

# Personal Hygiene Practices Among Selected Secondary Schools at South Eastern Nigeria

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## Abstract:

**Background:** Personal hygiene is the process of keeping one's own body clean, and it is considered a global concern among schoolchildren. Every year, it is estimated that diarrhoea kills more than 1.5 million school-aged children due to unclean water, a lack of sanitation, and a lack of cleanliness. Poor hygienic habits among schoolchildren raise a huge concern in underdeveloped nations. The purpose of this study was to analyse personal hygiene practises among students in secondary schools in Southeastern Nigeria.

**Methods:** A descriptive cross-sectional study design was utilised in this study. A self-administered questionnaire was used for data collection. The study population consisted of secondary school students at Okigwe LGA, Owerri, Imo State. A multistage sampling technique was utilised to select 404 respondents. Ethical approval was obtained from the Department of Public Health, Federal University of Technology, Owerri.

**Results:** Of the respondents, 44% (176) were within the age group of 10–12 years. 98.5% (394) were aware of personal hygiene practices, with 67.2% (269) of the respondents obliged to knowledge that personal hygiene includes bathing, washing your hands, brushing your teeth, etc. The study showed that the majority of 83.3% (333) of secondary school students in Okigwe always brush their teeth daily and 78.7% (315) also affirmed they always cut their nails as a mark of hygiene practice. 89.0% (356) indicated lack of adequate water supply as a challenge to the practise of hygiene, which means that the Okigwe community service lacks water provision at school and in the community at large.

**Conclusion:** The study concluded that there is a need for regular reinforcement to sustain the gains particularly with areas of assessment in the study showing that sanitary provisions of water is lacking.

**Keywords:** Hygiene, Sanitation, Practices, Personal Hygiene, Secondary School

well as personal hygiene habits, plays an important role in elements of healthy living and disease prevention (2, 3, 4). These health risk factors are linked to some important daily activities that are associated with worthy operational actions and obligatory responsibilities, such as handwashing with soap before meals and after defecation, brushing teeth at least twice a day, especially after breakfast and after meals, taking regular soap baths, keeping nails short, and engaging in regular exercise (5, 6). Regular hygienic practices may be viewed as good habits by a society, yet hygiene neglect may be viewed as obnoxious, rude, or even dangerous (4, 7, 8). Personal cleanliness is essential for many reasons, including personal, social, physiological, psychological, and simply as a way of life. Maintaining a high degree of cleanliness, helps to avoid the genesis and spread of infections and sickness (3).

Diarrhea kills more than 1.5 million school-aged children every year, according to estimates, owing to dirty water, sanitation, and hygiene (6, 9). In developing countries, poor hygiene practices among pupils are a major problem (3). In poor countries, hygiene and sanitation-related diseases constitute a severe burden, causing many people to grow ill and sometimes die (10). As a result of poor hygiene, infectious illnesses cause a large portion of the world's illness and mortality (4, 11). In Africa and Southeast Asia, infectious illnesses account for 62% and 31% of all deaths, respectively (11, 14). This trend is particularly visible in developing countries, where acute respiratory and intestinal infections are the main causes of sickness and mortality in children under the age of five (13, 14, 7, 12, 5, 15).

As a result, several studies have found that poor personal hygiene among these students contributes to the spread of germs, gum infections, a higher risk of infectious illnesses, the incidence of food-borne outbreaks, and reproductive tract infections (14, 2). These have been linked to the kids' lack of understanding of personal hygiene and related activities. In impoverished nations like Nigeria, personal hygiene inadequacies have been highlighted as a serious public health concern, with schoolchildren being particularly affected (11). Furthermore, there have been few researches on young children in school, and no formal study on Assessment of

## I. INTRODUCTION

Among school-aged children, personal hygiene is a serious and pervasive public health problem (1). Hygiene is a term that refers to habits that promote good health and cleanliness (1, 2). The practice of keeping one's own body clean is known as personal hygiene (2). Good sanitary care, as

Personal Hygiene Practices among secondary school students has been conducted. As a consequence of these concerns, the researcher conducted the study on personal hygiene practices in secondary schools in Okigwe LGA, Imo State South Eastern Nigeria.

