Barts and The London
School of Medicine and Dentistry

Betel Nut Usage in Tower Hamlets: Raising Awareness of Betel Nut and Food Standards Agency Food Safety Advice




Project Report

Prepared by Dr Saba Kassim, Dental Public Health Queen Mary University of London

Shamsia Begum, BME Stop Tobacco Project Queen Mary University of London

Ely MirzaHossein, Consumer Engagement Manager Food Standards Agency

Food Standards Agency
food.gov.uk

Table of Contents

Executive Summary

Tower Hamlets is one of the most deprived boroughs in England with a large Bangladeshi community who have a high risk of oral cancer. This is due to risk factors that include; Smoking tobacco, smokeless tobacco and betel nut use. The BME Stop Tobacco Project was commissioned by the Food Standards Agency (FSA) to conduct a small study into aspects of the usage of Betel Nut Alone (BNA), or with tobacco (BNT) and the uptake and the influence of betel nut safety advice amongst the Tower Hamlets Bangladeshi community. The BME Stop Tobacco Project (formerly known as the Bangladeshi Stop Tobacco Project) was chosen to do this study based on their experience of working within the community. The study took place in the London Borough of Tower Hamlets during September 2014-March 2015 and surveyed 160 adult Bangladeshi residents. The participants were recruited during different community events and health education campaigns. An A6 bilingual flyer using evidence-based advice about the carcinogenicity of using betel nut alone or with tobacco was produced in agreement with the FSA. The flyer also directed people to resources available in the area for quitting the consumption of BNA or BNT as well as giving alternative advice for using BNA or BNT. The study was done in two phases: Phase 1 obtained information from participants about the social aspect of betel nut use (BNA and BNT); how dependant they were; how motivated they were to quit; what can help/make them quit the consumption of BNA or BNT; aspects of their general and oral health; knowledge and awareness of oral cancer. During this phase participants were given the flyer after finishing the interview. The flyer was also provided to people who were not willing to participate in the study. The second Phase: 'Post flyer knowledge of oral cancer risk factors and oral cancer early lesions awareness', in this phase 56 participants from phase 1 agreed to be re-interviewed to assess their knowledge and oral cancer awareness after reading the flyer.

Key findings

1. **General characteristics:** Participants were asked about their social demographic background (for example age, gender) this shed light on the person who is most likely to chew BNA or BNT. We found that;

- The average age of participants was 47 years, 78% were female and 16% employed
- 52% self-reported 'Very good' general health and 48% reported 'Very good' oral health
- 55% of participants reported having one or more health condition(s). The main general health condition was diabetes (51.1%) followed by high blood pressure (46%) and cholesterol (41%)
- Oral health conditions reported by 38% of participants described these conditions as gum diseases (28%) toothache (47%) or other (6%).
- Only 39% attended a Dentist for regular check-ups (once or twice a year)
- For those not attending the Dentist regularly, 38% reported the main reason being 'No perceived need'

2. **Aspects of general Betel nut use:** Participants were asked to provide information about their consumption of BNA or BNT for example age of starting consumption, how much they are using per serving and the level of dependence they have on BNA or BNT. The findings show that;

- 25% of participants used betel nut alone (BNA)
- 75% of participants used betel nut with tobacco (BNT)
- The average amount of BNA per serving used was 1.91gram
- The average amount of tobacco per serving among BNT users was 0.28 grams
- The average age of starting to use BNA or BNT was 21 years (ranging from age 7 to 45 years)
- The number of years users consumed BNA or BNT was 25 years
- 93% percent used the BNA or BNT daily
- 21% used BNA or BNT within two hours after waking up
- An average of two attempts to quit BNA or BNT were reported by 28% of participants

- Only 7% reported 'I really want to stop BNA or BNT and intend to in the next month'
- Aspects of psychological dependence on use of BNA and BNT were assessed. The average of 'Severity of Dependence' (SDS) on BNA and BNT was 5.62 out of 15 scores. However, the average for BNA was 4.40 and for BNT 6.02.

