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Awareness of Dehydration and Health Effects Among People - A Survey

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Abstract: Water is a vital component in the body. Dehydration is defined as a decrease in water content in the body as a result of fluid loss or reduced water intake. Lack of hydration happens when the measure of water leaving the body is more prominent than the sum being taken in. Sicknesses of the gastrointestinal tract that cause spewing or looseness of the bowels may prompt lack of hydration. There are various different reasons for drying out including vomiting, diarrhoea, heat exposure, fiery exercise, kidney ailment and medicines that cause diuretics. Aim of the study is to know whether the people are aware of dehydration. A self developed online questionnaire was created and was completed by the participants. The questionnaire consisted of ten questions regarding the knowledge towards dehydration. The study shows that 96% of people are aware of dehydration and its health effects and have realised the need for awareness. The study concludes that most of the participants are aware of causes, symptoms and effects of dehydration. The study population has thus displayed good knowledge on dehydration and its effects.

Keywords: Awareness, Dehydration, Health effects, Water intake, Thirst.

INTRODUCTION

The vital component of all living cells and extracellular fluids is water. There should be balance in intake of fluids and fluid loss from the body. Dehydration is defined as a decrease in water content in the body as a result of fluid loss or reduced water intake. Depending on the level of exposure, the effects range from clinically unnoticeable to severe brain damage and even death. Dehydration is one of the most common conditions that requires proper medication (Harsha *et al.*, 2015) (Jéquier and Constant, 2010). A person can be dehydrated if they lose as little as about 3% of body weight from loss of fluids. Not drinking adequate measure of water and loss of fluid can eventually lead to dehydration (Coyle, 2004). To cope up with lack of hydration reptiles ,winged animals (Lindner and Funk, 2013), vertebrae and all land creatures have advanced a perfectly delicate system of physiology and thus they keep up their body water (Abigail *et al.*, 2019).

The less water intake is found to be associated with poor attention and poor memory (Benton *et al.*, 2016). There is also loss of performance which occurs as a result of dehydration (Benton *et al.*, 2016)) The common symptoms of mild to moderate dehydration includes dry skin, dry tongue and dry lips, thirst, headache, fatigue, weakness of muscle, dizziness, and focus lack (Britton, 2006). A series of studies suggested that the dehydration occurs due to deficiency of water through various ways like sweat, tears, vomiting, urine or diarrhoea (Renuka and Sethu, 2015).

Previously we have done so many review and research studies and awareness programs on various fields which led us to conduct awareness study on dehydration and health effects (Choudhari and Jothipriya, 2016) (Timothy, Gayatri Devi and Jothi Priya, 2019) (David *et al.*, 2019) (Shruthi and Preetha, 2018) (Rj and R, 2016) (Fathima and Preetha, 2016) (Samuel and Devi, 2015) (Dave and Preetha, 2016). Our team has rich experience in research and we have collaborated with numerous authors over various topics in the past decade (Deogade, Gupta and Ariga, 2018; Ezhilarasan, 2018; Ezhilarasan, Sokal and Najimi, 2018; Jeevanandan and Govindaraju, 2018; J *et al.*, 2018; Menon *et al.*, 2018; Prabakar *et al.*, 2018; Rajeshkumar *et al.*, 2018, 2019; Vishnu Prasad *et al.*, 2018; Wahab *et al.*, 2018; Dua *et al.*, 2019; Duraisamy *et al.*, 2019; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Gheena and Ezhilarasan, 2019; Malli Sureshbabu *et al.*, 2019; Mehta *et al.*, 2019; Panchal, Jeevanandan and Subramanian, 2019; Rajendran *et al.*, 2019; Ramakrishnan, Dhanalakshmi and Subramanian, 2019; Sharma *et al.*, 2019; Varghese, Ramesh and Veeraiyan, 2019; Gomathi *et al.*, 2020; Samuel, Acharya and Rao, 2020)

The aim of the present study is to assess the knowledge and awareness of dehydration among common people.

