

Effectiveness of Child-to-Child Approach on Knowledge and Practices of Personal Hygiene in Children Studying at Selected Schools

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Abstract: *The ancient Greek spent many hours in the bath using fragrance and make-up, in an effort to make them beautiful and be presentable to others. Personal hygiene may be described as the principle of maintaining cleanliness of the body. Children should be taught the importance of hygiene as early as possible. Hence, caregivers (or) elder children can teach children regarding personal hygiene like dental care, eye care, hand care & skin care. The child to child approach in newly introduced concept, which has great importance in the health aspect. Aim of the study was to evaluate effectiveness of child-to-child approach on knowledge and practices of personal hygiene in children. Methodology: A quasi experimental study was conducted on 90 school children selected by purposive non probability sampling technique in Government Schools of Gajukhera, Rajpura, Distt. Patiala, Punjab. Data were collected by using structured knowledge questionnaire and structured observational checklist on procedure of tooth brushing, hand washing and personal hygiene. Findings revealed that there was significant increase in mean post-test knowledge and practices scores of experimental group I & II (Child to child approach and planned teaching programme) than control group regarding personal hygiene. The computed values of post test knowledge scores, practice of tooth brushing, hand washing technique & regarding personal hygiene ($F_{87} = 117.055; p < 0.052$) ($F_{87} = 307.959; p < 0.58$) ($F_{87} = 340.797; p < 0.825$), ($F_{87} = 225.97; p < 0.052$) respectively which shows it is significant. It revealed that child to child is effective in increasing knowledge and practices of personal hygiene of schoolchildren age 10-12 years.*

Keywords: Effectiveness, child-to-child approach, personal hygiene

1. Introduction

The word “hygiene” is derived from “Hygeia”, the Goddess of health in Greek mythology. She is represented as a beautiful woman holding in her hands a bowl from which a serpent is drinking and testifies the art of healing which symbol has even retained today. Hygiene is the science of preserving and promoting health. Healthy child makes healthy generation. There is a meaningful truth in saying that Nation marches on the tiny feet of young children.¹ “Virginia Henderson”, who is one of the most influential nursing theorist and public health scientists, has given the importance to keep body clean and well groomed in his proposed total fourteen components of theory². Good personal hygiene entails more than just being clean. Lack of personal hygiene increased the risk of diarrheal and respiratory infection, which causes one child death every 30 seconds.³

The Child-to-Child approach was designed by a group of health and education professionals at the University Of London, UK as a way for school children to learn about and pass on basic health messages. It has been successfully implemented since 1978.⁴

The Child-to-Child approach is based on two assumptions. The first recognizes that in addition to their primary caregivers, young children are strongly influenced by other children— typically older siblings, playmates or minders with whom they interact daily. Second, by involving older primary school students, education systems can build on this phenomenon to systematically influence school readiness and on-time entry.⁵ Role-plays are used in the context of raising awareness and in encouraging interaction between groups of children who previously did not know each other. They can be used to illustrate situations from everyday life in order to raise awareness about common hygiene problems.⁶ The Child-to-Child approach is a way of

teaching about health which encourages children to participate actively in the process of learning and to put into practice what they learn. It is based on the principle that children enjoy learning through active participation. Children enjoy being involved and it helps them to learn better. This makes teaching interactive and effective. These activities stress the potential of children to promote better health and hygiene to younger children, to children of the same age, and within their families and communities. It is estimated that there have been 250 projects in 70 countries so far. In developing countries, Child-to-Child is a promising approach to providing cost- effective and efficient interventions in early childhood development (ECD), especially for more marginalized or deprived populations.^{4,5}

1.1 Aim of the study

The purpose of study is to evaluate the effectiveness of child-to-child approach on knowledge and practices of personal hygiene in children studying at selected schools of District Patiala, Punjab.

1.2 Objectives

- To assess the knowledge of children on personal hygiene in both experimental and control groups.
- To assess the practices of children on personal hygiene in both experimental and control groups.
- To evaluate the effectiveness of child to child approach on knowledge and practices by comparing mean knowledge and practices personal hygiene scores of experimental and control groups.

