Research Article

WATER INTAKE AMONG SHARJAH

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ABSTRACT

Introduction: Water is an essential resource for preserving life on earth and maintaining body homeostasis. So, adhering to the recommended daily water intake (RDWI) of 2L or more limits many health hazards. **Objectives:** The purpose of the study is to determine the level of awareness and practices of water intake among Sharjah citizens in UAE. **Methods**: A cross sectional study was conducted among Sharjah citizens in the period between February and March 2014. A total of 360 participants (150 males and 210 females) above 18 years old were selected randomly in public places using nonprobability convenience sampling method to participate in an interview administered questionnaire. SPSS version 22 was used to analyze questionnaires' results. **Results:** Of the total 360 participants, 29% consumed the RDWI of 2L or more. Further, 36% of males and 23% of females met the RDWI. The mean daily water intake in our sample is 2 liters. 38% of participants with chronic diseases were adhering to the RDWI, which was significantly higher than healthy participants (p-value=0.009). About 77% of the total participants were aware that 2L or more is the RDWI. 37% of people who reported carrying their own water bottle were drinking adequate amount of water compared to 21% of those who didn't carry water bottles (p-value=0.001). **Conclusion:** The majority of the participants tend to ignore their RDWI of at least 2L/day despite being well aware of the amount and importance of adequate water intake. We therefore recommend initiatives to promote practices related to water intake.

INTRODUCTION

Water is a vital component for maintaining the integrity of life for all living things [1]. Water constitutes sixty percent of the human body weight and serves some physiological functions like delivering nutrients to cells and flushing toxins out of the body. Therefore, maintaining a positive water balance is crucial in regulating the body's homeostatic functions including body temperature and appetite control. Furthermore, humans' cognitive and physical performances correlate with water intake in terms of amount and frequency. A range of side effects can develop as a result of lack of water intake. Possible side effects include headaches, fatigue and increased respiratory rates. With severe water deficits exceeding 8% of total body weight, death can ensue. Due to the various consequences associated with insufficient water intake, maintenance of adequate water intake is regarded as a public health concern [2]. Further evidence shows that patterns of water intake have an effect on the overall health of elderly and the risk of developing kidney stones, obesity, breast and colon cancer [3].

The large variance in water consumption patterns among different populations across the globe calls upon the need to inquire more about this trending issue. The recommended daily water intake is two liters which is equivalent to eight glasses. Apart from the various health issues discussed prior, not adhering to the recommended daily water intake is reflected further by the suboptimal conditions of the skin. Skin manifestations that result include loss of skin turgor followed generally by the appearance of wrinkles. Furthermore, the level of education was believed to be pivotal for the pattern of water intake. In highlight of the role of education, a cross sectional study, using self-administered online questionnaires, conducted in Malaysia concluded that the majority of medical students in International University Malaysia are aware and consume the recommended eight glasses of daily water [2]. Furthermore, a study conducted in South Western Ontario established a proportional relation between educational level and water consumption among the sample [4].

A cross sectional study conducted in the middle schools in Florida concluded that students' water intake, on average, was

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below the recommended levels. The study cites that the factor most recognizably interfering with adhering to the recommended daily water intake was the over-consumption of junk food like soda and snacks [5]. This dilemma has been further explored by studies conducted in Europe and USA. In those studies, about seventy to eighty percent of total water intake was dominated by other groups of beverages like tea, coffee and alcoholic beverages. An additional contributor to dehydration is owed to the diuretic property of caffeinated beverages. Apart from the risk of dehydration, the extra calories packed by beverages, apart from water, has a major influence to the rise of the obesity epidemic. The prevalence of childhood obesity over the past years have been soaring. High sugar drinks account for 7.1% in the average US diet. Since water is calorie free, it is certain that it has no role in promoting for obesity. Data on water intake for the population provides useful information to target interventions for increasing awareness among citizens [3].

