Comparison of knowledge, attitude and practices of betelnut users in two socio-economic areas of Karachi

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Abstract

Objective: To gain an insight on the knowledge, attitude and practices of those who chew betel nut in two different socioeconomic regions of Karachi.

Methods: The cross-sectional study was conducted in Saddar and Defence areas of Karachi over a five-week period in March-April 2012. Individual interviews following verbal consent were conducted using a pre-coded questionnaire, which was divided into 3 sections to analyse the knowledge, attitude and practices of the chewers. The data was entered and analysed using SPSS v. 16.0. Pearson's chi-square was used as the primary statistical test.

Results: A total of 370 subjects, 185 (50%) from each area, comprised the study. Majority of the chewers in Defence had higher educational qualification and income. Most of the participants in both areas acknowledged that betel nut chewing can potentially result in mouth (n=274; 74.1%) and throat cancers (n=267; 72.2%). A large part of the sample (n=299; 80.8%) conceded that betel nut chewing is a bad habit, and almost half the sample was addicted to it (n=194; 52.4%).

Conclusion: Awareness regarding the detrimental effects of betel nut was satisfactory amongst the subjects, but the population was not willing to quit the habit. We recommend a two-pronged approach, offering widespread educational and awareness campaigns to prevent increased consumption of betel nuts, and professional counselling services for those already addicted.

Keywords: Socio-economic areas, Betel nut users, Urban Karachi, Oral cancer. (JPMA 63: 1319; 2013)

Introduction

Betel nut is chewed by approximately 600 million people worldwide,[1] indicating that it is one of the most important commercial crops that are grown, especially in Southeast Asia. After tobacco, alcohol and caffeine, betel nut is the fourth most common addictive substance in the world.[2] Southeast Asia is the major region where betel nut is consumed. Surveys from nations like Pakistan, India and Nepal show that the prevalence of betel nut products in the past few decades is between 20-40% among adults.[2,3] A study conducted in a Karachi squatter settlement showed that 40 per cent of the population was involved in chewing of betel nuts and tobacco on a regular basis.[4] It's likely that betel nut is the second most common consumed carcinogen after tobacco in the subcontinent.

Betel nut usage is a common habit in subcontinental nations of Pakistan and India. It is commonly known as chhaalia in Urdu — the regional dialect in Karachi. The chewing of this substance is widely prevalent in all areas of the city due to its low cost and easy accessibility. In a study conducted about practices and knowledge of school children regarding chhaalia, it was found that 72.7% of the children were daily habitual users of betel nut.[5] Moreover, a study in Karachi stated that oral cavity cancer among the low-income families has escalated by 200 per cent between 1998 and 2002.[6]

Betel nuts are consumed in the form of betel quid (commonly known as paan in Pakistan), gutka with or without tobacco and as an ingredient in small sachets of supari. These are available at various shops in different regions of the city. Furthermore, the impact caused by the promotion of betel nuts by celebrities is immense, leading to its increased usage.[7] Chewable products containing betel nuts which are industrially produced are also gaining popularity, particularly among the younger population, due to the colourful, appealing sachets with attractive brand names like Shahi (Royal).[7]

There is substantial evidence that consuming betel nut can lead to numerous health complications. These are very important to address as betel nut is sometimes erroneously thought to have medicinal benefits.[8] Asthma aggravation[9] and hypertension[10] are few of the short-term

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effects of betel nut chewing. Oral sub-mucosal fibrosis and malignant oral injuries[11] can occur with long-term usage of betel nut. An alarming statistic is that Karachi has the highest incidence of oral cavity cancers in the world.[6] The malignant diseases associated with betel quid also include oesophageal cancer[12] and hepatocellular cancer.[13] Both malignant and benign diseases can be induced by betel nut chewing. Betel is also responsible for reddish discolouration of teeth, periodontitis and buccal mucositis.[14] Further undesirable effects include chance of boosting the danger of diabetes type 2[15] and a higher incidence of head and neck cancers leading to a much higher death rate among the chewers.[16]

Limited research has been conducted to determine the attitude and practices of those who chew betel nut. This research was undertaken primarily to find out the knowledge, attitude and practices of those who chew betel nut. The secondary objective was to assess the link between socio-economic variables and awareness regarding the harmful effects of betel nuts.