1.3 Operational Definitions

- a) Effectiveness In this study it refers to the extent to which the child to child approach in teaching personal hygiene leads to the gain in knowledge and practices

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- b) Planned teaching programme: it refers to systematically developed teaching aid designed to improve the knowledge and practice on personal hygiene of schoolchildren age 10-12 years.
- c) Child-to-child approach -In this study it refers to health information or knowledge and healthy practices, which are imparted to one child, is transmitted to another child by role-play, may be to a younger child, or peer group as measured by using a structured questionnaire and structured observational checklist.
- d) Knowledge: it refers to responses of the schoolchildren to the knowledge items in the structured knowledge questionnaire regarding personal hygiene.
- e) Practice: it refers to the activities performed by schoolchildren of age 10-12 years in relation to personal hygiene.
- f) Children: In this study it refers to the children who are studying in 5th to 7th standard of selected schools in the age group of 10 to 12 years
- g) Personal hygiene In this study refers, taking care of and maintaining a clean germ free, sanitary body, including dental, skin, hairs, nails, hands and feet and perineal area.

Hypotheses

H1: Post-test knowledge scores regarding personal hygiene will be significantly higher than the pre- test knowledge scores of experimental groups.

H2: Post-test practices scores regarding personal hygiene will be significantly higher than the pre-test practices scores of experimental groups.

H3: Post-test knowledge and practices scores of experimental groups will be significantly higher than control group regarding personal hygiene.

Delimitations

This study was limited to government school of Gajjukhera, District Patiala. This study will be limited to 10-12 years of age group.

Research design

In the view of the nature of the problem selected for the present study, the research design selected was a quasi-experimental study, pre-test post-test control group design with two experimental groups.

Groups		Pre Test	Treatment	Post Test
Experiment	Group 1	O1	X1	O2
	Group 2	O3	X2	O4
Control		O5	---	O6

Research setting

The study was conducted in selected government schools: government middle school and government high school Gajjukhera, of district Patiala. These schools are under the Punjab School Education Board (PSEB) came into being under an act of Legislation in 1969 amended in 1987. Now the Principal of Government high school is Baldev Singh. These schools were striving to inculcate their students a strong sense of social responsibility and good achievement in education. The total strength of children was 400 in both respective schools. This setting was chosen based on investigator's feasibility, in terms of availability and accessibility of children in schools.

Target population

The population for present study comprises of schoolchildren of government school, district Patiala with age group 10 – 12 years.

Sample size and sampling technique

90 schoolchildren of age 10-12 years were selected by using purposive nonprobability sampling. 30 samples were assigned in each experiment group, group I (child-to-child approach) and group II (planned teaching). 30 samples were assigned in control group.

Inclusion Criteria

Schoolchildren of age group 10-12 years and who were able to read.

Exclusion Criteria for sampling

- 1) School children other than age group of 10-12 years.
- 2) Children whose parents allowed them to participate in study.
- 3) Children who were absent at the time of data collection.

Selection and development of tool

Structured questionnaire prepared to assess the knowledge on personal hygiene and structured observational checklists used for assessing the practices of personal hygiene in children age of 10-12 years.

Development of tools

Preliminary draft prepared after an extensive review of literature on relevant topic. It included the preparation of the demographic data, structured knowledge questionnaire and structured observational checklists. Tools were sent to the different experts and changes were made according to their consultation and suggestions. Final draft of the tools was prepared regarding the topic.

Description of tool

The data collection was done by use of three sets of parts.

Part 1: Demographic data

This part deal with demographic variables of school children age 10-12 years such as gender, age, educational status, type of family, mothers education, father's education, mother's occupation, father's occupation, religion and sources of information regarding personal hygiene.

Part 2: Structured knowledge questionnaire

This part consists of the total 44 questions in different areas such as personal hygiene and its importance, skin and hair hygiene, eye hygiene, ear hygiene, oral hygiene, hand feet & nail hygiene and perineal hygiene. This instrument was used to identify the knowledge of children age 10-12 years.

Scores interpretation

The correct responses were given the score of one and wrong responses were given the score of zero. The maximum scores were 44.

Part 3: Structured observational checklists

There are three subsets of structured observational checklists. One is to determine the correct tooth brushing procedure, second is to determine the correct hand washing

technique and last is the observation checklist to assess the practice regarding personal hygiene. The tooth brushing part consists of 10 steps to determine the correct tooth brushing procedure. The second part consist of 11 steps to determine the correct hand washing technique and the last part included the total 25 points of a criteria such as hairs, skin, eye, ear, mouth, hands and feet hygiene. It consist of both negative and positive statements

Scores interpretation

In the first two observational checklists of correct tooth brushing procedure and hand washing technique the correct response was given the score of 1 and wrong response was given the score 0. The maximum scores were 10 and 11 respectively

Validity of tools

The prepared tools along with the blue print and content of planned teaching was sent with the objective and operational definitions to 6 experts for the content validity of which 4 were from the nursing field and remaining 2 were from the pediatric medicine .The permission for the tool validation obtained by sending requisition letter and acceptance form. The validators requested to give their opinion to the appropriateness; accuracy and relevance of the items of the tools and planned teaching. The suggestions of the experts were incorporated into the tools and it was further modified with the opinion of the experts and consultation of the guide and co- guide.