Epidemiological studies currently do not provide enough data on population hydration status [3]. Lack of statistical data in the United Arab Emirates (UAE) necessitates addressing people's knowledge and practices concerning water intake patterns. Multiple factors are involved in the discrepancies of water intake among individuals in the UAE. Such factors, in light of the individuals' lifestyles, include the eating, drinking and physical activity patterns adopted by each member within the community. In addition to those leading an active and busy lifestyle, the UAE's hot climate, plays a major role in dictating the underlying practice followed by individuals in maintaining their hydration status within an acceptable range.

MATERIALS AND METHODS

This study has been approved by the institutional board review at the University of Sharjah, college of medicine.

Study design

This was a cross sectional study conducted among Sharjah citizens between February and March 2014. Data collection was carried out at public places such as shopping malls, parks and an airport in the city of Sharjah located in the United Arab Emirates. Data about the sociodemographics, daily activities, level of awareness and practices of daily water intake were collected using structed interview-based questionnaires.

Study population

The sample size was calculated with a provided marginal error of 5%. 360 participants above 18 years of age, with Arabic or English proficiency, were interviewed in public places in the city of Sharjah. Any pregnant or breastfeeding women were excluded from the study. The sample was selected using a non-probability convenience sampling method.

Questionnaire development

The questions were developed, reviewed and structured to meet the study's objectives. The two main objectives this study tackles are concerned with the practices, knowledge and awareness regarding water intake in addition to its associated benefits. The questionnaire consists of 38 questions that address the objectives proposed. The informed consent form, included as the cover page of the questionnaire, served as a means by which those in charge of the study appreciate the

principles of ethics and good conduct in every encounter with the study sample.

Statistical analysis

Statistics software SPSS version 22was used to analyze the data. Means, percentages and chi square values were calculated to find the significant correlations between the different variables. Pie charts and bar charts were used to represent results of the study. A p-value less than 0.05 was considered significant.

RESULTS

A total of 360 participants enrolled into the study. 42% (n=150) of the participants were males, while 58% (n=210) were females.

The mean daily water intake calculated amongst the participants in the study was 1.5liters.

Chart 1 demonstrates that the majority of the study sample (71%) fall short behind consuming the recommended daily water intake of 2L. Despite that, chart 2 quotes an almost equivalent percentage of participants (66%) who perceive that their recommended daily water intake is optimal and thus adequate. Furthermore, chart 3 demonstrates a matching percentage of participants (63%) whom are aware of the recommended daily water intake.
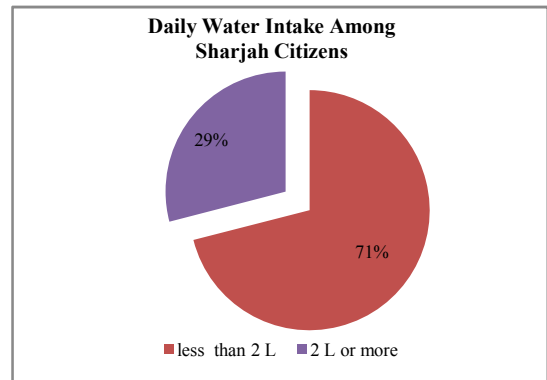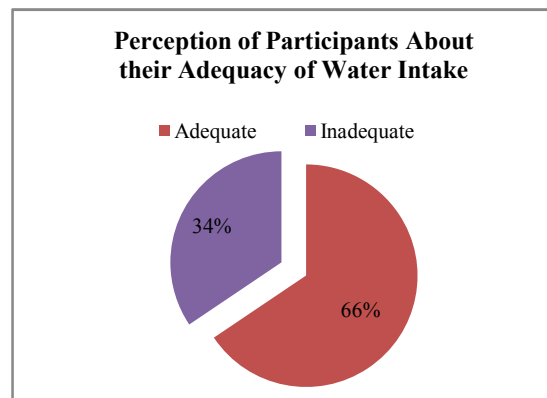

