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A Study to Assess the Effectiveness of Demonstration on Hand Hygiene Skill in Prevention of Illness Among Primary School Children in Selected Schools at Hassan

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Abstract:

Introduction: Hand hygiene is a fundamental practice for preventing the spread of infectious diseases, especially among young school children who are more susceptible to illness due to poor hygiene habits. Establishing proper handwashing practices during the early school years plays a vital role in promoting long-term health and reducing absenteeism due to preventable diseases. **Methodology:** This study employed a pre-experimental one-group pre-test and post-test design to evaluate the effectiveness of a hand hygiene demonstration programme among primary school children in selected schools at Hassan, Karnataka. Sixty children were selected through convenience sampling. Data were collected using a structured checklist that included socio-demographic details and an assessment of hand hygiene skills. After the baseline assessment, a live demonstration of proper handwashing technique was conducted. The post-test was administered one week later using the same tool. **Results:** Baseline findings revealed poor hand hygiene skills among all participants. Following the demonstration, every child achieved an adequate level of performance. The mean score increased markedly from 3.87 (SD = 1.24) before the intervention to 27.68 (SD = 0.85) after the intervention, with the difference being statistically highly significant ($p < 0.0001$). Initial skill levels were significantly associated with maternal education, family type, and area of residence. **Conclusion:** Demonstration-based teaching proved highly effective in improving hand hygiene skills among primary school children. Regular school-based health education programmes using practical demonstrations can foster lasting healthy behaviors and help prevent common infectious illnesses.

Keywords: Hand Hygiene, Knowledge, School children

INTRODUCTION

According to the definition provided by the World Health Organization, the condition of complete physical, mental and social wellbeing is health and not just a lack of illness. Healthy behaviors like exercises, sleep, and management of stress and avoiding unhealthy habits like smoking can be used to improve the same. The personal choice, social conditions, healthcare access, and genetics foster health.

Hygiene is a name derived off of the Greek goddess of health, Hygia, and is today used to describe the methods of keeping clear and eliminating bacteria. The terms of hand hygiene are not standardized, and standard definitions are significant to ensure consistency in research and successful execution of guidelines.

Physical health, emotional capacity, and self-esteem of children depend on personal hygiene. The essential ones are bathing regularly, handwashing, oral, and mouth covering during coughing and sneezing. It is even more crucial to form such habits at a young age when one gets into adolescence. The best way of preventing the spread of infection, especially in hospitals is by washing hands.

The World Health Organization in their Five Moments of Hand Hygiene provides the most important moments when a person needs to wash their hands, i.e. before and after touching a patient or being exposed to bodily fluid.

Washing hands by use of soap or alcohol-based hand rubs are very effective in preventing the spread of diseases and healthcare-associated infections. Good hygiene also safeguards such common infectious diseases like respiratory and gastrointestinal diseases. Hygiene deficiency particularly in caregivers of small children enhances the chances of infection caused by diarrhea. Keeping the body, teeth, hair, and nails clean help in maintaining the physical and social acceptance. In a cross-sectional study that included 625 schoolchildren in the ages of 9 to 14 years, which was conducted in urban and rural Raichur, Karnataka, the researchers determined that the majority of the sample were boys (64%), mainly Hindu (86.9%), and usually lived in joint families, which are demographic attributes likely to be of interest in hygiene-related studies.

METHODOLOGY

To determine the effectiveness of a hand hygiene demonstration programme in the prevention of illness in primary school children in selected schools in Hassan, Karnataka, an evaluative research design was taken employing a pre-experimental, in which one group underwent a pre-test and post-test design. The research was done in Rotary Sunrise School and CKS English School. The sample size included children of primary school that fulfilled the inclusion criteria. A total of 60 children were used in the study by a non-probability convenience sampling method. Children who were available during data collection and those who were not unwilling to participate were used.

The demonstration programme concerning hand hygiene was the independent variable, and the dependent variable was the hand hygiene competence of the children in illness prevention. A structured checklist that was comprised of two parts, namely, socio-demographic variables and hand hygiene skill assessment, was used to gather data. Expert examination was employed to ascertain content validity of the tool and reliability was determined by the split-half approach (r = 0.95).

A pilot study was done to determine feasibility. The pre-test was conducted after the institutional permission was received and informed consent was signed, and then the demonstration programme was conducted. The checklist was used again after one week in a post-test.

Data were both analyzed through descriptive and inferential statistics. Demographic variables were summarized using frequencies and percentages, mean and standard deviation were used to summarize the pre- and post-test scores, paired t-test was used to evaluate the programme effectiveness and chi-square was used to evaluate the relationship between skill scores and specific demographic variables.

RESULTS:

Demographic Variables

The majority of the participants (95%) were between 9 and 11 years of age with only 5% between 7 and 9 years. Most of them were Hindu (75%), and the second highest was Muslim (13.33%), and Christian (11.67%). Sixty five percent of the sample was made up of boys, with 35 percent being girls. With regard to maternal education, more than half (53.33%) received secondary education and 43.33% received a degree or better; only 3.33% received primary education and no one was not schooled. Majority of the respondents were in nuclear families (75%), 25 in joint families. The education attained by fathers was fairly good, 51.67 percent had secondary education and 48.33 percent had degree and above. Over 53.33 percent of the families (more than half) had monthly income greater than 20,000 Rupi, with other smaller proportions represented by lower income groups. Most of the children lived in the urban areas (70%), as opposed to children living in the rural areas (30%). More than half (56.67) said they previously practiced handwashing methods. Friends or neighbours (55%) and family members or relatives (45%) were the most common information source on the hand hygiene, and no participant mentioned sources in the mass media.