## II. METHOD

### *Study Design*

This study design for this research on the assessment of personal hygiene practices among secondary schools at Okigwe was a descriptive cross-sectional study.

### *Study Population*

The study population and respondents were Jss1-Ss3 Secondary School Students in Okigwe Local government.

### *Inclusion criteria*

Respondents were JSS1-SS3 secondary school students in Okigwe Local government area, Imo State

### *Exclusion criteria*

JSS1-SS3 secondary school students at Okigwe LGA who were seen to be sick at the time of study and students who refuse to give their consent for the study were excluded from the study.

### *Sampling*

#### *Sample Size Calculation*

This was determined by using Leslie fishers' formula

$$n = \frac{Z^2 Pq}{d^2}$$

where:

n is the minimum sample size

Z is the standard normal deviate at 95% confidence interval which is 1.96

P is the prevalence from previous studies based on the objectives of the study which is 50% =0.5

q is 1-P=1-0.5=0.5

d is the error margin which is 5%(0.05)

$$n = \frac{(1.96)^2 (0.5) (0.5)}{0.05^2} = 384.16 = 384$$

With an anticipated non-response rate of 5%,

Being 5% of 384 = 19.2

384+19.2 =403.2 = 404

### *Sampling Method*

A multistage sampling technique was used for this study, using simple random sampling via balloting at every stage to give every section an equal chance of selection.

### *First stage: Selection of communities*

Two out of the six communities namely, Amuro, Ihube, Okigwe rural, Otan-chara, Otanzu, Umulolo, in Okigwe local government, were selected via simple random sampling using balloting method, out of which the researcher selected Amuro and Ihube communities.

### *Second stage: Selection of Villages*

One village each was selected from Amuro and Ihube communities via simple random sampling. The villages selected were Amuro and Agbala villages.

### *Third stage: Selection of Secondary Schools*

One secondary school each was selected from the secondary schools in Amuro and Agbala villages by simple random sampling using balloting technique.

### *Fourth stage: Selection of classes*

Two classes each from junior and senior secondary schools in the two aforementioned were selected using simple random sampling and the data tool were distributed evenly.

*Fifth stage:* All selected secondary school students were recruited consecutively until the minimum sample size was reached.

### *Instruments for data collection*

The instrument for data collection to assess personal hygiene practices among secondary school students in Okigwe LGA was a structured questionnaire with open- and close-ended questions.

### *Validity of instruments*

The questionnaire was carefully prepared by the researcher, was scrutinized and approved by the researcher's supervisor (face validity). Also two other lecturers from the department of public health ascertained the validity to ensure that the questionnaire obtained the objective of the research.

### *Reliability of instruments*

Test-retest method was used to test the reliability of the questionnaire. The questionnaire was initially administered to respondents from a similar population and was repeated. The data that gathered from this research was analyzed to deem this study reliable. The questionnaire was pretested and Cronbach Alpha test was performed to obtain a reliability coefficient of 0.8.

### *Method of Data Collection*

Data was collected with the aid of a self-administered, well-structured and pre-tested questionnaire, which was used to assess the knowledge and practice of personal hygiene by secondary school students in Okigwe LGA, Imo state.

## III. METHOD OF DATA ANALYSIS

Data gotten from the questionnaire were input into the computer using the statistical package for social sciences

(SPSS version 23) and analysed. Descriptive statistics such as percentages, pie charts and frequency distribution tables was utilized in characterizing the respondents.

*Ethical Consideration*

The ethical approval to conduct this study was obtained from Department of Public health Local Ethics Committee Federal University of Technology Owerri. A verbal consent was obtained from all respondents before inclusion in the study.

**IV. RESULTS**

*4.1 Socio demographic Characteristics of the Respondents*

Table 1 below indicates that the majority of the respondents were between 10-12 years (44%), and 13-15 years (37.0%). Fewer number of respondents were within the age groups 0-9 years (8.5%) and above 16 years (10.5%). Slightly above half of the respondents (52.8%) were females while the rest were males. The table also shows that majority of the informants, 96.8% (387) were of Igbo origin and just 0.5% (2) were of Yoruba ethnic origin. The remaining 2.7% (11) included respondents from all other ethnic groups. Majority of the respondents, 95.5% (382) were Christians, 4.3% (17) were traditional worshippers and the least being 0.2% (1) was a Muslim. Distribution of participants across various classes were 22%, 18.5%, 16.8%, 15.7%, 14.2% and 12.8% for JSS3, SS2, SS1, JSS1, SS3, and JSS2 students respectively.

