

Effectiveness of Demonstration on Practices Regarding Hand Hygiene among Mothers of Under- Five Children in a Rural Area of Lucknow District

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Abstract

Diarrheal disease is the second leading cause of death in children under five years old, and is responsible for killing around 525000 children every year. It has been found that washing hand with soap may prevent many common and life-threatening infections. Interventions used to prevent diarrheal diseases, includes safe drinking-water, use of improved sanitation and washing hand with soap may reduce the disease risk. The objective of the study was to assess the effectiveness of demonstration regarding hand hygiene among mothers of under-five children. Quasi experimental one group pretest posttest design was used in rural area of Lucknow district with the samples of 100 mothers of under five children. Multi stage random sampling technique was used. The tools used were demographic questionnaire and checklist regarding hand hygiene. Result revealed, majority of the mothers 50% scored average and 50% scored poor in pre-test whereas in post-test 19% scored good 72% scored average and 9% scored poor. Mean post test score was significantly higher than the mean pre-test score at the "P value" less than 0.05. The calculated t value i.e. 16.58 was compared with the tabulated value i.e 1.98 with paired t test which revealed that the demonstration administered by the investigator was found effective to increase the practice level among the mothers of under five children regarding hand hygiene.

Key words:

Effectiveness; demonstration; practice; hand hygiene

Introduction

Diarrheal disease is the second leading cause of death in children under five years old, and is responsible for killing around 525000 children every year. Diarrheal infection can last for several days, and make the body dehydrated leading to loss of water and salts that are necessary for survival. It has been found in the past, that for most people, severe dehydration and fluid loss were the main causes of deaths due to diarrhea. Interventions used to prevent diarrheal diseases, includes safe drinking-water, use of improved sanitation and washing hand with soap may reduce the disease risk [1].

Washing hand with soap can prevent many common and life-threatening infections. Due to lack of proper hand hygiene many illnesses start with disease-causing bacteria and viruses. Proper hand hygiene can be performed after using the toilet, contact with a child's excreta, coughing, sneezing, touching other people's hands, and touching other contaminated surfaces. For example, a single gram of human feces can contain 10 million viruses and one million bacteria, and infant feces are particularly pathogenic [2].

According to WHO estimates, 3.8 million children aged less than five die each year from diarrhea and ARI. An estimated 88% of diarrheal deaths worldwide are attributable to unsafe water, inadequate sanitation and poor hygiene. Clean water and hand washing are viewed as the most cost effective intervention for preventing diarrheal

diseases and ARIs. Hand hygiene is the primary measure to reduce infections. [3]. According to WHO, proper hand washing was defined as washing hands with soap and water (HWWS) thoroughly following the five critical moments i.e., after defecation, after cleaning child's bottom who had defecated, before cooking, before eating and before feeding child [4]. Proven, lifesaving interventions already exist. They include prevention methods such as improved sanitation and hygiene, access to safe drinking water, vaccines, exclusive breastfeeding, and optimal complementary feeding [5].

Methodology

Research Design

The research design selected for the study is quasi experimental one group pretest posttest design to assess the effectiveness of demonstration on practices regarding hand hygiene among mothers of under-five children in a rural area of Lucknow district. A pre-test was conducted to the sample. Demonstration was implemented and again post- test was conducted to assess the effectiveness of demonstration.

Research setting

Setting of the study was rural area of Lucknow district. Two sub-centers were randomly selected i.e. Bani and Aurawa

Sample

Mothers of under-five children residing research setting, who met the inclusion criteria and agreed to participate in this study, were recruited as a subjects.

Sample size and sampling technique

The total sample size was 100.

Sample size calculated using acceptable formula for quasi experimental study as stated below:

$$N=Z^2pq/d^2$$

The samples were selected by multi stage random technique from the rural area, Sarojini Nagar, Lucknow. For sampling process, Primary Health Centre Sarojini Nagar was selected, that is adopted by King George's Medical University, Lucknow. Among the 9 sub centers covered under this PHC two sub-centers were randomly selected using the lottery method i.e. Bani and Aurawan. The total population of females in Bani was 841 and the total mothers of under-five were 542. Whereas the total female population of Aurawan village was 776 and the total mothers of under-five were 582. The selection of the total sample i.e. 100 for the study was done by using systematic random sampling method. Each day a group of 10-15 samples was selected for the pretest and intervention. A list of the names of the subjects was prepared and then the first sample was selected randomly, later every 2nd sample out of a population of 20-30 was selected randomly. The total sample selected from the Bani village was 48 and the total sample selected from the aurawan village was 52.

Data collection tool/instrument: The present study aimed to assess the effectiveness of demonstration on the practice.

Description of tool

Section A: Socio demographic variables

Socio Demographic variables for mothers consist of 13 items such as mother's age in years, mother's educational level, occupational status, religion, type of family, monthly income in rupees, no. of under five children, utilization of health services, water supply, previous knowledge regarding ors preparation, previous knowledge regarding hand hygiene, sources of information.

Section B: Checklist regarding hand hygiene

The tool consists of 6 items, seeking information regarding the level of practice of mothers of under-five children regarding hand hygiene. The score given for the right answer score was 1 and for wrong answer and not attempt score was 0. The maximum score was 20 and minimum score was 0.

Description of intervention:

The demonstration will be given to mothers of under five children. The demonstration consists of definition, purposes, uses, steps of Hand hygiene.

Data collection process:

The data collection period started from 5th November 2018 to 26th January 2019 to complete. Firstly the permission was obtained from the ethical committee of college. Formal permission was taken from

the MOIC, PHC, Sarojini Nagar, Lucknow. The data collection was done by multi-stage random sampling technique. Sub-centers were selected using lottery method & villages under these sub-centers were selected. Self-introduction was given to the participants. After that purposes and benefits of the study were explained to the participants and informed consent was taken. On the day one pretest was conducted and demonstration was also administered. Post-test was conducted after seven days of intervention with the checklist.

