Determination of Consumers' Liquid Choices, Consumption Frequencies and Habits

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Abstract

This study aimed to determine consumers' liquid choices, their consumption frequencies and habits. The study was conducted on 332 individuals aged between 16 and 30 (mean age: 20.7 ± 3.1 years). The most important factors that affect consumers' liquid choices are tastiness (74.7%), easy accessibility (71.4%) and being a continuously consumed beverage (69.3%), respectively. Of the participants, 78.0% consumed liquids at meals, 66.3% of them started the day with a drink, 65.4% controlled alcohol content in energy drinks, 62.3% consumed water while eating, 50.0% consumed water in the recommended amount and 46.7% paid attention to the warning statement when purchasing energy drinks. The liquids that participants consumed over the percentage consumption score were as follows: water (119.3%), tea (114%), ayran (83.7%), coffee (77.7%), fruit juice (66.9%), soda (65.8%) and milk (64.2%). It is thought that especially young consumers need to be informed about the healthy liquid choices and consumption habits.

Keywords: Liquid choice, consumer, consumption frequency, habits.

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1. Introduction

For encouraging healthy eating, liquids consumption should be evaluated in the context of general nutrition habits [1]. Beverages have an important place in meeting the body's need for liquid. Water and other drinks play a role in the digestion and absorption of food and in carrying it to cells, for development of biochemical reactions necessary for life and health, functioning of cells, tissues, organs and systems, removal of hazardous substances produced as a result of metabolism, balancing of body temperature and ensuring lubrication of joints [2]. Inadequate and improper daily liquid intake can have negative effects on the human health for a long time. Therefore, it is necessary to study the type of fluid people consume [3]. The amount of water demanded by the body can be met by various liquids such as water milk, tea, fruit juices, coffee and soft drinks. Yet, it is important for individuals to develop healthy drinking habits, considering the fact that various liquids have different nutritional values and health effects [4]. Because they can increase the risk of obesity and diet-related chronic disease, it is important to understand the liquid choices and consumption habits [5]. The amount and type of the liquid individuals consume can depend on traditions, habits and social life conditions [6]. Hence, it is important to examine the conditions that affect liquid consumption in order to determine faulty conducts and transform them into positive ones. This study is aimed to determine consumers' liquid choices, and their consumption frequencies and habits.

2. Method

This descriptive study was conducted on 332 individual (male: 43.1% and female: 56.9%) living in Konya, who volunteered to participate and were aged between 16 and 30-years old (mean age: 20.7 ± 3.1 years). The data of the research were collected through questionnaire technique. To determine the factors that consumers pay attention to when choosing a liquid, 'The Food Choice Questionnaire' developed by Steptoe *et al.* (1995) was used [7]. The questionnaire was modified by the researcher and translated into Turkish. In order to determine the liquid consumption frequency of the consumers, the formula $T = 5T_1 + 4T_2 + 3T_3 + 2T_4 + T_5$, developed by Aktas (1979), was used [8]. In the scoring, the frequency of the liquid consumed everyday was multiplied by 6, the frequency of that consumed 2–3 times a week was multiplied by 5, the frequency of that consumed once or twice a week was multiplied by 4, the frequency of that consumed every 15 days was multiplied by 3, the frequency of that consumed once a month was multiplied by 2 and the frequency of that consumed once was multiplied by 1 and added. The total scores (TSs) were found for each liquid. In order to compare the liquids with each other in terms of their consumption frequency, percentage consumption scores (PCSs) were calculated by making a proportion between the TS determined for each liquid and the highest TS this liquid could get in the case of being consumed every day. Gender, age, educational status and occupation were used as the explanatory variables. Statistical analyses included Pearson's chi-square test and Fisher's exact test. The data of the research were analysed using the statistical software SPSS 20.