Table 1: Socio demographic Characteristics of the Respondents

Characteristics	Frequency	Percentage (%)
<b>Age:</b>		
0-9	34	8.5
10-12	176	<b>44.0</b>
13-15	148	37.0
16 and above	42	10.5
Total	400	100
<b>Sex:</b>		
Male	189	47.2
Female	211	52.8
Total	400	100
<b>Ethnicity</b>		
Igbo	387	96.8
Yoruba	2	0.5
Hausa	0	0.0
Fulani	0	0.0
Others	11	2.7
Total	400	100
<b>Religion:</b>		
Christian	<b>382</b>	<b>95.5</b>
Islamic	1	0.2
Traditional worshippers	17	4.3

Total	400	100
<b>Class</b>		
JSS 1	63	15.7
JSS 2	51	12.8
JSS 3	88	22.0
SSS 1	67	16.8
SSS 2	74	18.5
SSS 3	57	14.2
Total	400	100

*4.2 Knowledge of Personal Hygiene Practice among Respondents*

Table 2 below reveals the responses as regards personal hygiene practices. Majority of the respondents 98.5% (394) have heard about personal hygiene, while just 1.5% (6) have not. Also, 60.1% (241) of the informants have heard about it from their teachers, 21.3% (85) from their parents, 9.0% (36) heard about personal hygiene from television/radio sets and 5.8% (23) from other sources, meanwhile a low 0.8% (3) obtained their knowledge from magazines. 97.2% (389) of the respondents obliged to personal hygiene including bathing, washing your hands, brushing your teeth, etc while just 2.8% (11) believed otherwise. On the issue of sharing drinking cups without washing, 8.2% (33) did not perceive it as a problem, while a great 91.8% (367) understood sharing drinking cups without washing could cause ill health. 64.25% (257) of the participants were positive to hand washing with or without soap being the same, while 35.75% (143) disagreed and understood there are differences washing their hands without soap and Washing with Soap. A majority of the respondents 86.0% (344) also wouldn't eat raw vegetables or fruits without washing because they believed it could cause amoebic infection, while 14.0% (56) did not think it could cause amoebic infections. 68.5% (274) of the respondents believe it was more important to wash your hands before meals than after, while 31.5% (126) said otherwise. On the issue of human faeces containing germs that can cause infections, 4.5% (18) agreed while a huge 95.5% (382) disagreed. A majority of the respondents 94.8% (379) also agreed that electronic devices such as cell phones could mechanically aid disease transmission without hand washing, while 5.2% (21) disagreed.

Table 2: Knowledge of personal hygiene practice among Respondents

Variables	Frequency	Percentage (%)
<b>Heard about personal hygiene</b>		
Yes	394	98.5
No	6	1.5
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Source of Information of Personal hygiene</b>		
Parents	85	21.3
Teacher	241	60.1

Books	12	3.0
TV/Radio	36	9.0
Magazine	3	0.8
Others	23	5.8
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Personal Hygiene includes bathing, washing your hands, brushing your teeth etc</b>		
Yes	389	97.2
No	11	2.8
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Sharing of drinking cups without washing can bring health problem</b>		
Yes	367	91.8
No	33	8.2
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Hand washing with or without soap the is same</b>		
No	143	35.75
Yes	257	64.25
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Eating Raw Vegetables or fruits without washing can cause amoebic infection</b>		
Yes	344	86.0
No	56	14.0
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Washing Hands after meal is more important than doing it before meal</b>		
Yes	126	31.5
No	274	68.5
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Human feces contain germs that can cause infection</b>		
Yes	18	4.5
No	382	95.5
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Electronic devices like cell phones can mechanically communicate diseases without hand washing</b>		
Yes	379	94.8
No	21	5.2
<b>Total</b>	<b>400</b>	<b>100</b>