Reliability of tool

In order to establish the reliability, the tool was tested on nineschoolchildren. To test the reliability of the structured knowledge questionnaire on personal hygiene the split half method used and tool found to be reliable (r=0.7).Inter-rater reliability was used to test reliability of observational checklists and tool found to be reliable (r=.80)

Pilot Study

Pilot study of the present study was conducted on nine subjects after obtaining the permission from the concerned authority of school from 11th February to 11th March, 2014 in the government elementary school of Manakpur, Ram Nagar, distt. Patiala. The subjects were chosen by purposive non-probability sampling. It was found that tools were feasible.

Data collection procedure

The study was conducted on 90 children after getting the written permission from the concerned authority of the schools. The purpose of the study was explained to the subjects and informed consent was obtained. The respondents were assured of maintain confidentiality

The data were collected by self-report and observational methods. Samples were selected by using purposive non-probability sampling technique in selected government middle and high school of Gajjukhera, District Patiala (Punjab). The research design was quasi-experimental design based on two experimental groups and one control group. On first day, the pre-test knowledge and practices of 60 samples of experimental and 30 samples of controlled group were assessed by using structured questionnaire and structured observational checklist respectively. At second visit, experimental group I 30 children receivedchild-to-child approach interventions by role playing with each other on personal hygiene and experimental group II of 30 children received planned teaching programme interventions by investigator through lecture-cum-discussion and lecture-cum-demonstration method with the use of charts, poster and black board. These interventions were not given to control group and they were part of routine teaching learning activities of school .On the seventh day, post-test carried out in both experimental and control group by using same structured questionnaire and structured observational checklist. Analysis of data was based on descriptive and inferential statistics.

Ethical consideration

Ethical Clearance was obtained from ethical committee of GianSagar Medical College and Hospital, Ram Nagar, Rajpura, District Patiala. Permission was obtained from Principal of government middle and high schools, Gajjukhera of District. Patiala Assurance was given to the study participants regarding the confidentiality of data collected.

2. Result

Table 1 shows frequency and percentage distribution of Schoolchildren according to demographic variables.it is evident that majority of 16 (53.3%) were males in experimental groupI and only 14 (46%) were females. In experimental group II, 15(50%) were males and 15 (50%) were females. In control group 19 (63.33%) were males and remaining were girls. In relation to age, majority of the children belonged to10 years of age in experimental group I, 11 (36.66%), and experimental group II, 13 (43.33%) and in control group 12 (40%) of children were 12 years old. In all the three groups, experimental I, II & control, majority of children 14 (46.66%), 13 (43.33%), 14 (46.66%) respectively were in 6th class. Majority of subjects 17 (56.66%) in experimental I, 19 (63.33%) in experimental II & 14 (46.66%) in control group were from nuclearfamily.

Section–A: Demographic characteristics of subjects

Table 1: Frequency and percentage distribution of sample characteristics- N=90

Demographic characteristics	School children					
	Experimental I (child to child)		Experimental II (planned teaching)		Control	
	f	%	f	%	f	%
1) Gender						
1.1) male	16	53.3	15	50	19	63.33
1.2) female	14	46.66	15	50	11	36.66
2) Age (in years)						
2.1) 10	11	36.66	13	43.33	8	26.66

