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Role of Indian women in saving water at domestic level

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Abstract

The most significant environmental problem and threat to public health in both rural and urban India is inadequate access to clean drinking water and sanitation facilities. Almost all the surface water sources are contaminated to some extent by organic pollutants and bacterial contamination and make them unfit for human consumption unless disinfected. The diseases commonly caused by contaminated water are typhoid, cholera, gastroenteritis, bacterial dysentery, hepatitis, poliomyelitis, amoebic dysentery etc.

Keywords: Role, saving, waste water

Introduction

Wastewater, also written as waste water, is any water that that has been adversely affected in quality by anthropogenic influence. Municipal wastewater is usually conveyed in a combined sewer or sanitary sewer, and treated at a wastewater treatment plant. Treated wastewater is discharged into receiving water via an effluent sewer. Wastewaters generated in areas without access to centralized sewer systems rely on on-site wastewater systems. These typically comprise a septic tank, drain field, and optionally an onsite treatment unit. Sewage is the subset of wastewater that is contaminated with feces or urine, but is often used to mean any wastewater. Sewage includes domestic, municipal, or industrial liquid waste products disposed of, usually via a pipe or sewer (sanitary or combined), sometimes in a cesspool emptier. Sewage is the physical infrastructure, including pipes, pumps, screens, channels etc. used to convey sewage from its origin to the point of eventual treatment or disposal. It is found in all types of sewage treatment, with the exception of septic system, which treat sewage on site.

Objectives

- To study the socio-economic status of women and identify the types of accommodation like apartments, own houses and rented houses.
- To assess the source of waste water such as aqua guard, kitchen, washing machine etc. and ways of recycling adopted.

Methodology

The study was conducted in Kanpur district of Uttar Pradesh. Six localities were selected from 6 zones of Kanpur district. Total 300 women were randomly selected in this study. The dependent and independent variables were used such as age, education, religion, technique, brand, knowledge, recycling etc. The statistical tools were used such as percentage, rank and correlation.

Results

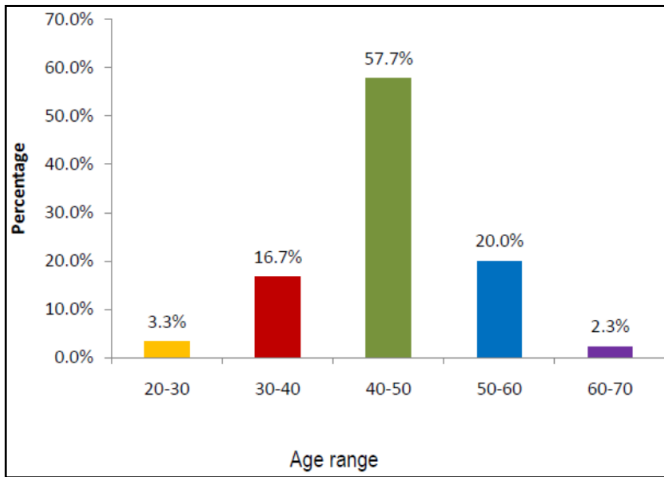
Table 1: Distribution of women according to age group

N=300

| Sl. No. | Age group (years) | Frequency | Percent |
|---------|-------------------|-----------|---------|
| 1 | 20-30 | 10 | 3.30 |
| 2 | 30-40 | 50 | 16.70 |
| 3 | 40-50 | 173 | 57.70 |
| 4 | 50-60 | 60 | 20.00 |
| 5. | 60-70 | 7 | 2.30 |
| | Total | 300 | 100.00 |

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Maximum 57.7 percent of women belonged to 40 to 50 years age group, followed by 20.0 percent of respondents who belonged to 50 to 60 years. 16.7 percent of Indian women belonged to age group 30 to 40 years whereas, 3.3 percent of 20 to 30 years of age group. 2.3 percent of respondents were belonging to in the age group 60 to 70 years in the study area. It was found that irrespective of economic position and location living of women from apartment, rented and own houses consumes more water in comparison to other age groups, from the previous observation it was found that consumption and utilization pattern of water totally different in apartment, rented and own houses.