Chart 1

Chart 2

Many reasons, as outlined in chart 4, underlyparticipants' nonadherence to the habit of maintaining a sufficient daily water intake. Half of the participants attribute their tendency to forget as the primary reason for their lack of sufficient water intake.
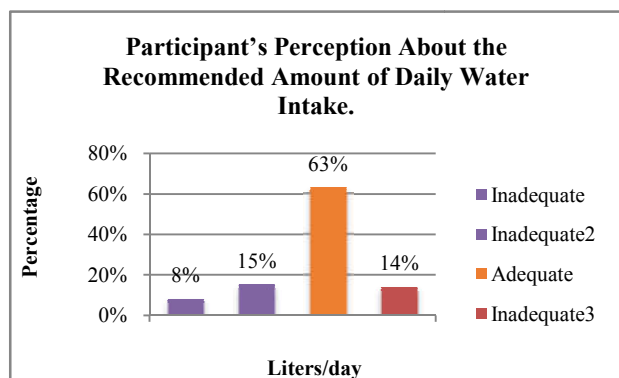
Participant's Perception About the Recommended Amount of Daily Water Intake.

Chart 3

The second two most common responses participants provided are being busy and lacking the feel of thirst. The least given responses, weighing at a percentage of 18% and 3% fall into the account of preferring other drinks to water and the inaccessibility to water respectively.
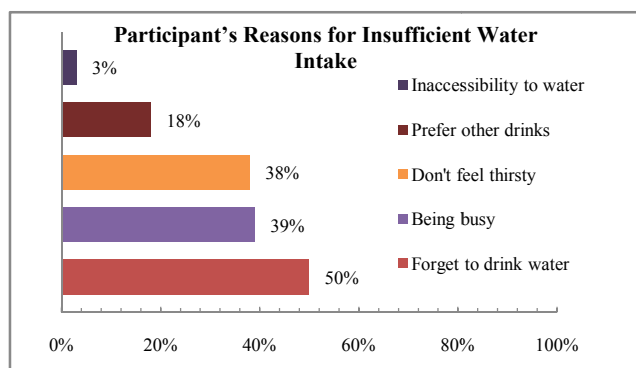

Chart 4

As per chart 5, more than 85% of the participants are well aware of the benefits concerning drinking adequate amounts of water on a daily basis. As illustrated by the bar chart, the list of the benefits related to adequate water intake include regulating body chemical reaction and body temperature, preventing constipation and maintaining a healthy skin.
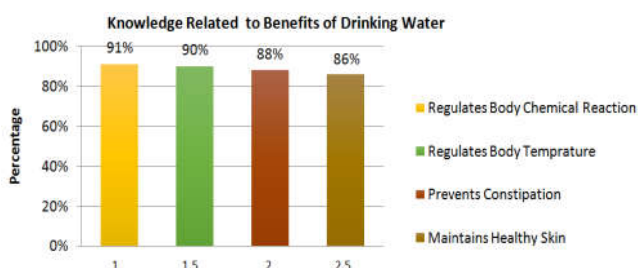

Chart 5

Chart 6 groups different factors including gender, health status and the habit of carrying a water bottle with the compliance rate of participants. Taking gender into account, males are compliant more than females with the recommended daily water intake by a difference of 13%. Participants with chronic diseases such as hypertension and diabetes are compliant to the recommended daily water intake by a percentage of 38% versus 26% compared to those participants with no chronic diseases. Finally, those who carry a bottle, with a percentage of 37%, exceed those who do not carry a bottle by 16% in terms of being compliant to an adequate daily water intake.
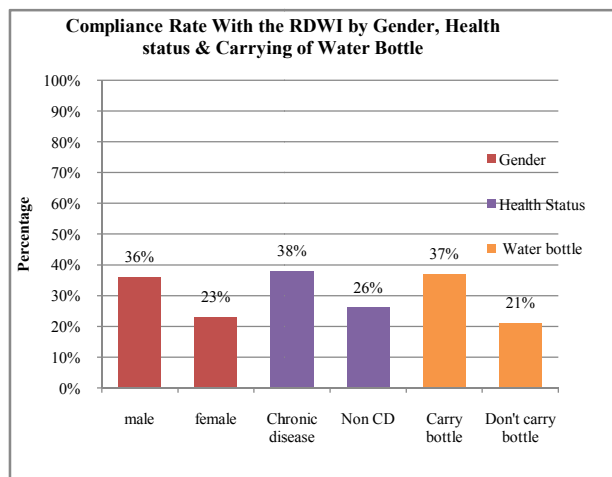

