Effectiveness of Educational Intervention on Sanitation and Hygiene among Tribal School Children

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Abstract

Introduction*: According to the WHO-UNICEF for sanitation and hygiene in 2020, 3.6 billion people do not have access to sanitation services, and 2.3 billion do not have access to hand wash facilities with soap and water.*

Objectives: *(i) To study the knowledge and awareness of sanitation and hygiene among Tribal school children. (ii) To assess the Effectiveness of sanitation and hygiene practices among tribal school children.*

Methodology: *An intervention study was conducted among tribal primary school children. Baseline data Regarding sanitation and hygiene facilities. Information was collected by using a Sanitation and hygiene checklist. Quasi-experimental research and Purposive sampling methods were used for the pre-test and post-test among 60 students of 4th & 5th classes in school. Initially, a pre-test was conducted by using the knowledge and awareness of sanitation and hygiene research questionnaire; after pre-test data collection, the sanitation and hygiene intervention module was implemented in the school; after the module intervention post-test was conducted by using the same questionnaire, and it was analysed through statistical techniques.*

Result: *The intervention module is based on students' and teachers' participation, sanitation, and hygiene-related themes. After intervention study brings changes and improvement in the tribal school knowledge and awareness of sanitation and hygiene status behavioural change, and attitude in Tribal school children.*

Conclusion: *Implementation of sanitation and hygiene in schools is going to be fruitful school health. Children's health and hygiene behaviour, improving handwashing behaviour, and food hygiene inculcated after the Pandemic COVID-19-time resulted in sustaining the character during childhood school.*

Keywords **:** Sanitation , Hygiene, Tribal school children, Intervention.

Introduction

Lack of Sanitation and Hygiene education and awareness among Tribal students & communities in remote localities leads to superstitions, poor health, unhygienic conditions, and it affects the children's lifestyle in school. The latest data from WHO, and UNICEF revealed that 3.6 billion people, nearly half of the world's population, do not have access to sanitation in their homes. 1.9 billion people live with basic sanitation and 494 million people practice open defecation.2.3 billion people don't have basic hygiene services, soap, and water at home. In the world, 670 million people don't have handwashing facilities in their homes. The tribal areas' WASH improvement is neglected in the villages and schools in the remote and tribal backward regions. One of the significant problems in the security of the tribal poor, especially girls, is the absence of toilet facilities within the residences and schools. WASH in schools is one of the urgent improvements in toilet facilities, availabilities of safe drinking water, safely managed sanitation facilities, and provision for basic hand-washing facilities and security, health, nutrition, and education. It is necessary that Sanitation and Hygiene Educational intervention implementation and create awareness in the tribal school and communities. Educational interventions enhance the knowledge regarding handwashing practices which improve the health status of children and lead to a better quality of life.

Objectives of the Study

1. To study the institutional arrangement made to impart Sanitation and Hygiene Education
2. To study the knowledge and Awareness on Sanitation and Hygiene among Tribal primary school children.
3. To assess the Effectiveness of Sanitation and Hygiene Educational interventions on knowledge and Awareness among the primary school children's in relation to
    - Gender
    - Class
    - Caste
    - Age
    - Parental Education
    - Parents Occupation
    - School category
4. To create Awareness about Swachh Bharath Swachh Vidyalaya in Tribal School and community

Hypothesis of the Study

1. There is no significant influence on the knowledge and awareness on Hygiene among Tribal primary schoolchildren
    - Knowledge towards Sanitation and Hygiene
    - Awareness towards Sanitation and Hygiene

2. There is no significant Effectiveness of Sanitation and Hygiene Educational interventions among primary school children's in relation to
    - Gender
    - Caste
    - Age
    - Parental Education
    - Parents Occupation
    - School category
3. Institutional arrangements accelerate the effectiveness of program implementation

Review of literature

Mr. Manish Saxenaand Dr. Rajendra Prasad Sharma (2021) conducted study Sample of 669 students were in grades 1-6, and they were interviewed by trained staff. Study results revealed that approximately 52% of students were having adequate knowledge of hygiene, only 36.2% reported using soap, and of the 76.7% of students who reported hand washing after defecation, only 14.8% students only followed this practice. Study findings revealed thatthere is a much more need for hand washing and hygiene education in schools.

