Original article

Culture, gender and coffee drinking in Kuwait

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Summary. The objective of the present study was to determine the effect of culture and gender on coffee drinking in Kuwait City, Kuwait. A cross-sectional study was conducted to achieve the objective of the study utilizing an online multiple-choice questionnaire. A total of 1483 participants aged between 18 and 35 years completed the online questionnaire. The largest portion of respondents were within the ages of 18-22 category (93.66 %, n=944), with 351 males (23.7%), and 1132 females (76.3%). 28.8% of males and 31% of females participants visit coffee shops 1-4 times a month, followed by 1-6 times a week (27.6% males, 23.2% females). The most consumed type of coffee among participants was Americano. Participants chose Starbucks as their favorite coffee shops (n=763, 51.4%). 66.7% (n=989) of participants do not check the products' nutritional facts before purchasing. In terms of gender differences, females consume more coffee and have more calorie knowledge compared to males.

Keywords: Coffee, Kuwait, Nutritional Knowledge, Starbucks

Introduction

Coffee, one of the most widely consumed beverage worldwide, has played a significant role in customer culture since the mid-sixteenth century. Over the last decades, coffee has experienced a revolution from a pure commodity to a specialty product (1).

Around 9 billion kilograms of coffee were consumed globally in 2015–2016 (2). The USA and Brazil are the largest coffee consumers, with 1.5 and 1.2 billion kilograms, respectively. Brazil is the largest coffee producer with 3.3 billion kilograms annually. Finland has the highest per capita coffee consumption of 12.2 kg. Italy, USA, and the UK have a per capita coffee consumption of 5.6 kg, 4.5 kg and 3.6 kg, respectively (3).

Although coffee as a beverage is around for a long time, the research of its impact on health has produced inconsistent results. Drinking coffee has been recognized as a risk factor for blood pressure and cardiovascular diseases, while a plethora of published literature has claimed

health benefits for coffee drinking. A recent review on coffee consumption and health considering data from 201 epidemiological studies, suggested that coffee expected to have beneficial roles in reducing the risk of cardiovascular diseases, type 2 diabetes, Parkinson's disease and some cancers (4). Another review study associated the habitual coffee consumption of 3-5 cups a day with a 15% lower risk of cardiovascular diseases in healthy individuals (5). Contrary to observational studies, clinical trials have linked coffee drinking with an increase in blood pressure and cardiovascular diseases. A meta-analysis of 12 clinical studies, participated by 1017 individuals, confirmed coffee intake with an increase in TC, LDL-C, and TG dose-dependently when followed for 45 days (6). Also, increase in blood pressure was observed in a cross sectional study in patients with uncontrolled blood pressure by 24-hour ambulatory BP monitoring of the habitual coffee drinkers of 3 or more cups per day (7).

These contradictory effects of coffee on health parameters may be accounted for the complex chemical

composition of coffee that comprises of polyphenols, caffeine, coffee oils, etc. (8), preparation method such as filtered or unfiltered (9), preexisting health conditions (7), etc. Polyphenols in coffee may protect against oxidative stress and inflammatory responses, thus help in preventing lipid peroxidation and lowering the risk of CVD in coffee drinkers (10-11). Caffeine is a potent stimulant that may increase heart rate and blood pressure (12-13). These effects of coffee drinking were more pronounced on blood cholesterol when the coffee was prepared by boiling, consumed unfiltered and specifically among the participants who had the preexisting condition of hypertension (14-18, 7, 9). The cholesterol-raising property of coffee is mainly because of the coffee oils such as cafestol and kahweol, which are extracted in high concentration in boiled coffee as boiling prolongs the contact of coffee beans with water especially in the presence of high temperature of boiling water as well as when consumed unfiltered (14-18).

