

# A Study on Water and Sanitation Facilities in Higher Secondary Schools in Salem District, Tamil Nadu

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## Abstract

Health is strongly correlated with water (drinking and hand washing), sanitation, and hygiene (WaSH). The significant key features of "Swachh Bharat, Swachh Vidyalaya" slogan are meant to ensure that each and every school in India has a set of functioning and well-maintained water and sanitation facilities. WaSH is referred to as the arrangement of technical and human development. It helps produce a healthy school environment and protects school children from illnesses. Its fundamental parameters are enhancement of school education and reduction in student drop-out in schools. It facilitates proper learning atmosphere in schools. Water, sanitation, and hygienic facilities are an important factor for formulating a healthy environment in schools, and it can effectively increase student enrollment, especially of girls. Therefore, the present study focused on water and toilet facilities in the state of Tamil Nadu and brings out an analysis of water and toilet facilities in government and private schools of Salem district (rural and urban areas), Tamil Nadu.

**Keywords :** water, sanitation, hygienic, health, student, education and schools

**JEL Classification :** A2, H44, H52, H75

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Health is strongly correlated with water (drinking and hand washing), sanitation, and hygiene (WaSH) in educational institutions. The Prime Minister of India (2014) propounded the slogan "Swachh Bharat: Swachh Vidyalaya" for the national campaign driving cleanliness (Clean India: Clean Schools). The key features of the slogan ensure that each and every school in India has a set of implementation and well-maintained WaSH facilities. It is referred as the arrangement of technical and human development and it helps to produce a healthy school environment. Its fundamental parameters are enhancement of school education and reduction in student drop-out rate in schools. WaSH helps in creating a better atmosphere in schools, which can effectively improve student enrollments, especially that of girl students.

WaSH in schools fulfills the universal right to education and health for school children. It plays a vital role in achieving the United Nations Millennium Development Goals, thus increasing access to school education, improvement of attendance, cognitive development, reducing child mortality, gender equality, and promoting greater girl-student participation. According to United Nations Children's Fund (UNICEF), children in schools contract illnesses and infections, and 88% of diarrhoeal diseases are caused by unsafe water supply, inadequate sanitation, and inappropriate hygiene. Poor water and sanitation facilities in school can spread diseases such as diarrhoea and worm infestations. These causes affect school participation of students and teachers and learning.

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## Review of Literature

The following studies have explored issues of water, sanitation, and hygienic conditions of schools.

Jha and Parvati (2014) noted that the state-wise data, compiled by the department of higher education, reflected wide regional disparities in terms of progress made in setting up primary schools. With regard to upper primary schools located at the regional level, progress has been skewed. The progress in providing drinking water and sanitation facilities also revealed a similarly skewed trend at the state level.

According to Kumar and Bhatia (2014), only healthy people can contribute productively towards nation-building and high economic growth. A brief look into the status of health care facilities and public expenditure on health contradicted this assumption, especially in the case of the state of Gujarat. The study made a modest attempt to review selected aspects of the healthcare system in Gujarat and confined rural areas.

Rajendran (2015) conducted a study about the availability and access to water and toilet facilities in government and private schools. These facilities in government schools are in bad shape and unusable. It is surprising that the government schools for boys in urban areas do not have access to toilet facility. Also, the toilet facility is very poor in schools. It was found from the field study that drinking water facility is not regularly available in the school campus, and the status of availability of the same was not clear in government school campuses.

Reddy and Murali (2015) found that corruption and poor quality construction and maintenance are impeding the actual progress of WaSH in schools and the poor and disenfranchised are bearing the brunt of such corrupt practices. Assessing integrity levels and risks in planning, development, and monitoring of school WaSH assets and identifying relevant integrity improvement measures are therefore, essential steps towards meeting sector targets and sustaining progress of water and sanitation coverage.

UNICEF (2012) reported that around 2.65 billion people lived (as per 2012 data) without access to proper toilet facilities, and 883 million do not have access to safe water. WaSH in schools can help mitigate the risks to overcome big challenges. School children are generally more interested in learning new ideas, can more easily change their behavior and improve their practices within their families and among their communities.

Adams, Bartram, Chartier, and Sims (2009) deliberated that schools, particularly in rural areas, completely lack drinking-water, sanitation, and hand washing facilities. Schools with poor water, sanitation, and hygiene conditions, and intense levels of person-to-person contact are high-risk environments for students and teachers and exacerbate students' particular susceptibility to environmental health hazards.