Lalitha Kumari (2021): conducted the study among school students aged between 10-12 years studying IV and V standards. The school was located at Chaitanya Puram tribal village in Renigunta Mandal, Chittoor district school was 62 and out of which 20 students. A total of ten boys and ten girls were selected for this study by adapting the purposive sampling technique and analysed in terms of descriptive and inferential statistics. The study findings revealed that the structured teaching program administered by the researcher effectively increased the knowledge, practice, and attitude of school children toward hand washing. The results disclosed a statistically significant difference at $p<0.001$ between pre-and post-test on knowledge, practice, and attitude regarding hand washing among school children.

Sandeep kaur and Elango. G (2018), studied under a quantitative approach, a Quasi-experimental research design was used, and 60 samples were Selected non-randomized sampling technique using the purposive method at primary schools in a rural area at distract Sangrur Punjab. Study results overview the mean pre-test knowledge of the experimental group is 10.47 and the mean post-test of the experimental group is 15.07. The 't-test value is 14.208 significant and shows that a planned teaching program regarding hand hygiene is effective for school-age children. The mean pre-test knowledge of the control group is 10,07, and the mean post-test of the control group is 10.73. The mean pre-test practice of the experimental group is 4.53 and the mean post-test of the experimental group is 6.40. The mean pre-test practice of the control group is 4.83, and the mean post-test practice of the control group is 5. 10. This study revealed that the planned teaching programme is effective in knowledge and practices regarding hand hygiene among school-age children in selected primary schools of a rural area at district Sangrur, Punjab for school-age children.

Elisabeth Seimetz,et.al.,(2017) this study, Interviews were conducted with 669 students in 20 primary schools in Burundi and 524 students in 20 primary schools in Zimbabwe. There sults shows that, in these countries, a programme was most effective, and it could be self-efficacy. In Burundi, increase the children's perceived seriousness of the consequences of contracting diarrhoea, and in Zimbabwe, increasing the children's health knowledge should be part of the programme. The school handwashing programme should create awareness through educational activities its benefits to students, arrange the school infrastructure and highlight the events and posters in school it leads to the children's ability and confidence in washing hands at school .

Mohammed Moussal et.al (2015)The Aim of the studied to evaluate the effectiveness of a training 28 programme on improving the hand wash among children in primary schools.Quasi-experimental designused in this study the data was collected from 450 students aged 6 to 12 years in Port Said city elementary schools in six months periods. The study concluded that there were significant statistical differences in total knowledge and practice scores of the studied sample after the implementation of the educational programme.

Chittleborough,et.al.(2013) In this study, process evaluation within acluster randomized controlled trial, including focus groups with pupils aged 6 to 11, semi-structured interviews with teachers and external staff who coordinated the intervention implementation, and school reports and direct observations in school. The Intervention educational module was implemented in 61.4% of schools (85.2% of intervention schools, and 37.8% of control schools for this research study). After intervention teachers and pupils reacted positively, according to the age-appropriateness of the resources. According to the students' knowledge and school settings teachers adapted the resources to suit their school. Staff coordinating the intervention implementation had limited capacity to follow up and respond to schools.

Methods and Procedure

Table –1: Pre and post-test design

Data Collection	Pre-test	Intervention	Post-test
Study group	O1	X	O2

Variables of the Study

The study contains dependent variables and independent variables. The following variables were selected and identified to ascertain their association with knowledge, Awareness, and Practices regarding sanitation and Hygiene.

Independent variables

- Gender of the student
- Caste of the student
- Category of the school

- Parents Qualification
- Parents occupation

Dependent Variables

In this research the dependent variables are 'knowledge, understanding, awareness and Sanitation and Hygiene

- Knowledge of Sanitation and Hygiene
- Understanding of Sanitation and Hygiene
- Awareness on Sanitation and Hygiene

Study Area

The Present study is confined to Rajannasiricillla district, veernapally (Tribal) village in theTelangana state of India.