3. **Oral cancer knowledge and awareness (whole sample):** All participants were asked about information regarding their knowledge and awareness of oral cancer, the risk factors (smoking cigarettes, chewing tobacco and chewing tobacco with betel nut) before reading the flyer. Their initial knowledge and awareness is as follows;

- 86% had knowledge that contracting oral cancer can happen at any age
- 83% had knowledge of smoked tobacco (cigarettes, cigars, bidi, roll ups or pipe, water pipe [hookah]) as being a risk factor for oral cancer
- 55% did not know that chewing betel nut (supari, gua, areca nut) with or without tobacco was a risk factor for oral cancer
- Almost 60% knew that chewed tobacco and chewed paan with tobacco were risk factors for oral cancer
- Only 38% knew about the risk of oral cancer when chewing paan with betel nut (supari ,gua, areca nut) but without tobacco

  Finally, 61% were not aware that a small lesion in the mouth can develop into oral cancer and 52% were not aware that early treatment can prevent a lesion from developing into oral cancer

4. **Phase 1 and Phase 2: Pre and post-flyer knowledge and awareness of oral cancer:** 56 participants were re-interviewed after reading the flyer and the changes in their knowledge and awareness after reading the flyer highlighted the following;

   - 9% who reported 'Do not know' about age as risk factor for oral cancer showed improvement in their knowledge after reading the flyer and responded positively with 'Yes'

- A significant number (77%) said ‘Yes’ before and after reading the flyer for ‘You are more likely to get oral cancer if you smoked tobacco (cigarettes, cigars, bidi, roll ups or pipe, water pipe)’ whereas 12% who did not know before the reading of the flyer about the risk of smoking tobacco reported ‘Yes’ after reading the flyer

- Those who were asked whether chewing betel nut with or without tobacco is a risk factor for oral cancer, 43% had said ‘Yes’ before and after reading the flyer. However of those who changed from ‘Don’t know’ to ‘Yes’, 36% showed an increase in their knowledge after reading the flyer. Again, those that had said ‘No’ before and ‘Yes’ after reading the flyer were at 19%

- Of those who were asked if ‘chewed tobacco’ alone is a risk factor for oral cancer 70% said ‘Yes’ before and after reading the flyer. Those who ‘Did not know’ (16%) before reading the flyer reported a ‘Yes’ after reading it. Those who said ‘No’ before reading the flyer, 3% reported a ‘Yes’ after reading the flyer

- When asked whether chewing paan with tobacco was a risk factor for oral cancer, 66% reported ‘Yes’ before and after reading the flyer. However, 27% did not know and reported ‘Yes’ after reading the flyer

- Participants were asked about whether chewing betel nut in paan without tobacco was a risk factor for oral cancer, 39% replied ‘Yes’ before and after reading the flyer, however, 34% who did not know replied ‘yes’ after reading the flyer. Those (16%) who had said ‘No’ before reading the flyer said ‘Yes’ after seeing and reading the information

- Thirty seven percent of participants were aware that a small lesion in the mouth can develop into cancer. However, 43% ‘Did not know’ before reading the flyer and reported ‘Yes’ after reading the flyer

- Fifty nine percent were aware that early treatment can prevent a lesion from developing into oral cancer. Of those who ‘Did not know’ 23% said ‘Yes’ after reading the flyer

1. Background

Betel nut is a seed of the areca palm tree also known as areca nut, Gua or Supari, it is traditionally cut into small pieces and chewed. Betel nut use is embedded within the socio-cultural aspects of the Pacific, South East and South Asian community at home and in the diaspora. It is the fourth most commonly used drug worldwide after tobacco, alcohol, and caffeine. It is estimated that 10% of the world's population uses betel nut[1]. The perceived benefits of betel nut use include being used as a mouth refresher, laxative, stimulant, an aid for relaxation and coping with stress[2, 3].