In Kuwait, coffee has an important social and cultural role. The first thing offered to guests in Kuwait is a cup of coffee, usually accompanied by dates or sweets. In fact, it is considered a high act of hospitality to serve coffee to guests. Kuwait has a per capita coffee consumption of 3.5 kg. It is ranked 46th among 154 counties worldwide. Coffee shops have gained a lot of popularity in Kuwait recently with Starbucks being the market leader with 60.8% of market shares (19). At the same time, Kuwait is an affluent society, has high rates of obesity and non-communicable diseases such as hypertension and type-2 diabetes. The recently published Kuwait National Nutrition Surveillance data reported the prevalence of obesity, diabetes, and high blood pressure at 78.12%, 18.85%, and 18.64%, respectively (20).

Despite the reputation and status of coffee as a product and the growing interest of the market regarding various aspects of consumer behavior towards coffee in Kuwait, no studies on coffee consumption exist to this date. Neither is coffee considered among the significant risk factors for obesity or hypertension in Kuwait. The younger generation in Kuwait commonly consumes the standard commercially sold coffee with the addition of cream, sugar, caramel, and all sort of caloric enhancer ingredients whereas the traditional type, prepared as boiled either filtered (Arabic) or unfiltered (Turkish and French) are equally popular among young and older generations.

The objective of the current study was, therefore, to explore coffee culture, drinking preferences, and the extent of gender differences if any, in Kuwait City, Kuwait.

Methods

A questionnaire adopted and modified from Amy Allen (21), was posted online on social networking services (Twitter and Facebook) from the 1st October to the 20th of November 2018. The questionnaire included 18 questions to appraise about coffee additions, preferred cup size, frequency of consumption, preferred choice of coffee-based beverages. Additional questions were asked to obtain information regarding age, gender, height, and weight etc. of the participants.

The sample size with 99% probability, 1% error, and 50% response rate, was estimated at 664 participants. The sample size was doubled to guarantee the required sample and accommodate incomplete responses. A total of 1,609 questionnaires were received, there were 126 incomplete questionnaires as a result 7.8% of the 1,609 were excluded from the study, resulting in 1,483 usable questionnaires.

The quantitative data collected were analyzed using Statistical Package for Social Sciences (SPSS Inc., Chicago, IL, USA) version 25. The significance level in this study was set at $p < 0.05$. Frequencies were obtained to describe the socio-demographics of participants, frequency of consumption, coffee consumption habits and coffee-calorie knowledge of the participants. Chi square test was conducted to compare gender and coffee consumption habits. Moreover, Independent t-test was used to compare mean coffee-calorie knowledge scores between genders.

Results

A response rate of 92% was achieved in the current study (351 males; 1132 females). The largest proportion of participants being within the ages of 18 to 22 years category (n=769, 51.9%), followed by the ages of 23 to 27 years category (441, 29.7%). The mean

weight, height and BMI of the entire sample were 68.9 kg, 163.4 m and 25.63 kg/m², respectively. The mean BMI for males was 27.10±6.3; while the mean BMI for females was 25.18±5.4 (P = 0.000). As for participants educational level, analysis showed that the highest proportion of participants were high school diploma holders (865, 58.3 %), followed by bachelor's degree holders (275, 18.5 %), then diploma holders (112, 7.6 %), master degree holders (74, 5%), and lastly PhD holders (19, 1.3 %).

Table 1 shows that 28.8% of males and 31% of females participants visit coffee shops 1-4 times a month, followed by 1-6 times a week (27.6% males, 23.2% females). No association was found between gender and coffee shop visits (P = 0.269).

Table 2 shows the consumption of 8 popular coffee beverages and the local specialty by participants. The local specialty coffee was consumed by (751, 51%) participants. Among the popular brands the most consumed coffee drink on a daily basis was Americano (250, 16.8%). Whereas, the least consumed coffee beverage

was Flat-white as 67.6% (1002) of participants never consumed it. A chi square test was conducted to check if there is a statistically significant relationship at the 0.05 level between gender and the different types of coffee. The test resulted in a significant association (P = 0.000).