Subjects and Methods

Individuals from Saddar and Defence areas of Karachi were selected using purposive sampling technique. Saddar is a much lower socio-economic area compared to Defence which is considered to be one of the posh areas of the metropolitan city of Pakistan. The study was approved by the Institutional Review Board of Dow University of Health Sciences (DUHS). The cross-sectional study was conducted over a period of 5 weeks during March-April, 2012. The sample size was calculated using proportion of betel nut chewers as 94%[5] with margin of error 2.5% and 95% Confidence Interval. The computed sample size was 347. Adding 5% non-response rate, the final sample size was 365. We opted to take 400 samples with equal distribution from each area due to preferable statistical consideration of comparing the two groups.

Any individual aged 10 years or above chewing betel nut in these 2 areas was selected. A face-to-face interview was conducted using a pre-coded questionnaire after taking verbal consent. Participants who were observed chewing betel nuts (usually while purchasing betel nuts or related products from shops in the two areas) were inducted in the study. The questionnaire specifically asked the participants for their place of residence to ensure that they were not simply visiting the area. In order to remove interviewer bias, the interviewers were given training on how to ask the questions. The questionnaire and the consent form were translated into Urdu as well. For participants below 18 years of age, induction was only sought if the children were accompanied with parents so that consent could be taken from their parents. People who did not chew betel nut, were below 10 years of age or had just migrated from a rural area were excluded from the study.

Data was entered and analysed using SPSS v. 16.0. Frequencies and percentages were computed for categorical responses. Chi square test was applied to see any difference between the opinions of people in the two different localities.

The questionnaire was divided into three sections namely knowledge, attitude and practices. In the knowledge section, information was collected on whether betel nut is responsible for a variety of harmful health complications such as mouth and throat cancer. In the attitude section, the chewing of betel nuts were assessed through the person's willingness to quit this habit and to discourage others from this habit. Regarding practices, the number of packets consumed daily were classified into 3 groups "one to five", "six to ten" and greater than 10. The age at which the user started this habit; fraction of income spent; and the form in which he chewed betel nuts were also noted.

Results

A total of 404 people were approached for the interview out of which 30 (7.4%) refused to participate in the study. The refusal rate from Defense participants (n=19; 9.7%) was more than that of Saddar (n=11; 2.7%). Of the 374 people who gave consent, 4 (1%) from Defence left the interview half way through. The final study sample thus was 370 (91.6%); 185 (50%) each from Defence and Saddar.

In Defence, 65.4% (n=121) were males compared to Saddar where 94.1% (174) of the participants were males. In both the areas, approximately 40% of the betel nut chewers were among the age group 21-30 (n=77; 41.6% in Defence, and n=72; 38.9% in Saddar). A considerably higher number of residents in Defence (n=70; 37.83%) had higher education when compared to those in Saddar (n=20; 10.81%). Participants having a postgraduate or undergraduate qualification were stratified as having higher eduation in Defence, 39 (21.1%) had a postgraduate qualification and 31 (16.8%) were undergraduate.

Of the total number of participants interviewed, 226 (61.1%) did not think that chewing of betel nut had any immediate effects. The results were statistically significant ($p<0.004$) with residents in Saddar being more in favour of betel nut causing immediate health effects than the residents in Defence. Every three out of four participants acknowledged that betel nut chewing causes mouth (n=274; 74.1%) and throat (n=267; 72.2%) cancer. More than half of them considered that consuming a small amount of betel nut is dangerous for health (n=208; 56.2%) without a statistically

significant difference in respondents from Saddar and Defence (p=0.356). Only 140 (37.8%) participants had read articles related to betel nut. Chewers in Defence had a statistically significant response in favour of reading articles on betel nut compared to residents of Saddar (p= 0.018).

Among the chewers, 148 (40%) had suffered dental problems. The results were statistically significant

Table-1: Knowledge amongst betel nut users in two socio-economic regions of urban Karachi.

