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## Creating awareness on water conservation among students: A Hamirpur study

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### Abstract

**Introduction:** Clean water is a very important component of our life, so, we need to conserve water for future safety. Water is such a commodity that cannot be made but it can be saved. Safe water is reducing globally due to the increasing population and its usage.

**Objective of the study:** Project was conducted to create awareness among the students of schools, colleges and the general public.

**Material and Methods:** Study was conducted among 6000 participants through a pre-structured Performa. 5000 participants responded. Pre and post-evaluation was done. Study was conducted in the department of Microbiology at Dr. Radhakrishnan Govt Medical College Hamirpur Himachal Pradesh. Project started after obtaining Ethical; approval from the Ethical committee of the College. Permission was also obtained from the Director of Higher Education Himachal Pradesh. It was a one-year study from April 2022 to March 2023.

**Results:** During pre-evaluation, it was revealed that 37% of participants were saving water, 10% were taking shower more often than a bath, 34% turned off the tap while brushing teeth, 24% had dual flush system at home, 10% collected water from washing fruits and vegetable to water plants, 25% while buying a new dishwasher selected a water-saving one, 22% used biodegradable washing and cleaning products, only 16% collected rain water, 29% water the garden with rain water, 24% use house when watering the garden, only 16% wash their car with rain water, 35% used bucket to save a water while washing the car and 31% used water when cleaning the yard

In post evaluation it was observed improvement was expressed in some areas such as that 19% express their willingness to turn the tap and use mug while brushing teeth. 6% more participants showed interest in using water for watering the plants used for washing fruits and vegetables. There were 7% More participants who expressed their willingness in washing car by using bucket and mug. All other parameter remained unchanged

**Conclusion:** Study reveals that there is a great need to make people aware on saving water. Natural resources are reducing along with the increasing population. We must all make changes in our lifestyles that will change the course of our water and its quality. Awareness programme, water management authorities need to plan for more efficient use of the water resources in the future. If most of an areas clean water is wasted, there will not be water for future generations to use, meaning the city. There is a need of more research at a larger level.

**Keywords:** Potable water, conservation, rain water, awareness, students

### Introduction

Water everywhere but not a drop to drink Samuel Taylor Coleridge wrote in the Rime of Ancient Mariner in 1798 but it is very true in today too. About three fourth of the universe is covered with water mainly in oceans. It is salt water that can only be consumed by humans and other species after undergoing desalination, which is an expensive process. Water is life because plants and animals cannot live without water. Water is needed to ensure food security, feed livestock, and take up industrial production and to conserve the biodiversity and environment. We need water for multiple purpose other than drinking to quench thirst. Fresh and safe water for human consumption is a very expensive commodity. Only three percent of the portable water is available. Water is a fluid of all living beings. It is the clear liquid that has no colour, taste or smell that falls from clouds as rain, that form streams, lakes and seas. It is used for drinking, bathing cooking, washing, buildings, and many other activities. In Indian literature monsoon is described as the season of love and life, but once the rains disappear the whole country become dry as a desert, life become difficult.

In spite of higher average annual rainfall (1170 mm) as compare to global average (800 mm) <sup>[1]</sup>, India faces recreating drought in some of its parts <sup>[2]</sup>. According to the Composite Water Management Index (CWMI) report released by the Niti Aayog in 2018, 21 major cities (Delhi, Bengaluru, Chennai, Hyderabad and others) are racing to reach zero groundwater levels by 2020, affecting access for 100 million people <sup>[3]</sup> in 2050, as estimated by the Government of India (2009) Since, fresh, clean water is a limited resource. Only 1% of the total water can be used by human beings <sup>[4-5]</sup>. As the potential for increasing the volume of utilization of water is hardly 5-10%, India is bound to face severe scarcity of water in the near future. We need to save water. If we save water; we will save life and save whole world on the earth. Since, fresh, clean water is a limited resource. Himachal Pradesh is under water stress. Himachal Sarkar is making people aware not to pollute waster and use waster sparingly. There are banners all around to aware people to this situation of reducing clean and fresh water. Requesting people to conserve water. Water conservation” includes the rules, strategies and actions made to manage fresh water as a sustainable resource, to protect the water environment, and to meet present and future human demand. Water conservation reduces energy use and can even save households money.

Water has a great significance in regards to health. It protects our heart: It is clinically proven that drinking a huge amount of water could help avoid heart attacks, controls hypertension. Drinking 2 liters of water daily which can provides the brain much needed oxygen to perform at optimum levels. It also helps to save money: Drinking water can be a cheap alternative in the place of costly soft drinks. Helps us to lose weight: Drinking water has the capability to increase your metabolic rate, thus helping your body’s ability to burn fat easily.

**Keeps us alert from tiring situation:** Our life is very fast now days so tiredness due to dehydration is very common but to keep us active, drinking water is better option rather than intake any other costly health. Drink <sup>[6]</sup>.

There is a need for Informatics blueprint for Integrated Water Resources Planning and Management at grassroots level <sup>[7]</sup>.

Conserving water now allows cities and regions to plan for more efficient use of the water resources in the future because natural resources are reducing along with the increasing population and their usages. If most of an area's clean water is wasted, there will not be water for future generations to use. The awareness can be spread out through seminar presentation, model preparing competition etc. To reduce water miss-use in the schools, colleges and general public.

