



Original Article

Knowledge, Attitude, and Practices of Soft Drinks and its Association with Gender among Nursing Students, Karachi, Pakistan

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ABSTRACT

It has been recognized that soft drinks have become the third most consumed beverage worldwide. In contrast, it has a detrimental effect on health. **Objective:** To assess the knowledge, attitude, and practices of soft drink consumption and determine its association with gender among nursing students in Karachi, Pakistan. **Methods:** This cross-sectional study was accomplished at three nursing institutions in Karachi from 1st January 2018 to 30th June 2018. In this study, there was a total of 369 students of male and female gender were enrolled for the study. Subjects were approached by a non-probability convenient sampling method. Self-structured and pretested questionnaire was used for the collection of data. **Results:** Among 369 subjects, the majority of 261 (70.7%) were male, and 315 (85.4%) were single. 310 (84%) participants knew the deleterious effects of soft drinks. More than 85% admitted that soft drinks are bad for health. Two knowledge questions heard about soft drinks and the idea of the bad effects of soft drinks showed statistically significant associations with gender variables (p -values < 0.05). Whereas only attitude questions regarding the amount of drink students prefer and one practice question related to favorite drink were found to be significantly associated with gender variable (p -values < 0.05). **Conclusion:** Most nursing students had a fair knowledge of soft drink and their hazardous effects on their health. Despite knowing the harmful consequences, nursing students consume soft drinks.

INTRODUCTION

In recent years, the consumption of soft drinks has become a trend worldwide [1]. Recent research has established that soft drinks have become the 3rd most consumed beverage across the globe [2]. It has been affirmed by current research that carbonated soft drinks are recognized as an integral part of welcoming guests [3]. Despite knowing its deleterious adverse effects on health, people consume fizzy beverages frequently [4]. Soft drinks are carbonated drinks that contain water, carbon dioxide,

color, synthetic flavors, and preservatives [5-6]. It is shown in a current research study that there is nothing healthy about carbonated drinks [7]. It is established by research that a healthy diet could promote optimum health, growth, and mental development [8]. However, soft drinks pose risks to an individual's health, including obesity, tooth decay, kidney diseases, osteoporosis, nutritional deficiencies, heart disease, and neurological disorders [9-11]. Soft drinks contain added sugar which may cause

overweight, obesity [12], and type-II diabetic mellitus [13]. In addition, consuming soft drinks may increase the risk of insulin resistance and inflammation [14]. Research revealed that the main reasons for consuming carbonated drinks are dieting, good taste, hot weather, more energy, refreshment, and better sports performance [15]. Despite the risk, the consumption of carbonated drinks is highest among young students [16]. Considering that incredible change in dietary habits among youth has been observed in several populations. According to the new pattern, carbonated drinks have replaced the healthy diet including vegetables, fish, and fruits that have been considered good for health [17]. There is a paucity of data related to carbonated drinks among nursing students in the Pakistani context. Hence, the present study has been undertaken to assess the knowledge, attitude, and practices of soft drink consumption and determine its association with gender among nursing students in Karachi, Pakistan.

METHODS

A cross-sectional study was employed at a public-sector organization (Institute of Nursing, Dow University of Health Sciences) and two other private-sector organizations (New Life College of Nursing and Karachi Kings College of Nursing) in Karachi. The study duration was six months, starting from 1st January 2018 to 30th June 2018. For the determination of sample size OpenEpi version 3.0 was used, considering a 95% confidence level, the sample size of 369 was calculated for both genders of subjects. Both genders of nursing students with diplomas and undergraduates from the first year to the final year were included in the study. The subjects who were not willing to participate and enrolled in one-year post-basic specialty programs were excluded from the study. Subjects were approached by the non-probability convenient sampling method. Data were collected by using an adapted and validated questionnaire. The researcher coded all questionnaires to maintain anonymity. After taking written informed consent, nursing students were invited to fill out the questionnaire. The participation of subjects was fully voluntary and guaranteed the confidentiality of participants. Institutional permissions were obtained from the respective organization. Data was entered and analyzed through SPSS version 21.0. Frequency and percentages were calculated for knowledge, attitude, and soft drink consumption practices. The Chi-square test of independence was employed to determine any potential association with the gender of the nursing students with a level of significance set as $\leq 5\%$.

RESULTS

Out of 369 study participants, the majority, 261 (70.7%), were male, and 315 (85.4%) were single. Two third of the

participants, 245 (66.4%) were 18 to 23 years old. Regarding discipline, 178 (48.2%) were studying for a nursing diploma (Table 1).

