A Descriptive study to assess the knowledge regarding Reverse Osmosis waste water utilization among general public of Indore District

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ABSTRACT

A method of extracting essentially pure, fresh water from polluted or salt water by forcing the water under pressure against a semipermeable membrane, which passes the pure water molecules and filters out salts and other dissolved impurities. All reverse osmosis units produce waste water. The waste water ratio to filtered water ratio can be changed, but not eliminated. Wastewater is any water that has been affected by human use. Households may produce waste water from flush toilets, sinks, dishwashers, washing machines, bath tubs, and showers. The study aims to assess the knowledge regarding Reverse Osmosis wastewater utilization among the general public of Indore District. Material and methods a quantitative research approach, the descriptive research design was adopted for the study. Total 30 general public selected by using none randomized purposive sampling technique was used. Data were analyzed using descriptive and inferential statistics. Major findings of the study it is found that among the general public are 3.3% of the general public having is adequate knowledge and 13.33% is inadequate knowledge and 83.33% is moderate knowledge. Statistical analysis showed that the mean value of reverse osmosis waste water utilization is 7.7. A significant difference was found at the score. (p>0.05 Thus the study revealed that there is a significant association with the selected socio-demographic variables regarding knowledge of reverse osmosis waste water utilization among the general public. so it calculated that alternative hypothesis H01 was accepted and null hypothesis H0 was rejected. Hence the research hypothesis HA1 is accepted there is significant Association between the knowledge scores regarding reverse osmosis waste water utilization andsocio-demographic variables of the general public.

Keywords— *Knowledge, General public, Reverse osmosis waste water utilization*

1. INTRODUCTION
A method of extracting essentially pure, fresh water from polluted or salt water by forcing the water under pressure against a semipermeable membrane, which passes the pure water molecules and filters out salts and other dissolved impurities. All reverse osmosis units produce waste water**.** The waste water ratio to filtered water ratio can be changed, but not eliminated. Reverse osmosis units separate water into two streams, filtered water and waste water. Reverse osmosis units use a flow restrictor on the waste water line that slows the flow of water out the waste water line. This creates pressure against the reverse osmosis membrane and forces the membrane to separate the incoming water into filtered water and waste water. Most membrane manufactures anticipate a 15% recovery rate, which would produce approximately 1 gallon of filtered water to 6.7 gallons of waste water. The amount of discharge water produced depends on the efficiency of the reverse osmosis filter and the amount of reverse osmosis water used. Somewhat paradoxically, the less efficient the filter system, the more discharge water is available for reuse. A typical family of four will use 2 to 5 gallons (7.57 l to 18.92 l) of reverse osmosis water per day, depending on their water use habits. some homes use reverse osmosis water just for drinking, others use it for all cooking, rinsing produce, brewing coffee and tea, ice trays and ice makers, watering indoor plants, etc. Assuming the reverse osmosis filter is 16% efficient (discharging 5 gallons (18.92 l) for every 1 gallon (3.78 l) of filtered water), a typical home will produce 3,600 to 9,000 gallons (13.6 m3 to 34.1 m3) of discharge water per year; all needlessly wasted when drained into the sewer system. An older, less efficient reverse osmosis filter might produce more than 30,000 gallons (113.5 m3) of discharge water per year.

2. OBJECTIVES
(a) To assess the knowledge scores regarding reverse osmosis waste water utilization among the general public of Indore District.
(b) To find out the association between knowledge scores regarding reverse osmosis waste water utilization and selected socio-demographical variables of the general public.

3. HYPOTHESIS

At p<0.05 level of significance

- **H_{01}:** There is no significant association of knowledge scores regarding Reverse Osmosis waste water utilization with selected socio-demographical variables of general public Indore District
- **H_{A1}:** There will be a significant association of knowledge scores regarding Reverse Osmosis waste water utilization with selected socio-demographical variables of general public Indore District**.**

4. METHODS

Research approach: This study quantitative research approach will be used.

Research design: This study descriptive research design

The setting of the study: This study will be conducted in urban community area Indore district.

Population: In this study, the study sample will be the general public.

Demographic variable: Age, sex, education, occupation, types of reverse osmosis filtration, previous knowledge etc.

Sample size: 30 people.