## Problem of the Study

In India, people are facing big challenges in terms of poor drinking water and sanitation in rural and urban areas. Inadequate water and sanitation facilities have been a major problem in elementary and secondary schools. Government managed schools do not properly maintain water and toilet facilities. Public schools have not provided safe and quality drinking water and toilet facilities to school stakeholders. This is the major cause of decrease in students' enrollment rate, increase in drop-out rate, especially that of girl students in the rural region. It is one of the factors for low female literacy rates in rural India.

Due to the lack of proper water and sanitation facilities, some parents admit their children in private schools and leave government institutions. The government and private schools store drinking water in overhead tanks and underground tanks, but tanks are not properly maintained. These factors affect the health of school children, act as a source of diseases, and affect the school learning environment. Also, some schools (government and private institutions) provide drinking water in pitchers, tin cans, and pots. Toilet facilities in government schools are pathetic. They are not maintained and cleaned for the reason that there is the shortage of manpower. Hence, the present study focuses on drinking water and toilet facilities in higher secondary schools.

## Objectives of the Study

In order to have an in-depth insight into existing water and sanitation issues prevailing in the higher secondary schools of Tamil Nadu, the following objectives have been formed by us :

- ☞ To examine the availability and accessibility of water and sanitation facilities in schools in Tamil Nadu.
- ☞ To investigate WaSH (water, sanitation, and hygienic) facilities in higher secondary schools in Salem District of Tamil Nadu.

## Methodology

The study was conducted using qualitative methods. We investigated secondary and primary data at macro and micro level. Secondary data was collected from government records, journals, and newspapers. Primary data was collected from higher secondary school students of both government and private institutions. We prepared an interview schedule for collecting primary data. The interview used rating scale method (*very poor - 1, poor - 2, no opinion - 3, good - 4, and very good - 5*). The study employed multistage random sampling method. The Department of School Education (Ministry of Human Resource Development, 2014) announced 44 blocks under the educationally backward blocks in Tamil Nadu. Here, female literacy rate is very low. We chose Salem District in Tamil Nadu. It had the highest number of 12 blocks (27.27%) which are educationally backward blocks in Tamil Nadu. The present study has taken only the educationally backward blocks of Salem District. The sample size employed 120 respondents from both government and private institutions. The study was conducted by using the interview schedule method. The time period of the study was from July - August 2015 for higher secondary school students in the districts under study.

## Scope of the Study

The present research was meant to study conditions and availability of water and toilet facilities in higher secondary schools (both government and private schools) of Salem District, Tamil Nadu. The study records opinion of secondary school students about water (for the purpose of drinking and hand washing) and toilet facilities (for girls and boys) in the school campus. The study examines the quality of facilities and demand – side factors for water and sanitation facilities at higher secondary schools in Salem District.

## Results and Discussion

**(1) Structure of School Education in Tamil Nadu :** School education structure in Tamil Nadu state is based on the national pattern. The state has a 12 years schooling system at two levels. The Table 1 shows school education structure of Tamil Nadu. The Right to Education Act, 2009 states that free and compulsory education is a fundamental right of every child between the age of 6 and 14 years.

Elementary education covers 8 years - 5 years of primary stage and 3 years of upper primary stage. This is followed by two years high school education and lastly two years of higher secondary education. Secondary education is the qualification to higher education in general education, technical education, and professional education. Secondary school education is an important parameter for fostering economic growth of the nation.

**(2) Types of Schools in Tamil Nadu :** School education is delivered by the government and private players in Tamil Nadu and Salem district. The Table 2 shows the types of schools such as primary schools, middle schools,

**Table 1. Structure of School Education in Tamil Nadu in 2015**

Level	Stages	Classes	No. of Periods	Age Group (Years)
Elementary	Primary	1st to 5th Std.	5	6 to 10
	Upper Primary	6th to 8th Std.	3	11 to 13
Secondary	High School	9th to 10th Std.	2	14 to 15
	Higher Secondary	11th to 12th Std.	2	16 to 17

Sources: Department of School Education, Government of Tamil Nadu

\*Std. means standard

**Table 2. Types of Schools in Tamil Nadu and Salem District in 2015**

Levels	Tamil Nadu		Salem district	
	No. of schools	Percent	No. of schools	Percent
Primary Schools	35307	61.73	1424	59.48
Middle Schools	9588	16.77	438	18.3
High Schools	5628	9.84	241	10.07
Higher Secondary School	6669	11.66	291	12.15
<b>Total</b>	<b>57192</b>	<b>100</b>	<b>2394</b>	<b>100</b>

Sources: Sarva Siksha Abhiyan, Tamil Nadu.

high schools, and higher secondary schools. Among the schools, 61.7% and 16.77% are primary and middle schools in Tamil Nadu. Higher secondary schools and high schools comprise of 11.66% and 9.84% of the total schools. High school and higher secondary level education are fostering economic growth in Tamil Nadu and account for 59.0% of schools that are located in rural areas. Good schooling would help higher education.