### 4.3 Hygiene Practices among Respondents

The results in the table 3 below show the responses to hygiene practices. 83.3% (333) of the respondents always brushed their teeth daily. 14.5% (58) replied with "sometimes" and a low 2.2% (9) do not brush at all. 78.7% (315) also affirmed that they cut their nails always; 19.5% (78) said that they do so sometimes, while the rest, 1.8% (7), never did. 98.0% (392) of the respondents took their bath daily; 1.8% (7) took a bath sometimes and the remaining 0.2% (1) replied with "never". When asked if the respondents do wear washed clothes daily,

91.8% (367) said "always", 7.7% (31) replied with "sometimes" and 0.5% (2) said "Never". 71.8% (287) of the respondents always ironed their attires before wearing, 26.2% (105) ironed sometimes, while 2.0% (8) never ironed their clothes before wearing. When asked about how often they changed their underwear, 67.2 % (269) said "always" followed by 29.0% (116) who replied with "sometimes" and 3.8% (15) who replied with "never". 88.0% (352) of the respondents obliged to removing unwanted hair "always", 10.8% (43) of them replied with "sometimes" and 1.2% (5) of the respondents never remove unwanted hair. When asked how often informants wash their hair, a majority 59.0% (236) replied with "always" a good number 152 (38%) replied with "sometimes" and the least 3.0% (12) were negative. The respondents were also asked if they picked their nose. 44.2% (177) replied with "sometimes", who also affirmed they pick their nose with a handkerchief 33.5% (116) a close second were the 42.3% (169) who said "always" using a handkerchief always too gave 31.2% (108 of them) and 13.5% (54) said "Never", also never using a handkerchief in picking their nose confirmed 35.3% (122) of a total 346 respondents. 80.8% (323) of the respondents affirmed they always wash their hands before eating, 15.2% (61) said "sometimes" and 4% (16) never washed their hands before eating. Upon the question of if they use soap to wash their hands after using the toilet, 44.0% (176) replied with "always", the majority being 46.5% (186) said "sometimes" and 9.5% (38) of the total told they never did. 39.0% (156) always washed their hands after handling live animals, 32.0% (128) replied with sometimes and the remaining 29.0% (116) respondents said "Never". The informants were also asked if they washed their hands before touching genitals, a large 96.0% (384) replied with "Never" while 3.2% (13) said ""sometimes" and just 0.8% (3) were affirmative.

Table 3: Hygiene practices among Respondents

Hygiene Practices	Frequency	Percentage (%)
<b>Do you Brush your teeth daily?</b>		
Always	333	83.3
Sometimes	58	14.5
Never	9	2.2
<b>Total</b>	<b>400</b>	<b>100</b>
<b>How often do you Cut your Nails?</b>		
Always	315	78.7
Sometimes	78	19.5
Never	7	1.8
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Do you take your bath daily?</b>		
Always	392	98.0
Sometimes	7	1.8
Never	1	0.2
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Do you wear washed clothes daily</b>		

Always	367	91.8
Sometimes	31	7.7
Never	2	0.5
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Do you iron your attire before wearing?</b>		
Always	287	71.8
Sometimes	105	26.2
Never	8	2.0
<b>Total</b>	<b>400</b>	<b>100</b>
<b>How often do you change your under wears?</b>		
Always	269	67.2
Sometimes	116	29.0
Never	15	3.8
<b>Total</b>	<b>400</b>	<b>100</b>
<b>How often do you remove unwanted hair?</b>		
Always	352	88.0
Sometimes	43	10.8
Never	5	1.2
<b>Total</b>	<b>400</b>	<b>100</b>
<b>How often do you wash your hair?</b>		
Always	236	59.0
Sometimes	152	38.0
Never	12	3.0
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Do you pick your nose?</b>		
Always	169	42.3
Sometimes	177	44.2
Never	54	13.5
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Do you use handkerchief when picking your nose?</b>		
Always	108	31.2
Sometimes	116	33.5
Never	122	35.3
<b>Total</b>	<b>346</b>	<b>100</b>
<b>Do you wash your hands before eating?</b>		
Always	323	80.8
Sometimes	61	15.2
Never	16	4
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Do you use soap to wash hands after using the toilet?</b>		
Always	176	44.0
Sometimes	186	46.5
Never	38	9.5
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Do you wash hands after using the toilet?</b>		
Always	317	79.3