MATERIALS AND METHODS

The advantage of this study was the properly defined population, as the study settings were online surveys we were able to reach more people and the study population was educated so they were able to make better knowledge choices. The disadvantages of this study was the language incompatibility and lack of communication which caused trouble to few study populations with the understanding capacity. People involved in this study were the general population in Tamilnadu. The total sampling size of the survey was 100 and the sampling method used was a simple randomised sampling method.

The primary data collection was done through an online portal using google forms. The questionnaire totally consisted of ten questions and it was developed based on previous studies elsewhere after a free and informed consent was obtained. Questionnaire validity checking was done in a standard manner. Output variables, the data collection software scores and the participants's awareness are represented by pie charts. Descriptive analysis was done using SPSS software and association analysis was done using chi square test in SPSS software.

RESULTS AND DISCUSSION

Among the people who took the survey, 54% are males and 46% are females (Figure 1). 95% of the people said that athletes are more prone for dehydration and 5% of the people said that hikers are more prone for dehydration (Figure 2). 95.8% of the population are aware of dehydration and 4.1% are unaware of dehydration (Figure 3). 91.8% of the people know the symptoms of dehydration and 8.2% of the people don't know the symptoms of dehydration (Figure 4). The association between gender and symptoms of dehydration was analysed using chi square test and was found to be insignificant (Figure 5). 91.8% of the people who took the survey have felt dehydrated before and 8.2% of the people who took the survey have not felt dehydrated before (Figure 6).The association between gender and experience of dehydration was analysed using chi square test and was found to be significant (Figure 7). 12.8% said dry skin as the common symptom of dehydration. 12% said dry tongue and lips as the common symptom of dehydration. 46.2% answered vomiting is the major consequence of dehydration, 21.2% answered diarrhoea is the major consequence of dehydration and 32.5% answered sweating is the major consequence of dehydration (Figure 8). The association between gender and consequence of dehydration was analysed using chi square test and was found to be insignificant (Figure 9). 30.3% said thirst was the common symptom of dehydration. 44.7% said decreased urination as the common symptom of dehydration (Figure 10). The association between gender and the common symptom of dehydration was analysed using chi square test and was found to be insignificant (Figure 11). 64.7% of the people who took the survey said that there is a role of water in the body and 35.2% of the people who took the survey said there is no role of water in the body(Figure 12). 59.8% of the people who took the survey consume 1 litre of water per day and 40.2% of the people who took the survey consume 2 litres of water per day (Figure 13). 89.3% of the people said cucumber helps in dehydration, 3.3% of the people said rice helps in dehydration and 7.4% of the people said ragi helps in dehydration (Figure 14).

This investigation has concentrated on information on dehydration and its side effects, causes, counteraction, water admission proposals and water consumption rehearsals. Advances of scientific research have brought about better understanding of dehydration (Swathy and Gowri Sethu, 2015). The published studies assessed dehydration knowledge or status and water intake practices among the population (Taylor and Machado-Moreira, 2013). Drying out is the loss of body liquids. Athletes can be more prone to serious health problems. This acknowledgment has not been among numerous individuals (Bohn, 2011). A sum of 100 individuals in Tamil Nadu took the review. In the investigation we see that practically 94% of the individuals know that dehydration is achieved by the loss of a higher amount of fluid in the body. This happens when you are losing an extraordinary amount of fluid. Lifestyle modification remains the cornerstone of dehydration (Baheerati and Gayatri Devi, 2018). Your body needs more measure of fluid as you work properly. Liquid recharges the fluids lost during exercise and diminishes the risk of stress (Schwabe *et al.*, 2007). Lack of hydration is a typical reason for mortality (Murray and Stofan, 2000). The participants have better knowledge on the symptoms of dehydration; dry lips, thirst and dry tongue. It is evident that there is no simple and well-organized method to evaluate the level of dehydration (R and Sethu, 2018). For example cucumbers have all things packed with water and in addition they have electrolytes. They can help prevent dehydration. Teenagers are more prone to dehydration than any other age groups (Iyer, Gayatri Devi and Jothi Priya, 2019). Staying hydrated is the principal nature to have a healthy gastrointestinal tract related complications by keeping off kidney stones and some different genuine complexities (Wang, 2020). To avoid dehydration, fluid intake should be regulated.. Adequate fluid intake is very important when the climate temperature is high and during times of intense physical activity, such as during sports or physical exercise.

