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Assessment of Undergraduate Students' Knowledge and Consumption of Electrolytes



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Abstract

Background: Electrolytes and water are essential and work together to keep the body functioning. Thus, the under- and over-consumption of both can have physical consequences. **Objective:** The aim of this study was to assess the knowledge undergraduate students possess regarding electrolytes and hydration. **Methods:** After approval from the Institutional Review Board (IRB), this survey was conducted at Ouachita Baptist University (OBU) and was distributed via an email to all undergraduate students. Participation was voluntary, and consent was required prior to participation. The results were obtained through a Google form survey and organized in Google sheets. **Results:** The respondents ranged across all classifications. Most participants indicated that they consume electrolytes on a less than daily basis. Greater than 50% of the respondents responded that they do not drink enough water which corresponds with the results that 50% of the respondents also drank less than 40 oz of water a day. **Conclusion:** Overall, Ouachita Baptist University undergraduate students have a good working knowledge of electrolytes and hydration. However, it would be remiss not to incorporate more information dissemination of information to students.

Purpose Statement

The purpose of this research was to determine the knowledge that undergraduate students have regarding electrolytes and hydration and assess where further dissemination of knowledge is needed. Considering the essential nature of water and electrolytes and the limited research in this specific subject, the knowledge and consumption thereof by college students was deemed a needed area of assessment.

Introduction

An imbalance of electrolytes and water in the body is detrimental to the normal functioning of the body and can lead to lightheadedness, tremors, and muscle cramping.¹ Electrolyte supplements are most often used during sports or when someone becomes ill, but it is also important that electrolytes are part of the daily routine through diet and supplements, if enough is not obtained through the diet.

There is limited information regarding the subject specific matter in the current literature. Most of the literature focuses on hydration and electrolyte consumption regarding athletes and illnesses. However, the habits and knowledge of non-athlete undergraduates regarding hydration and electrolytes is not well known, which can be detrimental due to the essential nature of water and electrolyte consumption.² Though not as high risk as athletes, students who perform physical activities and spend time outside could still be at risk.

Methodology

A review of literature was conducted and based on gaps in research, a survey was created and tested on a small level for reliability and validity by classmates and professors. The final survey, informed consent form, and proposal were sent to the Institutional Review Board, who approved it in an expedited review. The survey was then sent out to the residential Ouachita Baptist University (OBU) student population.

To conduct the survey, Google forms was used and sent out via an email to all OBU undergraduate students. The first section contained the informed consent, which the participants had to sign with their email as an electronic signature representing their consent. The survey consisted of ten multiple choice and four yes/no questions. The type of questions was broken up into several categories. The first category was four questions assessing the participant's knowledge of electrolytes. The second category was three questions concerning the participants consumption of electrolyte supplements. The third category was three questions concerning the participants hydration status. And the fourth category was two questions assessing the participant's knowledge of hydration.

The results from the online survey were put in Microsoft Excel sheets to analyze the data. The statistics were quantitative and descriptive.

Results

The respondents were from all four years. Seventeen responded that they were freshman, and the same number identified themselves as seniors. Fourteen of the respondents were juniors, 10 were sophomores, and 2 students stated that they were 'other'.

Most of the respondents were Caucasian (90%). The categories African American, Latino or Hispanic, and Asian each had one respondent identify with them and 3 students responded that they were of 2 or more ethnicities. (Table 1)

Table 1. Demographics

Classification	Ethnicity	Gender	
Freshman	17 Caucasian	54 Male	16
Sophomore	10 African American	1 Female	42
Junior	14 Latino or Hispanic	1 Prefer not to say	1
Senior	17 Two or more	3 Other	1
Other	2 Asian	1	

Results, continued

Of the 60 students that participated in the survey, only 7 answered that they consume electrolytes on a daily basis (11.7%). The remainder of the participants consume electrolyte beverages on less frequent basis. See Figure 2 for the data.

