

Journal of Coastal Life Medicine

Assess the Effectiveness of Planned Audio - Teaching Program on Menstrual Hygiene in Terms of Knowledge, Attitude and Practice among Visually Challenged Females of Reproductive Age Group in Selected Area of NCR”

Received: 17 February 2023, **Revised:** 20 March 2023, **Accepted:** 21 April 2023

Shalu, Assistant professor, Faculty of Nursing, SGT University, Gurugram

Komal, Nursing officer, Aiiims New Delhi,

Prof. Dr. A. Koijam Mamata devi, Professor, Faculty of Nursing, SGT University, Gurugram

Ms. Deepak, Associate professor, Faculty of Nursing, SGT University, Gurugram

Keywords

Visually challenged Females, Reproductive age group, Menstrual Hygiene, Knowledge, Attitude, Practice

Abstract

Over 20% of the world's blind people live in India, the second most populous nation in the world. According to the World Health Organization; one person worldwide loses their vision every five seconds, leaving 180 million individuals visually impaired. In India, blindness and vision impairment continue to be serious public health issues. The needs of girls who are blind or visually impaired have been so severely neglected. Consequently, specific steps should be done to sustain the higher level of education and hygiene habits on menstruation in girls who are visually impaired and are of reproductive age. One group pre -post test pre experimental research design was apply. In that 60 visually challenged females of reproductive age group sample were selected through convenient sampling technique. The data collected through, structured knowledge questionnaire, Likert scale for attitude and Non-observational checklist for practice. Result: visually challenged females of reproductive age group was observed and comparing their pre test and post test mean scores. In knowledge, attitude and practice the mean post test score is greater than the mean pretest score. Therefore, the intervention through audio teaching tool was effective to enhance the knowledge, attitude and practice of the samples in this research study. The result revealed that there is significant association between the education with knowledge regarding menstruation, regular menstruation, duration of menstrual flow and pre test knowledge score; significant association between the knowledge regarding menstruation and source of information and post test knowledge score; Therefore the research hypothesis (H2) is accepted for knowledge at 0.05 level of significance and null hypothesis is rejected for knowledge. The Result shows then association btw the pre-post test practice scores with demographic variables so the null hypothesis is accepted for practice at the level of significance. The Knowledge is also showing significant association regarding menstruation with source of information and duration of menstrual cycle. The pretest attitude score; significant association between age and post test attitude score. Therefore the research hypothesis (H2) is accepted for attitude at 0.05 level of significance and null hypothesis is rejected for attitude.

1. Introduction

Imagine what it would be like to not be able to see your mother's face, the beauty of the dawn, or the beauty of the flowers in bloom. Our eyes are the most important sense organs in the body of a human being use for seeing the nature or the

surrounding. So, one has to face the uncountable hurdles without the vision. The populations which do not see, they only touch, feel and smell but cannot visualize the things.¹The statistics shown that there are 31.6 million constitutes the visually

Journal of Coastal Life Medicine

challenged population in our country, India. It seen that there is continuously increase in the number of visually challenged persons. In 2010 there is 24.1 million persons are with no vision and in 2020 it reaches 31.6 million. It can be calculated that there is 7.5 million increase in the population of visually challenged people in India within a decade.²

Our country India is the ranked 2nd in the world in population of visually challenged people and approximate 20% of the globe's blind population is constitutes by India. Also, it constitutes the largest number of visually challenged children. This all because of the scarcity of the resources and the division of rich and poor. The poor population did not get enough basic needs and did not access to the health care facilities because they live in rural areas and urban slums. In our population, about 52% of the population is constitutes by females who are in the reproductive age group and a large number of them are having a proper menstrual cycle pattern. A large number of females are belongs to low socio economic status where they don't have area to clean the absorbent used by them or appropriate place to discard the sanitary products. Also, they do not access to reach the government facility and they do not have sanitary products to use during menstruation. Majority of females are restricted to do their day to day life activities because of they are in the menstrual period or bleeding period. Look after the health issues due to Unhealthy or poor hygienic practices during menstrual period, the inadequate awareness or belongs to low socio-economic status group they cannot reach to all these facilities i.e. sanitary products such as pads, tampons and other material. Around world, approximately 500 million females not have of proper access to menstrual hygiene facilities in their houses, schools, etc. There are several factors that influence difficult experiences of the females with menstruation, including improper facilities i.e. sanitation, education, etc. At the same scale the Adolescents and reproductive age group females are major concern for the issues of their reproductive health and reproductive system. There are differences in the issues from country to country, social class, family, culture and ethnic groups. The special focused on the how does a Blind Girl deal with her Menstrual Time when she gets it? How does she maintain her Schedule and Hygiene, who guides her, a lot of questions arise? There is a difficulty arises when there is interaction with the deaf and mute females and talk to them about the reproductive health and menstrual hygiene and communicate the right information regarding the menstrual hygiene maintenance. Sometimes if there is any misinterpretation in the communication then they understand the information not accurately which leads to that these females are following the wrong

practices. To fulfill the gap, the information to those challenged girls are provided with the special planned audio teaching programm aids which help them to understand easily and helpful for them in future.¹⁸

2. Methodology:

Research setting: This study was conducted in selected area of NCR. The location was chosen based on three factors: proximity to one another geographically, study feasibility, and sample availability.

VARIABLES UNDER STUDY ARE:

Dependent variable: Dependent variables in this study are knowledge, practice and attitude regarding menstrual hygiene.

Independent variable: Independent variable in the study is Audio teaching to visually challenged females of reproductive age group regarding menstrual hygiene.

Demographic variables: Demographic variables in this study were Age, Gender, Religion, Education, type of family, family income, area of residence, and clinical variables includes age of menarche, knowledge of menstruation, source of information, the duration of the menstrual cycle, the length of the flow, the regularity of the menstrual cycle, the flow during the menstrual cycle, and dysmenorrhea.

POPULATION:

Target population: Target population of the present study comprised of all visually challenged females of reproductive age group.

Accessible population: The selection of respondents that are located within easily accessible is the accessible population. All visually impaired females of reproductive age who satisfied the criteria for acceptance to the selected school comprised the accessible population in this study.

Sample and sample size: The sample size is based on the required level of precision, level of significance, type of variable, kind of study, goal of study, type of data collected process, and practicality of man, money, and material are used to establish sample size.

Sample Size: The sample size of this study is 60 visually challenged females of reproductive age who are living in selected schools

Sampling Technique: Non probability convenient sampling

Inclusion criteria:-

- The visually challenged females of reproductive age who are studying in selected blinds centers of NCR.
- The visually challenged females of reproductive age who attained menarche.

Journal of Coastal Life Medicine

- The visually challenged females of reproductive age who are willing to participate.