3. Results and Discussion

Table 1. Demographic features of the consumers (*n*: 332)

	N	*%*
Gender		
Male	143	43.1
Female	189	56.9
Age group		
16–19 years	160	48.2
20–30 years	172	51.8
$(\overline{X}) \pm (S_X)$	20.7 ± 3.1	
Educational status		
Secondary school graduate	51	15.4
High school graduate	140	42.2
University graduate	116	34.9
Graduate education	25	7.5
Occupation		
Worker	54	16.3
Civil servant	105	31.6
Student	147	44.3
Housewife	26	7.8

Of the consumers, 43.1% were males and 56.9% were females. The age of consumers varied between16 and 30 years, and the mean age was 20.7 ± 3.1 years. About half of the staff (42.2%) was high-school graduates, 34.9% were university graduate graduates, 15.4% were secondary school graduates and 7.5% had a graduate education. Of the consumers surveyed, 44.3% were still students; 31.6% were civil servants, 16.3% were workers and 7.8% were housewives. According to the general health status, 10.5% of the consumers stated that they had a health problem. Diabetes mellitus (17.1%) was determined to be the most common health problem.

Table 2. Consumer self-evaluations of liquid consumption status and some liquid consumption habits (*n*: 332)

	Yes		No	
	n	*%*	*n*	*%*
Self-evaluations				
I think that my liquid choices are healthy	104	31.3	228	68.7
I think that my daily liquid consumption is insufficient	69	20.8	263	79.2
I think that I always consume the same kind of liquid	86	25.9	246	74.1
I think I consume coffee much more than recommended	24	7.2	308	92.8
I think I consume tea much more than recommended	62	18.7	270	81.3
I don't like to drink herbal tea	67	20.2	265	79.8
I am addicted to acidic drinks	47	14.2	285	85.8
Consumption habits				
I start the day with a liquid	220	66.3	112	33.7
I consume liquids at meals	259	78.0	73	22.0
I consume liquids with small sips	155	46.7	177	53.3
I consume water in the recommended amount	166	50.0	166	50.0
I consume water while eating	207	62.3	125	37.7
I pay attention to the warning letter while purchasing energy drink	155	46.7	177	53.3
I control alcohol contained in drinks	217	65.4	115	34.6

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In the study, consumers were asked to make self-evaluations about liquid consumption situations and 68.7% stated that their liquid consumption was healthy; 25.9% stated that they always consumed the same kind of liquid, 20.8% stated that their daily liquid consumption was insufficient; 18.7% stated that they consumed tea, 14.2% stated they consumed acid drinks and 7.2% stated they consumed coffee much more than recommended. According to variables, it is revealed that by gender, males (22.4% and p: 0.000); by occupational group, students (20.4% and p: 0.021), by age, 16–19-year olds (21.2% and p: 0.000) thought that they were more addicted to acidic drinks compared to the other groups. One positive finding of the study was that more than half of the participants (63.3%) paid attention to choosing health drinks when choosing liquids. When the liquid consumption habits of consumers were examined, it was determined that 78.0% of the participants consumed liquids at meals, 66.3% of them started the day with a drink, 65.4% controlled alcohol content in energy drinks, 62.3% consumed water while eating, 50.0% consumed water in the recommended amount and 46.7% paid attention to the warning statement while purchasing energy drinks. In terms of various variables, it was revealed that a higher proportion of female consumers (70.9% and p: 0.046) consumed water while eating, a higher proportion of male consumers (56.6% and p: 0.046) consumed the recommended daily amount of water, and a higher proportion of women (73.0% and p: 0.001) paid attention to the alcohol content of energy drinks. According to the occupation types, it was determined that the workers had the highest rate for consuming water in the recommended amount (70.4% and p: 0.000) and consuming water while eating (77.8% and p: 0.010). Based on the age group, consumers in the 20–30 age group showed more importance to the recommended daily amount of water consumption (58.7% and p: 0.001) and paid attention to the alcohol content of liquids (70.4% and p: 0.029).

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Table 3. Distribution of the consumers regarding liquid consumption frequency (*n*: 332)

