50)	57(81.4)	52(74.3)	54(77.1)	
Moderately adequate (51 – 75%)	13(18.6)	18(25.7)	15(21.4)	
Adequate (76 -100%)			1(1.4)	70(100)

Table no 5 signifies that level of attitude of respondents remain same in pre-test and post- test among control group and pre-test among experimental group (87.1% 11.4% & 1.14%) moderately favourable, favourable and unfavourable respectively as whereas after intervention in post-test among experimental group more than half (65.7%) has favourable a and one third (34.3%) respondents had moderately favourable and no one had inadequate attitude

Table no 5:Pre-test and Post –test Attitude level in Control and Experimental

Group	Control (n=70)		Experimental (n=70)	
	Pre	Post	Pre	Post
Type	Pre	Post	Pre	Post
Attitude level	N (%)	N (%)	N (%)	N (%)
Unfavourable (<50)	1(1.4)	1(1.4)	1(1.4)	
Moderately Favourable (51 – 75%)	61(87.1)	61(87.1)	61(87.1)	24(34.3)
Favourable (76 -100%)	8(11.4)	8(11.4)	8(11.4)	46(65.7)

Table no 6 shows that the gain score of knowledge regarding of ASRH in control group is 0.68. This difference in score is statistically insignificant at 95% confidence level (p value: 0.61) while in experimental group the gain score is 49.53. This difference in score is statistically significant at 95 % confidence level (p value: <0.001)

Table no 6: Comparison of Gain score of Knowledge among Control and experimental group

Group	Type	Mean SD	t-score	Gain Score (95% CI)	p-value
Control	Pre(70)	43.18±7.84			
	Post(70)	43.86±7.84	0.515	0.68(- 1.94 to 3.30)	0.607
Experimental	Pre (70)	45.14±8.90		49.53(47.38 to 51.68)	<0.001
	Post(70)	94.67±1.91	45.512		

Note: Score was calculated in percentage

Table no 7 shows that the gain score of attitude regarding ASRH in control group is 0.16. This difference in score is statistically insignificant at 95% confidence level (p value: 0.19) while in experimental group the gain score is 12.03. This difference in score is statistically significant at 95 % confidence level (p value: <0.001)

Table no 7: Comparison of Gain score of Attitude between Control and experimental group

Group	Type	Mean SD	t-score	Gain Score (95% CI)	p-value
Control	Pre(70)	64.53±8.00			0.906
	Post(70)	64.70±8.41	0.119	0.16 (-2.58 to 2.91)	
Experimental	Pre(70)	63.74±8.21			<0.001
	Post(70)	75.77±6.15	9.819	12.03 (9.61 to 14.46)	

Note: Score was calculated in percentage

Table no 8 shows that there is no significant difference (1.96) in knowledge regarding ASRH between control and experimental group (p value: 0.17). While after intervention the knowledge was significantly difference (50.81) between control and experimental group at 95% confidence level (p value: <0.001)

Table no 8 : Comparison of Pre-test Knowledge level between control and experimental groups & Post-test Knowledge level between control and experimental group

Knowledge (in percent)						
Type	Group	N	Mean SD	t-score	Diff (95% CI)	p-value
Pre	Control	70	43.18±7.84			
	Experimental	70	45.14±8.90	1.383	1.96(-0.84 to 4.77)	0.17
Post	Control	70	43.86±7.84			
	Experimental	70	94.67±1.91	52.697	50.81(48.30 to 52.75)	<0.001

Note: Score was calculated in percentage

Table no 9 shows that there is no significant difference (-0.80) in attitude regarding ASRH between control and experimental group (p value: 0.56) while after intervention the attitude was significantly difference (11.07) in control and experimental group at 95% confidence interval (p value: <0.001)

Table no 9: Comparison of Pre-test Attitude level between control and experimental groups and Post-test Attitude level between control and experimental group