Exclusion criteria:-

- The visually challenged females of reproductive age who are not willing to participate.
- The Visually challenged females of reproductive age who had hearing impairment.
- The visually challenged females are unavailable during the period of data collection.

TOOL FOR DATA COLLECTION

The investigator prepared the structured interview schedule in order to collect the socio demographic variables, checklist for practice, knowledge questionnaire and rating scale for attitude.

DEVELOPMENT OF TOOL: The steps followed for preparing the tool.

- The tool's development included a review of relevant literature.
- The building of the instrument and its modification were done in accordance with the advice and consultation of the specialists.
- The plan for statistical analysis was prepared after consultation with the statistician.

DESCRIPTION OF THE TOOL:

Section - I: It deals with demographic data which consists of 14 items to collect the sample characteristics, which comprises of: Age ,Religion , Education ,Type of family ,Family annual income ,Area of residence, Age of menarche, Knowledge of menstruation, Source of information, Menstrual cycle and menstrual flow Duration, Regularity of menstruation, Flow during menstruation, Dysmenorrhea.

Section - II: Self structured questionnaire is used to assess the knowledge regarding menstrual hygiene among visually challenged females of reproductive age group. The consists of 3 areas which contain 21 items, they are questions related to anatomy and physiology of reproductive organ (4 items), questions related to menstruation(6 items) and questions for menstrual hygiene(11 items)the minimum score is 0 and maximum score is 21. There are 3 classifications for practice:

- If score is between 0 to 7 means Poor Knowledge.
- If score is between 8 to 14 means Average Knowledge.
- If score is between 15 to 21 means Good Knowledge.

Section – III: Likert scale is used to assess the attitude of visually challenged females of reproductive age group regarding Menstrual Hygiene. The scale contains 21 statements the minimum score is 0 and maximum score is 48. There are 2 classifications for attitude:

- If the score is between 0 to 24 means negative attitude.
- If the score is between 25 to 48 means positive attitude.

Section - IV: It contains the non- observational checklist for assessing Practice. The checklist contains 21 statements each statement have to response in YES or NO. For YES the 1 score and for No the 0 score the minimum score is 0 and maximum score is 48.

- If the score is between 0 to 7 means Poor practice.
- If the score is between 8 to 14 means Average practice.
- If the score is between 15 to 21 means Good practice.

3. Result:

SECTION I: Frequency and percentage distribution of Selected demographic Variables:

- In this study, majority 50 percent of Sample lies in age group of 20-29 years.
- In this study, the majority is 31.7 percent of subjects have intermediate level of education.
- In this study, majority 90 percent of subjects were Hindu.
- In this study, majority 60 percent of subjects were unmarried.
- In this study, majority 66.7 percent of subjects belongs to nuclear family.
- In this study, majority 81.7 percent of subjects had monthly family income less than 10,000.
- In this study, majority 56.7 percent of subjects were residing in rural area.

Journal of Coastal Life Medicine

- In this study, majority 86.67 percent of subjects have knowledge regarding menstruation.
- In this study, majority 33.3 percent of subjects have teachers as source of information regarding menstruation.
- In this study, majority 85 percent of subjects have regular menstruation.
- In this study, majority 48.4 percent of subjects have duration of 28 - 30 days in menstrual cycle.
- In this study, majority 56.7 percent of subjects have menstrual flow for 3 - 5 days.
- In this study, majority 58.3 percent of subjects have pain during menstruation.
- In this study, 50 percent of subjects have discomfort during menstruation and 50 percent of subjects not having discomfort during menstruation.

SECTION II: Assessing the level of knowledge, practice and attitude among visually challenged females of reproductive age group.

- Among 60 samples visually challenged females of reproductive age group, In pre test, majority 68.30 percent of subjects are having average knowledge, 78.40 percent of subjects having average practice, 65 percent of subjects having negative attitude.
- The Result shows the no significant association btw the pre-posttest practice scores with selected demographic variables, so H_0 hypothesis is accepted at 0.05 level of significance and H_1 hypothesis (H2) is rejected.
- The findings show that is a significant association between knowledge regarding menstruation, source of information, duration of menstrual cycle and pre test attitude score and significant association between age and post test attitude score; hence the H_1 hypothesis (H2) is accepted at 0.05 level of significance and H_0 hypothesis is rejected.
- Assessing the level of knowledge, practice and attitude regarding menstrual hygiene among visually challenged females of reproductive age group

- Among 60 samples visually challenged females of reproductive age group, In post test, Majority 63.40 percent of subjects are having good knowledge, 71.70 percent of subjects having good practice, 70 percent of subjects having positive attitude.

SECTION III: Comparison of mean pretest and mean posttest of knowledge, practice and attitude

- Among 60 samples visually challenged females of reproductive age group, the comparison of Mean pre-post test scores. In knowledge, practice and attitude the mean post test score is more than the mean pre test score. Therefore, the audio teaching is effective to enhance the knowledge, practice and attitude of the subjects in the research.

SECTION IV: Find out the Association between the level of knowledge, practice & attitude and demographic variables

- The findings show that there is a significant association between the education, knowledge regarding menstruation, regular menstruation, duration of menstrual flow and pre test knowledge score; significant association between the knowledge regarding menstruation and source of information and posttest knowledge score; So the research hypothesis (H_2) is accepted at 0.05 level of significance and null hypothesis is rejected.

Journal of Coastal Life Medicine

Table 1 distribution of level of pre test knowledge score

N = 60		
Level of Knowledge	Frequency	Percentage
Poor	16	26.70%
Average	41	68.30%
Good	3	5.00%
TOTAL	60	100.00%

This table depicts that the level of knowledge of the subjects in Pre Test. Majority 68.30 percent of subjects are having Average Knowledge, 26.70 percent of subjects having Poor Knowledge and remaining 5 percent of subjects having Good Knowledge.

Table 2 distribution of level of post test knowledge score

N = 60		
Level of Knowledge	Frequency	Percentage
Poor	2	3.30%
Average	20	33.30%
Good	38	63.40%
TOTAL	60	100.00%

This table depicts that the level of knowledge of the subjects in Post Test. Majority 63.40 percent of subjects are having Good Knowledge, 33.30 percent of subjects having Average Knowledge and remaining 3.30 percent of subjects having Poor Knowledge.