Level of Knowledge

Before the demonstration programme, none of the participants demonstrated moderate or adequate hand hygiene demonstration skills but all had inadequate skills. The intervention resulted in a total improvement: whereby all the participants (100 percent) were at the adequate level of skills regarding hand hygiene and no participant was left in the inadequate or moderate level. These results imply that there was a significant improvement in the level of skills after the demonstration programme, which shows that the intervention was very effective in enhancing skills in the demonstration of hand hygiene in the prevention of illnesses among primary school children.

The pre-demonstration scores were in the range of 1 to 7 (mean = 3.87, SD = 1.24), which showed that the participants had low baseline hand hygiene demonstration skills. The scores after demonstration significantly improved after the intervention, between 26 and 29 (mean = 27.68, SD = 0.85) which is indicative of good skills acquisition. Paired t-test (t = 128.83,df = 59, p 0.0001) was statistically significant showing that the difference in the skills of hand hygiene demonstration after the intervention was very significant. The findings are consistent with the effectiveness of the hand hygiene demonstration programme in enhancing illness-prevention in primary school children.

Table 1: Classification of study participants (n = 60)

S. No	Socio Demographic variables	Categories	f	%
1	Age in years	6 - 7years	0	0.00%
		7 – 9 years	3	5.00%
		9 - 11years	57	95.00%
		11 – 12 years	0	0.00%
2	Religion	Hindu	45	75.00%
		Muslim	8	13.33%
		Christian	7	11.67%
		Others	0	0.00%
3	Gender	Male	39	65.00%
		Female	21	35.00%
4	Education status of mother	No formal education	0	0.00%
		Primary education	2	3.33%
		Secondary education	32	53.33%
		Degree and above	26	43.33%
5	Type of the family	Joint family	15	25.00%
		Nuclear family	45	75.00%
		Extended family	0	0.00%
6	Education status of fatther	No formal education	0	0.00%
		Primary education	0	0.00%
		Secondary education	31	51.67%
		Degree and above	29	48.33%
7	Family monthly income (in rupees)	Rs.5001-10,000	1	1.67%
		Rs.10,001 -15,000	10	16.67%
		Rs.15,001 -20,000	17	28.33%
		Rs. 20000 above	32	53.33%
8	Place of the residence	Urban	42	70.00%
		Rural	18	30.00%
		Semi urban	0	0.00%
9	Whether performed hand washing technique before	Yes	34	56.67%
		No	26	43.33%
10	Source of information	Radio/TV/movies	0	0.00%
		Newspaper /printed/material	0	0.00%
		Friends /neighbours	33	55.00%
		Family members/relatives	27	45.00%

Table 2: Knowledge levels among primary school children regarding hand hygiene (n = 60)

Knowledge	No. of study participants.		Percentage of frequency	
Level	Pre- demonstration	Post- demonstration	Pre- demonstration	Post- demonstration
Inadequate	60	0	100.00%	0.00%
Moderate	0	0	0.00%	0.00%

Table 3: Overrall pre-demonstration, post- demonstration and enhancement knowledge scores (n = 60)

	Mini mum	Maxi mum	Range	Mean	SD	Paired t Test Value
PRE-DEMONSTRATION	1	7	6	3.87	1.24	128.83 (S) P<0.0001 df=59
POST-DEMONSTRATION	26	29	3	27.68	0.85	
ENHANCEMENT	19	27	8	23.81	1.43	

DISCUSSION

In the current study, it was found out that a hand hygiene demonstration programme was effective in enhancing hand hygiene skills as a means of preventing illnesses in primary school children. The results indicated that pre-demonstration assessment showed that all participants had poor skills which meant that there was poor baseline awareness and practice. The level of skill of all children was adequate after the intervention, which was a total and significant improvement. This change indicates the usefulness of demonstration-based teaching that is well structured to increase practical health behaviors in young children. The important effect of the intervention is also proven by the remarkable difference in the mean post-demonstration and pre-demonstration scores. The paired t-test is very high ($p = 0.0001$), which proves that the improvement was not as a result of chance.

CONCLUSION

The conclusion of the study is that the hand hygiene demonstration programme was very effective in enhancing hand hygiene skill in preventing illnesses among primary school children. They found a statistically significant improvement in knowledge and practical skills demonstrated by the participants at pre-test and post-test, and all children were at an adequate level post-intervention.

These findings demonstrate the significance of introducing systematic education on hand hygiene in school health programmes. This training at an early age via demonstrations has the potential to nurture long-term healthy lifestyles, decrease occurrence of communicable diseases and lead to better child health outcomes. Such programmes should be reinforced regularly to maintain and continue promoting the hygiene practices among school-age children.

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