

SANITATION PREVAILING IN WEAKER SECTIONS OF THE SOCIETY LIVING IN RURAL AREAS OF KRISHNA DISTRICTThokala Sivaiah¹, Vejendla Mothi Babu², Nallamalupu Radha³**HOW TO CITE THIS ARTICLE:**

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ABSTRACT: BACKGROUND: Hitherto, majority of health problems are related to the poor sanitary conditions prevailing in the premises of households major parts of which are in the rural areas in India. **RESEARCH QUESTION:** what is the sanitary condition and its impact on the health of weaker sections of the society living in rural area of the Krishna District? **OBJECTIVES:** 1. To know the sanitary condition prevailing in weaker sections of the society in rural area of Krishna District. 2. To identify the impact of poor sanitation on the health of the study group. **STUDY DESIGN:** Cross sectional study. **SETTING:** Rural area of Krishna District, Andhra Pradesh. **PARTICIPANTS:** People belong to BPL (Below Poverty Line) residing in rural area of Krishna district. **STATISTICAL ANALYSIS:** Proportions, percentages and chi-square test. **RESULTS:** In this study group access to safe water source was observed to be 86.18% and access to improved sanitation is 27.21%. About 50% of the study people are practicing open field defecation; about 37% of households treat the water at domestic level. Our study findings related to hand washing practices with reference to after defecation, before eating and before preparing food are 43%, 41% and 28% respectively. The current study has relived overcrowding (69%), lack of adequacy of ventilation(73%), lake of adequacy of lightening (75.45%) lack of adequacy of water supply(57.58%), absence of separate kitchen(86%), no sewage drains (47%). In this study about 54% adults and 57% of children are found to be suffering from malnutrition, 25% have history of diarrhoea, 46.21% fever and 31.82% passing worms in stools. And significantly 46.97% of study subjects suffering from Anaemia.

KEYWORDS: Sanitation, Water-Borne diseases, Diarrhoea hygienic practices, Krishna District.

INTRODUCTION: The study of sanitary conditions of people is an important aspect of Public Health research. If we go back and see the historic perspective of the rise of concept of public health, we could understand that it was due to the great sanitary awakening happened among the people of London and which was because of a historical study "the sanitary conditions of labouring population in Great Britain" conducted by Edwin Chadwick an inquisitive lawyer in 1832.

The dictionary meaning of the word sanitation is "The science of safe-guarding Health". The world health organisation states that: "Sanitation generally refers to the provision of facilities and services for the safe disposal of human urine and faeces. Inadequate sanitation is a major cause of disease world-wide and improving sanitation is known to have a significant beneficial impact on health both in house holders and across communities. The word "Sanitation" also refers to the maintenance of hygienic conditions through services such as garbage collection and waste water disposal.⁽¹⁾ "One of the Public Health care element is safe drinking water and sanitation. In 1990 more than one billion people in developing countries lacked access to safe drinking water and nearly two billion people lacked an adequate system for disposing off their excreta.⁽²⁾

Faeces disposed near homes, by the side of the roads near the banks of tanks, canals & rivers and poorly designed or maintained sewage systems are significant contributors of water pollution

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and leads to water born diseases which are so common in developing countries. Water quantity is as important as water quality. Washing hands after defecation and before preparing food is of particular importance in reducing disease transmission. Among the water born diseases, diarrhoea and intestinal worm infestations account for 10% of the total disease burden in developing countries.⁽³⁾

In India access to safe water 89% & adequate sanitation is 24% in rural areas where 72% population is living⁽⁴⁾ and about 59.4% of rural households do not have toilet facility.⁽⁵⁾ 45% of Indian children are stunted and 6 lakh children of under five years die each year largely because of inadequate water supply & poor sanitation.⁽⁶⁾ Among the under five children about 4 lakh are dying each year due to diarrheal diseases.⁽⁷⁾ Regarding viral hepatitis the incidence in 2003 is 12/1000 population.⁽⁷⁾ And about 37.7 million in India are affected by water born diseases each year.⁽⁸⁾ 7.5% of total deaths & 9.4% of total DALYs are due to unsafe water & Poor sanitation in 2002.⁽⁸⁾ Regarding typhoid the prevalence rate in India is 88 cases / 1 Lakh population.⁽⁹⁾ Apart from this the incidence of ARI, Skin & Eye infections increases as result of poor sanitation.