Demographic factor	n (%)
Age (Years)	
18-23	245 (66.4%)
29-29	102 (27.6%)
30-35	22 (6%)
Gender	
Male	261 (70.7%)
Female	108 (29.3%)
Marital Status	
Single	315 (85.4%)
Married	54 (14.6%)
Discipline	
Diploma in Nursing	178 (48.2%)
Bachelor in Nursing	191 (51.8%)

Table 1: The Socio-Demographic factors of study participants (N=369)

Table 2 depicts the Level of knowledge, attitude, and practice of soft drinks among nursing students. There were a total of 11 questions: three for knowledge, three for attitude, and five for practice. Most participants, 351 (95%), were familiar with soft drinks. 310 (84%) participants knew the deleterious effects of soft drinks. More than 85% admitted that soft drinks are bad for health. Half of the participants chose soft drinks due to taste, and 216 (59%) reported using soft drinks at home with family and friends. Most students, 282 (76%), liked soft drinks. When asked about quitting soft drinks, 243 (66%) agreed to refrain from soft drinks. Furthermore, 187 (51) students loved to use fruit juice, whereas percentages of dew and coca cola were 17% and 16%, respectively, and 136 (37%) stated to consume soft drinks weekly.

Questions	n (%)
Knowledge	
Have you heard about soft drinks?	
Yes	351 (95)
No	18 (5)
Do you have any idea of the bad effects of soft drinks?	
Yes	310 (84)
No	59 (16)
Do you think having these soft drinks is?	
Good for health	19 (5)
Bad for health	318 (86)
Do not Know	32 (9)
Attitude	
How do you choose your soft drinks?	
TV	17 (4)
Easy availability in the market	38 (10)
Family and friends	110 (30)
Taste	183 (50)
Others	21 (6)

At a time, how much of these drinks do you prefer having?	
A glass 100ml	222 (60)
A glass bottle 500ml	86 (23)
A pet bottle 500ml	42 (11)
More than 500 ml	19 (5)
When do you like having these drinks?	
When at home with family and friends	216 (59)
When at University/College with colleagues	107 (29)
When feel thirsty	46 (12)
Practice	
Do you enjoy having soft drinks?	
Yes	282 (76)
No	87 (24)
If asked to, would you stop drinking soft drinks?	
Yes	243 (66)
No	126 (34)
What would you choose from these drinks?	
Fruit juice	187 (51)
Carbonated drink	57 (15)
Slice	22 (6)
Milk	91 (25)
Others	12 (3)
How often do you consume soft drinks?	
Daily	50 (14)
Every alternate day	49 (13)
Weekly	136 (37)
Monthly	112 (30)
Never	22 (6)
What is your favorite drink?	
Pepsi	48 (13)
Coco cola	57 (16)
7up	55 (15)
Dew	62 (17)
Sprite	38 (10)
Others	109 (29)

Table 2: Level of knowledge, attitude, and practice of soft drinks among nursing students (N=369)

Table 3 reveals the association of knowledge, attitude, and practice of soft drinks with the gender of nursing students. Two knowledge questions heard about soft drinks, and the idea of the bad effects of soft drinks showed statistically significant associations with gender variables (p -values < 0.05). Only attitude questions regarding the amount of drink students prefer were significantly associated with gender (p -value=0.004). The type of drink from practice questions was again the only variable that reached the significance level; however, other variables, such as enjoying a soft drink, quitting a soft drink, and choosing a drink, were close to the significance level.

