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Effectiveness of Hand Washing Education on Knowledge among Adolescence Regarding Hand Washing and its Importance

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ABSTRACT

Introduction: Medical evidence suggests that contaminated hands are the main transmitters of disease**.** Hand washing is reflected as effective hygiene promotion activities for public health in the whole world**. Aim:** This study aimed to determine the effectiveness of hand washing education on knowledge regarding hand washing and its importance among adolescence in selected schools**. Materials & methods:** A quantitative research approach with Pre-experimental one group pretest and posttest design was used to conduct the study in selected schools of Uttar Pradesh. Non-probability purposive sampling technique was employed to select 40 adolescence. A self-structured knowledge questionnaire containing 30 items were used for assessing the level of knowledge among the subjects. Data were analyzed using SPSS version 25. **Results:** The mean score of the adolescence in pretest 10.2±4.1 is lesser than the mean score in posttest 20.2±4.3, t- value 18.8 which is significant P = 0.001. There was an association found between the levels of knowledge among the adolescence with their mother's education**. Conclusion:** The study is concluded that hand washing education is effective to enhance knowledge among adolescence regarding hand washing and its importance. Attitude and practice of adolescence regarding hand washing also can be assessed in future studies.

KEYWORDS: *Knowledge, Hand washing education, Adolescence, Schools*

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INTRODUCTION

Good hand washing is one of the easiest, most reasonable and effective means of preventing the spread of infection via feces, body fluids, and inanimate objects.[1] Respiratory viruses like coronavirus disease (COVID-19) spread when mucus or droplets having the virus get into your body through your eyes, nose or throat. Most often, this happens through your hands which are the one of the most common ways that the virus spreads from one person to subsequent. During a worldwide pandemic, one of the inexpensive, easiest, and most key ways to prevent the spread of a virus is to wash your hands often with soap and water.[2]

Good hand hygiene protects to slowing down transmission of COVID-19 and keeping ourselves and our communities safe. This is the main message of World Water Day 2020 on 22 March, and each person has a role to play.[3] Center for Disease Control and Association for Professionals in Infection Control and Epidemiology have created guidelines for hand washing.[4]

UNICEF estimates that diarrhea kills 1.1 million children each year, and pneumonia-related illnesses take another 1.2 million child lives. Hand washing with soap prevents disease during a more straightforward and cost-effective way than any single vaccine. In order to stress the importance of hand washing, October 15 has been declared as the Global Hand washing day by UNICEF since 2008.[5] In developing countries, 80% of the diseases are related to poor domestic and private hygiene and about 2.2 million people die, mostly children die annually because of diarrhea, the same number again die from acute respiratory infections.[6] The increased problem of contagious diseases among school children due to poor personal hygiene practices and inadequate sanitary conditions remains a urgency on the general public health agenda in developing countries.[7] Hand washing is very important for youngsters and adolescents, as these age groups are the most vulnerable to infections gained from unwashed hands.[8] School children are particularly vulnerable to neglect of basic personal hygiene due lack of knowledge and practice.[9] Poor knowledge, practice of and attitudes to personal hygiene such as hand washing play major roles in the high incidence of communicable diseases and therefore has negative consequences for a child's long term overall development. [10] School is the place where health education regarding important aspects of hygiene,

environment and sanitation, also as social customs is being imparted.[11]

Hence the researchers felt to conduct an experimental study on knowledge regarding the importance of hand washing among adolescence studying at schools. Objectives of this study were determine the effectiveness of hand washing education on knowledge regarding hand washing and its importance among adolescence in selected schools in Uttar Pradesh and to find the association of various factors with the level of knowledge.

MATERIALS AND METHODS

A quantitative research approach with pre-experimental one group pretest and posttest design was used to conduct the study in selected schools of Uttar Pradesh. Non-probability purposive sampling technique was adapted to select 40 adolescence selected from Ram Ashray Memorial Montessori School from Uttar Pradesh. A self-structured knowledge questionnaire was used to assess knowledge among adolescence regarding hand washing and its importance. Ethical and Administrative permission was taken from authorizes in concerned areas. The consent form was prepared for the study participant regarding their willingness to participate in the research study. Inclusion criteria: Adolescence aged 13-18 years, available during the study period and willing to participate. Exclusion criteria: Adolescence not present during the data collection

The research tool for data collection consists of two sections:
Section 1:- Demographic tool

It consists of age, gender, education, area of living, type of family, fathers education, mothers education, monthly family income and source of previous information are the demographic variables.