DISTRIBUTION OF KNOWLEDGE

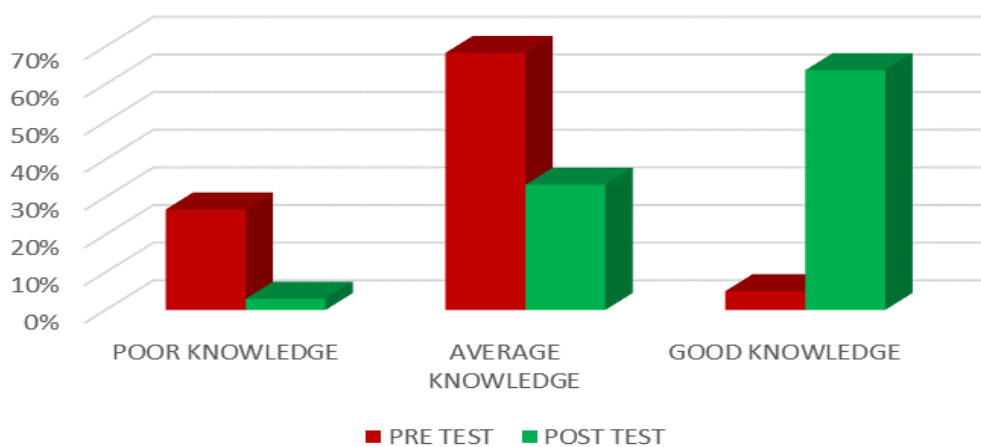


Figure 1: Distribution of level of knowledge score

Journal of Coastal Life Medicine

Table 3: Distribution of pre test Practice score

N = 60

Practice	Frequency	Percentage
Poor	11	18.30%
Average	47	78.40%
Good	2	3.30%
TOTAL	60	100.00%

This table depicts that the Practice of the subjects in Pre Test. Majority 78.40 percent of subjects having Average Practice, 18.30 percent of subjects having Poor Practice and remaining 3.30 percent of subjects having Good Practice.

Table 4: Distribution of Post test Practice score

N = 60

Practice	Frequency	Percentage
Poor	1	1.60%
Average	16	26.70%
Good	43	71.70%
TOTAL	60	100.00%

The Table 2 shows the Practice of the subjects in Post Test. Majority 71.70 percent of subjects having Good Practice, 26.70 percent of subjects having Average Practice and remaining 1.60 percent of subjects having Poor Practice.

DISTRIBUTION OF PRACTICE

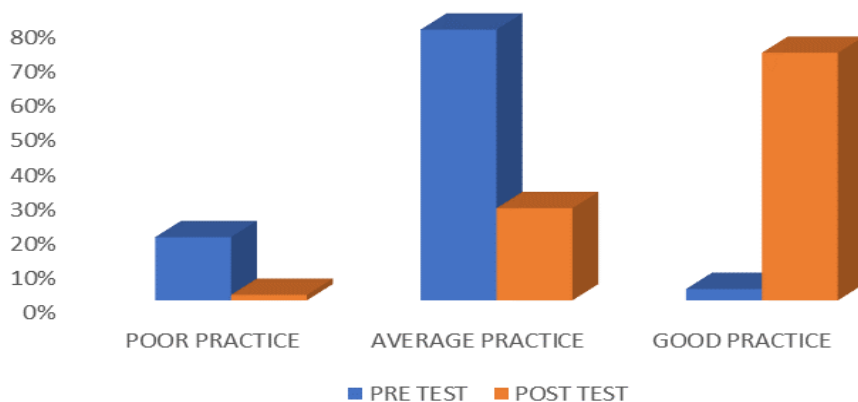


Figure 2: Distribution of Level of Practice score

Journal of Coastal Life Medicine

Table 5: Distribution of pre test Attitude score

N = 60

Attitude	Frequency	Percentage
Negative	39	65.00%
Positive	21	35.00%
TOTAL	60	100.00%

This table depicts that the Attitude of the subjects in Pre Test. Majority 65 percent of subjects having Negative Attitude and remaining 35 percent of subjects Positive Attitude.

Table 6: Distribution of post test Attitude score

N = 60

Attitude	Frequency	Percentage
Negative	18	30.00%
Positive	42	70.00%
TOTAL	60	100.00%

This table depicts that the Attitude of the subjects in Post Test. Majority 70 percent of subjects having Positive Attitude and remaining 30 percent of subjects Negative Attitude..

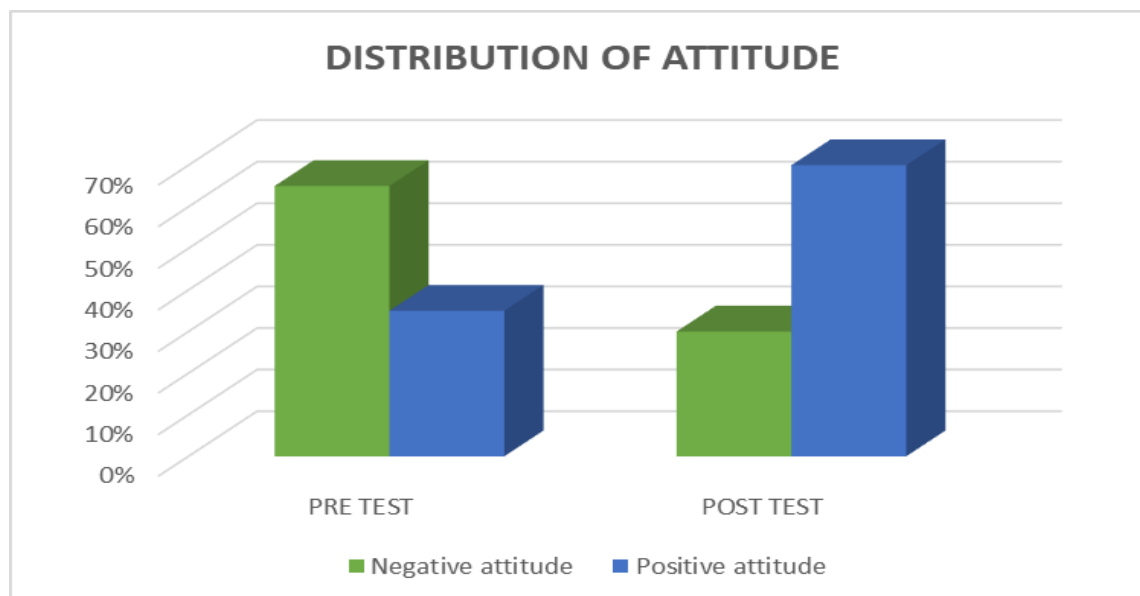


Figure 3: Distribution of level of Attitude

Journal of Coastal Life Medicine

Table7: Comparision Of Mean Pre Test And Mean Post Test Of Knowledge, Practice And Attitude

KNOWLEDGE		
Pre-test score Mean ± SD (Range)	Post test score Mean ± SD (Range)	t-value df p value
9.23 ± 2.854 (3 - 16)	16.33 ± 3.229 (7 - 20)	-12.75 59 0.0001*
PRACTICE		
Pre-test score Mean ± SD (Range)	Post test score Mean ± SD (Range)	t-value df p value
9.16 ± 2.001 (5 - 15)	16.68 ± 2.813 (7 - 20)	-16.86 59 0.0007*
ATTITUDE		
Pre-test score Mean ± SD (Range)	Post test score Mean ± SD (Range)	t-value df p value
24 ± 4.797 (10 - 38)	26.35 ± 4.245 (14 - 35)	-2.84 59 0.0001*

*=significant difference as p value <0.05

Journal of Coastal Life Medicine

ASSOCIATION OF KNOWLEDGE, PRACTICE & ATTITUDE WITH DEMOGRAPHIC VARIABLES

Table: 8 Association between pre test knowledge score with demographic variables.