Questions	Gender		p-value
	Male (f) %	Female (f) %	
Knowledge			
Have you heard about soft drinks?			
Yes	255 (69)	96 (26)	<0.001*
No	6 (1.7)	12 (3.3)	
Do you have any idea of the bad effects of soft drinks?			
Yes	209 (57)	101 (27)	<0.001*
No	52 (14)	7 (2)	
Do you think having these soft drinks is?			
Good for health	10 (2.7)	9 (2.4)	0.144
Bad for health	226 (61.2)	92 (25)	
Do not Know	25 (6.8)	7 (1.9)	
Attitude			
How do you choose your soft drinks?			
TV	14 (3.8)	3 (0.8)	0.72
Easy availability in the market	29 (7.9)	9 (2.4)	
Family and friends	75 (20.3)	35 (9.4)	
Taste	128 (34.7)	55 (15)	
Others	15 (4%)	6 (1.7)	
At a time how much of these drinks do you prefer having?			
A glass 100ml	142 (38.5)	80 (21.7)	0.004*
A glass bottle 500ml	67 (18.1)	19 (5.1)	
A pet bottle 500ml	36 (9.8)	6 (1.7)	
More than 500 ml	16 (4.3)	3 (0.8)	
When do you like having these drinks?			
When at home with family and friends	149 (40.37)	67 (18.15)	0.657
When at University/College with colleagues	79 (21.4)	28 (7.58)	
When feel thirsty	33 (9)	13 (3.5)	
Practice			
Do you enjoy having soft drinks?			
Yes	206 (55.82)	76 (20.6)	0.078
No	55 (14.9)	32 (8.68)	
If asked to, would you stop drinking soft drinks?			
Yes	179 (48.5)	64 (17.35)	0.086
No	82 (22.22)	44 (11.93)	
What would you choose from these drinks?			
Fruit juice	125 (33.9)	62 (16.8)	0.077
Carbonated drink	45 (12.2)	12 (3.3)	
Slice	12 (3.3)	10 (2.7)	
Milk	71 (19.24)	20 (5.4)	
Others	8 (2.16)	4 (1)	
How often do you consume soft drinks?			
Daily	39 (10.56)	11 (3)	0.221
Every alternate day	36 (9.75)	13 (3.52)	
Weekly	101 (27.37)	35 (9.5)	
Monthly	71 (19.24)	41 (11.11)	
Never	14 (3.79)	8 (2.16)	
What is your favorite drink?			
Pepsi	65 (17.61)	23 (6.23)	0.013*
Coco cola	42 (11.4)	15 (4)	
7up	36 (9.8)	19 (5.14)	
Dew	48 (13)	14 (3.8)	

Sprite	27(7.31)	11(3)	
Others	45(12.2)	24(6.5)	

Table 3: Association of knowledge, attitude, and practice of soft drink with the gender of nursing students (N= 369). *p-value ≤ 0.05 was considered significant

DISCUSSION

The consumption of soft drinks is very common in public, whether they belong to any profession, even when they are aware of the health hazards of soft drink consumption. The current study aimed to assess nursing students' knowledge, attitude, and practices of soft drink consumption. Furthermore, we also tried to determine its association with gender among nursing students. In this study, 84% of study participants revealed that they are aware that soft drinks have badly for health because another study conducted in Lahore, Pakistan, reported 98.3% [18]. Even though the present study participants belonged to the medical profession. Still, 50% of them consumed soft drinks because of their taste, and few consumed them because of family and friend choices. However, a study in Saudi Arabia reported that media advertisement was an infusing reason to do so [19]. Around 206(55.8%) male and 55 (14.9%) female students said they enjoy having a soft drink; this exhibited that the feeling of pleasure is a driving force to make students have a soft drink even when they are aware of its adverse effects on health. Around 101(27.3%) male study participants unveiled that they consume soft drinks weekly, whereas 71 (19.2%) female participants consume them monthly. These results show that male students consume more soft drinks than female students. As in Pakistani culture, male students are more outgoing and attend more social gatherings with friends; hence, they are more vulnerable to being affected by carbonated drinks. It is documented by current research that carbonated drinks can cause dental erosion, dental cavity, kidney stones, osteoporosis, and obesity [20]. Around 101 (27.3%) male students consumed soft drinks weekly, and 41 (11.1%) female students consumed them monthly. However, another study reported that 72% of participants consume daily [19]. Hence study reflects that in Pakistan, consumption is still a lot less in comparison. The positive sign was that around 179 (45.7%) male and 82 (22.2%) female study participants were willing to stop consuming drinks. The second preferred choices of drinks are fruit juice and milk; if these drinks are kept available in schools and colleges, then students may stop consuming them. The majority of this study population (66%) consumed 100 ml of the drinks; this observation was consistent with the finding of Rai et al., in New Delhi and Ghaziabad, India, who noted that 63.42% of populations were the same consuming amount of carbonated drinks

[3]. The reason for consuming fewer amounts is that one soft drink bottle could be shared amongst friends in their gathering. Now, it is the time to teach students how to say "No" to friends and family members who offer them these sugar-heavy drinks. This way, we can prevent the adverse effects of soft drinks among the population.

CONCLUSIONS

It is concluded that nursing students have adequate knowledge of soft drinks and their harmful effects on their health. Despite knowing the detrimental consequences, nursing students consume soft drinks considerably.

Conflicts of Interest

The authors declare no conflict of interest

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