UNICEF stated that the risk of water borne diseases will be reduced by 44% if hand wash with soap is practiced, by 39% if household treatment of drinking water is practiced, by 36% if people follow good sanitation measures, by 23% if water supply is increased and by 11% if water treatment is done at source.

MATERIAL AND METHODOLOGY: The study was conducted during the period from 1-08-2013 to 1-10-2013 in rural areas of Krishna District of Andhra Pradesh. Totally about 264 households belong to Below Poverty Line (B  L) were selected as study subjects by covering the four revenue districts of entire Krishna District (Three mandals from each division) by using the formula 4PQ /L2.

Among the selected villages the study subjects were picked up by systematic random sampling method. In this study house surgeons and staff of community medicine department were participated were collect the data.

The study comprised of a cross sectional study to find out the prevailing sanitary conditions & the impact of poor sanitation on the health of the rural people belong to Below Poverty Line. The data was collected with the help of pre-tested proforma by interviewing the family members available at the time of study.

The collected data was analysed by using proportions, percentages, and chi-square test. The results were discussed by comparing with other similar studies and reports of WHO & UNICEF collected as review of literature and detailed report was prepared.

RESULTS:

S. No	Religion	Caste					Total
		SC	ST	BC	FC	M	
1	Hindus	102 (38.62%)	11 (4%)	62 (23.41%)	23 (8.83%)	0	198 (74.94%)
2	Muslims	0	0	0	0	8 (3.10%)	8 (3.10%)
3	Christians	28 (10.69%)	3 (1.11%)	17 (6.48%)	6 (2.46%)	0	55 (20.76%)
4	Others	0	0	0	3 (1.20%)	0	3 (1.20%)
	Total	136 (51.54%)	14 (5.36%)	83 (31.25%)	23 (8.75%)	8 (3.10%)	264 (100%)

Table 1: Religion and caste wise distribution of study population

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With reference to religion among the study group Hindus are more in number (74.94%) followed by Christians (20.76%). And related to caste SCs are more in number (51.54%) followed by BC's are 31.25%, FCs are 8.75% and STs (5.36%).

Type of house	Owned	Rented	Total
Pacca	122 (46.21%)	16 (6%)	138 (52.27%)
Semi paka	44 (16.66)	04 (1.51%)	48 (18.18)
Kacha	76 (28.78%)	02 (0.78%)	78 (29.54%)
Total	242 (91.66)	22 (8.33%)	264 (100%)

Table 2: Type of house & ownership

About 29.54% of study population is living in Kacha houses and 18.18% are living in semi pacca houses.

S. No.	Facility	Present (%)	Absent
1	Compound wall	50 (18.94%)	214 (81.06%)
2	Separate kitchen	36 (13.64%)	228 (86.36%)
3	Sanitary latrine	108 (40.91%)	156 (50.09%)
4	Rat proofing	130 (49.24)	134 (50.76%)
5	Adequacy of ventilation	70 (26.67%)	194 (73.33%)
6	Adequacy of Lighting	65 (24.55%)	199 (75.45%)
7	Adequacy of water supply	112 (42.42%)	152 (57.58%)
8	Overcrowding	182 (68.94%)	82 (31.06%)
9	Access to safe water	228 (86.18%)	36 (13.82%)
10	House hold water purification	98 (37%)	166 (63%)
11	Sewage Drains	149 (56.58%)	115 (43.42%)
12	Sources of mosquito breeding in the premises of houses	254 (96.21%)	10 (3.79%)
13	Sources of fly breeding	203 (76.89%)	61 (23.11%)
14	Cockroach nuisance	112 (42.42%)	152 (57.58%)
15	Outdoor mosquito control measures	210 (79.55%)	54 (24.45%)
16	Mosquito personal protection measures	198 (75%)	66 (25%)
17	Access to improved sanitation	72 (27.21%)	192 (72.79%)
18	Practice of washing hands with soap of water after defecation	114 (43%)	150 (57%)
19	Practice of washing hands with soap of water before eating	108 (41%)	156 (59%)
20	Practice of washing hands with soap of water before preparing food	74 (28%)	198 (72%)