Our institution is passionate about high quality evidence based research and has excelled in various fields ((Pc, Marimuthu and Devadoss, 2018; Ramesh *et al.*, 2018; Vijayashree Priyadharsini, Smiline Girija and

Paramasivam, 2018; Ezhilarasan, Apoorva and Ashok Vardhan, 2019; Ramadurai *et al.*, 2019; Sridharan *et al.*, 2019; Vijayashree Priyadharsini, 2019; Chandrasekar *et al.*, 2020; Mathew *et al.*, 2020; R *et al.*, 2020; Samuel, 2021)

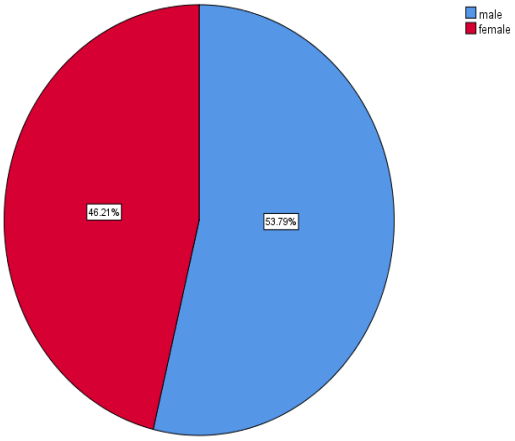

Fig.1: The pie chart represents the percentage distribution of males and females who took the survey. Blue indicates males and red indicates females. Majority of the participants were males (53.79%)

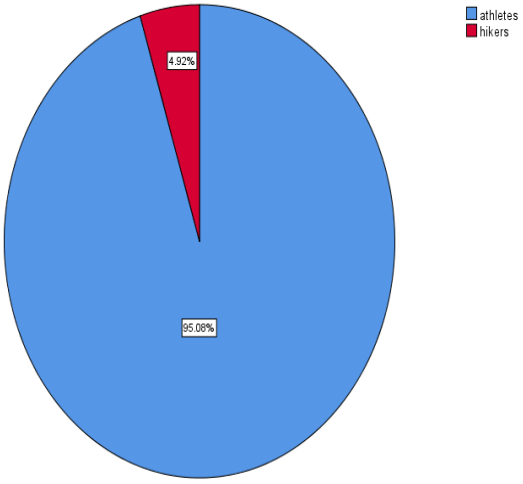

Fig.2: The pie chart depicts the percentage distribution on the awareness of people who are commonly prone for dehydration. Blue indicates athletes and red indicates hikers. Majority of the respondents answered (95%)athletes

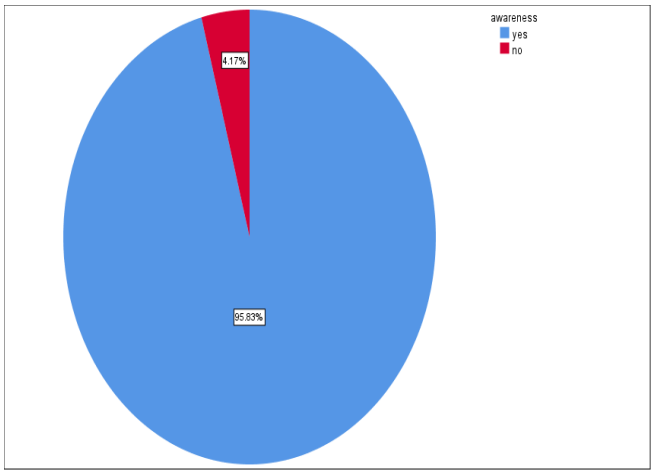

Fig.3: The pie chart depicts the percentage distribution of awareness of the term "dehydration". Blue represents yes, red represents no. 95.8% are aware and 4.1% are unaware

