Profile of the Customers and the Pattern of Purchasing in Sweet Shops, Kuwait

Fatimah A. Al-Sayegh[a]/Wajiha M. Al-Ali[a]

Purpose: This study aimed to describe the profile and the purchasing pattern of the customers of two sweet shops in Kuwait.

Materials and Methods: The data were collected by observing 500 customers in two sweet shops between 11 a.m. and 2 p.m. and between 5 p.m. and 10 p.m. during a two-week period. One shop was in the city (Capital Governorate; n = 330) and the other was in the suburban area (Ahmadi Governorate; n = 170). Every tenth adult customer was also interviewed, when they had completed their purchasing.

Results: There were 58.2% females and 41.8% males among the customers. The mean estimated age of the customers was 29.6 (SD = 13.8) years. The mean payment for the purchase was $5.32 USD (SD 2.350). Females commonly purchased larger amount of sweets (42.6%) compared with males (30.1%; p<0.001). Chocolate was the most common choice of purchase (71%), and only 10% of the products were sugar-free products. The mean age of the customers interviewed was 35.6 years (SD = 9.4). The favourite sugar product of the interviewed customers was also chocolate (36%). The proportion of the customers considering sugar-free products as their favourite decreased consistently with increasing age. More than half of the customers used soft drinks every day (58%).

Conclusion: Knowledge of the caries risk from sweets needs to be increased with a health education programme. Increasing the availability of sugar-free or tooth-friendly products should be one of the aims of the Kuwait Ministry of Health.

Key words: dental caries, diet, Kuwait, prevention

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Dental caries is the main oral disease that causes people to seek dental treatment. There is a strong positive relationship between the prevalence of dental caries and sugar intake (Sreebny, 1982; Sundin and Granath, 1992). The world population doubled in the last century, but sugar production increased five-fold (Newbrun, 1973). This is a clear indication that sugar consumption has greatly increased. Heavy consumption of sugar is common in the Middle Eastern and the South-Eastern Asian countries, where caries experience seems to be increasing, in contrast to the Western countries, where caries experience has been decreasing (Heloe and Haugejorden, 1981; Sheiham, 1984; Renson et al, 1985; Vigild et al, 1987; Skougaard et al, 1988; Holm, 1990; Murtomaa et al, 1995; Al-Mutawa et al, 2002). This is because of a change in lifestyle towards a more modern Western type. This means higher consumption of sugar during the primary dentition stage. It has been shown that dental caries experience in the Middle Eastern countries, and also in Kuwait, is low to moderate (Skougaard et al, 1988; Al-Mutawa et al, 2002; Barmes, 1979; Barmes and Zahran, 1979; Barmes and Sardo-Infiri, 1980; Moller and Mirza, 1981; Petersen et al, 1990a).

Worldwide oral health surveys have evaluated caries experience and the pattern of oral habits and

[a] *Faculty of Dentistry, Kuwait University, Kuwait*

Reprint requests: *Fatimah A. Al-Sayegh, PO Box 1287, 40163 Mishref, Kuwait. Tel: +965 6467382/+965 7177365. Email: fatsaiegh@yahoo.com*

behaviours. The first National Oral Health Survey was conducted in Kuwait in 1982. It described schoolchildren's oral health status between 5 and 16 years of age (Glass, 1983; Vigild et al, 1996). The survey showed that dental caries prevalence and experience was extremely high in the deciduous and moderately low in the permanent dentition (Glass, 1983; Vigild et al, 1996). The oral health survey carried out in 1985 showed high caries experience in both primary and permanent dentition (Behbehani and Shah, 2002). The majority of the daily brushers used a toothbrush and toothpaste (88%). A cross-sectional study to evaluate the oral health behaviour of 12-year-old children in Kuwait showed an extremely high consumption of sugary products, with most consuming the products once or several times a day (Vigild et al, 1999). It also showed a strong relationship between the education of parents with sugar consumption and toothbrushing patterns. Only 74% of children with high sugar consumption reported brushing once or twice daily. While only 54% of children with positive dental habits brushed their teeth at least twice a day. As a comparison between children in Kuwait and children in Denmark, Norway and Sweden, children in Kuwait has less regular oral hygiene habits, less frequently fluoridated toothpaste, and less frequent dental visits (Honkala et al, 1990; Petersen, 1992). Most of these studies showed that slightly questionable oral health behaviour was related to high caries experience, especially in young age groups. This is despite the fact that Kuwait school oral health programmes began in 1982 (Al-Mutawa, 2002). These programmes provide free dental services with preventive dental procedures that include the use of fluoride mouthwashes and gels, fissure sealants, and oral hygiene instructions.

In Kuwait there is no information about studies performed to evaluate the patterns of sugar consumption and sweet purchasing. Information on the pattern of purchasing of sugar products is important in planning oral health promotion programmes. Sweet shops are very common in Kuwait and their number has increased quite rapidly since the Gulf War. From the health education point of view it is also important to know the most common customers of these sweet shops.