Sampling method

The sample of the study will be drawn from the population of Rajannasiricillla district Veernapally Primary School located in Tribal areas, will be selected in district Government Schools; purposive - **Criterion based Sample** from the above category will be included as a sample. From school, all the students studying in classes 4, and 5 will be included as a sample for Experimental study for intervention.

Table – 2: Distribution of the sample in the study

S. No	Area/Location	No. of Primary School	Class	Students Sample
1.	Tribal	1	IV-V	60
				Total =60

Total Pre -test and Post - test Sample = 60

S. No	Gender		Class		Caste			
1.	Boys	Girls	IV	V	SC	ST	OBC	OC
2.	29	31	21	39	9	15	33	3

Table -3: Variable wise Distribution of the Sample

Research Tools (3)

Following Tools for Primary School Children's (Researcher Constructed Tools)

1. School sanitation Hygiene Education - Observation checklist
2. Knowledge and Awareness on Sanitation &Hygiene questionnaire

Data collection procedure

Researcher data Collected from Class 4, and 5 students were identified from the rural, urban, and Tribal area schools, and before intervention pre-test and after intervention post-test conducted by the Researcher through the administration of knowledge and Awareness towards Sanitation and Hygiene questionnaire. The pre and post-test scores were compared and statistical treatment was given for drawing inferences.

Intervention

Interventions Training module prepared by the researcher. The educational intervention for this study will be the module on primary school sanitation and Hygiene Education developed by the Researcher because it is part of the school sanitation and ygiene programme, which aims to impact sanitation and Hygiene Education for children.

Data Analysis

Tribal Sample School –Descriptive analysis

Table 4 : *Descriptive statistics of Pre-test score on Knowledge and Awareness of Sanitation and Hygiene*

Variable: Knowledge and Awareness of Sanitation and Hygiene

Locality of the School: Tribal

Mean	14.15	Skewness	1.12
Std.ErrorMean	0.65	Skewness.Error	0.30
Std.Deviation	5.05	Kurtosis	1.57
Sample Size	60	Kurtosis. Error	0.608
Minimum	6.00	Maximum	31.00

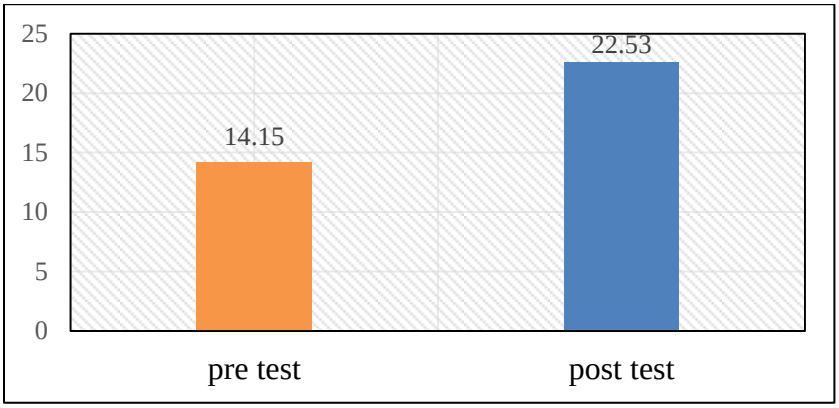
Table -5: *Descriptive statistics of Post-test score on Knowledge and Awareness of Sanitation and Hygiene*