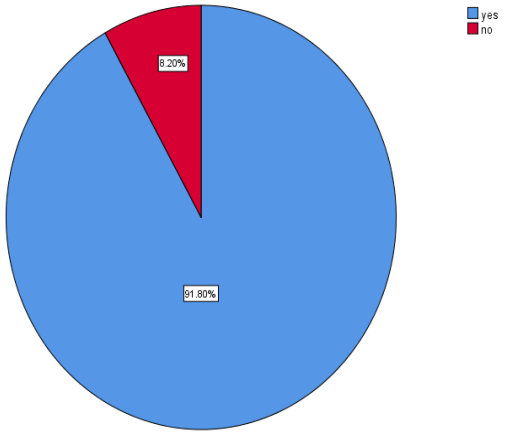

Fig.4: The pie chart depicts the percentage distribution of the awareness on the symptoms of dehydration. Blue represents yes, red represents no. 91.8% answered yes and 8.2% answered no.

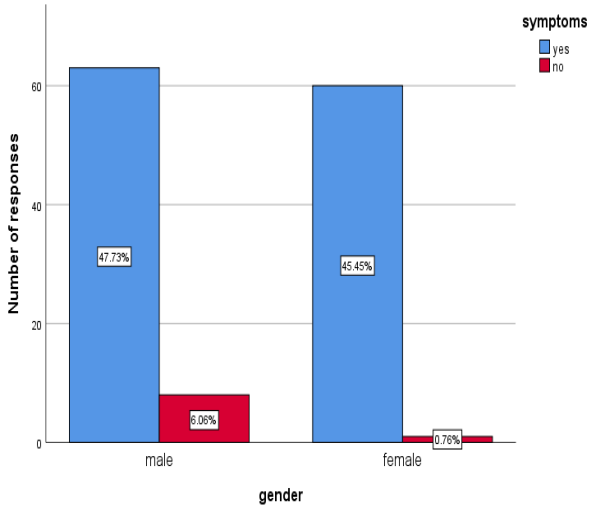

Fig.5: The bar chart depicting the comparison between gender and awareness of symptoms of dehydration. X axis represents gender and Y axis represents the number of individuals who are aware (blue) and not aware (red). Majority of the respondents were aware of symptoms of dehydration. However the results are not statistically significant. Chi square test P = 0.62 (p>0.05 - insignificant).

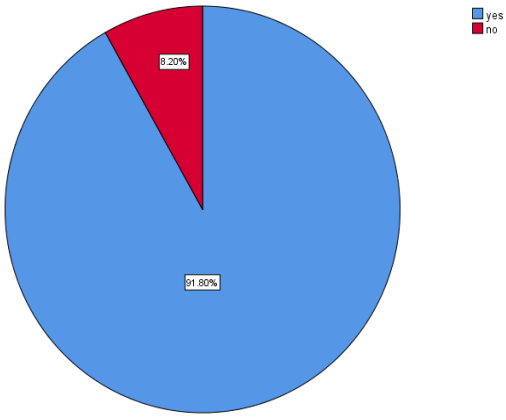

Fig.6: The pie chart depicts the percentage distribution of the people who have felt dehydrated before. Blue represents yes, red represents no. 91.8% of the study population had dehydration before.

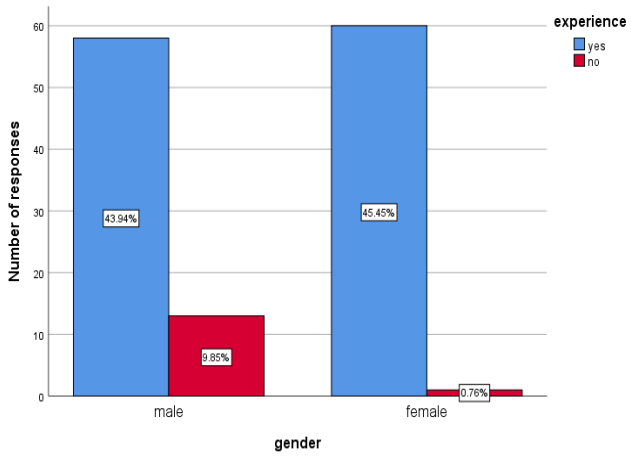

Fig.7: The bar chart depicting the comparison between the gender and experience of dehydration. X axis represents gender and Y axis represents the number of individuals who have experienced dehydration before (blue) and the individuals who have not felt dehydrated before (red). Females have experienced more dehydration compared to males and the difference is statistically significant. .Chi square test P=0.002 (p>0.05-statistically significant).