Sampling technique: Non-randomized purposive sampling techniques

5. RESULTS

5.1 Section1

Frequency and percentage distribution of socio demographic variables.

- With regards to the age of 30 general public, 1(3.3%) belonged to the age group of 15-20 years ,11(36.66%) general public belonged to 21- 25 years, 9 (30%) general public belonged to age group 26-30 years, 11 (36.66%) belonged to 31 years and above age group.
- It reveals that in the gender section the general public i.e. 14 (46.66%) male and 16 (53.33%) are female.
- With regards to education of 30 general public 2(6.66%) belonged to the primary education, 5 (16.66%) belonged to upper primary education, 6(20%) belonged to secondary education, 7(23.33%) belonged to higher secondary education, 5(16.66%) belonged to under graduate education, 5(16.66%) belonged to post graduate education.
- The data further reveals that 10 (33.33%) general public occupation was a private job, were government job 5 (16.66%), 12 (40%) were house wife and 3(10%) all of above.
- With regards to the water filters at home of 30 general public 14(46.66%) were having water filters and 16(53.33%) were not having water filters.
- It reveals that in what types of water filtration of 30 general public 10(33.33%) were R.O. filters, 3(10%)were U.V. filters, 2 (6.66%) were sedimentation filters,15(50%) were all of above.

5.2 Section 2

Findings related to knowledge regarding reverse Osmosis waste water utilization among the general public.

The data presented in the table shows that; the majority of the general public are having 83.33% moderate knowledge and 13.33% inadequate knowledge and 3.33 adequate knowledge.

5.3 Section 3

Association between the knowledge scores regarding reverse osmosis waste water utilization and socio-demographic variables of general public. There is a total of 6 demographic variables i.e. age, sex. Education, occupation, do you have a water filter at home, what types of water filters are significant at P<0.05%. So it calculated that alternative hypothesis H01 was accepted and null hypothesis H0 was rejected

Hence the research hypothesis HA1 is accepted there is significant Association between the knowledge scores regarding reverse osmosis waste water utilization and socio-demographic variables of the general public.

6. DISCUSSION

This chapter presents the major findings of the study, discussion of the findings is based on the sample characteristics, to assess the knowledge scores regarding reverse osmosis waste water utilization and an association between knowledge scores regarding reverse osmosis waste water utilization and selected socio-demographical variables of general public

7. IMPLICATIONS OF THE STUDY

The findings of the study have implications for nursing education, nursing research and nursing administration.

7.1 Nursing education

During basic nursing education courses, the general public may give community awareness programme regarding reverse osmosis waste water utilization. The curriculum should also give importance to awareness reverse osmosis waste water utilization in the community area. The curriculum should also an emphasis on the provision of written reverse osmosis waste water utilization of general public and provision on water save methods.

7.2 Nursing administration

Nursing administrators should take part in health policy making and developing protocols for water save methods. Nursing administrators should concentrate on the proper selection, placement and effective utilization of the nurses in all area by giving

proper guidance. The nursing administrative should take initiative in impairing the health information through campaigns, printed materials, in the form of booklets, pamphlets and poster in every community areas.

7.3 Nursing research
In India, many research studies are already done in the field of reverse osmosis waste water utilization. But the result of this study directs the light towards the fact that the research findings are not been implemented properly. The present study reveals that there is inadequate knowledge regarding reverse osmosis waste water utilization. This study enlightens that there is a need for community-based educational programmes to improve knowledge among the general public regarding reverse osmosis waste water utilization. This study motivates other investigators to conduct further studies regarding this topic. This study emphasizes the need for the proper communication implementation of the research findings**.**

8. RECOMMENDATIONS
- The following recommendations were made since the study was carried out on a small sample. The results can be used only as a guide for further studies.
- The study can be repeated by taking a large sample in other parts of the country.
- A similar study can be conducted on the assessment of knowledge scores regarding reverse osmosis waste water utilization among the general public.
- Another study can be conducted on the assessment of knowledge scores regarding reverse osmosis waste water utilization among the general public.
- An observational study can be conducted in the actual practice for a period of time.
- This study motivates other researchers to do a comparative study assessment of knowledge scores regarding reverse osmosis waste water utilization among the general public.

9. REFERENCES
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