Variable: Knowledge and Awareness of Sanitation and Hygiene

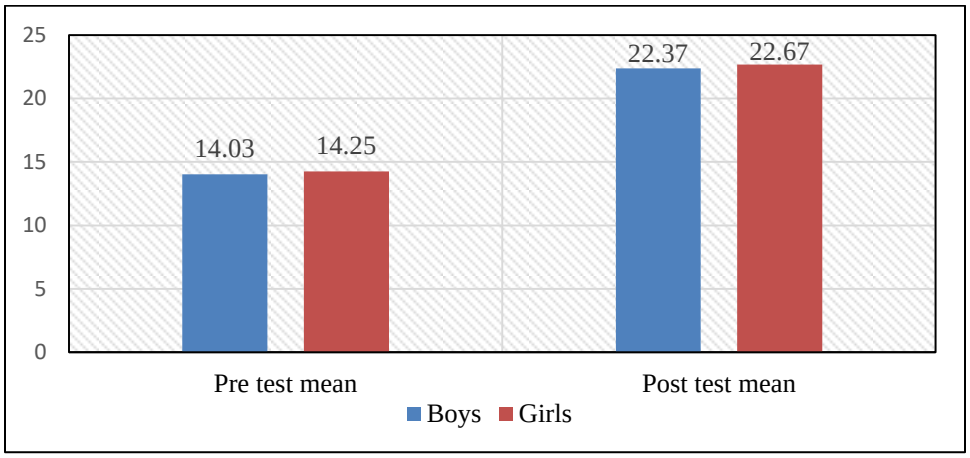
Locality of the School (Tribal)

Mean	22.53	Skewness	0.80
Std. Error Mean	0.93	Skewness. Error	0.30
Std. Deviation	7.24	Kurtosis	0.08
Sample Size	60	Kurtosis. Error	0.60
Minimum	12.00	Maximum	42.00

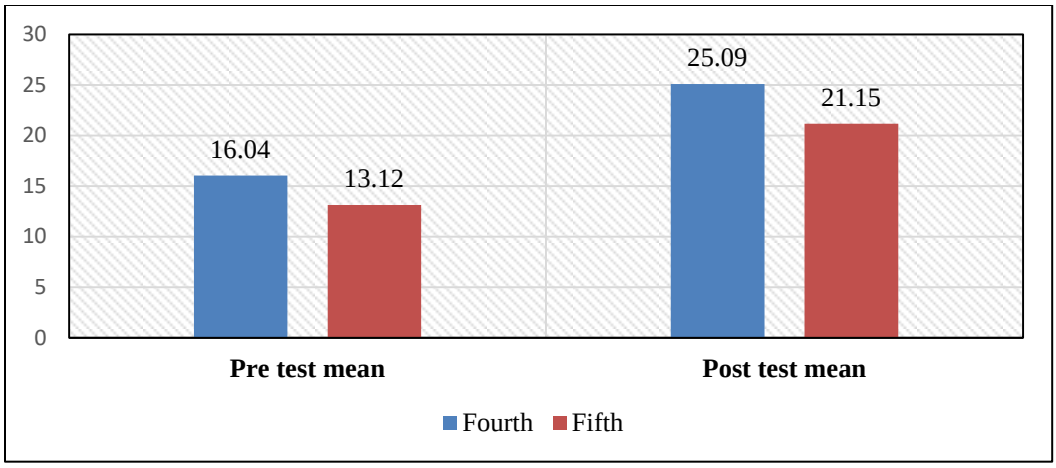
Graph -1: Comparison of means of Knowledge and awareness on sanitation and Hygienein Tribal School



Graph -2: Gender-wise Comparison of means of Knowledge and awareness on sanitation and Hygiene in Tribal school



Graph -3: Class wise Comparison of means of Knowledge and awareness on sanitation and Hygiene in Tribal school



Graph -4: Caste-wise Comparison of means of Knowledge and awareness on sanitation and Hygiene in Tribal School