		Area of Residence		p value
		Defence	Saddar	
Does chewing betel nuts have any immediate effects	Yes	48 (25.9%)	62(33.5%)	0.004
	No	127 (68.6%)	99(53.5%)	
	Don't Know	10 (5.40%)	24(13%)	
Do you think chewing betel nuts can cause mouth cancer	Yes	136(73.5%)	138(74.6%)	0.182
	No	30(16.2%)	20(10.8%)	
	Don't Know	19(10.3%)	27(14.6%)	
Do you think chewing betel nuts can cause throat cancer	Yes	133(71.9%)	134(72.4%)	0.439
	No	30(16.2%)	23(12.4%)	
	Don't Know	22(11.9%)	28(15.2%)	
Do you think consuming a small quantity of betel nuts is dangerous to health	Yes	99(53.5%)	109(58.9%)	0.356
	No	74(40%)	61(33%)	
	Don't Know	12(6.5%)	15(8.1%)	
Do you know of any advantages of chewing betel nuts	Yes	18(9.7%)	19(10.3%)	0.862
	No	167(90.3%)	166(89.7%)	
Have you ever read any articles about betel nut	Yes	81(43.8%)	59(31.9%)	0.018
	No	104(56.2%)	126(68.1%)	
Have you ever had any dental problems	Yes	61(32.9%)	87(47%)	0.006
	No	124(67.1%)	98(53%)	
Have you ever had problems with your tongue	Yes	43(23.2%)	47(25.4%)	<0.001
	No	142(76.8%)	119(64.3%)	
	Don't Know	0(0%)	19(10.3%)	
Have you ever experienced any hearing difficulties	Yes	31(16.8%)	39(21.1%)	0.288
	No	154(83.2%)	146(78.9%)	
Do you have difficulty in everyday speaking	Yes	39(21.1%)	48(25.9%)	0.27
	No	146(78.9%)	137(74.1%)	
Do you think chewing of betel nuts can cause chronic urticaria (skin rashes)	Yes	24(13%)	31(16.8%)	0.001
	No	108(58.4%)	130(70.3%)	
	Don't Know	53(28.6%)	24(12.9%)	
Effects of betel nut chewing on heart	Increase in heart rate	41(22.2%)	52(28.1%)	0.029
	Decrease in heart rate	7(3.8%)	6(3.2%)	
	Heart attack	8(4.3%)	2(1.1%)	
	Nothing/don't know	86(46.5%)	100(54.1%)	
	Chest pain	43(23.2%)	25(13.5%)	
Effects of betel nut chewing on CNS	Stimulates	91(49.2%)	84(45.4%)	0.613
	Depresses	23(12.4%)	29(15.7%)	
	No effect/don't know	71(38.4%)	72(38.9%)	
Do you think chewing betel nuts can increase your capacity to work	Yes	33(17.8%)	54(29.1%)	0.013
	No	107(57.8%)	105(56.8%)	
	Don't know	45(24.3%)	26(14.1%)	
Do you think chewing of betel nut can stimulate your salivation	Yes	47(25.4%)	80(43.2%)	<0.001
	No	74(40%)	73(39.5%)	
	Don't know	64(34.6%)	32(17.3%)	
Do you think chewing of betel nuts can affect pregnancy	Yes	35(18.9%)	34(18.4)	0.944
	No	95(51.4%)	93(50.3%)	
	Don't know	55(29.7%)	58(31.4%)	
Does chewing of betel nuts have any effect on kidneys	Yes	123(66.5%)	145(78.4%)	0.029
	No	18(9.7%)	9(4.9%)	
	Don't know	44(23.8%)	31(16.8%)	

Table-2: Attitude of betel nut users in two socio-economic regions of urban Karachi.

		Area of Residence		p value
		Defence	Saddar	
Do you think chewing betel nuts is a good habit	Yes	24(13%)	19(10.3%)	0.717
	No	147(79.5%)	152(82.2%)	
	Don't know	14(7.6%)	14(7.6%)	
Are you addicted to betel nut chewing	Yes	93(50.3%)	101(54.6%)	0.2
	No	80(43.2%)	79(42.7%)	
	Don't know	12(6.5%)	5(2.7%)	
Have you ever tried quitting the habit	Yes	100(54.1%)	124(67)	0.011
	No	85(45.9%)	61(33%)	
Where do you get betel nut from	Friends	48(25.9%)	5(2.7%)	<0.001
	Shop	118(63.8%)	164(88.6%)	
	Weddings	14(7.6%)	3(1.6%)	
	Other	5(2.7%)	13(7%)	
If you ever get a chance, will you try to stop others from chewing betel nut	Yes	143(77.3%)	158(85.4%)	0.045
	No	42(22.7%)	27(14.6%)	
Has anyone tried to stop you from chewing betel nut	Yes	120(64.9%)	136(73.5%)	0.072
	No	65(35.1%)	49(26.5%)	
Have you ever consulted a doctor for any problems you encountered because of betel nut	Yes	35(18.9%)	28(15.1%)	0.388
	No	150(81.1%)	157(84.9%)	

(p<0.006), with Saddar people enduring more than those in Defence. Only 23.2% (n=43) participants from Defence had tongue problems, while 25.4 %(n=47) participants from Saddar faced the same problems. The results were statistically significant (p<0.0001). Besides, 300 (81.1%) had not experienced hearing difficulties, and around three quarter of them (n=283; 76.4%) did not have any difficulty in speaking either.