Sometimes	78	19.5
Never	5	1.2
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Do you wash your hands after handling live animals?</b>		
Always	156	39.0
Sometimes	128	32.0
Never	116	29.0
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Do you wash your hands before touching genitals?</b>		
Always	3	0.8
Sometimes	13	3.2
Never	384	96.0
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Do you wash your hands after touching genitals?</b>		
Always	90	22.5
Sometimes	118	29.5
Never	192	48.0
<b>Total</b>	<b>400</b>	<b>100</b>

#### 4.4 Barriers influencing the practice of personal hygiene among Respondents

Table 4 below focused on the barriers influencing the practice of personal hygiene among respondents. 92.8% (371) of the respondents didn't lack education on personal hygiene while a small 7.2% (29) affirmed they lacked basic education on hygiene. 89.0% (356) lacked adequate water supply while 11.0% (44) didn't. When asked if they lacked time, 76.0% (304) replied "No" and 24.0% (96) said "Yes". 99.5% (398) didn't accept that religious beliefs was a barrier to personal hygiene while 0.5% (2) was affirmative. Laziness didn't affect some 72.2% (297) of the respondents while 27.8% (103) were lazy to practice personal hygiene.

### V. DISCUSSION

#### Socio demographic Characteristics of the Respondents

Considering the socio-demographic characteristics, with regards to age, findings from the study showed that majority of the respondents 44%, were within the age group 10-12years, the age seen in this study, is in consistence with the statement by Yadav *et al.* (16) that majority of secondary school students fall within this age category. Findings from this study showed that majority of the respondents 96.8% were of Igbo origin and also 95.5% were Christians. This was because the study was conducted in the Southern part of Nigeria and the secondary school communities were located in Okigwe, Imo state which is an Eastern state of the federation.

#### Knowledge of personal hygiene practice among Respondents

Findings from the study revealed that majority of the respondents 98.5% aware of personal hygiene. This

corroborates with a study by Takeda *et al.* (17) that 95.9% of the respondents are aware of personal hygiene practice. In this study, it was revealed that majority of the respondents (60.1%) have heard about personal hygiene from their teachers. This means during classes, information about personal hygiene is being communicated to them. Findings from this study showed that 67.2% of the respondents obliged to knowledge of personal hygiene including bathing, washing your hands, brushing one's teeth, etc. This agrees with the study by Yadav *et al.* (16) that 67.4% respondents had fair knowledge. A majority of the respondents 86.0% had the knowledge that eating raw vegetables or fruits without washing can cause amoebic infection; this disagrees with a study by Nwankwo *et al.* (18) carried out at a northern secondary school that found that 34.7% of respondents had knowledge that vegetable fruits can cause amoebic infection. 68.5% of the respondents had knowledge that it was more important to wash your hands before meals than after meals. This agrees with a study by Akinyamoju *et al.* (19) that showed that 69.3% of school children had knowledge of washing hands.

#### *Hygiene Practices among Respondents*

Considering the findings from this study, it was revealed that majority (83.3%) of secondary school students in Okigwe always brushed their teeth daily and 78.7% also affirmed they cut their nails always as a mark of hygiene practice. Findings on hygiene practice from this study corroborates with a similar study by Ejemotet *et al.* (20) which revealed that 81.4% of secondary school students practice hygienic measures such as brushing their teeth and cut their nails. The study revealed that 98.0% of the respondents take their bath daily, majority of the respondents 91.8% wear washed clothes daily in line with good hygiene practice. Finding from the study showed that majority of the respondents 80.8% always washed their hands before eating as a mark of hygiene practice. Findings about hand washing before eating from this study corroborates with a study carried out among school aged adolescents at Rwanda (20). The study found that 78.7% of school aged adolescents wash their hands before eating. Further information on hygiene practices on the study showed that a poor percentage of the respondents 46.5% use soap to wash their hands after using the toilet. This might be because of lack of water, ablutions and other sanitary facilities in the secondary school. This goes against a study from Takeda *et al.* (17) that showed that 76% of the adolescent school children wash their hands after going to the toilet. Considering another study by Omu *et al.* (21) 43.8% of the school children wash their hands after going to toilet, this falls in line with the study.

