

Original Research Article

Impact of hand washing intervention program on knowledge, attitude and practices about hand hygiene among school children in urban area of Kolhapur city

Pallavi A. Potdar^{1*}, T. A. More¹, Anjali Wagh¹, Manjiri M. Desai¹, Raja²

¹Department of Community Medicine, D Y Patil Medical College, Kolhapur, Maharashtra, India

²D Y Patil Medical College, Kolhapur, Maharashtra, India

Received: 12 April 2019

Revised: 21 May 2019

Accepted: 28 May 2019

***Correspondence:**

Dr. Pallavi A. Potdar,

E-mail: pallupot@gmail.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: Good hand hygiene is an important infection control measure as person-to-person contact via hands is a common mode of transmission for gastrointestinal and respiratory infections. There are promising results of proper hand washing for reducing many kinds of diseases. For improvement of knowledge and practice of hand washing, health education intervention is very much fruitful. The objectives of the study were to study knowledge, attitude and practice regarding hand washing among primary school children; to study impact of hand washing intervention program on knowledge, attitude and practices about hand hygiene.

Methods: The study was conducted from 1st March 2018 to 30th December 2018 in the government aided primary schools of urban area in Kolhapur. Initially baseline school health check-up was done to study knowledge, attitude and the actual hand washing practices both in school as well as at home among children. Extensive health education programs were conducted to demonstrate correct hand washing technique and importance of hand washing was taught; with involvement of teachers from schools. Data was collected using interview questionnaires. Hand washing facility and availability of water and soap in school was also noted. Teachers were actively involved to motivate students for hand washing with soap before eating and after visiting toilet facility. Follow up visits were done to study parameters like improvement in knowledge, attitude and practices about hand hygiene.

Results: After our health education sessions there was significant improvement in knowledge, attitude and practices regarding hand washing among the school children.

Conclusions: From our study findings it can be stated that after our health education sessions there was significant improvement in hand washing behaviour among the participants. We tried to sensitize teachers also so that they will motivate children in future

Keywords: Hand washing, Hand hygiene, School children, Urban area

INTRODUCTION

Hand-washing has been accepted as an effective measure to prevent the transmission of many infectious diseases with a recent meta-analysis showing a 31% reduction in gastrointestinal infections and 21% reduction in respiratory illness through proper hand-washing

practices.¹ The importance of school health has been acknowledged across countries since the beginning of 20th century.²

WASH Program initiated by UNICEF has put hand hygiene as effective intervention against many communicable diseases. Millions of lives could be saved

through simple and proper hand washing. There are marked changes in hand washing behaviour among school children after health education intervention at schools. School children communicate hand washing knowledge to their peers, parents and siblings thus bringing change by improving their hand washing knowledge and practice.³ Researchers have measured substantial changes in hand washing behaviour among school children after a preschool based hand washing promotion.⁴

The millennium development goals have firmly established the issues of “water, sanitation and hygiene” on the global agenda. Neglect of hygiene goes a long way in explaining why water and sanitation programs have often not brought the expected benefits.⁵ School children are particularly vulnerable to neglect basic personal hygiene due to lack of knowledge and practice. Poor knowledge, attitude and practice related 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.⁶ Keeping all these points in mind, we decided to utilize this simple hand washing intervention to bring major changes in school going children’s health related behaviour with active involvement of teachers to motivate children in future. Few studies conducted in India as well as abroad have proved significant impact of such awareness activity among school children.³

METHODS

The study was conducted over a period of 10 months in five Government-aided Primary schools in urban area.

Study setting: Five primary schools from urban field practice area of Medical College.

Study design: Interventional study.

Study period: 1st March 2018 to 30th December 2018.

Study population: School children of primary school.

Sampling technique

Out of the total 7 schools in our field practice area, we selected 5 schools randomly.

Sample size

We collected data from all 480 students of five Government-aided schools.

Study variables

Socio-demographic profile, environmental data, questionnaire on knowledge, attitude and practice regarding proper hand washing in schools as well as at home.

Ethical approval

Ethical clearance was obtained from Institutional Ethics Committee.

Data collection

Baseline school health check-up was done for all the selected 480 children studying in primary schools in our field practice area. Data was collected by face to face interviews after getting informed consent and permission from schools. We collected information regarding the level of knowledge, attitude and practice about hand washing at the time of first visit and improvement after our health education sessions in next visit after 2 months were noted. Data was collected using semi-structured questionnaire by interview method.

Data analysis

The collected data was entered in MS Excel work-sheet and was analysed using SPSS V 20. Paired ‘t’ test and McNemar’s test were used to study the association between different study variables.