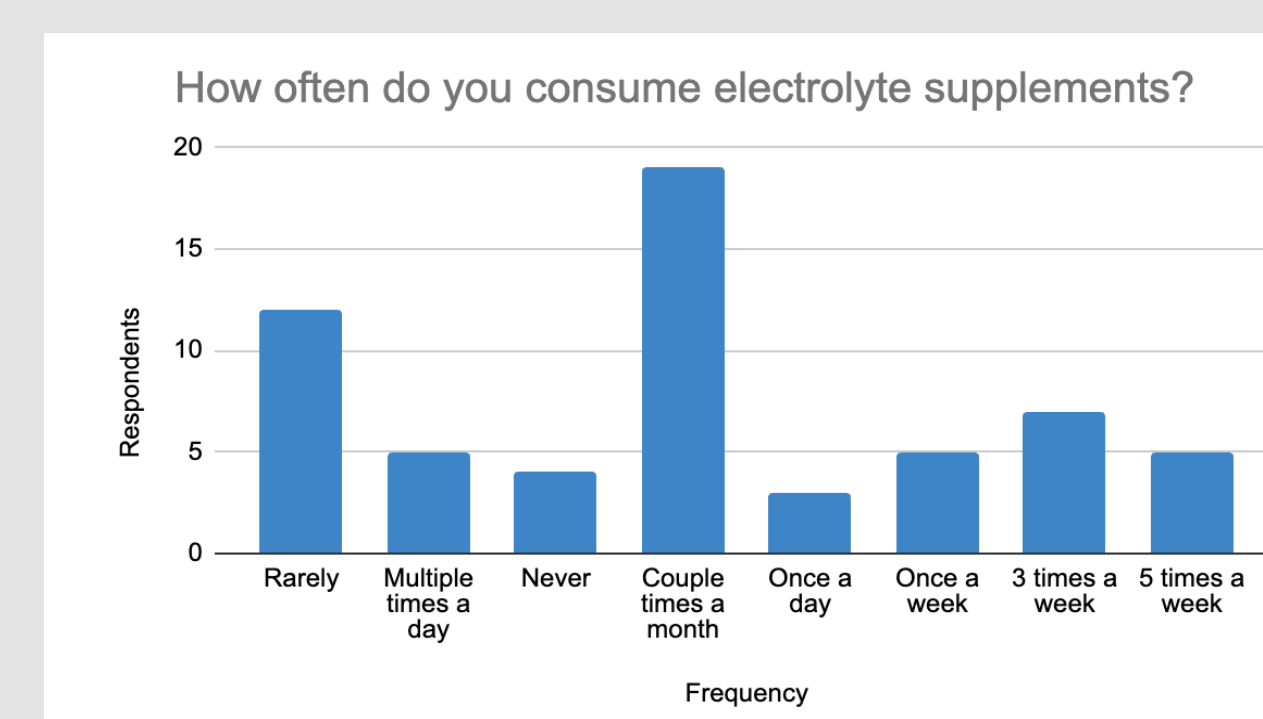


Figure 2. Electrolyte frequency

Greater than 50% of participants responded that they do not think they drink enough water (refer to Figure 3). When asked about their actual water consumption, Figure 4 shows that 50% drank greater than 40 oz and 50% drank less than that amount.