Most participants preferred drinking their coffee at coffee shops (460, 31%), followed by house (391, 26.4%), then college (263, 17.7%), and lastly workplace (190, 12.8%). The highest proportion of participants selected Starbucks as their preferred coffee shop (763, 51.4%), followed by local specialty coffee shops (312, 21%), Caribou (234, 15.8%), Costa (73, 4.9%), The Coffee Bean (71, 4.8%), Second Cup (19, 1.3%), Columbus (8, 0.5%), and lastly Coffee Republic (3, 0.2%). No association was found between gender and coffee shop preferences (P = 0.573).

The highest percentage of participants does not check the nutritional facts prior to ordering their coffee (989, 66.7%). From the 989 participants, 30% are males and 34% are females. However, no significant difference was found between the two factors (P = 0.122).

Most participants who drank coffee chose tall size (354 ml) (716, 48.3%), followed by short (236 ml) (591, 39, 9%) then, Grande (473 ml) (95, 6.4%) and finally Venti [591 ml (warm), 709 ml (cold)] (20, 1.3%). No significant association between cup size choice and gender were found (P = 0.993).

Table 3 shows the preferred milk types by participants. 46% of males and 36% of females used full fat milk with their coffee. Low fat milk was the second preferred choice for 14% for males and 19% for fe-

Table 1 Percentages of coffee shop visits according to gender

	Male %	Female %	P value
Never	2.00	2.90	
Rarely	21.7	23.1	
1-4 per month	28.8	31.0	
1-6 per week	27.6	23.2	
Once a day	11.4	13.5	0.269
2-3 per day	8.30	5.70	
≥ 5 per day	0.30	0.50	

Table 2 Percentages of consumption of 8 popular coffee-based beverages by participants

	Never		Rarely		1-4 times a month		1-6 times a week		Once a day		2-3 times a day		≥5 times a day	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Espresso	776	52.3	328	22.1	155	10.5	91	6.1	86	5.8	44	3	3	0.2
Latte	394	26.6	428	28.9	309	20.8	206	13.9	98	6.6	43	2.9	5	0.3
Cappuccino	518	34.9	474	32	251	16.9	137	9.2	70	4.7	25	1.7	8	0.5
Mocha	598	40.3	391	26.4	266	17.9	143	9.6	56	3.8	27	1.8	2	0.1
Macchiato	888	59.9	334	22.5	150	10.1	72	4.9	29	2	8	0.5	2	0.1
Flat white	1002	67.6	266	17.9	120	8.1	46	3.1	29	2.0	17	1.1	3	0.2
Frappuccino	859	57.9	354	23.9	175	11.8	52	3.5	27	1.8	7	0.5	9	0.6
Americano	710	47.9	200	13.5	164	11.1	159	10.7	132	8.9	106	7.1	12	0.8
Local specialty	163	11	168	11.3	177	11.9	224	15.1	130	8.8	249	16.8	372	25.1

Table 3. Percentages milk type preferences according to gender

Milk type	Male %	Female %	P value
w/o	24	11	
Full fat	46	36	
Low fat	14	19	
Skimmed	9	18	0.000
Soya	1	5	
Coconut	1	1	
Almond	3	4	
Lacto free	2	7	

males. Skimmed milk came in third as the preferred choice for 9% for males and 18% for females. Chi square test analysis showed that there was a significant association between gender and milk type (P = 0.000).

Most Participants added caramel sauce to their coffee (460, 31%), followed by extra coffee shot (391, 26.4%), then sugar free flavored syrup (169, 11.4%), whipped cream (165, 11.1%), flavored syrup (158, 10.7%), chocolate sauce (114, 7.7%), mocha syrup (44, 3%), marshmallows (32, 2.2%) and finally cereal (26, 1.8%). Chi square analysis showed that there was no significant association between gender and coffee additions (P = 0.806).