About 55 (15%) admitted that betel nut causes chronic urticaria. Residents from Defence were less knowledgeable about chronic urticaria than those from Saddar. Half of the participants (n=186; 50.2%) did not know that betel nut chewing impacted on heart functions. Of the rest, 93 (25.1%) professed that it causes an increase in heart rate. Only 13 (3.5%) answered that it decreases the heart rate. Eight (4.3%) participants in Defence considered betel nut chewing can cause heart attacks; 25 (13.5%) of Saddar residents regarded that betel nut chewing was related to chest pain; 175 (47.2%) thought betel nut chewing stimulated Central Nervous System (CNS); only 52 (14%) indicated that the habit depressed CNS; the remaining 143 (38.6%) responded that it had no effect on CNS (Table-1).

Betel nut chewing did not increase working capacity. This statement was admitted by more than half of the participants (n=212; 57.3%). Though residents from Saddar were more in favour of considering that this habit increased their working capacity. The result was statistically significant (p=0.006). Stimulation in saliva was reported more frequently by Saddar residents compared to the Defence residents (p<0.0001). Half of the participants (n=188; 50.8%) proclaimed that chewing betel nuts did not have any side effects during pregnancy. Though a large proportion (n=268; 72.4%) stated that it caused kidney stones. Saddar participants said this more than the Defence participants (p<0.029).

Majority of participants (n=299; 80.8%) conceded that betel nut chewing is not a good habit; 194 (52.4%) were addicted to this habit. Overall, 224 (60.5%) had tried to quit this habit. A higher number of residents from Saddar had attempted to quit and the findings was statistically significant (p<0.011). Most of the participants (n=282; 76.2%) purchased betel nut from shops. Trends of taking betel nuts from friends and weddings were found higher in Defence residents (p<0.0001). Around 69 (19%) participants refused to stop others from eating betel nut, and about 256 (70%) admitted that they were advised by their acquaintances to quit chewing betel nut. Besides, 64 (17.3%) of the participants acknowledged that they had consulted doctors after encountering problems due to this habit (Table-2).

Only 136 (36.7%) of the respondents brushed their teeth twice a day, while 28 (7.6%) participants did not brush their teeth at all. The remaining 206 (55.7%) stated that they brushed once a day. About 287 (78%) respondents reported that they consumed betel nut daily, while 27 (7.3%) consumed betel nut once in four weeks. Almost one-fifth of the sample (n=76; 20.5%) admitted that they consumed more than 10 packets a day, and 161 (43.5%) consumed 1-5

Table-3: Practices amongst betel nut users in two socio-economic regions of urban Karachi.