N = 60

Variables	Mean	F/ value	Df	p value
Age(in years)				
i. 11-19 years	9.72	2.03	3/56	0.120 ^{NS}
ii. 20-29 years	9.46			
iii. 30-39 years	8.5			
iv. 40-45 years	5			
Education				
i. Illiterate	5	3.55	5/54	0.007*
ii. Primary	8.3			
iii. High school	7.5			
iv. Intermediate	10.05			
v. Graduate	10.66			
vi. Post graduate	8.75			
Religion				
i. Hindu	9.33	0.21	3/56	0.887 ^{NS}
ii. Muslim	8.33			
iii. Christian	0			
iv. Sikh	0			
Marital status				
i. Married	8.5	1.335	2/57	0.271 ^{NS}
ii. Unmarried				
iii. Widow	9.72 0			
Type of family				
i. Nuclear family	9.025	0.31	2/57	0.733 ^{NS}
ii. Joint family	9.65			
iii. Extended family	0			
Monthly family income				
i. Less than 10,000	9.46	0.59	3/56	0.619 ^{NS}
ii. 10,001-15,000	8.18			
iii. 15,001-20,000	0			
iv. More than 20,000	0			

Journal of Coastal Life Medicine

Area of residence				
i. Urban	9.11	0.07	1/58	0.782 ^{NS}
ii. Rural	9.32			
Knowledge of menstruation				
i. Yes	9.55	5.41	1/58	0.023*
ii. No	7.12			
Source of information				
i. Parents	9.88	1.20	5/54	0.319 ^{NS}
ii. Teachers	9.33			
iii. Friends	9.83			
iv. Elders	8.87			
v. Mass media	0			
vi. None	7.12			
Regular menstruation				
i. Yes	9.54	4.39	1/58	0.04*
ii. No	7.44			
Duration of menstrual cycle				
i. Below 28 days cycle	9.27	0.52	2/57	0.596 ^{NS}
ii. 28-30 days cycle	9.51			
iii. Above 30 days cycle	8.53			
Menstrual flow				
i. Less than 3 days	7.93	4.55	3/56	0.006*
ii. 3-5 days	10.32			
iii. 6-7 days	7.5			
iv. More than 7 days	8			
Pain during menstruation				
i. Yes	9.42	0.38	1/58	0.535 ^{NS}
ii. No	8.96			
Discomfort during menstruation				
i. Yes	9.46	0.39	1/58	0.531 ^{NS}
ii. No	9			

*Significant difference as p value<0.05NS: Non significant

Journal of Coastal Life Medicine

.TABLE:9 Association of posttest knowledge score with selected demographic variables.

N = 60

Variables	Mean	F/ value	Df	p value
Age(in years)				
i. 11-19 years	17.11	1.47	3/56	0.232 ^{NS}
ii. 20-29 years	16			
iii. 30-39 years	16.7			
iv. 40-45 years	12.5			
Education				
i. Illiterate	12.5	1.92	5/54	0.105 ^{NS}
ii. Primary	17			
iii. High school	18.4			
iv. Intermediate	15.47			
v. Graduate	16			
vi. Post graduate	16.75			
Religion				
i. Hindu	16.42	0.14	3/56	0.930 ^{NS}
ii. Muslim	15.5			
iii. Christian	0			
iv. Sikh	0			
Marital status				
i. Married	16	0.207	2/57	0.810 ^{NS}
ii. Unmarried	16.55			
iii. Widow	0			
Type of family				
i. Nuclear family	15.97	1.48	2/57	0.227 ^{NS}
ii. Joint family	17.05			
iii. Extended family	0			
Monthly family income				
i. Less than 10,000	16.55	0.39	3/56	0.759 ^{NS}
ii. 10,001-15,000	15.36			
iii. 15,001-20,000	0			
iv. More than 20,000	0			
Area of residence				
i. Urban	15.16	2.31	1/58	0.133 ^{NS}
ii. Rural	16.88			

Journal of Coastal Life Medicine

Knowledge of menstruation				
i. Yes	15.98	4.96	1/58	0.029*
ii. No	18.62			
Source of information				
i. Parents	17.47	2.66	5/54	0.031*
ii. Teachers	15.46			
iii. Friends	15.83			
iv. Elders	14			
v. Mass media	0			
vi. None	18.62			
Regular menstruation				
i. Yes	16.33	1.071	1/58	0.099 ^{NS}
ii. No	16.33			
Duration of menstrual cycle				
i. Below 28 days cycle	16.55	0.07	2/57	0.925 ^{NS}
ii. 28-30 days cycle	16.17			
iii. Above 30 days cycle	16.38			
Menstrual flow				
i. Less than 3 days	16.06	0.08	3/56	0.970 ^{NS}
ii. 3-5 days	16.35			
iii. 6-7 days	16.75			
iv. More than 7 days	16.5			
Pain during menstruation				
i. Yes	16.11	0.38	1/58	0.538 ^{NS}
ii. No	16.64			
Discomfort during menstruation				
i. Yes		0.10	1/58	0.750 ^{NS}
ii. No	16.20			
	16.46			

*Significant

difference as p value<0.05NS: Non significant

Journal of Coastal Life Medicine

TABLE 10: Association of pre test practice score with demographic variables
 N=60

Variables	Mean	F/ value	Df	p value
Age(in years)				
i. 11-19 years	9.55	0.60	3/56	0.614 ^{NS}
ii. 20-29 years	8.86			
iii. 30-39 years	9.5			
iv. 40-45 years	8.5			
Education				
i. Illiterate	8.5	0.24	5/54	0.940 ^{NS}
ii. Primary	9.5			
iii. High school	8.8			
iv. Intermediate	9			
v. Graduate	9.46			
vi. Post graduate	9.25			
Religion				
i. Hindu	9.09	0.23	3/56	0.870 ^{NS}
ii. Muslim	9.83			
iii. Christian	0			
iv. Sikh	0			
Marital status				
i. Married	9	0.13	2/57	0.874 ^{NS}
ii. Unmarried	9.27			
iii. Widow	0			
Type of family				
i. Nuclear family	9.27	0.17	2/57	0.843 ^{NS}
ii. Joint family	8.95			
iii. Extended family	0			
Monthly family income				
i. Less than 10,000	8.95	0.95	3/56	0.420 ^{NS}
ii. 10,001-15,000	10.09			
iii. 15,001-20,000	0			
iv. More than 20,000	0			
Area of residence				
i. Urban	9.26	0.11	1/58	0.731 ^{NS}
ii. Rural	9.088			