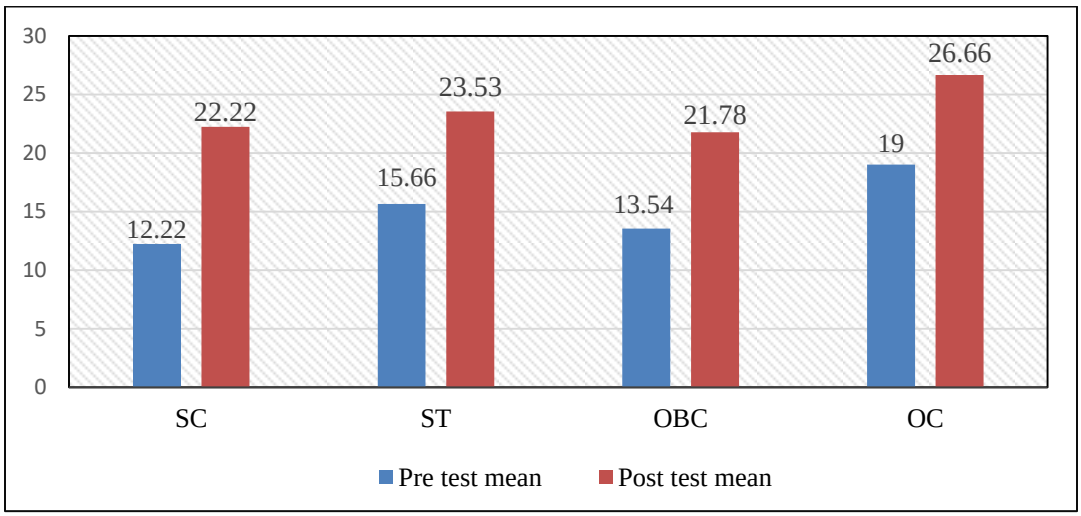


Table -6: Caste-wise pre-test comparison of Means score on Knowledge and Awareness of Sanitation and Hygiene in tribal School

Category	N	Mean	Std. Deviation	Std.Error	Minimum score	Maximum score	95% confidence interval of Mean
SC	9	12.22	6.45	2.15	7.00	28.00	7.25to17.18
ST	15	15.66	5.80	1.49	9.00	31.00	12.45to18.87
OBC	33	13.54	3.99	0.69	6.00	23.00	12.12to14.96
OC	3	19.00	4.58	2.64	14.00	23.00	7.61 to30.38

Table- 7: Caste-wise post-test comparison of Means score on Knowledge and Awareness of Sanitation and Hygiene in tribal School

Category	N	Mean	Std. Deviation	Std.Error	Minimum score	Maximum score	95% confidence interval of Mean
SC	9	22.22	8.80	2.93	13.00	36.00	15.45 to 28.98
ST	15	23.53	7.45	1.92	12.00	36.00	19.40 to 27.66
OBC	33	21.78	6.27	1.09	12.00	37.00	19.56 to 24.01
OC	3	26.66	13.31	7.68	18.00	42.00	-6.41 to 59.747

Table – 8: Class-wise pre-test comparison of Means score on Knowledge and Awareness of Sanitation and Hygiene tribal School

Category	N	Mean	Std. Deviation	Std.Error	Minimum Score	Maximum Score	95% confidence interval of Mean
Fourth	21	16.04	4.76	1.04	10	28	13.87 to 18.21
Fifth	39	13.12	4.96	0.79	6	31	11.51 to 14.73

Table – 9 : ***Class wise post-test comparison of Means score on Knowledge and Awareness of Sanitation and Hygiene in tribal School***

Category	N	Mean	Std. Deviation	Std.Error	Minimum score	Maximum score	95% confidence interval of Mean
Fourth	21	25.09	6.74	1.47	14	37	22.02 to 28.16
Fifth	39	21.15	7.20	1.15	12	42	18.81 to 23.49

Single group : t-Test-Sample tribal school Analysis

Table-10:

Paired Samples Statistics

		Mean	**N**	**Std. Deviation**	**Std. Error Mean**
Pair 1	**Pre-test**	14.15	60	5.05	0.65
	Post-test	22.53	60	7.24	0.93

Table -11:

Paired Samples Correlations

		N	Correlation	Sig.
Pair 1	Pre-test & Post-test	60	0.604	0.000

Table-12: Paired Samples Test

		Paired Differences					t	df	Sig.(2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pre-test &Post-test	-8.38	5.81	0.75	-9.88	-6.88	-11.17	59	0.000

(*P <0.05)

Ho: There is a significant difference between the Pre-test and Post-test mean scores of Tribal students on Knowledge and Awareness of Sanitation and Hygiene.