#### *Barriers influencing the practice of personal hygiene among Respondents*

Considering the barriers influencing the practice of hygiene among secondary school students in Okigwe, 92.8% of the respondents did not lack education on personal hygiene. This means that their teachers taught them about hygiene practices.

This finding goes in coherence with a previous study by Nwankwo *et al.* (18) which suggests that 89.7% of secondary school girls who participated in a survey did not lack education on hygienic practices. Majority of the respondents (89.0%) indicated lack of adequate water supply as a challenge to practice of hygiene, which means that the Okigwe community service lack water provision at school and community at large. A similar study by conducted in Daman Sokoto Community found that over 45% of respondents face the lack of basic water supply as a problem (19). This goes in corroboration with the study. Similarly from the study, 72.2% of the respondents noted that laziness didn't affect them towards practicing personal hygiene, falling in line with a similar previous finding (22).

Table 4: Barriers influencing the practice of personal hygiene among Respondents

Barriers	Frequency	Percentage
<b>Lack of Education</b>		
Yes	29	7.2
No	371	92.8
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Inadequate water supply</b>		
Yes	356	89.0
No	44	11.0
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Lack of time</b>		
Yes	96	24.0
No	304	76.0
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Religious beliefs</b>		
Yes	2	0.5
No	398	99.5
<b>Total</b>	<b>400</b>	<b>100</b>
<b>Laziness</b>		
Yes	103	27.8
No	297	72.2
<b>Total</b>	<b>400</b>	<b>100</b>

## VI. CONCLUSION

Hygiene practices are critical for one's health and well-being, especially when it comes to avoiding communicable diseases. The majority of students were aware of personal hygiene habits, according to the results of this poll. As a result, the authors propose that school-based health education programs encourage pupils to practice proper hygiene. To preserve the findings, frequent reinforcement is essential, particularly in regions of evaluation in the research that show a lack of sanitary water measures. According to the findings of this study, majority of illnesses, as well as other infectious diseases is reported to have been caused by inadequate hygiene standards in the school environment. The study's key

finding was that secondary school students in Okigwe LGA Southeastern Nigeria were well-versed in sanitation practices.

## VII. RECOMMENDATIONS

The recommendations for this study include the following;

1. Health education on practice of hygiene understanding of its benefits should be made available for secondary school students.
2. Improvement of the existing hygienic facilities in the school to cater for effective hygiene and sanitation practice among the students because poor hygiene could predispose one to illnesses and disease.
3. The study recommends government bodies to provide sanitary facilities and effective water supply at various tiers of the community in order to promote basic sanitation practices, etc.
4. Strict guidelines on hand washing and posters should be made at various corners of the classrooms to help improve adherence to this practice by students.

### *Implications for Future Research*

Future research should explore or use comparative evaluations in hygiene practice across both elementary and secondary school students, particularly in many parts of the nation, to assist facilitate discoveries and fill gaps in earlier data.

### *Limitations*

This include

1. The study's sample size. However, due to the broad geographic areas to be covered, a multistage random sampling procedure for participant selection was judged suitable.
2. Costs of reaching the intended audience due to financial restrictions.

### *Ethics Approval and consent to Participate*

Not Applicable

### *Consent to Publish*

Not applicable

### *Availability of Data and Materials*

The Data set from the study are available to the corresponding author upon request.