2.2) 11	9	30	7	23.33	12	40
2.4) 12	10	33.33	10	33.33	10	33.33
3) Educational status						
3.1) 5 th class	6	20	6	20	6	20
3.2) 6 th class	14	46.66	13	43.33	14	46.66
3.3) 7 th class	10	33.33	11	36.66	10	33.33
4) Type of family						
4.1) Nuclear	17	56.66	19	63.33	14	46.66
4.2) Joint	7	23.33	5	16.66	14	46.66
4.3) Extended	6	20	6	20	2	6.66
5) Mother's education						
5.1) Illiterate	7	23.33	5	16.66	1	3.33
5.2) Primary-Middle	14	46.66	18	60	13	43.33
5.3) Matric - secondary	9	30	7	23.33	16	53.33
5.4) Graduate or above	0	0	0	0	0	0
6) Father's education						
6.1) Illiterate	2	6.66	2	6.66	2	6.66
6.2) Primary-Middle	21	70	18	60	26	86.66
6.3) Matric - secondary	7	23.33	10	33.33	2	6.66
6.4) graduate and above	0	0	0	0	0	0
7) Occupation of mother						
7.1) Unemployment	15	50	13	43.33	15	50
7.2) Employment	12	40	17	56.66	15	50
7.3) Self-employed	3	10	0	0	0	0
8) Occupation of father						
8.1) Unemployment	5	16.66	3	10	0	0
8.2) Employment	22	73.33	14	46.66	30	100
8.6) Self-employed	3	10	13	43.33	0	0
9) Religion						
9.1) Sikh	13	43.33	11	36.66	29	96.66
9.2) Hindu	16	53.33	19	63.33	1	3.33
9.3) Muslim	1	3.33	0	0	0	0
9.4) Christian	0	0	0	0	0	0
10) Sources of information regarding personal hygiene						
10.1) Media	0	0	3	10	1	3.33
10.2) Friends	0	0	1	3.33	18	60
10.3) Parents	30	100	26	86.66	11	36.66
10.4) Health Professional	0	0	0	0	0	0

Regarding mother's education, in the two group's majority of mother's studied upto primary to middle 14 (46.66%) & 18(60%) as in experimental group I & II, whereas most of the mother's education in control group was matric-secondary 16 (53.33%). In all the three groups majority of father's studied upto primary-middle 21 (70%), 18 (60%) & 26 (86.66%) respectively. In all the three groups majority of children's father had employment 22(73.33%), 14(46.66%) & 30 (100%) respectively Regarding religion, in experimental group I and II majority of children belong to Hindu family,16 (53.33%) & 19 (63.33%) but in control group most of the children were from Sikh family 29 (96.66%). In experimental group I & experimental group II children received the information about personal hygiene from the parents 30 (100%), 26 (86.66%) where as in control group 18(60%) of children received information about personal hygiene from friends.

Section B: Assessment of the knowledge of children on personal hygiene.

Table 2 Range, Mean and standard deviation of pre and post-test knowledge scores on personal hygiene among school children age 10-12 years.

Table 2: Range, Mean and standard deviation of pre and post-test knowledge scores on personal hygiene among schoolchildren age 10-12 years, N=90

Group	Range		Mean		SD	
	Pre	Post	Pre	Post	Pre	Post
Experimental I	17	14	22.97	33.93	4.51	3.7
Experimental II	20	16	23.17	35.75	4.79	4.32
Planned teaching	12	12	21.63	21.7	3.42	3.43
Control						

Table 2 shows that post-test mean knowledge scores of experimental group I (child to child approach) (33.93+3.78) & II (planned teaching), (35.75+4.32) were higher than the control group of mean knowledge scores (21.70+3.43)

Section C: Assess the practices of children on personal hygiene.

This section deals with the practices scores in experimental I (child-to-child approach), II (planned teaching) and control group regarding personal hygiene among children age 10-12 years.

Table 3 Frequency and percentage distribution of pre-test and post test scores practice of tooth brushing, hand-washing and personal hygiene among schoolchildren

Table 3: Frequency and percentage distribution of pre-test and post test scores practice of tooth brushing, hand-washing and personal hygiene among schoolchildren, N=90

Grading of Observational Checklist	Experimental I		Experimental II		Control	
	pre	post	pre post		pre post	
	f (%)	f (%)	f (%)	f (%)	f (%)	f (%)
Tooth Brushing						
Poor (0-3)	0 (0)	00 (0)	00 (0)	00(0)	00(0)	00 (0)
Average (4-7)	30 (100)	00 (0)	30(100)	00 (0)	30 (100)	30(100)
Good (8-10)	0 (0)	30 (100)	00(0)	30(100)	00(0)	00 (0)
Hand washing						
Poor (0-4)	8(26.66)	00(0)	08 (26.66)	00 (0)	10(33.33)	10(33.33)
Average (5-8)	22 (73.35)	00(0)	22(73.35)	00 (0)	20(66.66)	20(66.66)
Good (9-11)	00 (00)	30 (100)	0 (00)	30 (100)	00(00)	00(00)
Personal hygiene						
Poor (0-8)	00 (00)	00 (0)	00 (00)	00 (0)	00(0)	00(0)
Average(9-13)	30 (100)	00 (0)	30 (100)	00 (0)	30(100)	30 (100)
Good(14-25)	00 (00)	30 (100)	00 (00)	30(100)	00(0)	00(0)

Table 3 shows that the majority of the frequency and percentage distribution in post-test tooth brushing practices scores of experimental group I(child to child approach) and II (planned teaching) and control group .Tooth brushing, hand washing and personal hygiene practices were good in experimental group I and II as compared to average practices in control group .