Intervention

Extensive health education programs in the form of health talk, skit and posters were conducted with actual demonstration of proper hand washing technique. We distributed soaps and hand wash liquids to children and also for use in common places in schools. Posters were distributed in each class for display and in common areas in schools. To make this activity interesting and to achieve more impact, we conducted drawing competition and slogan competitions in all five schools. Hand washing facility and availability of water and soap in schools were also noted. Teachers were actively involved to motivate students for hand washing with soap before eating food and after visiting toilet facility. Follow up visits after one month were done to study the effectiveness of program which included improvement in knowledge, attitude and practice regarding proper hand washing.

RESULTS

In our study, 49.58% of children had knowledge regarding necessity of hand washing and after health education intervention it increased to 83.12% with $p < 0.001$. About 3/4th of the students (74.21%) had knowledge of using soap while washing hands before eating and after education it became 94.37% with $p < 0.05$. Only 14.37% of students had knowledge that by hand washing they can prevent some disease, after the study 36.45% of them learnt with significant ($p < 0.05$). Only 7.5% of the students used the correct technique of hand washing and after health education it improved to 33.12% with significant $p < 0.001$.

Table 1: Knowledge about hand washing among study participants.

Knowledge indicators	Before intervention		After intervention		McNemar's test	P value
	No.	%	No.	(%)		
Why to wash hands?	238	49.58	303	83.12	49.78	<0.001
Should we always use soap for HW?	221	46.04	327	68.12	31.73	<0.001
Should we use soap for HW after visiting toilet?	319	66.45	432	90.01	58.64	<0.001
Should we wash hands with soap before eating?	357	74.21	453	94.37	2.39	>0.05
Should we wash hands with soap as we reach home from outside?	138	28.75	186	38.25	4.77	>0.05
Does HW prevents some diseases?	69	14.37	175	36.45	13.48	<0.05
What are correct techniques of HW?	36	7.5	159	33.12	43.65	<0.001

Table 2: Changes in hand washing practice after intervention

Practice about handwashing		Before (%)	After (%)
Using soap while bathing	Never	7.8	0.8
	Sometimes	24.4	3.6
	Always	67.8	95.6
Using soap while hand washing in school before eating	Never	12	06
	Sometimes	66	30.8
	Always	32	93.2
Using soap while hand washing in school after visiting toilet	Never	08	0.8
	Sometimes	23	3.6
	Always	69	95.6
Washing hands in school	Never	06	02
	Sometimes	30.8	13.2
	Always	43.2	80.8
Reason for not washing hands in school	Lack of soap	8.1	75.8
	Don't want	23	11.3
	Lack of time	69.6	12.9

Table3: Knowledge, attitude, practice score after health education intervention.

Score	Before intervention	After intervention	Mean±SD	Paired t	P value
Knowledge	44.53	63.72	19.19±3.61	6.23	0.01
Attitude	52.28	78.48	26.2±4.41	5.48	0.01
Practice	41.67	69.42	27.75±2.53	7.43	0.001

Only 67.8% of the students were using soap always while bathing, 24.4% sometimes and 7.8% never used it. After our health education it was improved to 95.6% for always, 3.6% sometimes and 0.8% never (Table 2). Before intervention only 32% of participants used to always wash their hands, while 66% wash sometimes before eating and after education, it was changed to 93.2% and 30.8% (Table 2).

The mean knowledge score of personal hygiene was 44.53 & it improved to 63.72 after health education intervention which was significant at $p < 0.01$. The attitude score was 52.28 increased to 78.48 and this change was statistically significant. The practice score was 41.67 which improved to 69.42 after education intervention which was statistically significant ($p < 0.001$) (Table 3).

DISCUSSION

Knowledge regarding use of soap for hand washing showed improvement from 46.04% to 68.12% after our active health education sessions. Similar results were found in research done by Garg which showed improvement from 81.1% to 99.3% in their study.⁴ In our study knowledge regarding hand washing after visiting toilets increased from 66.45% to 90.01% with our efforts and another study conducted by Shrestha showed similar improvement from 55.2% to 89.6%.³ Similar observation was given by Damayanthi where they showed improvement in knowledge from 77.3% to 94.6%. In our study only 7.5% of students knew correct hand washing technique before intervention which improved to 33.12% afterwards.⁷ The study done by Garg noted higher level

of knowledge compared to our participants i.e. 32.4% knew the correct technique which raised to 68% with significant ($p < 0.001$).⁴