Liquids	Everyday		2–3 times a week		Once a week		Once every two weeks		Rarely		Never		Total		Total Score	P.C.S[1]
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%		
Water	320	96.4	12	3.6	-	-	-	-	-	-	-	-	332	100.0	1650	119.3
Milk	37	11.1	76	22.9	59	17.8	39	11.7	66	19.9	55	16.6	332	100.0	773	64.2
Coffee	63	19.0	97	29.2	57	17.2	41	12.3	43	16.3	31	9.3	332	100.0	960	77.7
Tea	275	82.8	34	10.3	15	4.5	3	0.9	2	0.6	3	0.9	332	100.0	1563	114.0
Herbal tea	23	6.9	40	12.0	43	13.0	39	11.7	90	27.1	97	29.3	332	100.0	535	47.0
Cola	24	7.2	64	19.3	39	11.7	35	10.0	62	18.8	108	32.5	332	100.0	592	50.2
Fizzy drinks	17	5.1	42	12.5	40	12.0	41	12.3	98	29.6	94	28.3	332	100.0	514	45.7
Mineral water	33	9.9	83	25.0	63	19.0	36	10.8	69	20.8	48	14.5	332	100.0	793	65.8
Fruit juices	21	6.2	101	30.4	59	17.8	47	14.2	59	17.8	45	13.6	332	100.0	794	66.9
Ayran	38	11.4	144	43.5	70	21.1	38	11.4	27	8.1	15	4.5	332	100.0	1043	83.7
Kefir	6	1.8	11	3.3	7	2.1	10	3.0	57	17.1	241	72.6	332	100.0	164	13.8
Compote	7	2.1	25	7.5	13	3.9	21	6.3	154	46.5	112	33.7	332	100.0	351	30.5
Boza	1	0.3	4	1.2	1	0.3	6	1.8	66	19.9	254	76.5	332	100.0	98	7.6
Salgam (fermented carrot juice drink)	3	0.9	10	3.0	18	5.4	22	6.6	96	29.0	183	55.1	332	100.0	229	20.9
Energy drinks	6	1.8	19	5.7	18	5.4	15	4.5	48	14.4	226	68.1	332	100.0	225	19.7
Alcohol	4	1.2	8	2.4	12	3.6	8	2.4	44	13.2	256	77.2	332	100.0	142	12.7
Sherbet	6	1.8	5	1.5	9	2.7	18	5.4	90	27.1	204	61.4	332	100.0	187	16.1
Sahlep	5	1.5	4	1.2	16	4.8	24	7.2	117	35.3	166	50.0	332	100.0	232	21.7
Subye (syrup with melon seeds)	2	0.6	3	0.9	1	0.3	2	0.6	13	3.9	311	93.7	332	100.0	42	3.3
Gilaburu (guelder rose juice)	2	0.6	-	-	1	0.3	-	-	19	5.7	310	93.4	332	100.0	34	2.6
Hardaliye (crushed grape + mustard + cherry leaf)	1	0.3	-	-	-	-	-	-	10	3.0	321	96.7	332	100.0	17	1.2
Demirhindi serbeti (tamarind syrup)	-	-	1	0.3	-	-	2	0.6	21	6.3	308	92.8	332	100.0	29	2.1

[1]Percentage consumption score

To satisfy thirst, it is of prime importance to drink healthy and safe drinking water and milk products. As an essential nutrient, water is necessary for all tissues and makes up a significant part of the body. Liquids that have high nutrient value are milk, ayran, kefir and fresh juices. Globally, chronic diseases like obesity, cancer, hypertension is increasing. The fact that milk and ayran are preferred less than other beverages (tea, coffee and cola) is an indication of unhealthy nutrition. There are a number of studies indicating the relation between milk and milk products, and chronic diseases. Juices do not satisfy thirst as they stay in the stomach for a long period of time. Water should be preferred instead of alcoholic or non-alcoholic drinks, fizzy or still drinks, sugar added drinks, energy drinks, tea and coffee. Consumption of beverages with caffeine can lead to more water loss because of their diuretic effect, and if these beverages are consumed excessively, it can cause undesirable weight gain and chronic diseases in individual of all ages [9–11]. In the study, the participants consumed water the most frequently (96.4%), which was followed by tea (82.8%), and almost a half consumed coffee every day or 2 or 3 times a week (48.2%), while healthy beverages like milk (11.1%), ayran (11.4%) and kefir (1.8%) were consumed at lower rates . Besides, it was also determined that cola and fizzy beverage (totally 12.3%) consumption is higher than fresh fruit juices (6.2%). Over PCS, the liquids that participants consumed were, respectively, water (119.3), tea (114), ayran (83.7), coffee (77.7), fruit juice (66.9), soda (65.8), milk (64.2), cola (50.2), herbal tea (47.0) and fizzy drinks (45.7).

