

Consumer prevalence, attitude and dietary behavior of online food delivery applications users in Kuwait

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Summary. The objective of this research was to estimate the prevalence, attitude and dietary behavior of online food delivery application users in Kuwait. A survey of 1045 participants found that 87.6% of them have ordered food online by mobile app. Talabat was the most common food delivery application used among participants in Kuwait. Fast food was the most commonly ordered category followed by sweets and pastries. The most important attribute of electronic ordering is speed of delivery followed by ease of ordering. Around 73.6% of the participants use food apps to order dinner, and 76.4% order fast food at late night. The majority of online food delivery application users in Kuwait have unhealthy dietary practices. The results emphasize a serious need for implementing a suitable intervention for stimulating healthy eating behaviors among food delivery application users in Kuwait. (www.actabiomedica.it)

Key words: Kuwait, food delivery, applications, dietary habits

Introduction

Online and mobile food ordering is increasing in popularity among both customers and food establishments. Customers like online food ordering because of its speed and ease (1), while food establishments benefit from the increased profit. Online food ordering has become mainly effective for pizza delivery. For example, Domino's pizza is now the fourth biggest online pizza retailer in the U.S. after introducing an updated online ordering system in 2009 (2). Furthermore, Papa John's pizza has stated that more than 25 percent of its profit comes from online ordering (3).

In Kuwait, the habit of consuming food in restaurants is growing. In 2015, it was estimated that Kuwaitis spends around 6 million dollars per day in restaurants (4). In 2016, it was estimated that there were more than 5,000 restaurants in Kuwait, visited by over 650,000 people daily (5, 6). The number of restaurants in Kuwait is expected to grow exponentially in the near

future. As a result, the use of online food ordering apps has greatly increased and has started spreading rapidly.

According to the Kuwaiti National Nutrition Surveillance System, Kuwait has one of the highest obesity rates in the worldwide and the overall prevalence of overweight and obesity among adults was 78% (7). Factors such as reduced physical activity times, eating out, and increased consumption of energy dense foods were behind this high rate (8, 9). Furthermore, a rapid increase in economic status and a booming urbanization has been accompanied by profound changes in lifestyle. For example, the traditional diets of vegetables, fruits and wholegrain products have been replaced with fast foods and sugar-sweetened beverages along with decreased levels of physical activity among all ages (10, 11).

In Kuwait, the development of online food delivery companies attracted the attention of numerous restaurants that have switched over to offer this type of service. Also, there was an increasing number of Ku-

waitis and Arabs who use smartphones and who, consequently, began to order more foods online. These factors attracted the interest of external stakeholders, including international investments. For example, in 2015 the Rocket Internet, a German ecommerce company, had a complete acquisition of Kuwait's Talabat.com, an online food delivery company, for 150 million euros (12).

Literature review resulted in some information regarding the use of food delivery apps in Kuwait, yet the estimation of the commonness of the use of these apps was not reliable. Obtaining reliable information is essential in order to be able to understand how these services have led to a change in the consumer's perception about buying food. The survey aimed to estimate the prevalence, attitude and dietary behavior of online food delivery application users in Kuwait.

Materials and Methods

A convenience sample (n=30) was requested to complete the food app questionnaire. Questionnaires consisted of 14 questions, in Arabic, which were divided into two parts including demographics (4 questions) and food delivery apps questions (10 questions). Cronbach's coefficient α was used to analyze the internal consistency reliabilities for the questions. Cronbach's coefficient α ranged from 0.75 to 0.88 (mean 0.84). On the basis of this analysis, the 14-item questionnaire was used in this study. From January 1st 2012 to March 31st 2019, the questionnaire was posted online on social networking services (Twitter and Facebook).

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 1118 questionnaires were received, there were 73 incomplete questionnaires as a result 6.5% of the 1118 were not included in the study, resulting in 1045 usable questionnaires.

Participants were categorized according to gender, age, educational level and monthly income. The prevalence of food application services usage in the total and subsets of the population sample were analyzed statistically. The study was approved by the Research Administration from Kuwait University.