### *Competing Interests*

Authors have declared that they have no competing interests

### *Funding*

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Not Applicable

## REFERENCES

- [1] World Health Organization, (2017). Oralhealth ;<http://www.who.int/mediacentre/factsheets/fs318/en/> 2012
- [2] Goel, M. K. &Kundan, M. (2011). Psycho-social behaviour of urban adolescent school girls during menstruation.Australian Medical Journal, 4(1):49-51
- [3] Loughlin, R. (2016). Follow-up of a low cost latrine promotion programme in one district of Amhara, Ethiopia: characteristics of early adopters and non-adopters. Tropical Medicine and International Health, 14(1):1406-15.
- [4] Kumie, A. & Ali, A. (2015). An overview of environmental health status in Ethiopia with particular emphasis to its organization, drinking water and sanitation: A literature survey. Ethiopian Journal of Health Development, 19:89-103.
- [5] Raghava, L.A. (2015). Expanding the physician's role in addressing the oral health of adults.American Journal of Public Health, 20(2); 408-412.
- [6] Rabiei, S., Mohebbi, S. &Patja, J. (2012). Physicians' knowledge of and adherence to improving oral health.BMC Public Health, 5(1); 12:855.
- [7] Lukacs, J. R. &Largaespada, L. L. (2016). Explaining sex differences in dental caries prevalence: saliva, hormones, and "life-history" etiologies.American Journal of Human Biology, 18(3):540-555.
- [8] Lalani, A., Dasar, P. L. &Sandesh, N. (2015). Assessment of relationship between oral health behavior, oral hygiene and gingival status of dental students.Indian Journal of Dent Res, 26(04):592-597.
- [9] Czerwinski, B. S. (2016) Adult feminine hygiene practices. School teens.Applied epidemiology journal, 9(3):123-9.
- [10] World Health Organization, (2010). Hand-washing could save the lives of millions of children. Available at: <http://www.scielosp.org/scielo.php?lng=en>.
- [11] Snow, M., White, G. L. & Kim H, S. (2018) Inexpensive and time-efficient hand hygiene interventions increase elementary school children's hand hygiene rates. Journal of School Health, 78(07):230-233.
- [12] Scott, B., Curtis, C. &Rabie, T. (2017). Health in our hands but not in our heads: understanding hygiene motivation among secondary school students. Journal of Health Policy and Planning, 22(1), 225-233.
- [13] Kumar, H., Behura, S. S. &Ramachandra, S. (2017). Personal hygiene knowledge, attitude, and practices among dental and medical students in eastern India - a comparative study. Journal of International Social Prevention of Community Dentition, 9(01), 58-63.
- [14] Oswald, W. E., Hunter, G. C., Lescano, A. G., Cabrera, L., Leontsini, E. & Pan W. K. (2018) Direct observation of hygiene in a Peruvian shantytown: not enough handwashing and too little water. Tropical Medical International Health, 13 (3):1421-1428.
- [15] Sharda, A. J. &Shetty, S. (2018). A comparative study of personal hygiene health knowledge, attitude and behaviour of first and final year students of Udaipur city, Rajasthan.International Journal Dentition Hygiene, 6(02):347-353.
- [16] Yadav, R. N., Joshi, S., Poudel, R. &Pandeya, P. (2018). Knowledge, Attitude, and Practice on Menstrual Hygiene Management among School Adolescents. Journal of Nepal Health Res Counc, 15(3):212-216. doi: 10.3126/jnhrc.v15i3.18842
- [17] Takeda, T., Koga, S. &Yaegashi, N. (2010). Prevalence of premenstrual syndrome and premenstrual dysphoric disorder in Japanese high school students.WomensMent Health, 13(6):535-7.
- [18] Nwankwo, T. O., Aniebue, U. U. &Aniebue., P.N. (n.d). Menstrual disorders in adolescent school girls in Enugu, Nigeria.Journal of Pediatric Adolescent Gynecology, 23(6):358-63.
- [19] Akinyamoju, C. A., Dairo, D. M., Adeoye, I. A. &Akinyamoju, A. O. (2018). Dental caries and oral hygiene status: Survey of schoolchildren in rural communities, Southwest Nigeria. Nigerian Postgraduate Medical Journal, 25(4):239-245. doi: 10.4103/npmj.npmj\_138\_18. PMID: 30588945.

- [20] Ejemot, R. I., Ehiri, J. E., Meremikwu, M. M. & Critchley, J.A. (2018). Hand washing for preventing diarrhoea. *Cochrane Database Systematic Review*, 54
- [21] Omu, F. E., Al-Marzouk, R., Delles, H., Oranye, N. O. & Omu, A. E. (2011). Personal hygiene practices. Prevalence and effects on nursing students' academic performance and clinical training in Kuwait. *Journal of Clinical Nursing*, 20(1)15-23.
- [22] Snow, M., White, G. L. & Kim H, S. (2018) Inexpensive and time-efficient hand hygiene interventions increase elementary school children's hand hygiene rates. *Journal of School Health*, 78(07):230-233.