Data Analysis

The data analysis was based on objectives, research questions and analysis of the data was done by using descriptive and inferential statistics.

Pre and post test scores of practice was analyzed through the following technique.

Descriptive statistics: Descriptive statistics like percentage and frequencies were used to describe the sample characteristics and item wise analysis. Mean, standard deviation was used to quantify the level of Practice before and after demonstration.

Inferential statistics: Paired t-test was use to examine the effectiveness of demonstration. Chi-square test was used to determine the association of socio-demographic factors of people with pre-test practice.

Ethical

The ethical aspect was considered by ethical committee when presented before them and committee had given clearance at the institutional level. Departmental permission is obtained for the research. The participants who are willing to participate have been selected. The participants were having freedom to withdraw from study and were assured for the confidentiality and safeties of the participants to be maintained. Care was taken for no exploitation of human rights, humanity and indiscrimination of any type to the participants. Ethical clearance from ethical committee of university is also granted before the study designs.

Result

The data were collected were tabulated, analyzed and interpreted using descriptive and inferential statistics. The data have been presented under the following sections:

Description of selected socio demographic variables of mothers of under-five children

The frequency and percentage distribution of mothers of under five children in relation to demographic variables. The findings revealed that the majority of mothers were aged between 26 -33 years (50%), have secondary education (58%), were home maker (67%), were Hindu (73%), belongs to a joint family(64%), having < Rs 5000 monthly income (74%), have one under five children in the family(66%), had previous knowledge regarding ORS preparation (70%), had source of information regarding ORS preparation from mass media (50%), had previous knowledge regarding hand hygiene (92%), had source of information regarding hand hygiene from mass media (66%), utilizes private health care services (64%), and had shared type of source of water supply (88%).

Analysis and interpretation of pre -test and post- test score of practice on hand hygiene

Level of Practice	Category	Pre-test		Post-test	
		Frequency	Percentage	Frequency	Percentage
Good	≥ 16score	0	0	19	19
Average	8-15score	50	50	72	72
Poor	≤ 7score	50	50	9	9

Table 1: Frequency and percentage distribution of level of practice among the mothers of under five children on hand hygiene.

Table 1 reveals that among the 100 mothers of under five children 50% mothers scored average and 50% of mothers scored poor in the pre-test practice on hand hygiene. In post-test practice on hand hygiene 19% of mothers scored good, 72% of mothers scored average and 9% of mothers scored poor. The finding indicates that level of the practice of the mothers regarding hand hygiene was increased while in the pre-test majority of the mother were scored average.

Level of Practice	Pre-test	Post-test
Mean	8	13
Standard deviation	3.2	3.15

Table 2: Mean score and standard deviation of the mothers of under-five children on hand hygiene.

Table 2 depicts that the mean pretest score of the mothers was 8 and the posttest mean score was 13. The standard deviation of pretest score was 3.2 and the post test score was 3.15. Mean post test score was significantly higher than the mean pretest score.

Effectiveness of demonstration regarding hand hygiene

Hand hygiene	n	Mean	Standard deviation	df	paired t-value
Pre-test	100	8	3.2	99	16.58
Post-test		13.04	3.15		p<0.05

Table 3: Effectiveness of demonstration regarding hand hygiene.

The data presented in the Table 3 shows that the subjects' post-test practice score (13.04) was apparently higher than the mean pre-test practice score(8.0).The dispersion of the pretest score(SD=3.20) was more than their post test score (SD= 3.15), which shows that the level of practice regarding hand hygiene of the subjects were improved.

The researcher compared the calculated t-value (16.58) with the tabulated value (1.66). The obtained "t" value on analysis of the data was found to be significant at p<0.05 level. So, this is evident that the demonstration on practice regarding hand hygiene was effective.

Association of pre-test practice score with socio demographic variables

Association between the pre-test practice score of mothers on hand hygiene with their socio demographic variables

At the appropriate degrees of freedom, the variables such as age, education, occupation, source of knowledge regarding ORS preparation, source of knowledge regarding hand hygiene have strong association with the practice score of mothers. For these variables, the calculated value lies beyond the tabulated value hence, the null hypothesis was rejected and the research hypothesis was accepted. All the other variables such as religion, type of family, monthly income, number of under-five children in family, have been found non-significant.

Discussion

Effectiveness of demonstration regarding hand hygiene

In the present study the calculated t-value (16.58) was compared with the critical value (1.98). Since the calculated value lies beyond the critical value the null hypothesis was rejected and the alternative hypothesis was accepted and depicted that there was a significant change in the pre-test and post-test practice score of mothers regarding hand hygiene. So, this was evident that the demonstration on hand hygiene was effective.

These findings are supported by a study conducted on improving hand washing among school children that had revealed that the mean score of pretest practice 10.2 was increased to 15.47 in posttest. These findings proved that there is a greater improvement in level of the practice on hand washing because of structured teaching programme. These study findings are supported by the similar study conducted by Ashutosh, which highlighted that mean practice score was increased from 41.42 to 60.87 after health education intervention on hand washing. From these findings it is proved that structured teaching program improved the level of practice on hand washing among school children [5-9].

Conclusion

- Based on the findings it is recommended that,
- A similar study can be conducted with a larger sample for the purpose of generalization.
- A similar study can be conducted to assess the knowledge and practice among mother of school children regarding hand washing practice.
- A comparative study can be conducted between the rural and urban settings.
- The study can be conducted using different research design.
- A study can be conducted among different age group of children.
- A study can be conducted to find out the knowledge of parents and teachers on hand washing practice.

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