Statistical analysis

The statistical analysis was performed using SPSS ver. 24.0 (SPSS Inc. Chicago, IL, USA) software. The prevalence of food application services use among participants was calculated using 95% confidence intervals (CI). The Chi-square test was used to evaluate the prevalence of use among the different subgroups. Statistical significance was indicated p-value less than 0.05.

Results

A total of 1118 questionnaires were distributed among internet users in Kuwait. A total of 1045 questionnaires were included in the final analysis with a response rate of 93%, and the rest of the questionnaires (6.5%) were excluded from the study as a result of non-response. Table 1 shows the demographic characteristics of the study population. According to the table, 74% of the study participants were females and the rest were males. The majority of the participants were between 20-29 years, which represented approximately 55% of the total. Seventy one percent of the partici-

Table 1. Demographic profile (n = 1045)

Category	Number of respondents	Percentage
Gender		
Male	267	26%
Female	778	74%
Age		
<20	278	27%
20-29	577	55%
30-40	127	12%
>40	63	6%
Educational level		
High school or below	131	13%
Diploma	130	12%
Bachelor	747	71%
Master and higher	37	4%
Income (KD per month)		
<1000	819	78%
1000-1500	132	13%
1500-2000	50	5%
>2000	44	4%

Table 2. Prevalence of food delivery application users according to selected characteristic (n = 1045)

Category	Users/Total	Prevalence	P-value
Gender			0.001
Male	215/267	80%	
Female	700/778	90%	
Age			0.000
<20	242/278	87%	
20-30	532/577	92%	
30-40	101/127	80%	
>40	40/63	63%	
Educational level			0.000
High school or below	99/131	76%	
Diploma	115/130	88%	
Bachelor	677/747	90%	
Master and higher	24/37	65%	
Income (KD per month)			0.002
<1000	727/819	89%	
1000-1500	118/132	89%	
1500-2000	49/50	98%	
>2000	29/44	66%	

pants had bachelor degrees. Seventy eight percent of the participants had monthly income of less than 1000 Kuwaiti Dinar (KD), and 13% drew income between 1000 and 1500 KD.

Table 2 shows that there is a significant difference ($p = 0.000$) between the four levels of education in terms of food delivery applications usage. There are also significant differences among gender, age, and monthly income in terms of usage of food delivery applications.

Table 3 shows that the most common food delivery application used among participants are Talabat (70%), Carriage (28%) and Jeebley (0.1%). Most participants (42.7%) order one time per week from food delivery applications. The same table illustrates that most participants (47.5%) are satisfied with the service provided and (52.2%) of them have control of what they order. Approximately, 41.8% of the users spend less than 10 KD per week ordering from food delivery applications, 28.4% spend 10-14 KD while 14.9% spend 15-20 KD per week. The most two factors affecting food delivery applications usage by participants are speed of delivery and the ease to use app with percentages of 41.6% and 30.9%, respectively. Around 73.6% of the participants use food apps to order dinner, and 76.4% order fast food at late night.

Discussion

This study shows the prevalence, attitude and perception of customers towards online food application services in Kuwait. The prevalence of online food application services in Kuwait was as high as 87.6%. The self-reported questionnaire to measure the prevalence of online food purchasing has been validated in previous studies (13, 14).

In line with the results in Table 2, we found significant difference ($p = 0.001$) between genders for buying food online and women participate more than men in online food purchasing. The gender difference in online food purchasing among adults in Kuwait could be due to cultural reasons, where families may not encourage females to dine outside their homes. Moreover, girls compared with boys generally have limited opportunities and facilities for outside gathering. In a previous study by Allafi et al (15), females in Kuwait were reported spending more time in sedentary activities, such as watching TV and using computers than males. Time spent in sedentary activities such as watching TV, listening to music, computer utilization and doing homework by adolescents has been reported for many countries. The study among Saudi adolescents reported that only 11% of females and 16% of