Section 2:- Self-structured knowledge questionnaire
It consists of 30 items for assessing knowledge among adolescence regarding hand washing and its importance. Every item was of multiple choice types with one correct answer carrying 1 mark remaining options 0 marks. The total maximum score was 30 and the minimum score 0. The score were arbitrarily graded as 0-10 inadequate knowledge, 11-20 moderate knowledge and 21-30 adequate knowledge. Content validity of the tool was determined by experts in the field of Community medicine and Nursing. The reliability of the knowledge questionnaires was tested by using spearman brown split half method and score was found to be r = 0.79. The tool was prepared in English and Hindi to facilitate better comprehension. Interventional module, Hand washing education was prepared based on the review of literature which consists of areas such as introduction, definition, indications, benefits, steps, procedures and its importance.

Pre-test was followed by the administration of hand washing educational module (1 hour per day) for the next 5 consecutive days. After one week of intervention, a post-test was conducted by using the same questionnaire, data collected was tabulated and analyzed with the help of descriptive and inferential statistics. SPSS 25 (Statistical Package for the Social Sciences, India) was used for Statistical analysis and P = 0.05 was considered as the level of significance.

RESULTS

The major findings of the study were as follows:

Table 1: Frequency and percentage distribution of demographic variables of subjects (n=40)

Demographic Profile	Frequency (%)
Age (years)	
13-14	16 (40%)
15-16	14 (35%)
17-18	10 (25%)
Gender	
Male	27 (67.5%)
Female	13 (32.5%)
Educational background (Stream)	
High school	21 (52.5%)
Intermediate	19 (47.5%)
Area of living	
Rural	24 (60%)
Urban	11 (27.5%)
Extended	5 (12.5%)
Type of family	
Joint family	26 (65%)
Nuclear family	14 (35%)
Fathers education	
Illiterate	9 (22.5%)
Primary	14 (35%)
Secondary	12 (30%)
Graduation & above	5 (12.5%)
Mothers education	
Illiterate	20 (50%)
Primary	12 (30%)
Secondary	5 (12.5%)
Graduation & above	3 (7.5%)

Monthly family income (in Rupees)	
< 15,000	24 (60%)
> 15,001	16 (40%)
Source of previous information	
No information	15 (37.5%)
Family members & Friends	8 (20%)
Teachers	5 (12.5%)
Mass media	7 (17.5%)
Medical persons	5 (12.5%)

The table 1 displays that frequency and percentage distribution of demographic variables, the majority of the adolescence 40 % were in the age group of 13 to 14, 67.5% were male, 52.5% were from high school, 60% were from rural area, 65% belonged to joint family, majority 35% of respondents father had primary education in compare to 50% illiterate mothers, 60% were having less than 15000 rupees family monthly income and the majority 37.5 % of adolescence did not get any previous source of information.

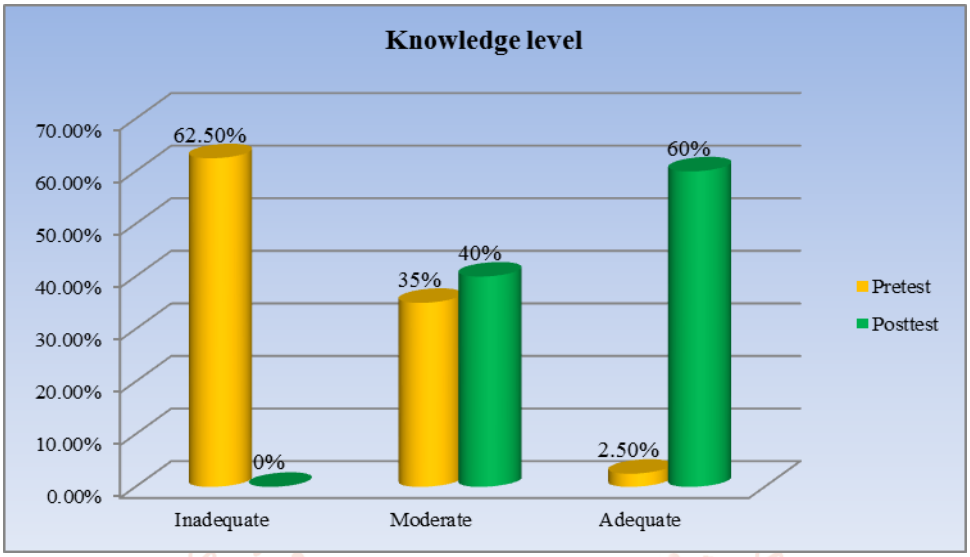

Fig-1: Frequency and percentage distribution of knowledge level

Fig-1: shows that frequency and percentage distribution of overall gradation of knowledge level among adolescence regarding hand washing and its importance, in the pre-test majority 62.5% had inadequate, 35% moderate and 2.5% adequate Knowledge wherein post-test, the majority 60% had adequate Knowledge, remaining 40% moderate and none of them had inadequate knowledge.