Table 2. Distribution of women according which type of house you live

N = 300

| Sl. No. | Types of house | Frequency | Percent |
|------------------------|----------------|-----------|---------|
| A. Own House | | | |
| 1. | Apartment | 126 | 42.0 |
| 2. | Single storey | 48 | 16.0 |
| 3. | Double storey | 21 | 7.0 |
| 4. | Villas | 5 | 1.7 |
| B. Rented house | | | |
| 1. | Apartment | 85 | 28.3 |
| 2. | Single storey | 10 | 3.3 |
| 3. | Double storey | 5 | 1.7 |
| 4. | Villas | - | - |
| | Total | 300 | 100.00 |

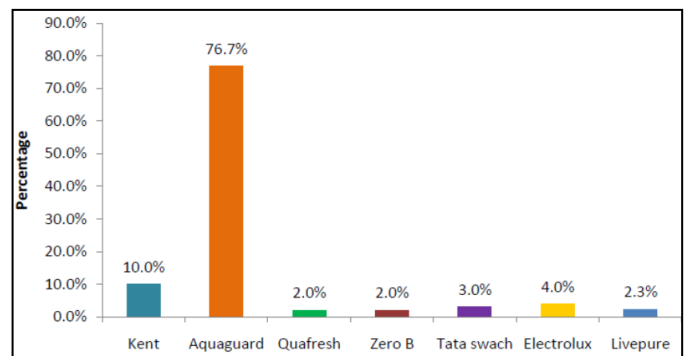
Most developed cities India is also undergoing a discernible shift towards lifestyle and housing choices as well. With time apartments have taken place of detached housing units which is result of changing living habits as well as higher density living. Slowly and gradually standalone housing is becoming a thing of past in metro cities. The number one benefit of living in an apartment is the financial aspect of renting. Rent is generally cheaper than a mortgage. In addition to an overall lower monthly payment, other financial components such as upkeep and utilities are generally lower because of the smaller space and the overall responsibility of a landlord/owner

versus a tenant. While it does depend on a few different factors, two storey homes are often a better investment and deliver better returns. In cities where space is at a premium the push for higher density living favours two storey houses over sprawling one storey blocks. Most people like the idea of separate living areas, whether that's to divide kids and adults or otherwise, and this favours two storey properties. Buying a separate villa can put a considerable strain on own finances. Typically, she can expect to pay more for housing during the first several years as a homebuyer than she did as a renter. Even if your mortgage payments are less than she paid previously per month in rent, she must also pay property taxes, homeowners insurance, utilities and upkeep expenses.

Table 3: Distribution of women according to possession of Aquaguard brand in their house

N = 300

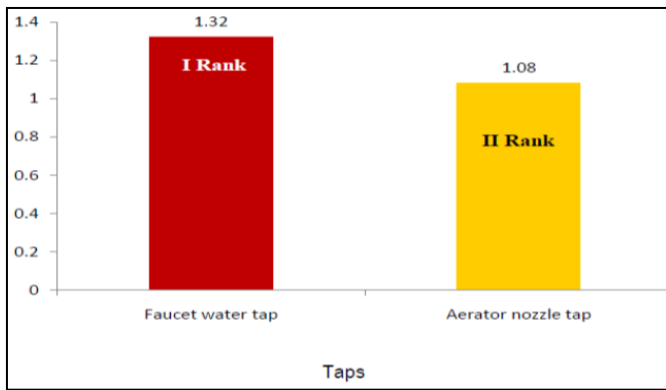
| Sl. No. | Brand | Frequency | Percent |
|---------|------------------|-----------|---------|
| 1. | Kent | 30 | 10.0 |
| 2. | Aquaguard Revina | 230 | 76.7 |
| 3. | Quafresh | 6 | 2.0 |
| 4. | Zero-B | 6 | 2.0 |
| 5. | Tata Swach | 9 | 3.0 |
| 6. | Electrolux | 12 | 4.0 |
| 7. | Livepure | 7 | 2.3 |
| | Total | 300 | 100.00 |



The population of India comprises more than 700 million people residing in about 1.42 million habitations spread over 15 diverse ecological regions. It is true that providing drinking water to such a large population is an enormous challenge. Our country is also characterized by non-uniformity in level of awareness, socio-economic development, education, poverty, practices and rituals which add to the complexity of providing water. Water contains important nutrients and minerals like Calcium, Sodium, Potassium, Magnesium, Iron, Zinc and many more, which are essential for human health. Therefore, in present time different brands RO use increasingly in every home Such as Kent RO, Acquaguard Revina, Quafresh, Zero B, Tata Swach, Electrolux, Livure. In present time there is a huge demand of ROs. Different RO companies launch variety of RO systems in the market according to the economic status of Indian people.