Attitude (in percent)						
Type	Group	N	Mean SD	t-score	Diff (95% CI)	p-value
Pre	Control	70	64.53±8.00			
	Experimental	70	63.74±8.21	-0.581	-0.80(-3.51 to 1.91)	0.56
Post	Control	70	64.70±8.41			
	Experimental	70	75.77±6.15	8.892	11.07(8.61 to 13.53)	<0.001

Note: Score was calculated in percentage

IV. Discussion

Discussion Related to Socio-demographic Information: Regarding socio-demographic information, Majority (65.7% & 60%) of the respondents among control and experimental group belongs to age group 14 to 16 years with the mean age 16.10±1.25 (S.D.) and 16.14±1.29 (S.D.) in control and experimental group respectively. A study on sexual and reproductive health of adolescent aged 15–19 years in rural Nepal revealed that mean age 16.4 years.¹³ Based on sex more than half (54.3% & 52.9%) of the respondents were male in control and experimental group respectively. Regarding ethnicity, majority of respondents from both groups were Brahmin/Chhetri (65.7%) in control and (62.9%) in experimental group. Most of all respondents (88.6 %) in control and (85.7%) in experimental group follows Hinduism. A cross-sectional study among adolescents in Jhapa district 59.6% were boys and 40.4% were girls. Majority 86.1% of the respondent were Hindus¹⁰. Which findings is similar to present study. Regarding ethnicity, majority of respondents from both groups were Brahmin/Chhetri (65.7%) in control and (62.9 %) in experimental group. Most of all respondents (88.6 %) in control and (85.7%) in experimental group follows Hinduism. Majority of the respondents belongs to joint family in both groups (61.4%) in control and (62.9%) in experimental. Majority (60%) respondent's mother in both groups can read and write. Regarding level of education of mother, (52.4% & 45.2%) had elementary education in control and experimental group respectively. Majority of respondent's Father (71.4%) in control (70.0%) experimental group and can read write. Based on education level of father, 40.0% had secondary and above in control group where as 42.8% had elementary education in experimental group. Based on education level of father, 40.0% had secondary and above in control group where as 42.8% had elementary education in experimental group.

Source of information

Regarding source of information about ASRH, Majority (88.6%) of the respondents in control group and 91.4 % in experimental group had received information from teachers and minority (22.9%) of the respondents in control group and 11.4% in experimental group received information from peer. Institutional based cross-sectional study was conducted among adolescent in different educational institutions of Kathmandu most of them (83.9%) were got sexual and reproductive health information via radio, TV or the internet (98.63%) and through books and newspapers (94.52%⁸). The result is contrast with the present study. It might be due to different setting.

Discussion related to level of knowledge and attitude on ASRH

The present study shows that in pre-test majority (81.4%) of respondents had inadequate knowledge 18.6 % had moderately adequate and no one had adequate knowledge among control group Similarly among experimental group 77.1 % of respondents had inadequate knowledge, 21.4 % had moderately adequate and only 1.4 % had adequate knowledge while after educational intervention in post-test among experimental group level of knowledge was increased to 100% whereas in control group, level of knowledge remain nearly same(74.3% inadequate and 25.7% moderately adequate)

This study signifies that the gain score of regarding knowledge of ASRH in control group is 0.68 (43.18 ± 7.84) (43.86 ± 7.84) in pre-test and post-test. This difference in score is statistically insignificant at 95% confidence level (p value: 0.61) while in experimental group the gain score is 49.53 (45.14±8.90) (94.67 ± 1.91) in pre-test

and post-test. This difference in score is statistically significant at 95 % confidence level (p value: <0.001) .This findings is supported by finding of the educational intervention study on sexual and reproductive health among adolescent in Kathmandu where mean knowledge score before the intervention was 36.02 ± 0.672 , while the mean knowledge score after intervention was 48.27 ± 0.337 , with almost all (98%) having good knowledge. The difference between pre-test and post-test knowledge score was found to be highly significant (p<0.01). Before educational intervention, only 30% of the students had good knowledge. Most of them 63% had average knowledge during pre-test, while almost all 98% had good knowledge during posttest.¹⁴