Table 2: Comparison of Knowledge score between Pretest and Posttest

Stress Score	N	Mean	SD	t- value	df	P
Pre-total	40	10.2	4.1	18.8	39	0.001**
Post-total	40	20.2	4.3			

**Significant (p<0.01)

The table 2 indicates that Comparison of pre-test and post-test knowledge score among the adolescence by using paired t-test, the overall mean score in pre-test 10.2±4.1 was lesser than the post-test mean score 20.2±4.3 and the obtained t- value 18.8 which was significant P = 0.001. It is inferred that there is a significant difference in pretest and posttest knowledge among adolescence. So the hand washing education is effective to enhance knowledge among adolescence regarding hand washing and its importance.

Table 3: Association between pretest knowledge level with their demographic variables

Demographic Profile	≤ Median	> Median	X^2	df	P
Age (years)					
13-14	8	8	1	2	0.6
15-16	8	6			
17-18	7	3			
Gender					
Male	14	13	0.5	1	0.48
Female	9	4			
Educational background (Stream)					
High school	11	10	0.14	1	0.71
Intermediate	12	7			

Area of living					
Rural	14	10	1.8	2	0.41
Urban	5	6			
Extended	4	1			
Type of family					
Joint family	15	11	0	1	1
Nuclear family	8	6			
Fathers education					
Illiterate	7	2	2.6	3	0.46
Primary	7	7			
Secondary	7	5			
Graduation & above	2	3			
Mothers education					
Illiterate	15	5	9.4	3	0.02*
Primary	7	5			
Secondary	1	4			
Graduation & above	0	3			
Monthly family income (in Rupees)					
< 15,000	15	9	0.21	1	0.65
> 15,001	8	8			
Source of previous information					
No information	10	5	1.8	4	0.76
Family members & Friends	5	3			
Teachers	3	2			
Mass media	3	4			
Medical persons	2	3			

*Significant (p<0.05)

Table 3 illustrates that Chi-square value in pretest knowledge score with the selected demographic value like respondents mothers education (9.4) was significant (p= 0.02) and other variables like age (1), gender (0.5), educational background (0.14), area of living (1.8), type of family (0), fathers education (2.6), family income (0.21) and previous source of information (1.8) were not significant(p>0.05). Thus it can be concluded that there is an association between knowledge score with the mothers' education of the adolescents.

DISCUSSION

The present study found that interventional program hand washing education is effective to enhance knowledge among adolescence about hand washing and its importance. These results were supported by Garg A et al which displays there were a significant enhancement in the knowledge regarding hand-washing and frequency of hand-washing practices after the intervention.[12] Guo N et al revealed that the intervention of intensive education on hand hygiene commendably improved personal hygiene among both children and parents.[13] Lehotsky A et al found that contemporary health education programs which including four-hour and eight-hour pieces of training was effective on increasing the knowledge about hand hygiene and technique of hand washing in primary school-age children.[14] Md. Abdur Razzak et al revealed that nutrition education increased the hand washing practising behavior of the adolescents and the tendency to use hygienic materials for hand washing. [15]

Other studies by Yalçin SS et all noticed that adolescents have limited knowledge about indications of hand-washing and some problems unfavorably influenced hand-washing.[16] Dobe et al conducted a cross-sectional study to assess the prevalence of good hand-washing practice (GHP) among adolescents which concluded that the prevalence of adolescent GHP was 32.1% (95% CI = 27.1, 37.1).[17] Tamilarasi R et al directed a study to assess the knowledge and practice of hand washing among school-going adolescents in Chennai, shows that only 24.9% were practising adequate hand washing even though 85.6% of had adequate knowledge which concluded that the students have a significant level of hand washing knowledge but effective measures and long term inspiring activities should be taken to improve their hand washing behavior.[18]

The present study found an association between the levels of knowledge among the adolescence with their mother's educational status. In contrary, Ajay Kumar et al study concluded that female students had more knowledge level than male students.[19]

IMPLICATIONS AND RECOMMENDATION

Nurse educator could use these hand washing education techniques to enhance knowledge among adolescence regarding hand washing and its importance. Nurse administrators can organize workshops or continuous nursing education programs to update the knowledge of community health nurses regarding the importance of hand washing and which helps to prevent many diseases. A similar study can be replicated on a large scale and for a longer period for more reliability and efficacy. Attitude and practice of adolescence regarding hand washing also can be assessed in future studies.

CONCLUSION:

The study is concluded that hand washing education is effective to enhance knowledge among adolescence regarding hand washing and its importance. The overall findings of the study showed that there is a significant

association found between the levels of knowledge among the adolescence with their mother's education. The study is limited to school going adolescence in selected schools in Uttar Pradesh, India.

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Conflicts of interest
There are no conflicts of interest

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