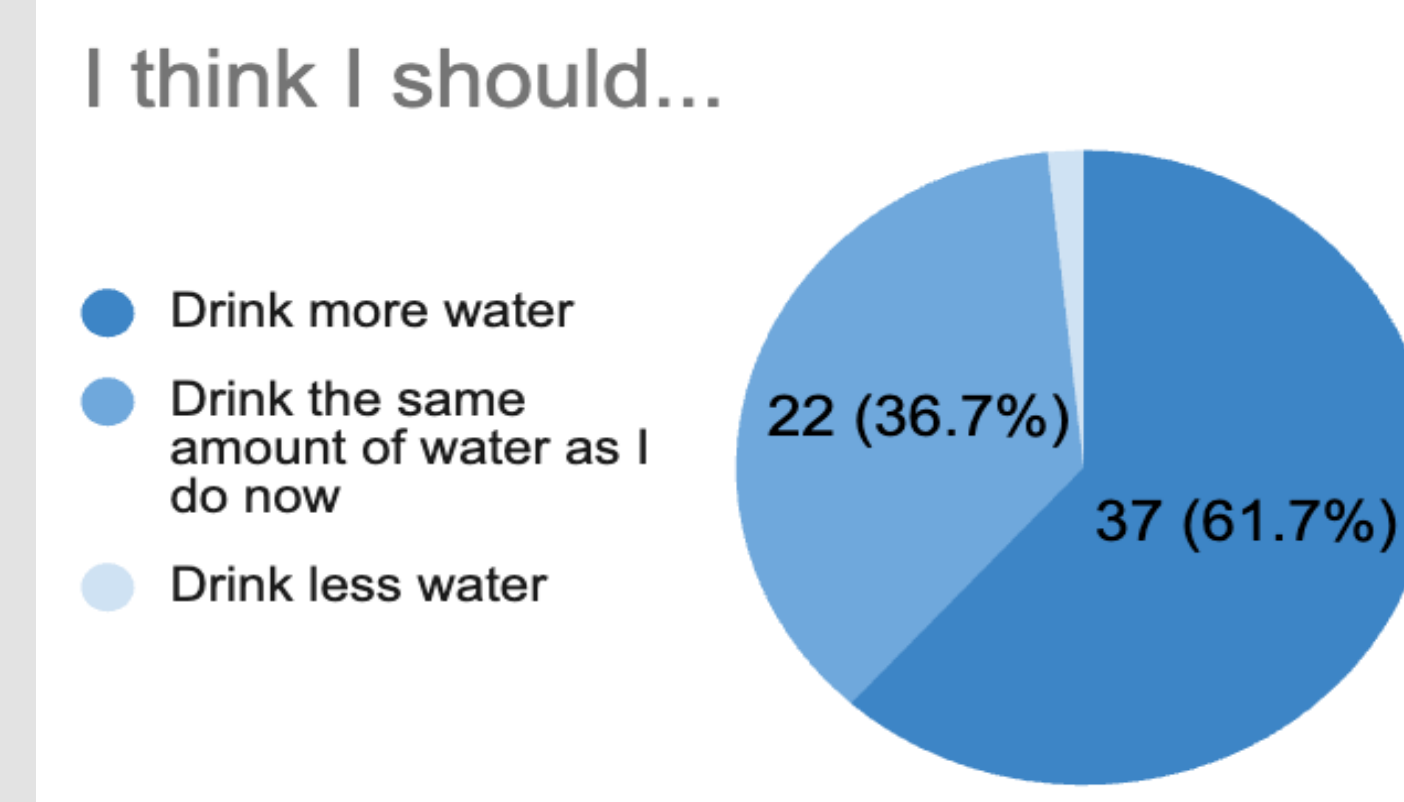


Figure 3. Water intake future action

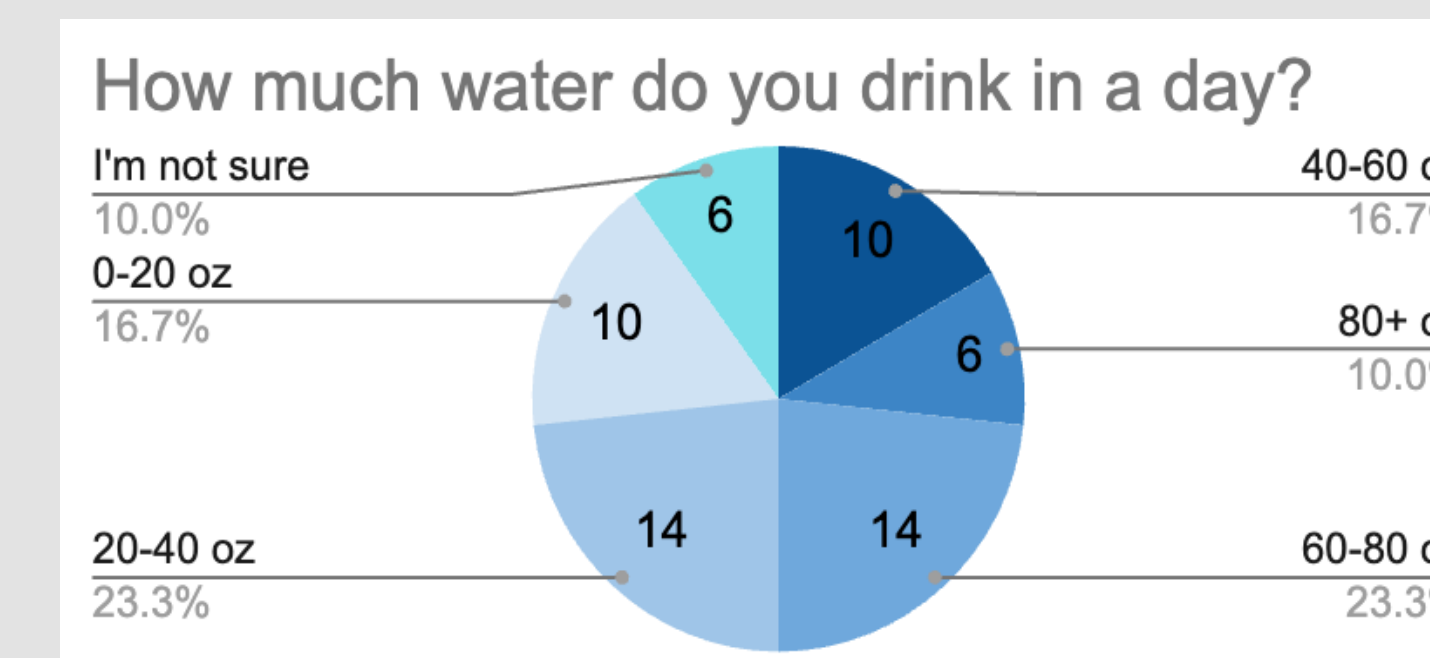


Figure 4. Reported water intake

Of the respondents, 85% selected the desired answer that feeling thirsty, lightheaded, and having dark-colored, strong-smelling urine as signs of dehydration (51 respondents). Nine respondents erroneously chose urinating too much as a sign of the dehydration(15%). See Figure 5 for the data.