The Table 2 shows types of schools in Salem district ; 61% are elementary schools in Salem district (primary schools constitute 59.48% and middle schools constitute 18.3%). Higher secondary schools were 12.15% which were followed by 10.07% high schools. Hence, the school education department should concentrate upon upgrading school levels and infrastructure facilities such as classrooms, drinking water, and toilet facilities.

**(3) Water and Sanitation Facilities in Schools of Tamil Nadu :** Water, sanitation, and hygiene (WaSH) in schools refers to a combination of technical and human development mechanisms that are necessary to produce a healthy school atmosphere. The government of Tamil Nadu (2015) promotes cleanliness, health, and hygiene through its campaign "*Muzhu Sugadhara Tamizhagam*". The Table 3 shows water and toilet facilities in Tamil Nadu in 2014-2015. Water and toilet facilities are important factors for creating quality education in school environment. Poorvaja (2015) said that the Government of Tamil Nadu has been implementing water sanitation and hygiene (WaSH) under the sponsorship of District Rural Development Agency (DRDA). The project was launched in Madurai district for the first time in Tamil Nadu state and it is benchmarked at Panchayat Union Schools in the Madurai district. The Table 3 demonstrates the availability of drinking water, toilet facilities for girls and boys in Tamil Nadu during 2010-11 and 2014-2015 academic years.

It can be inferred from the data that drinking water facility level was degrading in primary and upper primary schools during the 2014 - 2015 academic year. Drinking water facility improved in the high and higher secondary schools from 2010- 2011 to 2014 - 2015. It is to be noted that Tamil Nadu state is building lavatory facilities in all types of schools to upkeep education of girls.

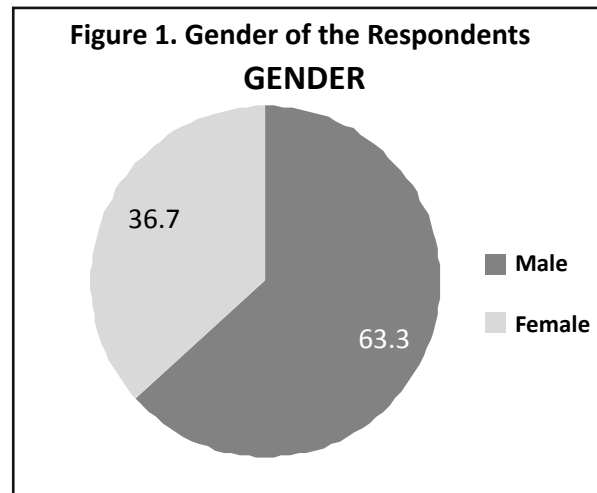
**(4) Socioeconomic Conditions of the Respondents :** One of the important characteristics of the study is to estimate

**Table 3. Water and Toilet Facilities in Tamil Nadu in 2010-2011 and 2014-2015**

Levels	% of Drinking water facility		% of Toilet facility for girls		% of Toilet facility for boys	
	2010-2011	2014-15	2010-11	2014-15	2010-11	2014-15
Primary Schools	100	99.88	61.65	98.92	51.68	100
Middle School	100	99.71	71.67	99.85	60.32	99.98
High Schools	86.00	99.54	62.84	99.49	NA	99.92
Hr. Sec School	92.35	99.54	69.71	99.91	NA	99.92
All Schools	94.59	99.81	66.47	99.71	-	99.29

