MAK HILL Publications Research Journal of Pharmacology

Research Article
doi: 10.59218/makrjp.2023.1.22.25

OPEN ACCESS

Key Words
Hand washing, gastroenteritis, rural students

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Received: 30 January 2023
Accepted: 18 February 2023
Published: 29 February 2023

Citation: Mohan Baboo Goyal and Garurav Khandelwal, 2023. Correlation Between Hand Washing Practice and Gastroenteritis in Rural Student. Res. J. Pharm., 17: 22-25, doi: 10.59218/makrjp.2023.1.22.25

Correlation Between Hand Washing Practice and Gastroenteritis in Rural Student

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ABSTRACT
The faecal-oral pathway is typically used to transfer the bacteria that cause diarrhoea. The transmission methods include direct contact with infected faeces, person to person contact and consumption of contaminated food and water. All students in the selected classrooms were eligible to participate in the survey regardless of age. The questionnaire was translated into the local language in each country and consisted of multiple choice response options: students recorded their response on computer scan able sheets. Student privacy was protected through anonymous and voluntary participation and informed consent was obtained as appropriate from the students, parents and school officials. A total of 2050 adolescents aged 12-15 years [mean (SD) age 14.2 (1.0) years; 51.3% boys] were included in the analysis. Overall, the prevalence of hand-washing practices was as follows: never/rarely washing hands before eating (7.1%), after using toilet (6.4%) and with soap (9.2%). Moreover, such a message may also have a cross-over effect, that is, we may observe reductions in other diseases linked to poor sanitation conditions such as pneumonia, gastroenteritis, diarrhea, dysentery, hepatitis A, cholera, typhoid, polio and skin infection.

INTRODUCTION

Diarrhoea is thought to be the cause of 1.8 million fatalities globally each year, with children under the age of five being the most affected. Estimates indicate that diarrheal disease causes 72.8 million disability adjusted life years (DALYS) annually, with the majority of these cases occurring in low and middle-income countries (LMICS). Diarrhoea significantly exacerbates malnutrition in children by forcing low-nutrient intake, decreasing absorption and increasing nutrient output. 1. Obviously the malnutrition-infection complex is reinforced during diarrhoea episodes, since poor nutritional status predisposes children to more severe and prolonged diarrhoea, decreased growth and development and higher case fatality rates. The germs that cause diarrhoea are usually spread through the faecal-oral pathway. Direct contact with contaminated faeces, interpersonal interaction and in take of tainted food and drink are the three ways that the disease is spread. 2. According to certain research, contaminated food and drink can be the cause of more than 75% of cases of diarrhoea overall. 3. High levels of bacterial contamination in food and beverages are associated with the negligent handling practises and poor hygiene practises of cares. Hand contact with ready-to-eat food-defined as food consumed without further washing, cooking, processing or preparation by the consumer is one possible important route by which bacteria that cause diarrhoea contaminate food and water. Programmes promoting hygiene are one of the methods the World Health Organization (WHO) has identified for the management of diarrhoea. 4. One of several interventions aimed at influencing individuals and groups to embrace safer practices in private and public spaces is hand washing, which aims to lower the incidence of diarrheal diseases linked to poor hygiene. 5. Hand washing is a multifaceted act, as are the factors that influence how people wash their hands in their communities. For example, people's understanding of best practices and the availability of soap and water may influence whether they wash their hands with it or without it. The broad application and durability of hygiene regimens have been critically examined recently. For example, keeping new hand washing practices is crucial to maximizing the potential health benefits associated with hand washing promotional activities. Apart from the challenges encountered by the targeted groups in sticking to a new conduct (hand washing) one of the biggest obstacles to the sustainability of hand hygiene practice is its associated cost. Six Therefore, due to a lack of means for doing so the potential health advantages of hand washing may be restricted, particularly for low-income households and communities. The purpose of the present research was to assess the relationship between hand washing practices and prevalence of gastroenteritis in students of rural areas.

MATERIALS AND METHODS

This study was conducted in Department of Medical Gastroenterology, National Institute of Medical Sciences and Research, Jaipur. The survey used a standardized two-stage probability sampling design for the selection process within each participating country. For the first stage, schools were selected with probability proportional to size sampling. The second stage involved the random selection of classrooms which included students aged 13-15 years within each selected school. All students in the selected classrooms were eligible to participate in the survey regardless of age. The questionnaire was translated into the local language in each country and consisted of multiple choice response options: students recorded their response on computer scannable sheets. Student privacy was protected through anonymous and voluntary participation and informed consent was obtained as appropriate from the students, parents and school officials. Three questions about hand-washing practices in the past 30 days were asked: (a) how often did you wash your hand before eating? (b) how often did you wash your hands after using the toilet or latrine?: and (c) how often did you use soap when washing your hands? Each of these questions had as answer options: 'Never', 'Rarely', 'Sometimes', 'Most of the time' and 'Always'. Food insecurity was assessed by the question "During the past 30 days, how often did you go hungry because there was not enough food in your home?" with answer options 'Never', 'Rarely', 'Sometimes', 'Most of the time', and 'Always'. Statistical analysis was carried out with the help of SPSS 25.0. The associations between severe food insecurity and each type of hand-washing practice were assessed. Sampling weights and the clustered sampling design of the surveys were taken into account in all analyses. Results from the logistic regression analyses are presented as odds ratios (ORs) with 95% confidence intervals (CIs).