MATERIALS AND METHODS

The observation study

The data were collected by observing 500 customers in two sweet shops between 11 a.m. and 2 p.m., and between 5 p.m. and 10 p.m., during a two-week period. One shop was in the city (Capital Governorate; n = 330) and the other was in the suburban area (Ahmadi Governorate; n = 170). The observer sat near the cashier's desk, and observed the customers as they were purchasing. The aspects observed were: gender, age, accompanying persons (adult, children, adult alone, children with parents but buying alone, children with maid, children alone), type of sugar products bought (chewing gum, chocolate, sweets, biscuits and cakes, soft drinks, jelly, sugar-free chewing gum and sweets, others), amount of the purchase (small, 1–2 products; average, 3–5; large, 5–10; extra large, >10), and money spent (determined by an observer of the cash machine, when payment was completed).

The interview study

Every tenth adult customer (n = 50; over 20 years of age by the estimation of the observer) was also interviewed when they had completed their purchase. Interviews were conducted during the same period as the observations in the same two sweet shops (Capital, n = 31, and Ahmadi, n=19). The interviewer introduced herself as a student of Kuwait University, but did not reveal which Faculty. Questions concerned nationality, age, number of children, favourite sugar products (chewing gum, chocolate, sweets, biscuits and cakes, soft drinks, jelly, sugar-free chewing gum and sweets, others), the amount of money spent in this purchase, the frequency of eating sweets by adult and by children (several times a day, once a day, few times a week but not daily, once a week or rarely, never), the frequency of drinking soft drinks by adults and children (several times a day, once a day, few times a week but not daily, once a week or rarely, never), the reason to buy sweets this time (for myself, for children, as a present, for others), the frequency of buying sweet products (every day, 5–6 times per week, 3–4 times per week, 1–2 times per week, not every week).

Data analysis

The data were installed and analysed using SPSS program (version 12.0). The methods used in the data analyses were descriptive (mean, standard deviation, and 95% confidence interval) using cross tabulations and Chi-square test and ANOVA.

RESULTS

The observation study

Profile of the customers

There were 58.2% females and 41.8% males among the customers. The most common type of customer was a lone adult (44.6%), then a lone child (31.0%), an adult with another adult (14.8%), an adult with children (5.4%), a child with a maid (3.2%), and a child with the parent(s) but buying alone (1%). Males were more often present alone than females. The mean estimated age of the customers was 29.6 (SD = 13.8) years. Most commonly the customers were middle-aged and young adults (Table 1)

Purchasing pattern of the customers

The mean payment was $5.30 USD (SD 2.350); $6.90 in the city shop and $1.73 in the suburban shop. The amount of money spent by males ($5.59) was slightly higher than by females ($5.10), but the difference was not statistically significant. However, the amount of money spent increased steadily with increasing age ($p < 0.001$). Average purchase by children was $4.07 when they were buying alone, $3.753 when with adults, and $5.67 when buying with a maid (Table 2).

Chocolate was the most common choice of purchase (71%), and other products were purchased in the following order: sweets (36%), chewing gum (29%), jelly (26%) and biscuits (13%). Only 10% of the customers purchased sugar-free products. The distribution of the quantity of items purchased was: small (1–2 products; 29%), average (3–5; 21%), large (5–10; 37%), and extra-large (>10 products; 13%) (Table 3). Females more often purchased large or extra-large quantities compared with males (>5 products, 56% v. 42%; 5–10 products, 42.6% v. 30.1%, $p < 0.001$). Males more often bought small quantities (1–2 products; 40.2%) compared with females (21.3%). Average quantities (3–5 products) were bought by 22.7% of males and by 18.2% of females. Adults accompanied by other adults purchased extra-large quantities more often than the other customers (Table 3). The small quantities were most common among the adult customers purchasing alone without any accompanying person. The youngest customers (under 10 years old) more often purchased small quantities (47.1%), while the oldest customers bought mostly large amounts of sweets. Large amounts were the most common category of purchase among customers over 10 years of age.

Table 1 The age distribution of the sweet shop customers

Age	Customers (%)
3–10 yrs	13.4
11–20 yrs	17
21–30 yrs	24.6
31–40 yrs	30
41–50 yrs	10.6
51–70 yrs	4.4

Table 2 The mean amount of money spent (USD) for purchasing for different alone/accompanied people ($p < 0.001$)

Company status	Money spent (USD)
Adults together	9.46
Adults alone	5.00
Adults and children	3.75
Children with parents*	2.21
Children with a maid	5.67
Children alone	5.00
Total	31.10

*Children with parents but buying themselves

The interview study

Profile of the customers

The mean age of the customers interviewed was 35.6 years (SD = 9.4). Only adults over 20 years old were approached. Females comprised 43.6% of the sample and males 56.4%; and Kuwaitis comprised 64.0% and non-Kuwaitis 36.0%. There was no gender difference according to the nationality. Two-thirds (73.1%) of the respondents had children, female customers more often than males (81.8% v. 60.7%), and the Kuwaitis more often than the non-Kuwaitis (78.1% v. 61.1%).