		Area of Residence		p value
		Defence	Saddar	
How often do you eat betel nut	Everyday	140(75.7%)	147(79.5%)	0.479
	One to six times a week	25(13.5%)	17(9.2%)	
	Once in two weeks	4(2.2%)	6(3.2%)	
	Once in three weeks	3(1.6%)	1(0.5%)	
	Once in four weeks	13(7%)	14(7.6%)	
How many packets of betel nut products on averagedo you consume everyday	1-5	78(42.2%)	83(45.1%)	0.55
	6-10	40(21.6%)	45(24.4%)	
	>10	39(21.1%)	36(19.6%)	
	0	28(15.1%)	20(10.9%)	
What form do you eat betel nut in	Betel squid without tobacco	24(13%)	21(11.4%)	0.025
	Betel squid with tobacco	57(30.8%)	66(35.7%)	
	Betel nut with tobacco	18(9.7%)	18(9.7%)	
	Only betel nut	86(46.5%)	66(35.7%)	
For how long have you been eating betel nuts	<12 months	2(1.1%)	28(15.1%)	<0.001
	1-2 years	78(42.2%)	21(11.4%)	
	3-6 years	43(23.2%)	34(18.4%)	
	7-10 years	21(11.4%)	31(16.8%)	
	> 10 years	41(22.2%)	71(38.4%)	
Does anyone else in your house chew betel nuts	Yes	79(42.7%)	107(57.8%)	0.014
	No	96(51.9%)	71(38.4%)	
	Don't know	10(5.4%)	7(3.8%)	
At what age did you start chewing betel nuts	Under 10	0(0%)	46(25%)	<0.001
	10-20	38(20.5%)	94(51.1%)	
	21-40	146(78.9%)	41(22.3%)	
	41-60	1(0.5%)	3(1.6%)	
How much do you spend on betel nut products every month	<100	17(9.2%)	66(35.7%)	<0.001
	100-500	124(67%)	64(34.6%)	
	501-1000	27(14.6%)	27(14.6%)	
	>1000	17(9.2%)	28(15.1%)	
Have you ever chewed betel nut in a forbidden area	Yes	68(36.8%)	69(37.3%)	0.285
	No	117(63.2%)	116(62.7%)	
While chewing, for how long do you keep betel nuts in your mouth	< 1 min	0(0%)	19(10.3%)	<0.001
	1-2 mins	34(18.4%)	20(10.8%)	
	2-5 mins	82(44.3%)	45(24.3%)	
	> 5 mins	69(37.3%)	101(54.6%)	
Do you eventually swallow it or spit it out	Swallow	35(18.9%)	31(16.8%)	0.276
	Throw out	96(51.9%)	112(60.5%)	
	Sometimes swallow sometimes throw out	54(29.2%)	42(22.7%)	
Do you experience sweating while chewing betel nuts	Yes	48(25.9%)	85(45.9%)	<0.001
	No	100(54.1%)	62(33.5%)	
	Never notice	37(20%)	38(20.5%)	
How often do you brush your teeth	Everyday	98(53%)	108(58.4%)	0.003
	Twice day	80(43.2%)	56(30.3%)	
	Don't brush	7(3.8%)	21(11.4%)	
At what time of day do you usually consume betel nuts	Before meal	12(6.5%)	8(4.3%)	0.006
	After meal	29(15.7%)	48(25.9%)	
	Before sleeping	3(1.6%)	7(3.8%)	
	After waking up	3(1.6%)	11(5.9%)	
	No pattern	138(74.6%)	111(60%)	
How did you come to know of betel nut eating	Friends	128(69.2%)	116(62.7%)	0.027
	Advertisements	28(15.1%)	18(9.7%)	
	Tradition	11(5.9%)	14(7.6%)	
	Family	11(5.9%)	15(8.1%)	
	Others	7(3.8%)	22(11.9%)	

packets daily. Saddar residents consumed more tobacco-mixed betel products than Defence residents. This result was statistically significant ($p<0.05$). Most of the residents (n=112; 30.3%) had been consuming betel nut for more than 10 years and very few respondents (n= 30; 8.1%) had been consuming betel nut for less than 12 months. Two out of every three residents (n=244; 65.9%) stated they were introduced to betel nut by their friends. Advertisements were the second most important source (n=46; 12.4%). Tradition and use by family were more reported by Saddar residents ($p<0.027$). Half of the participants (n=186; 50.2%) acknowledged that their household members also consumed betel nut. This proportion was found more in Saddar participants then that of Defence ($p<0.014$). As for spending, 45 (12.2%) participants spent more than 1000 Pakistani rupees on betel nut every month. More respondents in Saddar (n=28; 15.1%) spent this staggering amount on betel nut compared with the Defence (n=17; 19.2%) respondents. Nearly half (n=188; 50.8%) of the participants spent 100-500 Pakistani rupees on betel nut every month. Of those 188, 124 (66%) were from Defence. This result was statistically significant ($p< 0.001$). A notable number of participants (n=137; 37%) admitted that they chewed betel nut in forbidden areas. Most of the participants (n=170; 45.9%) kept betel nut in their mouth for more than 5 minutes while chewing. Out of those 170 chewers, 101 (59.4%) were from Saddar ($p<0.001$). A large number of the participants (n=208; 56.2%) spot out the betel nut after chewing it (Table-3).