Betel nut may be used in a variety of ways (fresh, dried or cured) with or without tobacco. It is commonly packaged in a betel leaf with additives, betel nut, loose tobacco, lime paste and other flavourings[4, 5]. This is known as a betel nut quid (pouch) or paan quid tobacco. It is placed in the mouth and held against the cheek and molar teeth. The betel quid is periodically chewed to extract the juices[6]. Commercially manufactured dry betel nut includes paan masala, supari, gutkha with or without tobacco[4, 7, 8]. This type of betel nut is gaining popularity among the younger population due to its appealing colourful sachets with attractive brand names[7]. Research has shown that betel nut use with or without tobacco is associated with general health conditions including diabetes, obesity, and cardiovascular diseases[9, 10, 11, 12].

[1] Benegal V, Rajkumar RP, Muralidharan K. Does areca nut use lead to dependence? Drug Alcohol Depend. 2008;97(1-2):114-21.
[2] Norton SA. Betel: consumption and consequences. J Am Acad Dermatol. 1998;38(1):81-8.
[3] Gunaseelan R, Sankaralingam S, Ramesh S, Datta M. Areca nut use among rural residents of Sriperambudur Taluk: a qualitative study. Indian J Dent Res. 2007;18(1):11-4.
[4] Schensul JJ, Nair S, Bilgi S, Cromley E, Kadam V, Mello SD, et al. Availability, accessibility and promotion of smokeless tobacco in a low-income area of Mumbai. Tob Control. 2013;22(5):324-30.
[5] Croucher R, Dahiya M, Gowda KK. Contents and price of vendor assembled paan quid with tobacco in five London localities: a cross-sectional study.Tob Control. 2013;22(2):141-3.
[6] Mirza SS, Shafique K, Vart P, Arain MI. Areca nut chewing and dependency syndrome: is the dependence comparable to smoking? A cross sectional study. Subst Abuse Treat Prev Policy. 2011;6:23.
[7] Khan MS, Bawany FI, Shah SR, Hussain M, Arshad MH, Nisar N. Comparison of knowledge, attitude and practices of betel nut users in two socio-economic areas of Karachi. J Pak Med Assoc. 2013;63(10):1319-25.
[8] Bhat SJ, Blank MD, Balster RL, Nichter M. Areca nut dependence among chewers in a South Indian community who do not also use tobacco. Addiction. 2010;105(7):1303-10.
[9] Javed F, Al-Hezaimi K, Warnakulasuriya S. Areca-nut chewing habit is a significant risk factor for metabolic syndrome: a systematic review. J Nutr Health Aging. 2012;16(5):445-8.
[10] Shafique K, Mirza SS, Vart P, Memon AR, Arain MI, Tareen MF, et al. Areca nut chewing and systemic inflammation: evidence of a common pathway for systemic diseases. J Inflamm (Lond). 2012;9(1):22.
[11] Yamada T, Hara K, Kadowaki T. Chewing betel quid and the risk of metabolic disease, cardiovascular disease, and all-cause mortality: a meta-analysis. PLoS One. 2013;8(8):e70679.
[12] Lee CH, Ko AM, Yen CF, Chu KS, Gao YJ, Warnakulasuriya S, et al. Betel-quid dependence and oral potentially malignant disorders in six Asian countries. Br J Psychiatry. 2012;201(5):383-91.

In addition, mental (e.g. psychosis and dependence) and oral conditions (e.g. oral submucous fibrosis) was reported[13, 14, 15, 16, 17].

Studies also show a general lack of awareness of the risks and signs of oral cancer among users of all ages when compared to awareness of the risks of smoking. Previous activities done to raise awareness of products containing betel nut have centred on smokeless tobacco that is added to the betel quid[18]. Older betel nut users reported that the use of the betel nut alone has no impact on oral health compared to when betel nut is chewed with tobacco[3]. Increase in education levels is associated with awareness of betel nut use. Impact and attempts to quit betel nut use was reported among dependent users [3, 7].