Purchasing pattern of the customers

The mean amount of money spent was $9.98 (range $0.69–55.34). There was no statistically significant difference between females and males in the amount spent on the purchase, although the mean amount was $8.73 by females and $10.90 by males. The non-Kuwaitis spent more money ($11.31) on their purchase than the Kuwaitis ($9.27), although this difference was also not statistically significant. The mean amount of money spent by the customers increased with increasing age, and was highest ($15.58) among the oldest age group (41–61 years; $p = 0.04$).

Table 3 The amount of sugar products purchased (%) for different alone/accompanied people (p<0.001)

Company status	Small	Average	Large	Extra-large
Adult with adult	18.9	14.9	43.2	23.0
Adult alone	36.8	17.9	31.8	13.5
Adult with children	11.1	40.7	37.0	11.0
Children with parents*	0	0	100	0
Children with maid	12.5	18.8	50.0	18.8
Children alone	29.0	25.2	39.4	6.5
Total (500)	29.2	20.8	37.4	12.6

* But buying themselves

Table 4 Favourite sugar product (%) by age group

Age (years)	Several products	Chocolate	Other	Sugar-free products
21–30	21.1	47.4	15.8	15.8
31–40	29.4	23.5	35.5	11.8
41–60	28.6	35.7	28.6	7.1
Total	26.0	36.0	26.0	12.0

The more often the customers reported eating sweets, the more money they also spent on the purchase on the recorded occasion. The money spent by the customers buying for the other reasons ($15.55) was higher than when purchasing for themselves ($6.19) or for their children ($11.02). The amount of money for purchasing sweet products seemed to increase according to the increasing reported frequency of consumption. The mean amount spent was the highest among the customers who reported buying several times a day. The favourite sugar product of the customers was chocolate (36%), and others had several favourites (26%). Only 12% of the customers considered sugar-free products their favourite. Customers who had several favourite products also spent more money ($14.46) than those whose favourite was chocolate ($6.49), any other product ($10.37), or sugar-free products ($9.92). Chocolate was more often favourite for males (46.4%) than for females (22.7%). Sugar-free products were considered as favourite slightly more often among females (13.6%) than among males (10.7%).

The younger age group most often reported chocolate as their favourite sweet product (Table 4). The proportion of the customers considering sugar-free products their favourite decreased consistently with increasing age. Chocolate and other single sweet products were more often the favourite of the non-Kuwaiti customers than of the Kuwaiti customers (Table 5). The Kuwaiti customers more often favoured several different products. Chocolate was more often a favourite product of the customers with children (57.1%) than of those with no children (27.8%). Sugar-free products were considered as favourite by only 7.1% of those with children, but by 13.3% of those without children. Most of the interviewed customers reported using sweets at least once a day.

One quarter of the customers (26%) had no children and 10% did not know how often their children ate sweets. Almost all the children ate sweets at least once a day (87.5%) as reported by the parents. There seemed to be a strong association between the frequency of sweet consumption by the parent and their children (Table 6).

One fifth of the customers (18%) answered that they purchased sweets every day, and about half (40%) purchased once or twice a week. Females most often purchased for their children (59.1%) or for themselves (36.4%), but males purchased more evenly (for themselves 42.9%; for children 28.6%; for other reasons

Table 5 Preference for sweet products by nationality (%)

	Kuwaiti	Non-Kuwaiti	Total
Chocolate	34.3	38.9	36.6
Other	21.9	33.3	27.6
Sugar-free	12.5	11.1	11.8
Several products	31.3	16.7	24

Table 6 The proportion (%) of children using sweets daily according to their parent's frequency of using sweets

Parental consumption	Children using daily (%)
Once a week	66.7
Few times a week	87.5
Once a day	100
Several times a day	88.9

28.6%; p = 0.033). The most common reason for purchasing sweet products was for themselves (57.9%) among the youngest age group (21–30), but for the children (71.4%) among the oldest age groups (41–60) (p = 0.033).

More than half of the customers used soft drinks every day (58%). According to the response of the customers who had children, half of the children (51.3%) used soft drinks on a daily basis. Similar to sweets, the frequency of soft drink consumption by the parent was associated with the consumption by the children. The proportion of children consuming soft drinks daily when compared with their parents' frequency of consumption of soft drinks was: 33% when parents never had soft drinks, 25% when they had soft drinks once a day, 0% when parents consumed soft drinks a few times a week, 83.3% when parents consumed once a day, and 62.5% when they consumed several times a day.