To test the above null hypothesis single group correlated mean t-test is used, and the results are analysed from the above table. The above table, indicated that 't' value is -11.17, P-value at 0.05 level of significance. Hence, it can be concluded that mean values are significance different between Pre-test and Post-test scores of Tribal Students on Knowledge and Awareness of Sanitation and Hygiene. Therefore, the null hypothesis is rejected and finally significant difference between the mean values of Pre-test and Post-test scores of tribal Students on Knowledge and Awareness of Sanitation and Hygiene.

Swachh Bharath -Swachh Vidyalaya Campaign

The researcher conducted the Swachh Bharath -Swachh Vidyalaya Campaign in the tribal village, in this campaign Village sarpanch, Headmaster, teachers, students, Parents, community, Youth, and SMC members actively participated. Before that, primary school children were enthusiastically involved in the writing quotation water, Handwash, open defecation, Waste management, etc. Charts preparation. Children wrote the Swachh Bharath slogans on each chart, and when walking on the roads with placards, every child shouted inspirational quotes.

Results and Discussion

Institutional Arrangements All Schools

The classroom facilities in the school include tribal. In all school, 's adequate condition, sufficient light in the classroom, and windows. Tribal schools don't have dustbins, Broom, or Proper cleanliness in the classroom. In tribal schools, there is a separate toilet for teachers and students. Toilet cleaning material is not available in all schools. Only tribal Scavenger has to clean the toilets every day. The school doesn't have toilets for children with special needs. Every 3 months Health camps are Conducted in Schools. They provided Medicine, a First aid box, etc. Solid waste management Availability and Accessibility in the schools. Tribal school preparation mid-day meals in the school kitchen.

Knowledge and Awareness in Tribal School children.

- Tribal school students had a significant improvement in knowledge and Awareness of sanitation and Hygiene in the pre-test (14.15) to post-test (22.53).
- Tribal Students' had a significant difference between the mean values (8.38) of Pre-test and Post-test scores of Knowledge and Awareness of Sanitation and Hygiene.
- Tribal school post-test maximum score girls, qualification Primary education father of students, Degree qualified mothers' students, father qualification business father and mother got the highest (42)
- Gender, Class, Caste, Father, mother qualification, and occupation has significant effectiveness of sanitation and Hygiene educational interventions on knowledge and Awareness among primary school children. Girls' mean score is high in the post-test (22.67) compared to boys (22.37).
- Fourth class post-test means to score high (25.09) compared to the Fifth class mean score (21.15). The difference between the pre-test and post-test means of the fourth class is 9
- Age group nine students mean 26 higher than other age group means but least age group means.
- ST and OC caste students' pre-test means score increased to 26.53,26.66 compared to other castes in school.
- Illiterate, illiterate, Primary, Secondary, Degree, others education father qualification student's pre-test means 15.20,12.5,12.68,16.40,14.30,18.0 but after intervention it has drastically increase in post-test means score 26.4,18.11, 20.7, 23.8, 23.3, 29.5.
- Illiterate, illiterate, Primary ,Secondary, Degree ,others education mother qualification student's pre-test means 14.38,14.41,10.90,13.53,16.36, but after the intervention, it has drastically increased in post-test means score 22.92,23.0,20.6,20.7,23.90.
- Labour, Agriculture, Business, Govt.job, Private job, other father occupation students Post-test means score (25.12,20.53, 24.35,27.6,17.0)is higher than Pre-test means score (15.37,13.93,13.85,17.33,9.50)
- Labour, Housewife, Agriculture, Business, Govt.job,Private job mother occupation of students pre-test means score 12.50, 13.75, 12.44, 13.71, 22.0, but after intervention it has increase the 23.33,22.06,22.40,20.85,28.33

Conclusion

Based on the current study, it is concluded that the Knowledge and Awareness of sanitation and hygiene practices of children of tribal primary schools were improved after educational intervention implementation. The knowledge and awareness increase is statistically significant. The study suggested that before meals, after meals, and after toilets use, every child should use liquid hand wash for handwashing. Teachers to promote the WHO hand wash steps training in the school, Accessibility of infrastructure, and construction of girls' toilets in the school. Finally, the research study revealed that there is a need to implement sanitation and hygiene interventions in tribal school.

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