Table 3. Pattern of food delivery application users to the survey questions

Question		%
1 - Which app you use the most to order food from the following?	Talabat	70%
	Carriage	28%
	Cravez	0.6%
	Jeebley	0.1%
	Others	1.3%
2 - How many times you order from the food apps per week?	1	42.7%
	2	25.3%
	3	15.3%
	4	6.9%
	5	4.3%
	>5	5.5%
3 - Are you satisfied when you order food from food apps?	Highly satisfied	24.8%
	Satisfied	47.5%
	Neutral	23.7%
	Not satisfied	3%
	Not satisfied at all	1%
4 - How do you describe your control when you order food from food apps?	I can control myself	52.2%
	I have a medium control	38%
	I cannot control myself	9.8%
5 - How much you spend on food apps per week?	<10KD	41.8%
	10-15KD	28.4%
	15-20KD	14.9%
	>20KD	14.9%
6 - What is the main factor affecting your usage of the food apps?	Speed of delivery	41.6%
	Easy to use app	30.9%
	Promotions	6.9%
	Ordering from multiple restaurants at the same time	6.8%
	Price	8.7%
	Others	5.1%
7 - Which meal you order most from food apps?	Breakfast	1.6%
	Lunch	19.5%
	Dinner	73.6%
	Snack	5.3%
8 - What type of food you usually order using food apps?	Fast food	76.4%
	Coffee/juice	4.9%
	Healthy meals	9.1%
	Sweets/pastry	9.6%
9 - Do you watch the menu and food pictures before you order food using food apps?	Yes	93.3%
	No	6.7%
10 - When do you usually order food using food apps?	Morning	1.9%
	Noon	7.1%
	Afternoon	17.8%
	Evening	73.2%

males met the American Academy of Pediatrics' recommendations on daily screen time of 2 h/d (16). In a study of over 1200 American children (8-16 years of age), about 48% of the males and 38% of the females reported watching TV for more than 2 h/d. Spending more time in sedentary activities was positively associated with the prevalence of overweight and obesity in adults (17). It needs to be documented that sedentary activities are associated with harmful health outcomes that are different from those attributable to physical inactivity (18).

Our data confirm some preliminary results offered by Morganosky and Cude (19), in which the majority of online food shoppers were younger than 55 years and contradict more recent findings by Gan et al. (20) that elderly households are the most important online food delivery users. In our study, only 63% aged older than 40 order their food online. This was possibly due to lack of internet literacy among elderly households. Furthermore, a previous study by Goethals et al. (8) concluded that several respondents older than 45 years mentioned that they wanted to see the food before buying it.

The results of the present study in Table 2 indicate that the majority of food delivery users have bachelor degrees (90%) with monthly incomes of 1500-2000 KD (98%). This result is similar to what was reported by Sheryl E. Kimes (21) and other studies (22, 23).

Table 3 shows pattern of food delivery application users to the survey questions. Around 42.7% of the participants order food once per week from online food delivery applications and 5.5% of the participants order more than 5 times per week. Moreover, 76.4% of the respondents order fast food from online food delivery applications. And only 52.2% of the respondents have control of what they order online. This can explain why Kuwait has the highest obesity rates in the world. A recent report of the Kuwait National Nutrition Surveillance System indicated that 78% of Kuwaiti adults were either obese or overweight (7).

Approximately 73.6% of online food delivery users order meals at dinner times and only 1.6% of them order meals at breakfast times. Skipping breakfast is a well-recognized unhealthy dietary behavior and we also observed a significant negative association of the number of days of consumption of breakfast with BMI

and waist circumference (24). A similar association was also reported for Saudi adolescents (25).

Around 93.3% of respondents answered that they usually prefer to see the menu and photos of the food served in a restaurant before they make a choice. Out of 1045 respondents using mobile apps for ordering food, 24.8% were highly satisfied, 47.5% were satisfied, 23.7% were neutral, 3% were dissatisfied and only 1% were highly dissatisfied. Broadly, it can be observed that around 71% of users of online food ordering apps are satisfied with the services. Around 41.8% respondents mentioned that they pay less than 10 KD while 28.4% pay between 10-14 KD. These results are consistent to what were reported in previous studies (21, 22, 23).

Conclusions

The study concludes that unhealthy eating patterns are well widespread in Kuwait by people ordering from food delivery applications. Prevalence of such behavioral traits significantly counts towards obesity which provokes the need for improvements in overweight management strategies by the healthcare providers as well as community educators.

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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.

Conflict of interest: Each author declares that he or she has no commercial associations (e.g. consultancies, stock ownership, equity interest, patent/licensing arrangement etc.) that might pose a conflict of interest in connection with the submitted article

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