Despite the research on the adverse health effects of betel nut consumption, we know very little about betel nut use among adult communities residing in the UK. The BME Stop Tobacco Project has been supporting and helping members of the Bangladeshi community in Tower Hamlets to give up tobacco in paan for over 13 years[19]. Around half (48.5%) of Bangladeshi women in this community chew paan quid with betel nut and tobacco [20], but there is no data locally to explore aspects of betel nut use alone or with tobacco and to suggest what proportion of men or women chew betel nut on its own without tobacco. Betel nut use in other communities particularly reflected in Taiwan exhibit specific use from the Bangladeshi community[21]. A survey of 800 children published in 2001 by Farrand et al, suggested that a high prevalence (77%) of South Asian children in Tower Hamlets may

[13] Lee CH, Ko AM, Yen CF, Chu KS, Gao YJ, Warnakulasuriya S, et al. Betel-quid dependence and oral potentially malignant disorders in six Asian countries. Br J Psychiatry. 2012;201(5):383-91.
[14] Pickwell SM, Schimelpfening S, Palinkas LA. 'Betelmania'. Betel quid chewing by Cambodian women in the United States and its potential health effects. The Western journal of medicine. 1994;160(4):326-30.
[15] Secretan B, Straif K, Baan R, Grosse Y, El Ghissassi F, Bouvard V, et al. A review of human carcinogens--Part E: tobacco, areca nut, alcohol, coal smoke, and salted fish. Lancet Oncol. 2009;10(11):1033-4.
[16] Porter S. Strong association between areca nut use and oral submucous fibrosis. Evid Based Dent. 2006;7(3):79-80.
[17] Tilakaratne WM, Klinikowski MF, Saku T, Peters TJ, Warnakulasuriya S. Oral submucous fibrosis: review on aetiology and pathogenesis. Oral Oncol. 2006;42(6):561-8.
[18] Milward D, Karleson S. Tobacco use among minority ethnic populations and cessation interventions. http://www.darkredweb.net/REF-better-health/sites/default/files/briefings/downloads/health-brief22_0.pdf. 2011.
[19] Croucher R, Shanbhag S, Dahiya M, Kassim S, McNeill A. Predictors of successful short-term tobacco cessation in UK resident female Bangladeshi tobacco chewers. Addiction. 2012;107(7):1354-8.
[20] Croucher R, Islam S, Jarvis M, Garrett M, Rahman R, Shajahan S, et al. Tobacco dependence in a UK Bangladeshi female population: a cross-sectional study. Nicotine Tob Res. 2002;4(2):171-6.
[21] "Tackling Taiwan's betel". Tackling Taiwan's betel nut habit. Accessed on 1 April 2015 At: http://www.bbc.co.uk/news/health-31965504. 2015.

already be ‘experienced users of the betel nut habit’. Products used by the respondents included using betel nut alone, mistee paan, betel quid and pan masala[22].

In the light of the current literature, gaining access to comprehensive information about aspects of betel nut use alone or with tobacco amongst communities in Tower Hamlets, East London, will help us to better understand their needs and priorities. It will help us to develop effective programmes to prevent the uptake of betel nut use and help identify programmes and strategies that help people to quit. Finally, this research may contribute to the body of evidence needed to inform legislation and policy requirements to raise awareness of the carcinogenic effects of betel nut use and support people to give up.

Aims of the study

1. To provide baseline information about aspects of betel nut use (with or without tobacco) that includes the psychosocial (e.g. assessing betel nut alone or with tobacco dependency, social model [family and friends use]) and behavioural characteristics (e.g. frequency of use) of the user in Tower Hamlets.
2. To transfer knowledge via dissemination, a bilingual flyer using evidence based advice about oral health risk factors specifically the carcinogenicity of using betel nut alone or with tobacco.
3. To raise awareness via dissemination, using the bilingual flyer with evidence based advice about early oral lesion development into oral cancer and early oral lesion treatment prevention of oral cancer.
4. To assess the influence of the flyer in improving knowledge about oral health risk factors, specifically the carcinogenicity of betel nut use alone or with tobacco.
5. To assess the influence of the flyer in raising awareness about the early oral lesions detection and treatment.

[22] Farrand P, Rowe R. Areca nut use amongst South Asian schoolchildren in Tower Hamlets, London: the extent to which the habit is engaged in within the family and used to suppress hunger. Community Dent Health. 2006;23(1):58-60.