Sources: U-DISE, New Delhi-2014-2015

NA -Data Not Available

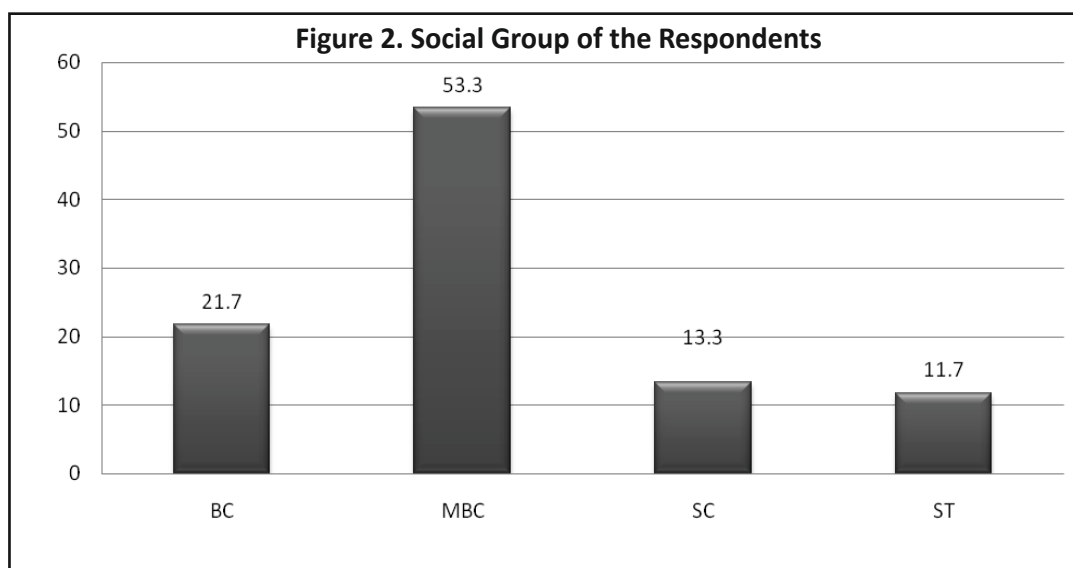
**Table 4. Religion of the Respondents**

Religion	Frequency	%
Hindu	76	63.3
Christian	26	21.7
Muslim	18	15.0
<b>Total</b>	<b>120</b>	<b>100</b>

the socioeconomic profile of the respondents in the study region. Social and economic conditions of the respondents like religion, social groups, educational background, occupational status of parents, and family income level could further reveal the background of the respondents and their characteristics.

**(i) Gender of the Respondents :** The Figure 1 shows the gender of the respondents in the study area. It is also essential to discuss the gender of the students for higher secondary schools in Salem district. Of the total sample of 120 students, about 63.3% were boys and 36.7% were girls. This figure reveals the preference level for both government and private higher secondary school students in Salem district.

**(ii) Religion of the Respondents :** The Table 4 shows the religion of the students in higher secondary schools in the study area. The majority of the respondents were Hindus (63.3%) and 27.7% and 15.0% of the respondents were Christians and Muslims, respectively.



**Table 5. Occupation Status of Parents**

Occupation types	Frequency	%
Agriculture	27	22.5
Self employee	23	19.2
Govt. employee	2	1.7
Private employee	3	2.5
Daily wage	65	54.2
<b>Total</b>	<b>120</b>	<b>100.0</b>

**(iii) Social Groups :** The Figure 2 shows social groups in Salem district. Majority of them belonged to the Most Backward Classes or MBC (53.3%) followed by Backward Classes or BC (21.7%), Scheduled Caste or SC (13.3%), and Scheduled Tribe or ST (11.7%). The Figure 2 shows that the predominant social groups in the study area were MBC and BC.

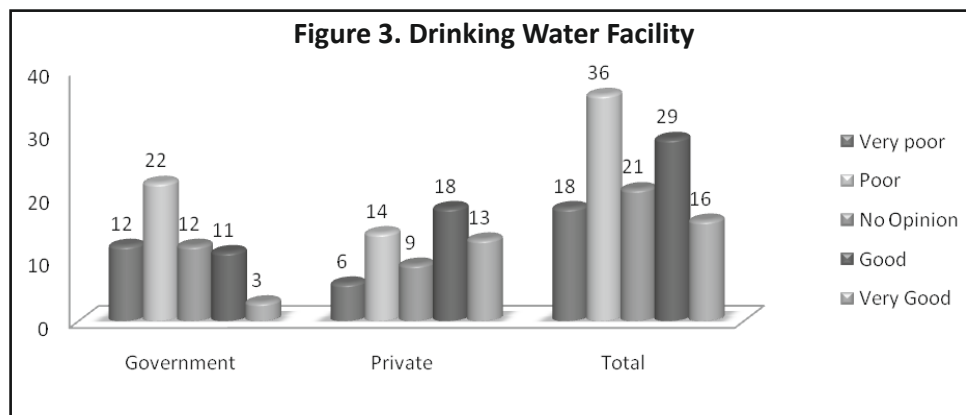
**(iv) Occupation Status of Parents :** The occupation of parents is a prime factor that decides education of their children. Their occupation status has been grouped into five, that is, agriculture, business, government, private, and daily wage earners. Among them, the highest number of parents worked as daily wage workers, accounting for 54.2% of the total sample (Table 5).