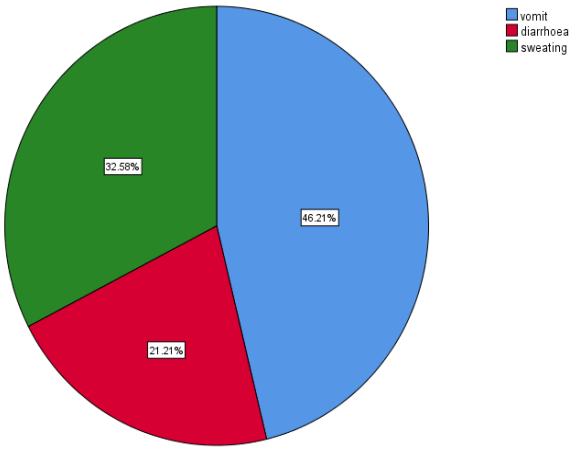

Fig.8: The pie chart depicts the percentage distribution of the awareness of causes of dehydration. Blue represents yes, red represents no. 46.2% of the study population were aware that vomiting causes dehydration.

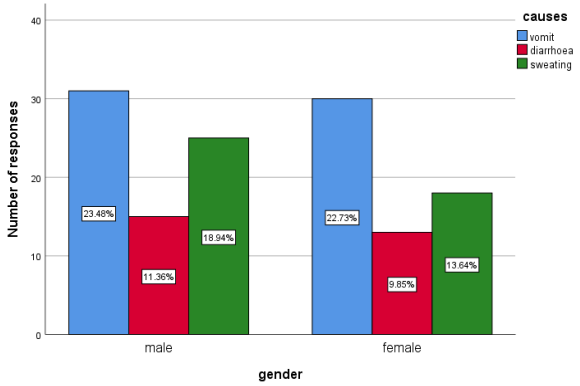

Fig.9: The bar chart depicting the comparison between gender and awareness on causes of dehydration. X axis represents gender and Y axis represents the causes of dehydration that is vomit (blue), diarrhoea (red), sweating (green). Majority of the males were aware that vomiting leads to dehydration (23.48%). However there is no significant difference between the gender and causes of dehydration. Chi square test P = 0.76 (p>0.05-statistically insignificant).

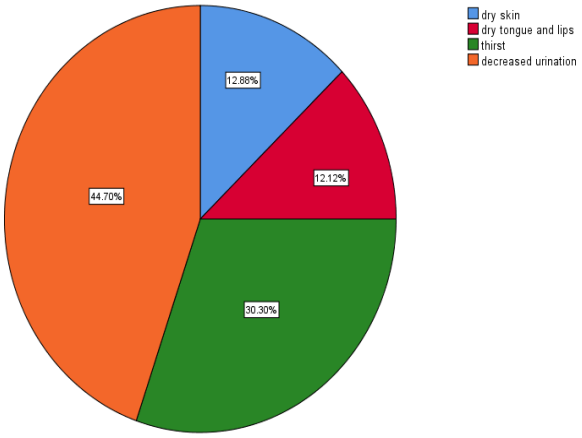

Fig.10: Pie chart depicts the percentage distribution of the awareness on common symptoms of dehydration. 12.8% answered dry skin (blue). 12% answered dry tongue and lips (red). 30.3% answered thirst (green). 44.7% answered decreased urination (orange).