Discussion

Our study was conducted to assess the knowledge, attitude and practice of people who chew betel nut. Therefore, the frequency of betel nut chewers is 100%. The study sample belonged to a high-income class and a low-income class in society. The results were compared on the basis of social class, education, age, income and gender. People who just migrated from a high-class society to a low-class society or vice versa were not included in the survey. Disabled persons were also excluded. The sample of chewers of betel nut is not the perfect sample representative of chewers in Karachi, because we used convenient sampling as our methodology. Some of the respondents had difficulty recalling their ages and the exact year when they started betel nut chewing, which may have led to recall bias.

In a similar study on the use of betel nut in Karachi, it was noted that 97% of the respondents were betel nut users.[5] The respondents were students in the age range of 11-15 years. Males were 55.4% in contrast to our study where it was 65.4%.[5] In another study conducted on a Pakistani squatter settlement, it was noted that everyday consumption of betel nut was more common in the 10-18 age groups than adults.[16] In our study, about 40% of the users were from 21-30 age group in both Defence and Saddar towns. In the research conducted on squatter settlement, females were more likely to use betel nut than males.[16] This may provide a limitation in our study as the female-to-male ratio was not equal.

Residents of Defence had higher educational qualifications compared to the residents of Saddar. Only 37.8% of the respondents had read articles related to betel nut. This awareness was higher in Defence which may be supported by high educational qualifications of the residents of Defence. Besides, 75% of the respondents believed that that chewing betel nut causes mouth cancer. The frequency of head and neck cancers corresponds with the topographical prevalence of betel nut products as 58% of global head and neck cancers are seen alone in South and Southeast Asia.[17,18] In our study, it was noted that 72.4% of the users agreed with the fact that betel nut causes kidney stones, while in another study, 44% of the users believed that betel nut caused kidney stones.[5] It should be noted that the two studies provide a good comparison as our study and the one mentioned above (97% of the respondents were users) focussed on the users than the general population.[5]

In a study mentioned earlier, 88% of the users had access to betel nut from shops.[5] This result is consistent with our value of 76.2%. Furthermore it was also noted that in our study 80.8% of the people believed that chewing betel nut is not a good habit. In the study mentioned above, 60% believed that chewing is a bad habit.[5] In our study, around 69% of the consumers had been advised by their acquaintances to quit the habit, while in the above study almost all (98.6%) had been advised to quit the habit mainly by their parents and teachers.

High prevalence of betel nut consumption among adolescents was determined in another research.[16] It has been proven that the use of betel products is high in Pakistan and substances like gutka and niswaar are gaining favourable recognition amongst the adolescents.[16] In our study, about 80% of the chewers (n=287) were consuming betel nuts every day, while another study on a school children sample stated that more than 74% of the children consumed chewable products on a regular basis.[19] In another study done in Mehmodabad,[5] Karachi, around 88% of the children's relatives consumed chhalia, while in our study only around 50% of the respondents said betel nut was consumed by their relatives. Our results also show that half of the respondents had started chewing betel nut at an age group of 21-40. This clearly demonstrates that the

bread-earning population is involved in this habit which can be detrimental.

In Pakistan, the first step to control the epidemic of head and neck cancer is to discourage the use of betel nut and tobacco.[20] In order to achieve this goal, extensive measures should be taken by healthcare workers, media and community.[10] Unfortunately, there have been very few steps on this issue.[21] Behavioural intervention has proved to be a very potent way in reducing the use of smokeless tobacco.[22-24] Visual illustrations of the harmful effects caused by the use of betel nut may be helpful for this purpose. Strong pictorial health warnings should also be present on betel nut products. Music, movies, and other types of media promoting betel nut use should be banned. The Health Ministry should play an important role in designing new policies to curb the production, trade and consumption of betel nut.[25] Awareness campaigns for all should be conducted and social support groups should also be established for those who are addicted to betel nut chewing.

Conclusion

The findings indicate that betel nut is consumed mainly by the young population. The major adverse effects of betel nut chewing were known by both the high-income and the low-income classes. In both areas, majority of the respondents did not have any convincing reason to chew betel nut. However, some of the participants with low educational qualifications falsely linked betel nut chewing with increased working capabilities. A significant finding was that many of the respondents who were addicted to the habit had actually tried to quit the habit. This implies that professional counselling services for those who are in addiction can play a vital role in reducing the consumption of betel nut. Even the participants with low income were spending a great amount of money on betel nut due to their addiction. Furthermore, the participants in the lower income area had a habit to keep betel nut in their mouths for a longer period and consume more tobacco-related betel products, leading to increased chances of oral cancers.

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