As can be seen from the Table 5, the share of agriculture is 22.5%. The parents of the respondents were dependent upon agricultural and allied works ; 19.2% of the parents were self employed ; 2.5% and 1.7% of the parents were private and government employees, respectively.

**(v) Income Status of the Parents :** An important factor is income level of parents which determines education of their children as well as their choice of academic institutions. We created five income groups, that is, income upto ₹ 50,000 ; ₹ 50,001 - ₹ 1,00,000 ; ₹ 1,00,001 - ₹ 1,50,000 ; ₹ 1,50,001 - ₹ 2,00,000, and above ₹ 2,00,000 lakh earned per annum. The income status of the parents of the respondents per annum is given in the Table 6 ; 55.8% of the parents of the respondents belonged to the annual income category of per annum income of upto ₹ 50,000, 28.3% belonged to the ₹ 50,001 to ₹ 1,00,000 level, and the lowest 0.8% belonged to the income level of more than ₹ 2,00,000 annual income.

**Table 6. Income Level of Parents**

Income level	Frequency	%
Up to ₹ 50,000	67	55.8
₹ 50,001 to ₹ 1,00,000	34	28.3
₹ 1,00,001 to ₹ 1,50,000	10	8.4
₹ 1,50,001 to ₹ 2,00,000	8	6.7
Above ₹ 2,00,000	1	0.8
<b>Total</b>	<b>120</b>	<b>100.0</b>



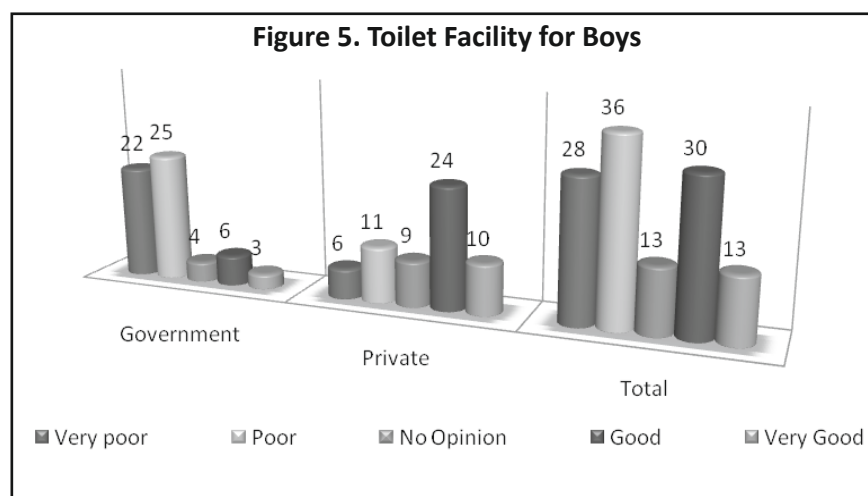
#### (5) Drinking Water and Toilet Facilities in Schools in Salem District

**(i) Drinking Water Facility :** The present study analyzed the availability of drinking water and toilet facilities in government and private schools of Salem district. The Government of Tamil Nadu has been supporting development of quality education to achieve high human development and economic growth. The Government of Tamil Nadu has been taking initiatives to provide quality education and create a healthy environment in schools.

The Figure 3 shows drinking water facilities in higher secondary schools in the study region. The students were asked about drinking water facilities in government and private schools ; 30% of the respondents were of the opinion that drinking water facility was poor ; 24.2% of the respondents opined that the drinking water facility was good. Therefore, the data reveals that drinking water facility provided by private schools is better than what is provided by government schools.

Providing drinking water facility is the responsibility of the management of institutions and during the field study, it was found that some of the private schools had installed water purifiers in the school campuses. This shows that drinking water facilities in government schools are poorly maintained. The field observation reveals that some government schools were not regularly supplying drinking water. In this case, the students searched for drinking water in nearby tea shops and homes.