Table 4. Factors affecting the consumers' liquid choices (*n*: 332)

It is important to me that the liquid I drink on a typical day	Very important		Not important		Not sure	
	n	%	*n*	%	*n*	%
1) …is easy to prepare	205	61.7	32	6.4	106	31.9
2) …contains no additives	187	56.3	29	8.7	116	35.0
3) …gets listed in advertisements	75	22.6	97	29.2	160	48.2
4) …is not expensive	175	52.7	38	11.4	119	35.9
5) … is frequently in media	53	16.0	115	34.6	164	49.4
6) …is low in calories	112	33.7	65	19.6	155	46.7
7) …tastes good	276	83.1	9	2.7	47	14.2
8) …contains natural ingredients	191	57.5	28	8.4	113	34.0
9) …is diet product	67	20.2	113	34.0	152	45.8
10) …is nutritious	188	56.6	29	8.7	115	34.7
11) …is low in sugar	138	41.6	48	14.5	146	44.0
12) …smells nice	202	60.8	34	10.2	96	28.9
13) …helps me cope with stress	155	46.7	62	18.7	115	34.6
14) …is what I usually drink	230	69.3	22	6.6	80	24.1
15) …contains a lot of vitamins and minerals	172	51.8	32	9.6	128	38.6
16) …is easily available in shops and supermarkets	237	71.4	15	4.5	80	24.1
17) …makes me feel good	248	74.7	24	7.2	60	18.1
18) …keeps me healthy	210	63.3	30	9.0	92	27.7
19) …stimulates me	144	43.4	61	18.4	127	38.3
20) …motivates and enables me to work efficiently	190	57.2	36	10.9	106	31.9
21) …refreshes me	222	66.9	32	9.6	78	23.5
22) …keeps me awake and alert	217	65.4	23	6.9	92	27.8
23) …is suitable for my social environments	185	55.7	51	15.4	96	28.9
24) …is high in sugar	80	24.1	122	36.7	130	39.2
25) …is traditional	92	27.7	93	28.0	147	44.3

According to the results, the most important factors that affect consumers' liquid choices are tastiness (83.1%), making feel good (74.7%), easy accessibility (71.4%), being a continuously consumed beverage (69.3%), refreshing (66.9%), keeping awake (65.4%), health promotion effect (63.3%), easy preparation (61.7%), good fragrance (60.8%), containing natural ingredients (57.5%), motivating

(57.2%), being nutritious (56.6%), containing no additives (56.3), being not expensive (52.7%), respectively. The least effective factors in the liquid choices of consumers are liquids' frequent media coverage (16.0%), being a diet product (20.2%), advertisements (22.6%), sugar content (24.1%) and being traditional (27.7%), respectively. When the factors affecting the liquid choices of the consumers were examined in terms of various variables, it was determined that females gave more importance to items 1 (68.3% and p: 0.018), 2 (68.3% and p: 0.000), 4 (59.3% and p: 0.009), 7 (87.8% and p: 0.031), 8 (70.9% and p: 0.000), 10 (67.2% and p: 0.000), 11 (48.7% and p: 0.008), 15 (58.2% and p: 0.027), 16 (77.8% and p: 0.0012), 17 (81.5% and p: 0.005), 18 (70.4% and p: 0.008), 21 (73.0% and p: 0.001) and 25 (33.3% and p: 0.001). As for educational level, it was seen that as the education level increases, consumers gave more importance to the natural ingredient content of beverages (p: 0.000) and to liquids being diet products (p: 0.011). In terms of occupation, housewives gave more importance to liquids not containing additives (73.1% and p: 0.006), containing natural ingredients (73.3% and p: 0.000), being a brand they consume generally (80.8% and p: 0.011). In terms of age, it was determined that consumers gave more importance to liquids not containing additives (66.3% and p: 0.001), containing natural ingredients (73.3% and p: 0.000) and being a brand they consumed generally (66.9% and p: 0.000) as their age increased. As a result, media and advertisements (22.6%) were not highly effective on liquid choices. These are the positive findings of the study.

4. Conclusion

In conclusion, it was revealed that more than half of the participants were careful to choose healthy ones when choosing liquids: half of them consumed the recommended amount of water, media and advertisements were not highly effective on liquid choices. These are the positive findings of the study. On the other hand, the fact that male consumers and students were somehow addicted to acidic liquids and consumers who were between the ages 16 and 19 paid less attention to healthy liquid choices compared to older consumers, is a negative finding of the study. It is thought that especially young consumers need to be informed on the healthy liquid choices and consumption habits.

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