Section D:

Evaluate the effectiveness of child to child approach on knowledge and practices of personal hygiene This section deals with the knowledge and practice scores in experimental I (child to child approach), 2 (planned teaching) and control group regarding personal hygiene among children age 10-12 years.

H0: There will be no significant difference in post test mean scores of knowledge and practices regarding personal hygiene in experimental (child to child approach) group and control group.

H1: There will be significant difference in post test mean scores of knowledge and practices regarding personal hygiene in experimental (child to child approach) group and control group. To test this hypothesis MANOVA test has been used.

Table 4 Mean, standard deviation, Mean difference and F-test of post-test knowledge and practices scores regarding personal hygiene.

Table 4: Mean standard deviation, Mean difference and F-test of post-testknowledge and practices scores regarding personal hygiene, N=90

Dependent Variable	Group	Mean±SD	Mean Difference in between			F-value	P value
			Child to child & plan teaching	child to child & control	plan teaching & control		
1.Knowledge regarding Personal hygiene	Child to child	33.93±3.787	-1.8	12.23	14.03	117.055*	0.174
	Planned Teaching	35.73±4.323					
	Control	21.7± 3.436					
2. Practices of Personal hygiene	Child to child	9.5±0.63	0.17	3.67	3.5	307.959*	0.58
	Planned Teaching	9.33± 0.547					
	Control	5.83±0.743					
1)Regarding tooth brushing	Child to child	10.13 ±0.73	0.13	5.16	5.03	340.797*	0.825
	Planned Teaching	10 ±0.788					
	Control	4.97±1.066					
2) Regarding hand washing	Child to child	21.63±1.903	01	8.23	7.23	225.975*	0.052
	Planned Teaching	20.63 ±1.52					
	Control	13.4± 1.453					

F tab (2, 27)=3.35 * significant

Table 4 MANOVA was used to test the differences between the means scores of two experimental group and control group. Analysis revealed that there is significant difference in post-test mean practices scores of tooth brushing in experimental group I (child to child approach) (9.5±0.63) and control group (5.83±0.743) and there is also the significant difference in post-test mean practices scores of hand washing (10.13±0.73) and control group (4.9±1.066) .The post-test mean practices scores of personal hygiene (21.63±1.903) is also significantly higher as compare to control group (13.4±1.453).

The mean difference in knowledge scores regarding personal hygiene between the experimental group 1 & II, experimental group I& control and experiment II & control are (-1.8, 12.23 &14.03) respectively. Whereas the mean difference in tooth brushing practices scores regarding personal hygiene between the experimental group 1 & II, experimental group 1 & control, experiment II& control are (0.17 ,3.67 & 3.5) respectively. The mean difference in hand washing technique scores regarding personal hygiene between the experimental group 1 & II, experimental group 1 & control and experiment II& control are (0.13,5.16 &5.03) respectively. The mean difference in personal

hygiene scores regarding personal hygiene between the experimental group I & II, experimental group I & control and experiment II & control are (01,8.23 & 7.23) respectively. The computed “F” value of post-test knowledge scores is ($F_{2, 27} = 117.055$; $P < 0.05$). Findings revealed that child to child approach teaching is effective in improving knowledge and practices of personal hygiene in children.

The study of **Leenak.c. & D'souza Jacinta** supported the present study found a significant improvement in the mean knowledge scores of children of two different groups i.e health education group- I ($t=5.61$, $p<0.05$), child to child group II ($t=6.42$, $p<0.05$). A significant difference in the post health education knowledge scores were observed ($t=2.06$, $p<0.05$). (Effectiveness of child-to-child approach to health education on prevention of worm infestation among children of selected primary schools. Significant difference in the pretest (5.20 ± 3.19) and posttest (18.03 ± 1.87) knowledge scores on prevention of worm and t value (- 18.96) which is significant at $p<0.05$.

One another study conducted by **Mwape and Serpell**, which supported the findings of this study was that in which child-to-child techniques led to a dramatic improvement in educational outcomes for girls. In child-to-child classrooms, the qualification of participating students for admission to secondary school improved to 74%, with girls accounting for two-thirds, in contrast to averages of 33% and 29% for two non-child-to-child classrooms.

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