Journal of Coastal Life Medicine

Knowledge of menstruation				
i. Yes	9.15	0.015	1/58	0.900 ^{NS}
ii. No	9.25			
Source of information				
i. Parents	8.64	2.99	5/54	0.094 ^{NS}
ii. Teachers	8.33			
iii. Friends	10.083			
iv. Elders	10.37			
v. Mass media	0			
vi. None	9.25			
Regular menstruation				
i. Yes	9.29	1.38	1/58	0.243 ^{NS}
ii. No	8.44			
Duration of menstrual cycle				
i. Below 28 days cycle	9.38	0.63	2/57	0.531 ^{NS}
ii. 28-30 days cycle	9.27			
iii. Above 30 days cycle	8.61			
Menstrual flow				
i. Less than 3 days	9.125	0.08	3/56	0.967 ^{NS}
ii. 3-5 days	9.235			
iii. 6-7 days	8.875			
iv. More than 7 days	9.5			
Pain during menstruation				
i. Yes	9.02	0.39	1/58	0.531 ^{NS}
ii. No	9.36			
Discomfort during menstruation				
i. Yes	9.2	0.016	1/58	0.898 ^{NS}
ii. No	9.13			

*Significant difference as p value<0.05NS: Non significant

Journal of Coastal Life Medicine

TABLE 11: Association of post test practice score with demographic variables

N = 60

Variables	Mean	F/ value	Df	p value
Age(in years)				
i. 11-19 years	15.66	2.10	3/56	0.109 ^{NS}
ii. 20-29 years	17.53			
iii. 30-39 years	16.3			
iv. 40-45 years	15			
Education				
i. Illiterate	15	0.52	5/54	0.758 ^{NS}
ii. Primary	17			
iii. High school	16.3			
iv. Intermediate	16.73			
v. Graduate	17.26			
vi. Post graduate	15.25			
Religion				
i. Hindu	16.68	0.07	3/56	0.999 ^{NS}
ii. Muslim	16.68			
iii. Christian	0			
iv. Sikh	0			
Marital status				
i. Married	16.62	0.008	2/57	0.991 ^{NS}
ii. Unmarried	16.72			
iii. Widow	0			
Type of family				
i. Nuclear family	16.45	0.404	2/57	0.669 ^{NS}
ii. Joint family	17.15			
iii. Extended family	0			
Monthly family income				
i. Less than 10,000	16.57	0.134	3/56	0.930 ^{NS}
ii. 10,001-15,000	17.18			
iii. 15,001-20,000	0			
iv. More than 20,000	0			
Area of residence				
i. Urban	17.38	2.94	1/58	0.091 ^{NS}
ii. Rural	16.14			

Journal of Coastal Life Medicine

Knowledge of menstruation				
i. Yes	16.44	2.95	1/58	0.090 ^{NS}
ii. No	18.25			
Source of information				
i. Parents	15.94	1.16	5/54	0.339 ^{NS}
ii. Teachers	17.4			
iii. Friends	15.83			
iv. Elders	16.62			
v. Mass media	0			
vi. None	18.25			
Regular menstruation				
i. Yes	16.82	0.84	1/58	0.362 ^{NS}
ii. No	15.88			
Duration of menstrual cycle				
i. Below 28 days cycle	16.55	0.07	2/57	0.930 ^{NS}
ii. 28-30 days cycle	16.82			
iii. Above 30 days cycle	16.53			
Menstrual flow				
i. Less than 3 days	16.68	0.62	3/56	0.602 ^{NS}
ii. 3-5 days	16.82			
iii. 6-7 days	16.75			
iv. More than 7 days	14			
Pain during menstruation				
i. Yes	16.74	0.03	1/58	0.848 ^{NS}
ii. No	16.60			
Discomfort during menstruation				
i. Yes	16.53	0.168	1/58	0.683 ^{NS}
ii. No	16.83			

*Significant difference as p value<0.05NS: Non significant

Journal of Coastal Life Medicine

TABLE:12 Association of pre test attitude score with selected demographic variables

N = 60

Variables	Mean	F/ value	Df	p value
Age(in years)				
i. 11-19 years	25.22	0.97	3/56	0.411 ^{NS}
ii. 20-29 years	24			
iii. 30-39 years	22.2			
iv. 40-45 years	22			
Education				
i. Illiterate	22	0.90	5/54	0.481 ^{NS}
ii. Primary	24.8			
iii. High school	26.2			
iv. Intermediate	23.05			
v. Graduate	24.13			
vi. Post graduate	21.5			
Religion				
i. Hindu	23.90	0.06	3/56	0.978 ^{NS}
ii. Muslim	24.83			
iii. Christian	0			
iv. Sikh	0			
Marital status				
i. Married	22.5	2.02	2/57	0.141 ^{NS}
ii. Unmarried	25			
iii. Widow	0			
Type of family				
i. Nuclear family	23.97	0.001	2/57	0.990 ^{NS}
ii. Joint family	24.05			
iii. Extended family	0			
Monthly family income				
i. Less than 10,000	24.08	0.02	3/56	0.994 ^{NS}
ii. 10,001-15,000	23.63			
iii. 15,001-20,000	0			
iv. More than 20,000	0			
Area of residence				
i. Urban	24.19	0.07	1/58	0.788 ^{NS}
ii. Rural	23.85			

Journal of Coastal Life Medicine

Knowledge of menstruation				
i. Yes	23.15	15.01	1/58	0.0002*
ii. No	29.5			
Source of information				
i. Parents	22.47	3.73	5/54	0.005*
ii. Teachers	22.13			
iii. Friends	25.08			
iv. Elders	23.62			
v. Mass media	0			
vi. None	29.5			
Regular menstruation				
i. Yes	24.25	0.95	1/58	0.331 ^{NS}
ii. No	22.55			
Duration of menstrual cycle				
i. Below 28 days cycle	25	3.54	2/57	0.035*
ii. 28-30 days cycle	24.72			
iii. Above 30 days cycle	21			
Menstrual flow				
i. Less than 3 days	25.18	0.48	3/56	0.693 ^{NS}
ii. 3-5 days	23.41			
iii. 6-7 days	24.12			
iv. More than 7 days	24			
Pain during menstruation				
i. Yes	23.6	0.579	1/58	0.449 ^{NS}
ii. No	24.56			
Discomfort during menstruation				
i. Yes	24.33	0.28	1/58	0.594 ^{NS}
ii. No	23.66			

*Significant difference as p value<0.05NS: Non significant

Journal of Coastal Life Medicine

TABLE: 13 Association of posttest attitude score with demographic variables
 N =60

