

## A CROSS SECTIONAL SURVEY ON KNOWLEDGE, ATTITUDE AND PRACTICE OF STAFF MEMBERS TOWARDS DAILY WATER INTAKE DURING WORKING HOURS IN INTERNATIONAL MEDICAL UNIVERSITY, MALAYSIA.

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### ABSTRACT

**Background:** The knowledge, attitude and practice of staff members towards water intake during working hours in International Medical University have not been investigated extensively. The aim of this research was to explore it.

**Method:** This study was conducted among the staff members in International Medical University. A validated, online self-administered questionnaire was used to gather the data. Descriptive statistics were applied using SPSS® version 18.

**Results:** Most of the respondents (75%) know the daily intake of water for normal adult. The results showed that there was significant association between the respondents' understanding of the 'daily intake of water for normal adult' with Nature of work ( $p=0.001$ ) and age ( $p=0.001$ ).

**Conclusions:** Most of the staff members feel that drinking water location is one of contributory factor for drinking less water. Further studies can be conducted by exploring the knowledge, attitude and practice of staff members in other universities of Malaysia.

**Keywords:** Daily water intake, knowledge, attitude, practice, drinking water, International Medical University, Malaysia, working hours, dehydration.

### INTRODUCTION

Water is the body's principal chemical component and makes up about 60 percent of the human body weight. Every system in the body depends on water. For example, water flushes toxins out of vital organs, carries nutrients to your cells and provides a moist environment for ear, nose and throat tissues (Bengt Andersson, 2008).

Lack of water can lead to dehydration, a condition that occurs when human don't have enough water in the body to carry out normal functions. Even mild dehydration can drain the energy and make them tired. A sufficient water intake is needed to combat dehydration, which saps energy, causes fatigue and reduces concentration (Alfred Gilman, 2007). The standard 'eight glasses a day' of water, which equates to two litres, has been widely reported as the recommended daily intake for water. Lack of water content in the body can result in decreased skin condition in which the resistance and enzyme function is not optimal, so the skin looks dry, rough, dull, wrinkled and looks fresh (Angela Sirigu et al 2006).

Although it's a great idea to keep water within reach at all times, it is not needed to rely only on what human drinks to meet your fluid needs. What human eat also provides a significant portion of the fluid needs. On average, food provides about 20 percent of total water intake. For example, many fruits and vegetables, such as watermelon and tomatoes, are 90 percent or more water by weight (Peter H. Gleick, 2009).

In addition, beverages such as milk and juice are composed mostly of water. Even beer, wine and caffeinated beverages — such as coffee, tea or soda — can contribute, but these should not be a major portion of your daily total fluid intake. Water is still the best because it's calorie-free, inexpensive and readily available. To ward off dehydration and make sure the body has the fluids it needs, make water as beverage of choice. It's also a good idea to drink a glass of water or other calorie-free or low-calorie beverage with each meal and between each meal (Kristal-Boneh, 1988).

Although uncommon, it is possible to drink too much water. When your kidneys are unable to excrete the excess water, the electrolyte (mineral) content of the blood is diluted, resulting in low sodium levels in the blood, a condition called hyponatremia. Endurance athletes, such as marathon runners, who drink large amounts of water, are at higher risk of hyponatremia (Simon Webba, 2003).

Healthy humans regulate daily water balance remarkably well across their lifespan despite changes in biological development and

exposure to stressors on hydration status. Acute or chronic body water deficits result when intakes are reduced or losses increase, but day-to-day hydration is generally well maintained so long as food and fluid are readily available. However, strenuous physical exercise and heat stress can greatly increase daily water needs, and the individual variability between athletes can be substantial (Michael N. Sawka, 2007).

The Nationwide Food Consumption Surveys indicate that a portion of the population may be chronically mildly dehydrated. Several factors may increase the likelihood of chronic, mild dehydration, including a poor thirst mechanism, dissatisfaction with the taste of water, common consumption of the natural diuretics caffeine and alcohol, participation in exercise, and environmental conditions. Dehydration of as little as 2% loss of body weight results in impaired physiological and performance responses. New research indicates that fluid consumption in general and water consumption in particular can have an effect on the risk of urinary stone disease; cancers of the breast, colon, and urinary tract; childhood and adolescent obesity; mitral valve prolapse; salivary gland function; and overall health in the elderly. Dietitians should be encouraged to promote and monitor fluid and water intake among all of their clients and patients through education and to help them design a fluid intake plan (Susan M Kleiner, 1999).

### METHODS

#### Study design

This was a cross-sectional study carried out at International Medical University, Bukit Jalil campus in Malaysia. Information about the knowledge, attitude and practice of staff members towards water intake during working hours were obtained by the use of a structured online self-administered questionnaire.