Table 3: Information pertaining to housing sanitation

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Regarding information pertaining to housing sanitation about 81% of the study population are not having the compound wall, 86.36% separate kitchen, 50.09% sanitary Latrine, 50.76% rat proofing, 73.33% Adequacy of ventilation, 78.45% Adequacy of Lighting 89% Adequacy of lighting, 42.42% adequacy of water supply. And 86.18% access to safe water, 96.12% have sources of Mosquito breeding in the premises of houses, 76.89% Sources of fly breeding, 42.42% Cockroach nuisance, 43.42% have no sewage drains, 21.45% have no access to outdoor mosquito control measures followed 75% of study group are practicing mosquito personal portative measures. Our study finding related to hand washing practise with reference to after defection, before eating and before preparing food are 43%, 41% and 28% respectively.

S. No.	Health Problem	Present	Absent
1.	Passing worms in stools	84 (31.82%)	180 (68.18%)
2.	Taking deworming Treatment	122 (46.21%)	142 (53.79%)
3.	Diarrhoea	66 (25%)	198 (75%)
4.	Fever	122(46.21%)	142 (53.79%)
5.	Anaemia	124 (46.97%)	140 (53%)
6.	Taking Treatment for anaemia	62 (23.48%)	202 (76.52%)
7.	Malnutrition		
	Adults	143 (54%)	121 (46%)
	Children	150 (57%)	114 (43%)

Table 4: Information about health problems due to poor sanitation

Regarding health problems observed due to poor sanitation are history of passing worms in the stool (31.82%) and among this only 46.2% had treatment for the above problem. And also observed that about 25% had the history of diarrhoea and 46.2% had the history of fever. It was identified clinically that about 46.97% study population are suffering from anaemia and among this only 62% of patients are taking treatment. In this study among adults 54%, and among children 57% malnutrition is observed.

DISCUSSION: According to UNICEF, India-water, Sanitation reports the impact of the poor sanitation on the health of the individuals in India is greater especially on the children which includes malnutrition, water-borne diseases, worm infestations, Acute Respiratory tract infections, and skin of eye infections etc.^[10] In the year 2002, a W.H.O. study on sanitation reveals that 7.5 % of total deaths & 9.4 % total DALYs are due to unsafe water and poor sanitation.⁽⁸⁾ And 37.7% Indians are affected by water borne diseases each year.

In this study access to safe water source was observed to be 86.18% as comparable to findings in W.H.O, UNICEF joint monitoring programme study.^[4] And access to improved sanitation is 27.21% as against W.H.O, UNICEF joint monitoring programme study result ie 24%.^[4] In our study we noticed that about 50.09% of the people are practicing open field defecation which is compared with the reports of UNICEF, India-water, and Sanitation (47.52%)⁽¹⁰⁾ and with the results of NSSO (National Sample Survey Organization) 69th round survey reported as the above finding was 59.4% in rural areas.⁽⁹⁾ which is almost correlating with our study. And also we noticed that about 63% of the households do not treat the water at domestic level. Similar finding (67%) was reported by UNICEF, India-Water, and Sanitation survey.^[10] Our study findings related to hand washing practices with

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reference to after defecation, before eating, and before preparing food are 43%, 41%, 28% respectively correlates with the findings of UNICEF, India-Water, Sanitation reports after defecation, before eating, before preparing food are 53%, 38% and 30% respectively. It shows that among the rural people the awareness levels regarding personal & domestic hygiene is at showing increasing trend.