Variables	Mean	F/ value	Df	p value
Age(in years)				
i. 11-19 years	28.94	5.80	3/56	0.001*
ii. 20-29 years	25.23			
iii. 30-39 years	26.4			
iv. 40-45 years	19.5			
Education				
i. Illiterate	19.5	1.52	5/54	0.197 ^{NS}
ii. Primary	25.8			
iii. High school	27.6			
iv. Intermediate	27.21			
v. Graduate	25.8			
vi. Post graduate	26			
Religion				
i. Hindu	26.81	2.29	3/56	0.087 ^{NS}
ii. Muslim	22.16			
iii. Christian	0			
iv. Sikh	0			
Marital status				
i. Married	25.45	0.87	2/57	0.420 ^{NS}
ii. Unmarried	26.94			
iii. Widow	0			
Type of family				
i. Nuclear family	25.87	0.74	2/57	0.479 ^{NS}
ii. Joint family	27.3			
iii. Extended family	0			
Monthly family income				
i. Less than 10,000	26.34	0.0004	3/56	0.999 ^{NS}
ii. 10,001-15,000	26.36			
iii. 15,001-20,000	0			
iv. More than 20,000	0			
Area of residence				
i. Urban	26.69	0.29	1/58	0.589 ^{NS}
ii. Rural	26.08			

Journal of Coastal Life Medicine

Knowledge of menstruation				
i. Yes	26.23	0.30	1/58	0.583 ^{NS}
ii. No	27.12			
Source of information				
i. Parents	26.52	0.31	5/54	0.900 ^{NS}
ii. Teachers	26.4			
iii. Friends	26.66			
iv. Elders	24.62			
v. Mass media	0			
vi. None	27.12			
Regular menstruation				
i. Yes	26.66	1.92	1/58	0.171 ^{NS}
ii. No	24.55			
Duration of menstrual cycle				
i. Below 28 days cycle	27.11	0.58	2/57	0.559 ^{NS}
ii. 28-30 days cycle	25.75			
iii. Above 30 days cycle	26.61			
Menstrual flow				
i. Less than 3 days	26.87	1.85	3/56	0.147 ^{NS}
ii. 3-5 days	26.85			
iii. 6-7 days	23.12			
iv. More than 7 days	26.5			
Pain during menstruation				
i. Yes	25.88	1.004	1/58	0.320 ^{NS}
ii. No	27			
Discomfort during menstruation				
i. Yes	26.03	0.329	1/58	0.567 ^{NS}
ii. No	26.66			

*Significant difference as p value<0.05NS: Non significant

4. Discussion:

To assess knowledge, practice and attitude pre or post test scores regarding menstrual hygiene among visually challenged females of reproductive age group in selected area of NCR.

- In the knowledge score of the visually challenged females of reproductive age group the majority 68.30 percent of subjects are having Average Knowledge, 26.70 percent of subjects having Poor Knowledge and remaining 5 percent of subjects having Good Knowledge regarding menstrual hygiene. In

the practice score of the visually challenged females of reproductive age group majority 78.40 percent of subjects having Average Practice, 18.30 percent of subjects having Poor Practice and remaining 3.30 percent of subjects having Good Practice regarding menstrual hygiene. In the attitude score of the visually challenged females of reproductive age group majority 65 percent of subjects having Negative Attitude and remaining 35 percent of subjects Positive Attitude regarding menstrual hygiene. In the knowledge score of the visually challenged females of

Journal of Coastal Life Medicine

reproductive age group the majority 63.4 percent of subjects are having Good Knowledge, 33.3 percent of subjects having Average Knowledge and remaining 3.3 percent of subjects having Good Knowledge regarding menstrual hygiene. In the practice score of the visually challenged females of reproductive age group majority 71.7 percent of subjects having Good Practice, 26.7 percent of subjects having Average Practice and remaining 1.6 percent of subjects having Poor Practice regarding menstrual hygiene. IN the attitude score of the visually challenged females of reproductive age group majority 70 percent of subjects having Positive Attitude and remaining 30 percent of subjects Negative Attitude regarding menstrual hygiene. An analysis of the knowledge and self-reported habits of visually impaired adolescent females at certain blind schools in the city of Pune. The study was carried out using one group pre- and post-test designs and a non-probability practical sampling method. The investigation was carried out in certain blind schools. There were 30 teenage girls with vision impairments in the sample. Menstrual hygiene knowledge and a check list for self-reported practices were assessed using a semi-structured questionnaire. The study's findings revealed that, in the pre-test, 3.33 percent of visually impaired adolescent girls had good knowledge about menstrual hygiene, 93.34 percent had moderate knowledge, and 3.33 percent had low knowledge Score. While 29 (96.67%) of the visually impaired adolescent females reported having good menstrual hygiene habits, only 1 (3.33%) had mediocre habits. So that the p value was less than 0.05, indicating significant difference in self-reported practices acc to mother's educational level.

To evaluate the effectiveness of audio teaching to visually challenged females of reproductive age group in selected area of NCR.

- The group's mean post-test score of 16.33 for knowledge of menstrual hygiene was higher than the group's mean pre-test score of 9.23 for the same topic. 3.229 standard deviation and 2.854 pre-test standard deviation were the results. Table value (-12.75), which was determined to be significance at the 0.05 level, the resulting t-value for the pre-posttest knowledge of menstrual hygiene scores is 0.0001*. As a result of the audio training programme, visually impaired women who are of reproductive age can learn more about menstrual hygiene.
- The group's mean post-test practice score for menstrual hygiene was 16.68, which was higher than the group's mean pre-test score of 9.16 for menstrual hygiene knowledge. Menstrual hygiene practices were seen to have a standard deviation of 2.813 during the post test, compared to a standard deviation of 2.01 during the pretest. The compared table value was (-16.86), which is determined to be significant at 0.05 level, the derived t-value for the pre and post-test scores of practice about menstrual hygiene is 0.0007*. In order for visually impaired women who are of reproductive age to experience a considerable increase in the practice of menstrual hygiene as a result of the audio training programme.
- The group's mean post-test practice score for menstrual hygiene was 16.68, which was greater than the mean pre-test knowledge score of 9.16. The menstrual hygiene practice posttest standard deviation was 2.813, and the pretest deviation was 2.001. The obtained t-value for the practice menstrual hygiene pre-test and post-test scores is 0.0007*. The compared table value (-16.86) was determined to be significant at the 0.05 level. So that visually impaired women who are of reproductive age practice menstrual hygiene more frequently as a result of the audio education programme.
- The group's mean attitude score for the post-test was higher than the mean pre-test score for attitude toward menstrual hygiene, coming in at 26.35. In the post-test, the attitude toward menstrual hygiene was found to have a standard deviation of 4.245, while the pre-test standard deviation was 4.797. When compared to the table value (-2.84), the t-value for the pre-posttest scores of knowledge on menstrual hygiene is 0.0001* was significant at the 0.05 level. Result shows the audio teaching program has a adequate effect in improving the attitude regarding menstrual hygiene among visually challenged females of reproductive age group.
- H1: The significant difference between pretest and post test level of knowledge, attitude and practice before and after audio teaching on menstrual hygiene among visually challenged females of reproductive age group is accepted. Same study was conducted in Government school Delhi. So that visually impaired women of reproductive age have a significantly improved attitude toward menstruation hygiene as a result of the audio

Journal of Coastal Life Medicine

training programme. When audio training on menstrual hygiene is approved, it shows the substantial difference between the pre-posttest levels of knowledge, attitude, and practice among visually impaired women of reproductive age. An analysis of the knowledge, attitudes, and practices of adolescent schoolgirls in a particular Delhi government school on menstruation and menstrual hygiene.