RESULTS

The analysis comprised 2050 adolescents between the ages of 12 and 15 [mean (SD) age 14.2 (1.0) years; 51.3% boys]. Overall, the following behaviours related to hand washing were prevalent: never/rarely washing hands before eating (7.1%), after using the restroom (6.4%) and using soap (9.2%). (Table1). High and upper middle-class rural students were more likely to never or seldom wash their hands before eating, while low-income rural students were more likely to wash their

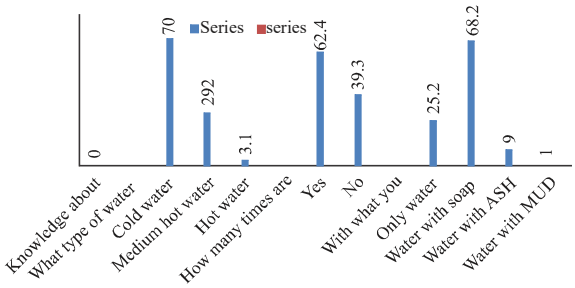

Fig. 1: Knowledge about handwashing

Table 1- Knowledge about handwashing

Knowledge about handwashing	(%)	95% CI
What type of water should be used for handwashing?		
Cold water	70.0	(63.1, 73.1)
Medium hot water	29.2	(23.1, 36.1)
Hot water	3.1	(1, 6.4)
How many times are needed for proper handwashing?		
Yes	62.4	(55.2, 69)
No	39.3	(33, 46.2)
With what you should wash your hand?		
Only water	25.2	(19.2, 31.2)
Water with soap	68.2	(61.1, 74.1)
Water with ash	9.0	(5.2, 13.3)
Water with mud	1.0	(0.3, 5)

Table 2: Association between severe food insecurity and never/rarely washing hands before eating, after using toilet and with soap estimated

Outcome	Income group	OR (95% CI)	I^2
Before eating	low	1.38	12
	Middle	1.27	72
	Upper middle	1.41	66
	high	1.39	44
After using toilet	Low	1.43	51
	Middle	1.50	38
	Upper middle	1.84	52
	high	2.00	00
Soap	Low	1.37	61
	Middle	1.28	58
	Upper middle	1.65	68
	high	1.85	00

hands with soap after using the lavatory. Overall, there was a 1.38 (96% CI = 1.27-1.41) times greater likelihood of never or never washing hands before eating when there was severe food insecurity. For never or infrequently washing hands after using the loo the equivalent value was 1.65 (96%CI = 1.50-1.74). The percentage of students who never or very rarely used soap when washing their hands was 1.46 (96%CI = 1.39-1.54) and the highest ORS were found in upper middle and high-income rural kids. This was a very small percentage. All overall estimations showed a moderate degree of heterogeneity. (Table 2)

DISCUSSION

The majority of people who never or very seldom wash their hands with soap after using the loo are from low-income countries. Those with low socioeconomic level, measured by acute food insecurity, tended to wash their hands less frequently. The outcomes held true for every circumstance in which hand washing was performed-that is, before eating and after using the restroom, or with soap. 7. The new study's findings are consistent with earlier research, which indicated that good hand-washing habits were not very common, especially among pupils from lower socioeconomic backgrounds. This can be the result of not understanding the benefits of using the right hand washing practises. For example, a survey of ninety-nine medical professionals in Northeast Ethiopia revealed that thirty-six percent of them did not know how to properly wash their hands. 8. Poor handwashing habits can also be caused by a shortage of soap, clean water, handwashing facilities in low-income countries. 9. A statement like this might also have a cascading effect, meaning that illnesses related to unhygienic conditions could become less common. These illnesses include skin infections, cholera, polio, pneumonia, gastroenteritis, diarrhoea, dysentery and hepatitis A. Based on the current study's findings, there was a significant correlation between acute food insecurity-a proxy for a low socioeconomic level and the poor hand-washing habits of rural poor kids. Notably, among upper middle-class students with lower income, severe food insecurity was more strongly associated with never/rarely washing hands with soap after using the restroom. This suggests that, even among wealthy students, those with lower socioeconomic status are more likely to practise poor hygiene and may be more vulnerable to a range of infections.

CONCLUSION

A low prevalence of good hand-washing practices was reported, particularly in low-income students and those with a low socio-economic status. Moreover, such a message may also have a cross-over effect, that is, we may observe reductions in other diseases linked to poor sanitation conditions such as pneumonia, gastroenteritis, diarrhea, dysentery, hepatitis A, cholera, typhoid, polio and skin infection.

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