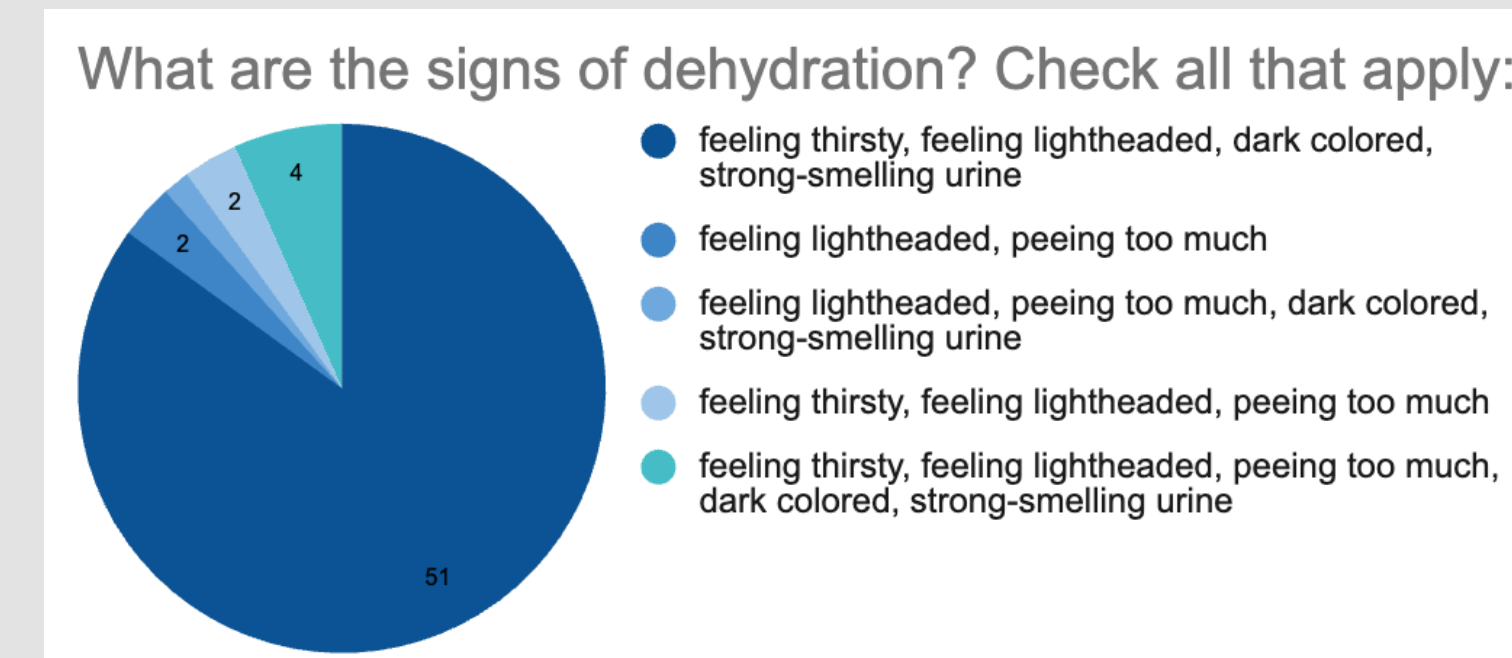


Figure 5. What are the signs of dehydration?

Conclusion

While there was variation in the demographics regarding gender and classification, most of the respondents were white which can lead to limitations in the data. Moreover, a limitation of the study is that "African" was not included in the list of options for ethnicity, which excluded the international students from that continent.

Overall, OBU undergraduate students have a good working knowledge of electrolytes and hydration. While electrolytes are essential, it is possible to overconsume them, and most of the respondents consume them with lower frequency than once a day.

The fact that greater than 50% of respondents believe they need to drink more water combined with the 50% of the respondents drink less than 40oz a day indicates that while students have knowledge of hydration needs, they may need more knowledge on ways to optimize obtaining it.

Since it can be difficult to know how much water one needs it was encouraging to see that the vast majority of the participants showed that they know what the indicators are for dehydration and are aware of their own consumption. There does appear to be a disconnect between the knowledge of the students and the actions they took regarding hydration.

In conclusion, students should have access to a higher quality of education regarding hydration and electrolytes. It would be beneficial to provide education on strategies for the adequate consumption of water daily and when it is appropriate to consume electrolyte beverages.

References

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