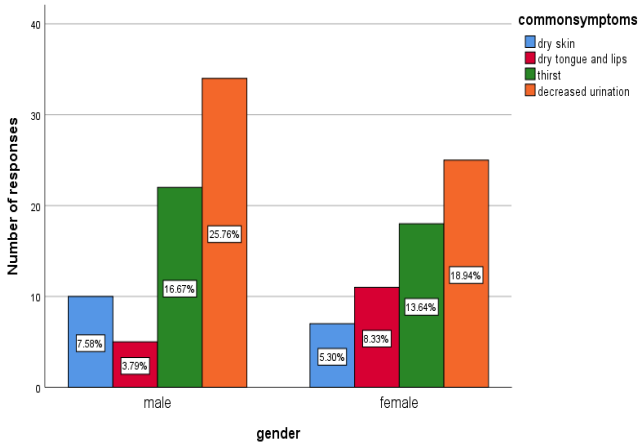

Fig.11: The bar chart depicts the comparison between gender and awareness on common symptoms of dehydration. X axis represents gender and Y axis represents the common symptoms of dehydration that is dry skin (blue), dry tongue and lips (red), thirst(green) and decreased urination(orange). However there is no significant difference between the gender and common symptoms of dehydration. Chi square test P= 0.28 (p>0.05-insignificant).

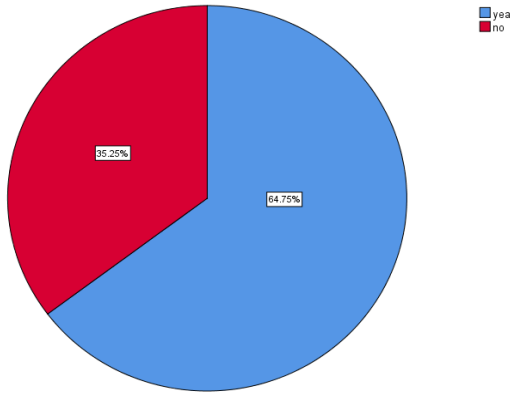

Fig.12: The pie chart depicts the percentage distribution of awareness on the role of water in the body. Blue represents yes, red represents no. 64.7% answered yes and 35.2% answered no.

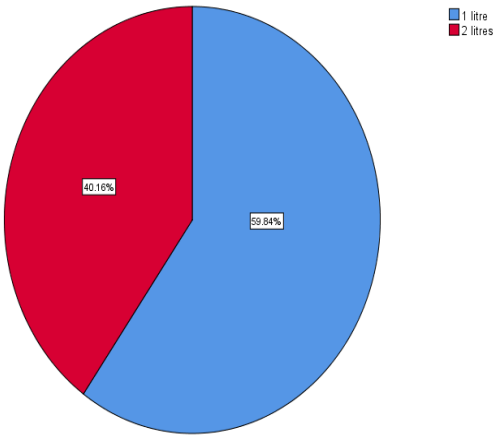

Fig.13: The pie chart depicts the percentage distribution of awareness on the amount of water an individual consumes. Blue represents yes, red represents no. 59.8% answered 1 litre per day.

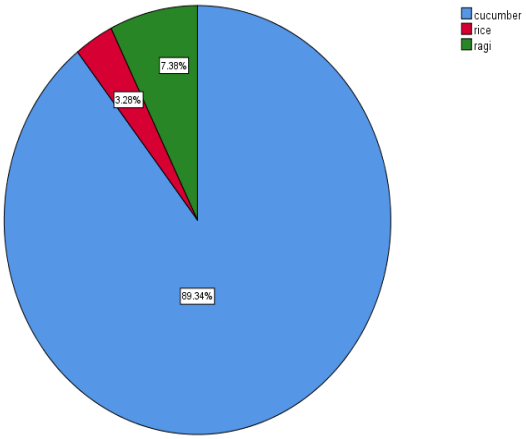

Fig.14: The pie chart depicts the percentage distribution of awareness of the food that helps with dehydration. 89.3% answered cucumber. 3.2% answered rice. 7.3% answered ragi.

CONCLUSION

The present study show that people have very good knowledge and are aware of dehydration and its health effects and have realised the need for awareness. The participants also had reported adequate water intake.

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