The current study has revealed that the other parameters of sanitation like absence of compound wall (81%), absence of separate kitchen (86%), absence of rat proofing (50.76%), lack of adequacy of ventilation (73%), lack of adequacy of lighting (75.45%), lack of adequacy of water supply (57.58%), presence of overcrowding (69%), presence of sources of mosquito breeding (96%) & fly breeding (77%) and lack of outdoor mosquito control measurer (79.5%) significantly shows that presence of poor sanitary conditions prevailing among the rural population of Krishna District.

About 54% of adults & 57% of children in the rural area in the study group are found to be suffering from malnutrition. These Observations are correlating well with the report of ICMR study (1977) which states that 50-60% of women of low socio-economic status are suffering from malnutrition⁽¹¹⁾ and 48% of children in India are also suffering from some degree of malnutrition as observed by UNICEF, India, water sanitation reports.^[10] And more than 16% of world children belong to less than 5 years of age were under nourished.⁽¹²⁾

RECOMMENDATIONS: In view of poor sanitary conditions prevailing among the rural population belong to Below Poverty Line (BPL), in Krishna District, in order to improve the impact of poor sanitation on health, the following measures are suggested as recommendations:

Our honourable Prime Minister, Sri. Narendra Modi has started a national cleanliness campaign in October, 2014 as a country wide programme named as Swachh Bharath for the current five year plan which is executed by involving every citizen of the country in order to encourage the public to practice safe disposal of domestic waste. And also motivate the people who are living in kacha houses to utilize the schemes implementing by the government like IAY (Indira aavasa yojana) etc to construct their pucca houses in rural areas where 72%⁽¹³⁾ of population is living.

There is a great need to improve the water levels in the ground water tables in the premises of households in rural areas through measures like construction of soakage pits and rain water harvesting pits in and around the houses as well as schools, hostels, offices and other establishments where every drop of water can be saved to recharge the ground water.

Although enriched with many rivers in India, rural population are in dire need of adequate supply of water so as to meet the standard levels prescribed by W.H.O. i.e 150-200 lts/ head/day for all purposes. In India, Government is trying to provide water by at least 40lts/head/day in rural areas. Raising the awareness levels of domestic water purification methods among the rural people of personal and domestic waste & garbage is a needed objective like boiling & cooling of drinking water, pot-chlorination, use of domestic water filters etc in order to contain the water borne diseases.

The practice of open defecation in India is to be tackled with utmost importance and urgency in every corner of the country giving special emphasis to places of sources, storage, supply of drinking water in rural areas, for which Government of India is taking steps to sponsor building of Individual house-hold sanitary latrines in all the areas. Intensive motivation of public in this regard should be highlighted in all health education programmes, execute planned village sanitation programmes, awarding clean & green villages with good sanitation with Niramal Gram Puraskars.

REFERENCES:

1. Who int progress on drinking water and sanitation.
2. Smit, RF (1973), Bull. Wld.Hlk.Org, 48384, 2014 update.
3. RAO, T.R. 919740J.com.dis-6.57.
4. WHO. UNICEF, Joint monitoring programme.
5. NSSO (Sample Survey Organisation), 69th Round of survey, 25th December, 2013.
6. Water in India "UNICEF Siyuation & prospects, a report, Feb 18.2013.
7. "India`s burden of water-borne diseases is underestimated" British Medical journal Ganapati Madur, June 14, 2003.
8. A WHO Study (2008).
9. Vaughen, V.C. et al (1979), Nelson Text Book of paediatrics, Saunders, Philadelphia.
10. UNICEF, India – WATER SANITATION. ENV;
11. ICMR study (1977), ICMR Bulletin, Dec. 1977.
12. UNICEF, state of world`s children 2012.
13. Type & Forms of rural houses in India, Rashid Faridi, Aug 28, 2013.

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