Table 4: Distribution of women according to installation of faucet water tap in their kitchen

| Sl. No. | Water tap | Frequency | | Percent | | Mean scores | Rank |
|---------|--------------------|-----------|-----|---------|------|-------------|------|
| | | Yes | No | Yes | No | | |
| 1. | Faucet water tap | 95 | 205 | 31.7 | 68.3 | 1.32 | I |
| 2. | Aerator nozzle tap | 25 | 275 | 8.3 | 91.7 | 1.08 | II |



Taps are normally connected to the water supply by means of a swivel tap connector, which is attached to the end of the water pipe using a soldered or compression fitting, and has a

large nut to screw onto the threaded tail of the tap, which hangs down underneath the bath, basin or sink. A fibre washer is used between the connector and the tap tail. Tap tails are normally 1/2" in diameter for sinks and 3/4" for baths. The same connection method is used for a ball cock. There are used two types of water taps for saving the water. When installed in a home, sensor faucets alleviate the need for parents to ensure that children have turned off the faucet. They can also benefit the elderly and those suffering from arthritis or other mobility limiting conditions since there are no handles to twist or pull. These water saving devices will control the amount of water that flows through the tap without affecting the water pressure as they mix the water with air. While oil and water don't mix, air and water certainly can which will save water and money.

Table 5: Distribution of women according to their use of techniques to save rain water

| Sl. No. | Rain water storage | Yes | No | Mean Score | Rank |
|---------|--------------------|------------|------------|------------|------|
| 1. | Pond | 75 (25.0) | 225 (75.0) | 1.25 | II |
| 2. | Tub | 125 (41.7) | 175 (58.3) | 1.42 | I |
| 3. | Pits | 60 (20.0) | 240 (80.0) | 1.20 | III |

(Figures in parenthesis indicate percentage of respective values)

Humans use over half of all accessible water runoff total water use less than 10 percent is used for domestic use. Households are the smallest consumers of water, but have a large potential impact. Users have the most influence at the household level and can experiment with strategies to develop water saving habits to implement outside of the home. There are many benefits to having a backyard garden pond that extend well beyond creating a natural, relaxing and picturesque landscape. Ponds are also tremendously beneficial to local ecosystem. Pond water contains more nutrients than the water from garden hose. It can be used to water other plants throughout the yard. During the dry season, they can

position drainpipes or any water run-off might have to flow right into the pond, creating a natural reservoir. Generally using big tubs for collection of the rain water for harvesting purpose is common. Rain water harvesting is one of the most effective methods of water management and water conservation. This is a very useful method for a developing country like India in reducing the cost and the demand of treated water and also economizing the treatment plants operation, maintenance and distribution costs. Pits are made in ground floor and collecting water in rainy seasons and municipal board. Pits storage water is used for kitchen garden purpose.

Table 6: Use of waste water at household level

| Sl. No. | Types of water | Waste water source | Yes | No |
|---------|-------------------|--------------------|------------|-------------|
| 1. | Black water | Toilet | - | 300 (100.0) |
| 2. | Grey water | Shower | 60 (20.0) | 240 (80.0) |
| | | Hand basin | 120 (40.0) | 180 (60.0) |
| | | Washing machine | - | 300 (100.0) |
| | | Laundry tap | 45 (15.0) | 255 (85.0) |
| | | Flush toilets | 195 (65.0) | 105 (35.0) |
| | | Bath tub | 105 (35.0) | 195 (65.0) |
| | | Jar | 15 (5.0) | 285 (95.0) |
| 3. | Other waste water | Kitchen tap | 95 (31.7) | 205 (68.3) |
| | | Dish washer | 30 (10.0) | 270 (90.0) |
| | | Garden | 240 (80.0) | 60 (20.0) |
| | Total | 300 | 100.0 | |

(Figures in parenthesis indicate percentage of respective values)

Waste water management plants are certainly very much necessary to dirt free the water through all the waste as well as harmful microorganisms. Domestic water consumption makes up 8.0 percent of total global water use particularly in developed countries. Domestic water use is often many times larger than the WHO minimum recommended per capita consumption. Thus, household water consumption has a large potential to be reduced. Benefits of reducing domestic water consumption include lower water bills or less time spent collecting water, reduced pressure on local water resources, and increased availability of potable water available for appropriate purposes such as drinking, cooking, and hygiene.

One effective way of reducing water consumption is to reuse the wastewater produced at the household level.

Conclusion

With the rapid urbanization in the country, there has been a commensurate increase in the need for and the use of water, one of life's most essential necessities. Almost 80.0 percent of the water supplied for domestic use, comes out as wastewater. In most of the cases wastewater is let out untreated and it either sinks into the ground as a potential pollutant of ground water or is discharged into the natural drainage system causing pollution in downstream areas. So, there is an urgent

need for treating wastewater using modern technology and recover as much usable water as possible. But the fact is a majority of towns and cities in India have either no sewerage and sewage treatment facilities or the treatment facilities are highly inadequate. Sources of wastewater include homes, farms, factories, hospitals and businesses.

Recommendations

- Conducting training and public awareness programs targeting women at, householders, must be conducted to raise the knowledge and culture and to achieve the sustainability for the wastewater treatment plant
- Proper water conservation measures should be used people should be made aware and trained on the techniques of water conservation.
- Women should be trained as water manager for the better utilization of water.

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