### Aim and objective of water conservation

Creating awareness on conservation of water and protection of a natural resources of water, protection form pollution to sustain water resources to the future generation and guarding against rising costs and political conflicts.

### Material and Methods

Study was conducted in the department of Microbiology of Dr. Radhakrishnan Govt Medical College Hamirpur Himachal Pradesh. Project was started after the Ethical approval of Research Advisory Committee of the college. Permission was obtained from DHE Himachal Pradesh. It was a one-year study from April 2022 to March 2023.

Students of Twenty three schools, six colleges and staff of Six block hospitals in Hamirpur District of Himachal Pradesh were sensitized by creating awareness through talks by PowerPoint presentation. Multicolored pamphlets were distributed among students and their parents depicting the methods of water conservation. Pre and post evaluations were done by pre structure questionnaire.

### Results

**Table 1:** Showing awareness talks delivered

Sr. No.	Institution	No of talks delivered	No of Students
1	Schools	23	4500
2	Colleges	06	1200
3	Block Hospitals	06	300

Performa was distributed among 6000 participants, 5000 participants responded.

### Results of Pre evaluation

Pre evaluation of participants showed that 37% were saving water, 10% were taking shower more often than a bath, 34% turned off the tap while brushing teeth, 24% had dual flush system at home, 10% collected water from washing fruits and vegetable to water plants, 25% while buying a new dishwasher will select a water saving one, 22% use biodegradable washing and cleaning products, only 16% collect rain water, 29% water the garden with rain water, 24% use hose when watering the garden, only 16% wash their car with rain water, 35% use bucket to save a water washing the car and 31% use water when cleaning the yard.

### Post evaluation

In post evaluation it was observed improvement was expressed in some areas such as that 19% express their willingness to turn the tap and use mug while brushing teeth. 6% more participants showed interest in using water for watering the plants used for washing fruits and vegetables. There were 7% More participants who expressed their willingness in washing car by using bucket and mug. All other parameter remained unchanged

### Discussion

Study suggests the great need of water conservation by all especially young students since they have good receptive nature and they can be influenced easily.

### Students can save water in the kitchen

- Close the kitchen tap when no more water is required.
- Use a bowl of water-to-water fruits or vegetables.
- Avoid running the tap until the water gets cold enough to drink. Instead, fill up a large water bottle and keep it in a fridge.

### Saving water in washroom

- Turn off the tap while brushing teeth can save up to 760 liters of water per month.
- Choose showers over baths. A bath usually consumes up to 20 liters of water, whereas a 5-minute shower will utilize just 5-7 liters.
- Take shorter baths.
- Stop running water while lathering or shampooing.
- Close tap after each use.
- Avoid flushing waste or tissue paper into the toile.

To reduce water miss-use in the school, to follow the right path of water conservation, increase awareness among

students regarding the concept of water conservation is very important along with this conduct competitions for students e.g., posters, slogans. Put up symbols in all classrooms which can inspire water conservation concept among students. Convey the idea of using planned amount of water in the place of unnecessary use is also be encouraged. Turn off any needless flows in washrooms and kitchens<sup>[8]</sup>.

To relish the welfares of having pure, clean water, we must help conserve water properly so that human being may continue to enjoy these benefits<sup>[9]</sup>.

Rooftop gardening the continuous growth of the human population on earth is creating a lot of social, economic and ecological pressure on the environment. Rooftop gardens with rain water can be splendid substitute for natural looking landscaped areas. School students can also be motivated to start rooftop gardening using harvested rain water<sup>[10]</sup>.

### Rainwater Harvesting

Rainwater harvesting is a technique which can refer to the collection of rainwater, mostly on a roof, from where it flows freely through a pipe to a reservoir. It is a proper management of rain water which was previously wastage due to lack of knowledge<sup>[11]</sup>.

### As a responsible citizen we can save water by following simple ways

- Keeping the tap closed when not in use.
- Check for the openings or leaks in water distribution pipes.
- Make sure to use collected rainwater for gardening or washing purpose.
- Always have a measure of how many buckets of water is wasted in a day and try to reduce.
- Do not run more water than necessary while washing and cleaning clothes, utensils, etc.
- Do not prolong your bathing. Go for a quick shower rather than wasting buckets of water.
- Rainwater harvesting is one of the best method used for conserving water. There are different methods used to preserve rainwater instead of getting it wasted.

Follow other measures to save water. Implement the idea of rainwater harvesting at home tell family, friends and neighbors to save water, report leaking taps or pipes. Conduct awareness campaigns in your locality on ways to conserve water. Ensure that you turn off taps before leaving your home or when going out on a vacation.

### Conclusion

Study reveals that there is a great need to make people aware on saving water. Simple activities will make a greater difference in our future life and generations to come. Drop by drop conservation of water by each of us can save a big amount of water that can be used to meet the need of society. We must all make changes in our lifestyles that will change the course of our water and its quality. It can start from our homes school, and colleges. School student can easily develop rooftop gardening where senior students can prepare the awareness programme among their friends. Students can be involved to prepare model of rainwater

harvesting and establish in school. If we all do our part in conserving water, we can make a huge difference to the environment. For conserving water the water management authorities need to plan for more efficient use of the water resources in the future. If most of an area's clean water is wasted, there will not be water for future generations to use, meaning the city will need to come up with new ways to produce clean, fresh water, which will ultimately be at the taxpayers' expense. There is a need of more research at a larger level.

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### Conflict of Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Not available

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