Comparison of pre-test total mean knowledge between control and experimental groups & post- test mean knowledge between control and experimental group this study shows that there is no significant difference(1.96)in mean knowledge regarding ASRH between control and experimental group in pre-test (43.18 ± 7.84) (45.14 ± 8.90) respectively at 95% confidence interval using independent sample t test (p value: 0.17). While after intervention the knowledge was significantly difference (50.81) in control and experimental group (43.86 ± 7.84) (94.67 ± 1.91) at 95% confidence level (p value: <0.001)

Present study signifies that level of attitude of respondents remain same in pre-test and post- test among control group and pre-test among experimental group (87.1% 11.4% & 1.14%) moderately favourable, favourable and unfavourable respectively as whereas after intervention in post-test among experimental group more than half (65.7%) has favourable a and one third (34.3%) respondents had moderately favourable and no one had inadequate attitude.

Present study shows that the gain score of attitude regarding ASRH in control group is 0.16 (64.53 ± 8.00) (64.70 ± 8.41) in pre-test and post-test. This difference in score is statistically insignificant at 95% confidence level (p value: 0.19) while in experimental group the gain score is 12.03 (63.74 ± 8.21) (75.77 ± 6.15) in pre-test and post-test. This difference in score is statistically significant at 95 % confidence level (p value: <0.001).

Comparison of pre-test total mean attitude between control and experimental groups & post- test mean knowledge between control and experimental group shows that there is no significant difference(-0.80) in attitude regarding ASRH between control and experimental group in pre-test (64.53 ± 8.00) (63.74 ± 8.21) respectively at 95% confidence interval (p value: 0.56). While after intervention the attitude was significantly difference(11.07) in control and experimental group (64.70 ± 8.41) (75.77 ± 6.15) respectively at 95% confidence interval (p value: <0.001). Which is similar to the finding of educational interventional study done in Dharan; mean (\pm SD) pre-test score of the experimental group on knowledge of reproductive health was $39.83 (\pm 16.89)$ and of the control group was $39.47 (\pm 0.08)$. The same of experimental group after administration of the structured teaching program (84.60 ± 10.60) and of the control group with conventional teaching method (43.93 ± 10.08) was statistically significant (p<0.001). Similarly, the post-test scores of knowledge of the groups on responsible sexual behaviour and their attitude towards reproductive health were better in the experimental group than in the control group (p<0.001).¹²

Similar type of educational intervention study conducted in Srilanka shown that significant improvement in SRH knowledge and attitude among grade nine students (p < 0.05) in the intervention area after the intervention; in experimental group pre-test knowledge score mean(SD) (14.6 ± 12.2) whereas post-test (26.5 ± 13.6) (p value 0.001) in control group pre-test mean knowledge score(15.6 ± 13.2) post-test (21.8 ± 12.9)(p value:0.099) and attitude among experimental group in pre-test test mean attitude 4.7 and post-test 8.4 (p value-0.029) whereas among control group in pre-test mean score 2.0 and post-test 3.1 (p value: 0.450).¹⁵

Using Paired t test among pre -test and post-test and independent t test between control (without educational intervention) and experimental (with educational intervention) this study found that there is significant difference in knowledge and attitude at 95% confidence level. This supports hypothesis "There is significantly different in knowledge and attitude regarding adolescent sexual and reproductive health between the experimental groups following educational intervention

V. Conclusion

This study found significant difference in level of knowledge and attitude among the respondents following educational intervention in post-test among experimental group. Therefore it is concluded that educational intervention has significant role in improving knowledge and attitude of sexual and reproductive health among secondary school students in order to improve the sexual and reproductive health and reduce the incidence and prevalence of adolescent reproductive health problem

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