#### Study population

100 respondents were included regardless of gender, ethnicity and nature of work from International Medical University, Bukit Jalil campus. The exclusion criteria include those that had communication barrier, and were not willing to participate in the study.

#### Development of questionnaire

Novel questions were developed in accordance with the study objectives. The questionnaire consisted of four sections (Table 1)

with a total of 20 questions. Five questions (section B) evaluated knowledge towards daily water intake using a Likert scale of one to five reflecting 'Almost to 'none'. Five questions (section C) evaluated Attitude towards daily water intake using a Likert scale of one to five reflecting 'Strongly Agree' to 'strongly disagree'. Five questions (D) evaluate the practice towards daily water intake. The questionnaire was worded in English language and was not translated to other languages as the participants were graduates.

**Validation of questionnaire**

Data were collected by interviewing the respondents using a structured questionnaire. The content of the questionnaire was piloted among 20 respondents. This was done to validate whether the respondents are able to comprehend the questions being asked. As a result, the questionnaire was validated and modified accordingly. Furthermore, reliability of the questionnaire was assessed using Cronbach-alpha test and the value was found to be 0.78 which was considered reliable.

**Statistical analysis**

Both descriptive and inferential data analyses were carried out using Statistical Package for the Social Sciences, SPSS® version 18 with 0.05 as the level of significance. Descriptive statistics were used to analyze frequency, percentage and mean. Chi-square test was performed to measure the association between the demographic characteristics and responses to understanding, attitude towards MSG. The variables analyzed using Spearman test was similar to that analyzed using Chi-square test.

**RESULTS AND DISCUSSION**

**Demographic characteristics**

Out of the 100 respondents, 81% of the respondents were females while 19% consisted of males. 49% of the females were in the age group of above 35. The demographic characteristics of respondents are summarized in Table 1.

**Table 1: Demographics profile of respondents.**

Characteristics	Frequency	Percentage (%)
<b>Gender</b>		
Female	81	81.0
Male	19	19.0
<b>Age in years</b>		
Below 18	03	3.0
18-25	24	24.0
26-35	16	16.0
Above 35	57	57.0
<b>Nature of work</b>		
Teaching	84	84.0
Non-teaching	14	16.0
Administration	02	02.0
Others	00	00
<b>Ethnicity</b>		
Chinese	90	90.0

**Table 2: Knowledge towards drinking water.**

Item	Percentage (%)				P value				
	Almost	Something	Very little	None	Gender	Age	Ethnicity	Nature of work	of
Do you know that air conditioned room can cause dehydration?	1	1	1	97	0.441	0.838	0.953	0.100	
Do you know the daily intake of water for normal adult?	1	14	75	10	0.867	0.001*	0.999	0.001*	
Do you know that less intake of water cause health hazards?	5	20	53	21	0.586	0.014*	0.826	0.963	

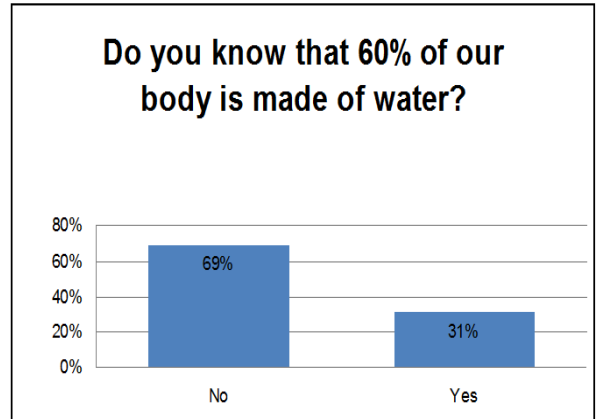
\*p<0.05

There was a statistically significant association between the question the 'daily intake of water for normal adult' with age (p= 0.001) and with Nature of work (p=0.001). Practice towards the daily water intake:

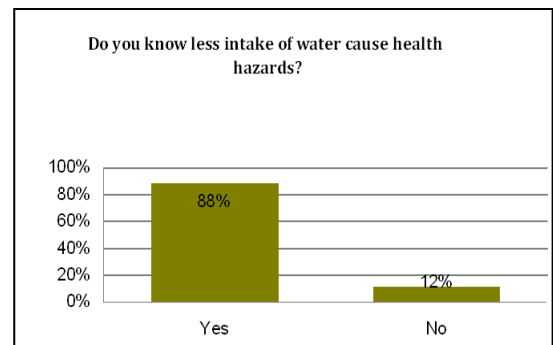
Malay	05	5.0
Indian	04	4.0
Others	01	1.0

**Knowledge towards drinking water**

More than half of the respondents (69%) answered that they that 60% of our body is made of water (Figure 1) while 88% know that less intake of water cause health hazards (Figure 2).