To determine the efficacy of the planned training programme on menstruation and menstrual hygiene, an experimental study approach and one group pre-post test design were used. The Government Girls Senior Secondary School in Kalyanpuri, New Delhi, served as the study's location. Through the use of structured questionnaires, data was gathered. 50 teenage females who are currently enrolled in classes VI, VII, and VIII make up the entire sample. To choose the sample, a systematic sampling procedure was applied. The statistics were used for interpret the data. According to the Research findings, the average knowledge score before the exam was 4.1 and increased to 16.9 afterward. The mean pre-test attitude score was 3.04, and the post-test attitude score increased to 5.38. The average pre-test practice score was 3.5, and it rise to 6.4 during the actual post test.

To find out the association of knowledge, practice & attitude pre and post scores regarding menstrual hygiene with demographic variables.

- Association btw the pre-test knowledge score and specific demographic factors Age, religion, marital status, type of family, monthly family income, area of residence, source of information, duration of cycle, menstruation pain, menstruation discomfort, and pre-test knowledge score do not significantly correlate. Other than this there is a significant relationship between education, menstrual cycle duration, menstrual cycle regularity, and pretest knowledge score.
- Association between post-test knowledge score and particular demographic factors Age, religion, marital status, type of family, monthly family income, place of residence, regular menstruation, length of menstrual cycle, pain during menstruation, discomfort during menstruation, and post test knowledge score do not significantly correlate with each other, according to the P-value, which is greater than 0.05 levels. Given that the P-

value is less than 0.05, there is a strong correlation

- Association between pre-test practice scores and specific demographic factors Age, education, religion, marital status, type of family, monthly family income, place of residence, knowledge of menstruation, information source, regularity of menstruation, length of menstruation, duration of menstrual flow, menstrual pain and Discomfort, and pre-test practice score do not significantly correlate with each other.
- Association between post-test practice scores and specific demographic factors Age, education, religion, marital status, type of family, monthly family income, place of residence, knowledge of menstruation, source of information, Continuity of menstruation, duration of menstrual cycle, period of menstrual flow, menstrual pain and discomfort and post test practice score do not significantly correlate with each other.
- Association between pre-test attitude score and specific demographic factors Age, education, religion, marital status, family type, monthly family income, place of residence, regular menstruation, pain during menstruation, discomfort during menstruation, and pre-test attitude score do not significantly correlate
- Association between post-test attitude score and specific demographic factors Education, religion, marital status, type of family, monthly family income, place of residence, knowledge of menstruation, information source, regular menstruation, length of menstrual cycle, pain and discomfort during menstruation, and post-test attitude score are not significantly correlated but there is a significant correlation between age and the post-test attitude score.
- An investigation into the menstrual hygiene knowledge of teenage females at a selected blind school in north Gujarat. A pre-experimental design was utilized to gather data from 60 visually challenged adolescent females in the blind schools in north Gujarat. According to the findings shows that the mean knowledge score after the exam was 13.54, higher than the mean knowledge score before it, which was 5.83; with a mean difference of 7.71. The estimated "T" value exceeds the listed "T" value by 21.48. (2.00). The teenage ladies who were blind all did well on the post-test.

Journal of Coastal Life Medicine

5. Conclusion:

According to the study's findings, visually impaired women of reproductive age have higher knowledge, practice, and attitude scores on a post-test on menstrual hygiene. The study comes to the conclusion that audio teaching is the most effective way for visually impaired women of reproductive age to learn about, practice, and develop a positive attitude about menstrual hygiene.