Chart 6

DISCUSSION

Based on the results of the study, since about two thirds of the participants were well aware of the recommended daily water intake, it is suggested the majority of the sample reflected a satisfying level of knowledge and insight into the matter.

Interviews played a major role highlighting the hindering factors contributing to the gap between the knowledge and practices related to sufficient water intake. Participants' daily lifestyle is the core motive that explains their compliance or reluctance to maintain a well hydrated status. Taking into account the fact that the majority of participants led a busy lifestyle, half of the participants responded by admitting to forgetting to drink water. Furthermore, elaboration by participants reveals that being busy encompasses having multiple responsibilities at work and home to meet. The increasing demands of the personal, social and occupational life are believed to have major influence on the attitude of the study's participants towards water intake. Though it is noted that other beverages are widely available, responses to not feeling thirsty exceeded those to preferring other drinks. Given the hot climate of the United Arab Emirates, the study was restricted to air-conditioned areas. Given the minimum level of physical activity of participants in such conditions, it is thought that the sample aren't as metabolically active as their peers from the working class or day to dayathletes. Hence, they feel thirsty less often. Due to the widespread availability of water at offices, malls and supermarkets, participants seldom regarded inaccessibility to water as a limiting factor to consume adequate amounts of water.

Operating and collecting data within a multiethnic and multicultural society, it was believed that the standard and level of education are pivotal for determining the compliance rate and awareness of the recommended level of the daily water intake(2). However, the study results did not support our evidence and proved the contrary. As an observation, the majority of whom responded to the questionnaire further supported their habit of consuming adequate amounts to their cultural and religious backgrounds.

Furthermore, participants with chronic diseases reported higher amounts of daily water intake in comparison to their peers with no reported background of diseases. Inquiry on this matter

reveals two main back to back supporting statements of conduct. As put forward by the participants with chronic diseases, the motive towards maintaing a better quality of life and preserving an optimal state of health explains the higher compliance rate to the recommended daily water intake among these crowds. On the other hand, it is an attributed token of appreciation to the physicians, following up with these groups of participants, who recommend a wide array of healthy habits, which include consuming adequate amounts of water on a daily basis. The majority of participants conveyed their gratitude to those physicians involved in raising awareness, encouraging and elaborating on the importance of adequate daily water intake and side effects of dehydration.

CONCLUSION

Based on the results of this pioneering study in the Sharjah emirate in the United Arab Emirates, it has been brought to our attention that the majority of participants were well aware of the recommended daily water intake. However, only one third of the participants were cumulatively adhering to the recommended level of daily water intake. Of whom which, two thirds considered to be adequate.

Citing from the study results, the majority of the participants responded not drinking adequate amounts of water to the fact that they would forget or are busy. Furthermore, supported by the fact that water is widely accessible in the UAE, we recommend individuals to maintain their hydration by carrying a water bottle. Given the lack of studies done in this topic, we recommend further studies to be conducted in this UAE community that will promote healthy practices toward adequate water intake.

Authorship

Each author has equally contributed to this research. The tasks have been equally distributed and divided among all authors. Thus, the following contributions are credited to each author enrolled in this research:

- Data collection including formulating and distributing questionnaires
- Data entry and analysis using the SPSS software
- Composing of the manuscript

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