**Figure 1: Frequency of hearing that 60% of our body is made of water**



**Figure 2: Frequency of knowing that less intake of water cause health hazards**

Table: 2 show the frequency analysis of respondents' Knowledge towards drinking water. Among the respondents, (97%) do not know that air conditioned room can cause dehydration. Three quarter (75%) of the respondents know the daily intake of water for normal adult. Meanwhile, 53% of the respondents are aware that less intake of water cause health hazards. This shows significant association with age of respondents (p=0.014) where 41.5% out of the 53% are from the age group of above 35.

The frequency analysis results of respondents' practice towards daily water intake are presented in Table 3. "Sometimes" was the most common answer for questions which assessed on their practice towards the daily water intake. Only minorities of the respondents often drink water in a day during work hours (16%) and carry their own water bottle every day (14%). Meanwhile, more than one

quarter (28%) of the respondents feel they have been dehydrated during working hours.

#### Attitude towards the daily water intake

The frequency analysis results of respondents' attitude towards daily water intake are presented in Table 4. Most of the staff

members (76%) feel that drinking water location is one of contributory factor for drinking less water. Only minorities of the respondents feel that awareness program about daily water intake change their outlook towards regular drinking (10%).

**Table 3: Practice towards daily water intake**

Item	Percentage (%)				P value			
	Every time	Most of the time	Some time	Very rare	Gender	Age	Ethnicity	Nature of work
How often do you drink water in a day during work hours?	16	10	48	26	0.117	0.497	0.778	0.690
Do you carry your own water bottle every day?	14	14	52	20	0.509	0.358	0.818	0.241
How much amount of water do you drink in a day approximately during work hours?	12	23	42	23	0.609	0.725	0.707	0.156
Have you ever been dehydrated during working hours?	14	28	40	18	0.707	0.317	0.679	0.065
Have you ever experienced any other health problem due to lack of drinking water?	12	19	50	19	0.715	0.304	0.799	0.058

**Table 4: Attitude towards daily water intake**

Characteristics	Frequency	Percentage (%)
I feel that drinking water location is one of contributory factor for drinking less water	76	76.0
I feel that carrying own drinking water bottle will help to drink more water.	08	8.0
I feel that awareness program about daily water intake change my outlook towards regular drinking	10	10.0
I feel that my thirst is less in air conditioned rooms?	04	4.0
I feel that the quality of water makes me to drink fewer amounts	02	2.0

#### CONCLUSIONS

Majority of the respondents are females and were dominantly from the Chinese ethnicity. Most of the respondents have never heard that air conditioned room can cause dehydration. However most of them know the daily intake of water for normal adult. Most of the staff members feel that drinking water location is one of contributory factor for drinking less water. The output of this study gave a significant data about the knowledge, attitude and practice of staff members towards water intake during working hours in International Medical University. Further studies can be conducted by exploring the knowledge, attitude and practice of staff members in other universities of Malaysia.

#### REFERENCES

- Bengt Andersson. (2008) 'Regulation of water intake', *Physiological reviews*, Vol. 58 No. 3, pp. 582.
- Alfred Gilman. (2007) 'the relation between blood osmotic pressure, fluid distribution and voluntary water intake', *American Journal of Physiology*, Vo. 120 No. 2, pp.323-328.
- Angela Sirigu, Jean-René Duhamel, Laurent Cohen, Bernard Pillon, Bruno Dubois and Yves Agid. (2006) 'The Mental Representation of Hand Movements after Parietal Cortex Damage', *Science*. Vol. 273 No. 528, pp.1564-1568.
- Peter H. Gleick. (2009) 'Basic Water Requirements for Human Activities. Meeting Basic Needs', *Water International*. pp. 83-92.
- Kristal-Boneh E, Glusman J. G, Chaemovitz C and Cassuto Y. (1988) 'Improved thermoregulation caused by forced water intake in human desert dwellers', *European Journal of Applied Physiology and Occupational Physiology*, Vol. 57 No. 2, pp.220-224.
- Simon Webba, Thomas Ternesb, Michel Gibertc and Klaus Olejniczak. (2003) 'Indirect human exposure to pharmaceuticals via drinking water', *Toxicology Letters*, Vol. 142 No. 3, pp.157-167.
- Michael N. Sawka, Samuel N. Cheuvront and Robert Carter. (2005) 'Human Water Needs', *Nutrition Reviews*, Vol. 63 No. s1, pp.S30-S39.
- Susan M Kleiner. (1999). 'Water: An Essential but Overlooked Nutrient', *Journal of American Dietician Association*. Vol. 99 No. 4, pp.411.