**(ii) Toilet Facility for Girls :** It is an important issue, especially for girl students. Due to the unavailability of proper toilet facilities, parents do not admit their teenage girls in schools. The Figure 4 shows the condition of toilet facilities that are available for girl students in the sample district ; 29.2% of the respondents opined that toilet facilities for girls were in a good condition and 28.3% of the respondents opined that toilet facilities were in a poor condition in both government and private schools, especially government schools lacked properly maintained toilet facilities.



At the same time, majority of the government school respondents gave a negative feedback regarding toilet facilities for girl students. We observed that government schools lacked manpower for toilet cleaning as the toilets were not properly clean and maintained. The school students said that the toilet facilities were in a poor condition in the sample schools. Due to poor toilet facilities in schools in rural areas, girl students drop out or get a transfer to other schools. This is one of the reasons for low female literacy in educationally backward blocks in the State. Poor condition of toilets and non-availability of toilets may result in creation of breeding grounds of dangerous diseases.

**(iii) Toilet Facility for Boys :** Providing toilet facilities separately for girls and boys is the responsibility of schools ; 20.8% and 18.3% of the respondents opined that the toilet facility for boys was poor and very poor in government schools in the study region, respectively. Of the total respondents, 30.0% opined that the toilet facility was in poor condition in both government and private schools. This is one of the causes of decreasing enrollment of boys.

The Figure 5 shows that 20% of the respondents said that the toilet facility for boys was in good condition in private schools. The data shows that toilet facility for boys in private schools was better than what it was in government schools. Similarly, some private schools are providing toilet facility with hand washing water tap.

Private schools maintain clean and hygienic toilet facilities. The field study found that toilet facilities in government schools was in a bad shape. This is the scenario in all government schools. Also, anti-social activities take place in these toilet facilities. We also found that some students urinated in open places in government schools.

## **Research and Policy Implications**

- (1) The government should install R-O plants to ensure the availability of safe drinking water in all schools.
- (2) Schools should construct more toilet facilities with the help of funds raised from donors and by NGOs.
- (3) The government should employ people part-time for toilet cleaning at government owned schools.
- (4) Schools teachers should create awareness and teach about health and sanitation.
- (5) Proper dustbins have to be arranged for napkins and papers used by adolescent girls. Incineration facilities may be arranged to avoid any unwanted dumping of materials.
- (6) Checking water quality and health of children have to be undertaken periodically to detect problems, if any, at an early stage.
- (7) Tax exemption may be provided to firms that supply RO plants to schools and other educational institutions.

## **Conclusion**

The present study explored the availability and quality of drinking water and toilet facilities in higher secondary schools in Salem district in Tamil Nadu. Water and toilet facilities are important for quality education and healthy environment in schools. Earlier studies found regional disparities in providing drinking water and toilet facilities at the state level (Jha & Parvati, 2014); correlation between corruption and poor quality of sanitation facilities in educational institutions (Reddy & Murali, 2015); and water and sanitation services are not functioning properly in schools (Rajendran, 2015). The present study found that government schools have a very poor condition of drinking water and sanitation amenities and it is compared with private schools. It can be inferred that facilities that are provided and available in private schools are much better than those in government schools. However, regional disparities were observed between rural and urban areas. The provision of water and toilet facilities needs to be accelerated with maintenance, meaningful hygiene education, and consistent use of facilities by all children and teachers. Schools have the responsibility of providing a healthy school environment. The government should take action to improve toilet and water facilities in schools. Furthermore, it should check that toilet and water facilities are properly maintained and are functioning in government and private schools. Schools should provide pure drinking water and clean toilet facilities to the school children to avoid diseases.

## **Limitations of the Study and Scope for Further Research**

The study did not consider water and sanitation conditions in primary, middle, and high schools. The data was taken from higher secondary students (students of classes 11<sup>th</sup> and 12<sup>th</sup>) who are familiar with the school environment for this study.

Water and sanitation facilities factors affect student enrollment and transit rates, especially those of girls students. Annual Status of Education Report (ASER, 2014) pointed out that student enrollment rate increased in private schools and parents were opting to admit their children in private schools. Therefore, it indicates a lack of infrastructure in government schools and poor maintenance. Primary education is the base for all developmental

activities, especially a healthy environment in educational institutions. Hence, this study will lead to further research along different dimensions such as the level of awareness about benefits of toilets among students, health education imparted to students in schools, and financial outlay for the proper maintenance of toilet and water facilities in schools etc.

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