References

- [1] Hutmacher F. Why Is There So Much More Research on Vision Than on Any Other Sensory Modality?. *Front Psychol.* 2019;10:2246. Published 2019 Oct 4. doi:10.3389/fpsyg.2019.02246 [PubMed] [PMC Article]
- [2] Iqbal S, Dubey AK, Gedam DS. Blindness: Indian scenario: Is it really preventable? *Int J Med Res Rev.* 2013;1(5):255-260. doi:10.17511/ijmrr.2013.i05.11.[Google Scholar][PubMed]
- [3] Coast E, Lattof SR, Strong J. Puberty and menstruation knowledge among young adolescents in low- and middle-income countries: a scoping review. *Int J Public Health.* 2019;64(2):293-304. doi:10.1007/s00038-019-01209-0.[PubMed][PMC Article]
- [4] Gupta N, Tandon R, Gupta SK, Sreenivas V, Vashist P. Burden of corneal blindness in India. *Indian J Community Med.* 2013; 38(4):198-206. doi:10.4103/0970-0218.120153.[PubMed][PMC Article]
- [5] https://www.who.int/blindness/Vision2020_report.pdf
- [6] Vision Loss Expert Group of the Global Burden of Disease Study. Causes of blindness and vision impairment in 2020 and trends over 30 years: evaluating the prevalence of avoidable blindness in relation to "VISION 2020: the Right to Sight". *Lancet Global Health* 2020. doi.org/10.1016/S2214-109X(20)30489-7.
- [7] <https://medlineplus.gov/menstruation.html>
- [8] <https://my.clevelandclinic.org/health/articles/10132-normal-menstruation>
- [9] Garg R, Goyal S, Gupta S. India moves towards menstrual hygiene: subsidized sanitary napkins for rural adolescent girls-issues and challenges. *Matern Child Health J.* 2012 May;16(4):767-74. doi: 10.1007/s10995-011-0798-5. PMID: 21505773. [PubMed]
- [10] Garg, Rajesh & Goyal, Shobha & Gupta, Sanjeev. (2011). India Moves Towards Menstrual Hygiene: Subsidized Sanitary Napkins for Rural Adolescent Girls—Issues and Challenges. *Maternal and child health journal.* 16. 767-74. doi:10.1007/s10995-011-0798-5. [PubMed][Research Gate][PMC Article]
- [11] Water Aid: Menstrual hygiene matters. July 2016. Available at <http://www.wateraid.org/what-wedo/our-approach/research-and-publications/viewpublication>
- [12] Ghimire S. Knowledge regarding menstrual hygiene among adolescent girls. *Int J Res Med Sci* 2017;5:3426-30.[PubMed]
- [13] Chapparbandi SR, Nigudgi SR. A cross sectional study on menstrual hygiene of adolescent girls in rural field practice area of Kalaburagi, Karnataka, India. *Int J Community Med Public Health* 2016;3:2233-6.
- [14] Kyilleh, J.M., Tabong, P.TN. & Konlaan, B.B. Adolescents' reproductive health knowledge, choices and factors affecting reproductive health choices: a qualitative study in the West Gonja District in Northern region, Ghana. *BMC Int Health Hum Rights* 18, 6 (2018). <https://doi.org/10.1186/s12914-018-0147-5>[PubMed][PMC Article]
- [15] <https://www.who.int/reproductivehealth/to-pics/adolescence/en/>
- [16] Pashe, S.P., Tekelab, T. & Mekonnen, J. Assessment of knowledge and practice of menstrual hygiene among high school girls in Western Ethiopia. *BMC Women's Health* 15, 84 (2015). <https://doi.org/10.1186/s12905-015-0245-7>.
- [17] Anand E, Singh J, Unisa S. Menstrual hygiene practices and its association with reproductive tract infections and abnormal vaginal discharge among women in India. *Sex Reprod Healthc.* 2015 Dec;6(4):249-54. doi: 10.1016/j.srhc.2015.06.001. Epub 2015 Jun 25. PMID: 26614609.[PubMed]
- [18] <https://www.downtoearth.org.in/blog/health/menstrual-hygiene-day-if-healthy-women-have-problems-what-about-the-differently-abled--64777>
- [19] Rugoho T, Maphosa F. Challenges faced by women with disabilities in accessing sexual and reproductive health in Zimbabwe: The case of Chitungwiza town. *Afr J Disabil.* 2017;6:252. Published 2017 May 26. doi:10.4102/ajod.v6i0.252. [PubMed][PMC Article]
- [20] <https://www.unicef.org/media/91341/file/UNICEF-Guidance-menstrual-health-hygiene-2019.pdf>
- [21] <https://www.medicinenet.com/menstruation/article.htm>
- [22] Singh A, Gupta V, Agrawal D, Goyal P, Singh M, Lukhmana S. A cross-sectional study to investigate the impact of focused group discussion on menstrual hygiene among rural school girls of Southern Haryana, India. *J Educ Health Promot.* 2020;9:260. Published 2020 Oct 30.

Journal of Coastal Life Medicine

doi:10.4103/jehp.jehp_475_20.[PubMed][PMC Article]

[23] Dasgupta A, Sarkar M. Menstrual Hygiene: How Hygienic is the Adolescent Girl?. *Indian J Community Med.* 2008;33(2):77-80. doi:10.4103/0970-0218.40872 [PubMed]

[24] <https://menstrualhygieneday.org/managing-menstruation-for-women-and-girls-with-disabilities/>

[25] Torondel, B., Sinha, S., Mohanty, J.R. et al. Association between unhygienic menstrual management practices and prevalence of lower reproductive tract infections: a hospital-based cross-sectional study in Odisha, India. *BMC Infect Dis* 18, 473 (2018). <https://doi.org/10.1186/s12879-018-3384-2>.

[26] Das P, Baker KK, Dutta A, et al. Menstrual Hygiene Practices, WASH Access and the Risk of Urogenital Infection in Women from Odisha, India. *PLoS One.* 2015;10(6):e0130777. Published 2015 Jun 30. doi:10.1371/journal.pone.0130777. [PMC Article]

[27] Paudel, A. ., Bilakshan Sah, R., Ghimire, A. ., Chakravartty, A. ., Chhetri, . M. ., & Bastakoti, S. . (2021). Knowledge and Practice Regarding Menstruation among the Visually Challenged Female Students of Western Nepal. *Annapurna Journal of Health Sciences*, 1(1), 23–29. [Google Scholar]

[28] Wilbur, J., Kayastha, S., Mahon, T. et al. Qualitative study exploring the barriers to menstrual hygiene management faced by adolescents and young people with a disability, and their carers in the Kavrepalanchok district, Nepal. *BMC Public Health* 21, 476 (2021). [Google Scholar]

[29] Nandhini. A, Payal Dabhi. A Study to assess the effectiveness of Audio drama on knowledge regarding menstrual hygiene among visually challenged adolescent girls at selected blind school of north Gujarat. *Int. J. Nur. Edu. and Research.* 2021. [Google Scholar]

[30] Dündar T, Özsoy S. Menstrual hygiene management among visually impaired women. *British Journal of Visual Impairment.* 2020;38(3):347-362. [Google Scholar]

[31] Prema S, Diksha Dhandapani, Dona Prakash, Snehal Gawade. Effectiveness of Planned Health Teaching on Knowledge and self reported practices of Menstrual Hygiene among visually impaired Adolescent girls in selected blind Schools of Pune city. *Int. J. of Advances in Nur. Management.* 2020; 8(1):53-56. [Google Scholar]

[32] Subathra, Serma & Shetty, Asha & Shyamadevi, & Murugesan, Karthick & Shanmugam, Shankar. Knowledge and Practice on menstrual hygiene among specially abled (Deaf & Dumb) adolescent Girls at selected centres in Bhubaneswar, Odisha State -A Pilot Project.

European Journal of Molecular & Clinical Medicine , 2020, Volume 07, Issue 03. [Google Scholar]

[33] Rajasri G. Yaliwal, Aruna M. Biradar, Shreedevi S. Kori, Subhashchandra R. Mudanur, Shivakumar U. Pujeri, Mohd Shannawaz, "Menstrual Morbidities, Menstrual Hygiene, Cultural Practices during Menstruation, and WASH Practices at Schools in Adolescent Girls of North Karnataka, India: A Cross-Sectional Prospective Study", *Obstetrics and Gynecology International*, vol. 2020, 8 pages, 2020. [Google Scholar]

[34] Hennegan J, Montgomery P. Interventions Improve Education and Psychosocial Outcomes for Women and Girls in Low and Middle Income Countries? A Systematic Review. *PLoS One* [Internet]. 2016;49:1–21. Available from: Do Menstrual Hygiene Management Interventions Improve Education and Psychosocial Outcomes for Women and Girls in Low and Middle Income Countries? A Systematic Review. [PMC free article] [PubMed] [CrossRef] [Google Scholar]

[35] Singh A, Gupta V, Agrawal D, Goyal P, Singh M, Lukhmana S. A cross-sectional study to investigate the impact of focused group discussion on menstrual hygiene among rural school girls of Southern Haryana, India. *J Educ Health Promot.* 2020 Oct 30;9:260. [Google Scholar]