Flavor was the most influential factor that affected participants to select a particular coffee (1050, 70.8%). 30.5% (452) of participants chose convenience. 30.3% (449) chose time of day. Other factors also influenced choices such as cost 29.3% (435), energy level at the time of purchasing 26.2% (388), Low calories 22.3% (330). A chi square test was used to test whether there was a significant association between gender and factors that influence coffee type purchases. A chi square test showed that there was a significant association between gender and factors that influence coffee type purchases (P = 0.015).

Participants were provided with descriptions of 6 coffee based beverages to arrange them based on calorie contents. The beverages were Americano, Mocha Frappuccino, Mocha, Cappuccino, Latte and finally Caramel Macchiato. The highest possible score is 6. Only 5.5% (83) of participants arranged all 6 coffee based beverages correctly. There was a significant difference in mean scores between genders (P = 0.000) where females scored higher (2.3±1.5) than males (1.7±1.4).

Discussion

The response rate in the current study (92%) was higher than what was reported by Aguirre (90 %) in Costa Rica (22). About 77% of the participants visit coffee shops at least 1-4 times per month. Loftfield et. al (23) survey on coffee drinkers in the United States showed lower prevalence rate (75%) as compared to our study. A possible reason behind this high rate is the swift rise in economic uplift and urbanization in Kuwait which increased the number of coffee shops exponentially. Another possible reason is that coffee shops in Kuwait are used intensively for socializing and studying especially for younger generations. Starbucks is the market leader with 60.8% of market shares in Kuwait (19) which explains that (763, 51.4%) of participants favorited their coffee.

Males tend to consume Americano and Espresso more than females. However, females have higher consumption rates for the remaining coffee based-beverages. These results were similar to the ones obtained by Cristovam et. al in the gender preference in hedonic ratings for espresso and espresso-milk coffees (24).

Flavor was the most dominant factor that affected participants to select a particular coffee (1050, 70.8%). Those findings contradict with the results obtained by Allen (21) which showed that cost was the top factor in selecting a particular coffee. One of the reasons behind this contradiction is that the participants in the Allen (21) study were all students who are usually financially cautious. On the other hand, students in Kuwait enjoy free education on all levels which make them less economically restrained.

The majority of participants chose their coffee in tall size with full fat milk and caramel sauce (31%). Moreover, most participants (66.7%) do not check the nutritional facts prior to ordering their coffee. These findings can explain the high obesity and overweight rates in Kuwait. A recent report of the Kuwait National Nutrition Surveillance System (20) indicated that the overall prevalence of overweight and obesity in Kuwait are 75.2% and 81.1% for males and females, respectively. Furthermore, the high prevalence of hypertension and cardiovascular diseases in Kuwait requires research in the Kuwaiti population to affirm the effect of boiled and unfiltered coffee on these health parameters (14-18).

The mean score for correctly answered questions for males and females are (1.7±1.4) and (2.3±1.5), respectively. The results suggest that females have a better awareness of coffee based beverages calorie content than males. Those findings confirm with the results obtained by Allen (19) which showed that female UK university students have good understanding of calorie contents of various coffee based beverages. One possible reason behind these findings is that women use calorie information more often than men. Former investigation found that label use differs by gender, with women more likely to consult the Nutrition label and more likely to order lower-calorie products in response to calorie content (25).

Conclusion

In conclusion, a large majority of Kuwait adults drink coffee frequently. However, the usual consumptions of coffee vary by demographic and lifestyle factors. Kuwaiti adults like to drink their coffee in tall size with full fat milk and caramel sauce and most of them do not check nutritional facts before ordering their coffee. Only few of the participants could arrange accurately different types of coffee based on calories. Excess energy consumption is a vital public health concern because of the increasing rates of overweight and obesity in Kuwait. Future research should also include longitudinal studies to examine the effect of nutritional knowledge on coffee consumption and the long-term weight as well as blood pressure consequences.

Ethical considerations

Ethical issues (Including plagiarism, Informed Consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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Competing interests

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