DISCUSSION

This study design was based on observations and the interviews. Observation technique has been very rarely used in dental studies. However, it gave quite a distinct description about the customers in these two sweet shops. There might be some differences between the different sweet shops in Kuwait, but these differences probably are quite small. The analysis of the profile of the customers was done based on the large number of observations (n = 500) and further information was gathered by interviewing 10% of the customers.

The purchasing pattern was mainly discovered by the interviews (n = 50). Observation as a data collection method is very reliable, but the interview commonly gives slightly biased results, because the participants often want to give their answers towards the expectations of the interviewer. However, in this study the customers did not know that the interviewers were dental students and thus they might not have modified their answers towards the healthier behaviour. Also the results indicate that the adult customers answered according to their real practice and opinions. The sample size of the interview study was quite small and this did not allow the detailed analyses of the dependent variables according to the multi-categorical independent variables. Only the large differences were statistically significant.

The most common customers were adults between 21 and 40 years of age, who were purchasing alone. Surprisingly, there was no significant gender difference among the customers, either in the observation or in the interview study. The only gender difference was that males more often visited a sweet shop alone, without the company of another adult or a child. Two-thirds of the customers were Kuwaitis and two-thirds had children according to the interview.

The amount of spending money was four times higher in the urban shops than in the suburban shop. This was most probably because the suburban shop was situated inside the shopping mall, where the cus-

tomers did not come especially to purchase sweet products only. The amount of money spent increased consistently with increasing age. This was because the older customers were more likely to purchase for the children than for themselves or for any other reason. Adults were spending more money than the children, obviously because they had more money. Children who visited a shop with their maids seemed to spend more money than the children alone or with their parents.

Chocolate was the most common sweet product purchased in the observation study and the most common favourite sugar product in the interview study. Chocolate has been shown to be less cariogenic than the other sweets (Birkhed, 1990). Sugar-free products were still very uncommon alternatives, 10% in the observation study and 12% in the interview study. One explanation for the low level purchase of sugar-free products is that the population in Kuwait still have a very low level of knowledge about the risks of sugar. Together with the high consumption of sugar products, this has been shown previously (Petersen, 1990b; Vigild et al, 1999; Honkala et al, 2003). The World Health Organization (WHO) showed that sugar consumption per capita per year is increasing, especially after the Iraqi invasion (19.1 kg in 1991 and 33.1 kg in 2000) (WHO, 2001). However, the younger age groups had sugar-free products more often as their favourite compared with the older ones, which might be an indication of increasing knowledge. Another explanation for the low purchasing pattern of the sugar-free products might be the low availability of such products with different versions. It is well known that most sugar-free products found in Kuwait are of the chewing gum and candy types, which would reduce the chances of purchasing such products as it was shown that chocolate is the main sweet purchased. It should be understood that although knowledge is a fundamental factor in the reduction of sugar consumption and caries experience, the importance of the availability of sugar-free products is equally important.

The quantity of sweet products purchased was large or extra large (more than 5 different products) by more than half of the customers. More than half of the adults and almost all children (87.5%) consumed sweets every day. This is an alarming sign of the high frequency of sugar consumption among children, which has also previously been reported (Honkala et al, 2003). About half of the adults and the children also used soft drinks every day.

There was extremely high association between the daily use of sweets and soft drinks by the parents and their children. If the parents were using sweets and/or soft drinks every day, then almost all their children behaved the same way. This reflects the role of the parents as a behavioural model for their children, which has been observed in previously (Petersen, 1990a; Honkala et al, 1983). An interview study of Kuwaiti mothers and school teachers in 1988, showed that sugar consumption was high for both mothers and their children (Petersen, 1990a). Of the children studied, 66% consumed chocolate and 44% consumed soft drinks several times a day. The mothers consumed tea with sugars more often than other sweet products. The level of knowledge was found to be more in teachers than mothers. Most of the mothers answered that dental caries was caused by sweets. Half of the mothers knew the harmful effect of sugary drinks and the preventive role of fluoride. This indicates that we should improve mothers' knowledge as it has a positive relationship with the oral health of their children, as mentioned above.

CONCLUSIONS

1. Sweet shop customers very often purchase large amounts of sweets and spend quite a lot of money of their purchases.
2. The frequency of consumption of sugar products among children is extremely high.
3. There was a strong association in the frequency of use of sugar products between the parents and their children.
4. Knowledge of caries risks from sweets needs to be increased by health education programmes.
5. Increasing the availability of sugar-free or tooth-friendly products with low costs, reducing the importation of sugar-containing products, using attractive labelling that would distinguish the dentally safe products from sugar-containing products, and use of mass media to increase populations' oral health knowledge all should be emphasised by the Kuwait Ministry of Health.

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