Among our study participants knowledge score was 44.53, attitude score was 52.5 and practice score was 41.67. Another study by Hazazi showed higher values than our findings in which knowledge score was 56.3, attitude score 74.8 and practice score as 51.2.⁸

The practice of hand washing which increased from 41.67% to 69.42% in our study participants similar findings were given by Shrestha which showed improvement from 41.43% to 60.87%.³ Among our study participants 32% practiced washing hands with soap before eating food; similar results were given by Dajaan.⁹ According to findings of Takalkar, 80% practiced hand washing with soap before eating food which was higher than our findings.¹⁰ As per findings of Besha 71.43% practiced it while according to findings of Vismita it was only 11% which was less than our results.^{11,12} Among our study participants who did not practice proper hand washing 75.8% stated that lack of soap was the reason for not washing hands in school, but results of study by Gawai stated that only 2.4% had given similar reason for not washing hands in schools.¹³ From our study findings it can be stated that after our health education sessions there was significant improvement in hand washing behaviour among the participants. We tried to sensitize teachers also so that they will motivate children in future.

ACKNOWLEDGEMENTS

Authors would like to sincerely thank Dr Pravin Kolekar, Mr Namdev Landage, Mr Tushar Nikam, Mr Prafulla Mirajkar and Mr Rohan Bhogale for their assistance in conducting the health education programmes.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Chittleborough RC, Nicholson AL, Basker E, Bell S, Campbell R. Factors influencing hand washing behaviour in primary schools. *Health Educ Res*. 2012;27(6):1055-68.
2. Haag JH. *School Health Programme*. 3rd ed. London: Henry Kimpton; 1972: 2-7.
3. Shrestha A, Angolkar M. Improving handwashing among school children. *A L Ameen J MED Sci*. 2015;8(1):81-85.
4. Garg A, Taneja PK, Badhan SK, Ingle GK. Impact of school-based hand washing promotion Program

- on knowledge and hand washing behaviour of girl students in a middle school of Delhi, India. *Indian J Public Health*. 2013;57(2):109-12.
5. Mohammed G, Nihar D, Abdullah B, Hila I, Albarazi R, Saheli ZA. Knowledge and practice of personal hygiene among primary school students in Sharjah, UAE. *J Health Sci*. 2016;6(5):67-73.
6. Motakpalli K, Indupalli AS, Sirwar SB, Jayalakshmi KN, Bendigeri ND, Deepak C. A Study on health hygiene among school children in rural field practice area of AJIMS, Mangalore, Karnataka, India. *Int J Bioassay*. 2013;2(10):1407-10.
7. Damayanthi MN, Ranganatha SE. Effectiveness of health education on knowledge regarding personal hygiene among school children in rural field practice area of medical college. *Ann Community Health*. 2016;14(4):8-12.
8. Hazazi A, Chandramohan S, Khan J, Mohaithef MAL. Knowledge, attitude and practice regarding personal hygiene among the male primary school children in Abha, Saudi Arabia. *Helix*. 2018;8(2):3215-23.
9. Dajaan DS, Addo HO, Ojo L, Amegah KE, Loveland F, Bechala BD, Benjamin BB. Hand washing knowledge and practice among public primary school in Kintampo Municipality of Ghana. *Int J Community Med Public Health*. 2018;5(6):2205-16.
10. Takalkar AA, Nirgude AS, Nagaraj K, Naik PR, Prasad VG, Reshmi SS. Hand hygiene perception and practice of school going children from rural government schools of Nalgonda, Andhra Pradesh. *Int J Med Health Sci*. 2013;2(2):154-60.
11. Besha B, Guche H, Chare P, Amare A, Kassahun A, Kebede E et al. Assessment of hand washing Practise and its associated factors among primary school children in Arbaminch town, Ethiopia. *Epidemiology (Sunnyvale)*. 2015;6(3):247.
12. Vishmita P, Paliwal CK, Nishi F, Surbhi C. Personal hygiene habits among school going children in rural areas of Jaipur, India. *Int J Sci Re Rev*. 2014;3(2):126-42.
13. Gawai PP, Taware SA, Chatterjee AC, Thakur HP. A Cross sectional descriptive study of hand washing knowledge and practice among primary school children in Mumbai, Maharashtra, India. *Int J Community Med Public Health*. 2016;3(10):2958-66.

Cite this article as: Potdar PA, More TA, Wagh A, Desai MM, Raja. Impact of hand washing intervention program on knowledge, attitude and practices about hand hygiene among school children in urban area of Kolhapur city. *Int J Community Med Public Health* 2019;6:2955-8.