2. Methods

2.1 Study design, inclusion and exclusion criteria

This was a two phased cross sectional study intended to recruit 225 users based on previous prevalence of betel nut use[22]. The study included male or female adults aged 18 and above, speaking English or Bengali, resident in the UK and using BNA or BNT at least once a week in the last 12 months. Participants who did not meet the criteria, withhold consent or lack capacity to provide informed consent as defined by the Mental Capacity Act 2005, were excluded from the study.

2.2 Strategy of recruitment of participants into the study

The 'privilege access interviewers' technique was used to recruit participants[23] . This implies using interviewers from the same population group to gain access to the targeted population. As such the BME Stop Tobacco Project team in Tower Hamlets was commissioned by the FSA to do this work. In addition, participants were approached to take part in the study through community events and venues as recommended by the current literature on participant recruitment[24] .

Four Advisors (two Bangladeshi female and two Bangladeshi male) recruited the participants from different social and medical care settings (e.g. East London Mosque (Friday Prayers), Community Centres, GPs and Market Stalls). This was done during annual health events in the area e.g. 'No Smoking Day', 'Stoptober' and the Ramadan campaign. The betel nut users were recruited into the study in two phases.

[23] Griffiths P, Gossop M, Powis B, Strang J. Reaching hidden populations of drug users by privileged access interviewers: methodological and practical issues. Addiction. 1993;88(12):1617-26.
[24] Taylor C, Griffiths P. Sampling issues in drug epidemiology. *In* Epidemiology of drug abuse, pp 80-90. Z Sloboda (Ed), Springer Press. 2005

In phase 1 initial baseline data was obtained using a questionnaire in an interview setting, that was developed from a pre-piloting of sample questions and existing validated questionnaires (Appendix 1)[25, 26, 27, 28, 29, 30, 31, 32, 33].

2.3 Data Collection

The questionnaires for data collection (Appendix 1) included: socio-demographic characteristic of BNA and BNT users, patterns of BNA and BNT use, betel nut preparation (e.g. shredded), dependence on BNA and BNT, motivation to stop BNA and BNT use. The participants were asked to provide a portion of betel nut and tobacco that they would chew per serving. If they used both BNT the ingredients would be weighed separately. This was weighed on a digital electronic pocket scale. In addition the questionnaire asked for the participants' general and oral health, knowledge and awareness about oral cancer related risk behaviours and signs and treatment. On finishing the interview participants were given a bilingual postcard flyer (Appendix 2) including information about oral cancer risk factors (e.g. use of BTA or BNT), and the importance of early detection of small lesions to prevent development of oral cancer. In the second phase 'Post flyer knowledge of oral cancer risk factors and oral cancer early lesions awareness', was assessed after reading the flyer.

2.3 Ethical considerations

Ethical approval was obtained from the Research Ethics Committee at Queen Mary University of London (QMREC2014/15). Participation in the study was voluntary and

[25] American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorder: DSM-IV, fourth ed. Washington, DC. 1994.
[26] Gossop M, Darke S, Griffiths P, Hando J, Powis B, Hall W, et al. The Severity of Dependence Scale (SDS): psychometric properties of the SDS in English and Australian samples of heroin, cocaine and amphetamine users. Addiction. 1995;90(5):607-14.
[27] Heatherton TF, Kozlowski LT, Frecker RC, Fagerstrom KO. The Fagerstrom Test for Nicotine Dependence: a revision of the Fagerstrom Tolerance Questionnaire. Br J Addict. 1991;86(9):1119-27.
[28] Humphris G, Duncalf M, Holt D, Field E. The experimental evaluation of an oral cancer information leaflet. Oral oncology. 1999;35(6):575-82.
[29] Kotz D, Brown J, West R. Predictive validity of the Motivation To Stop Scale (MTSS): a single-item measure of motivation to stop smoking. Drug Alcohol Depend. 2013;128(1-2):15-9.
[30] McCaul KD, Hockemeyer JR, Johnson RJ, Zetocha K, Quinlan K, Glasgow RE. Motivation to quit using cigarettes: a review. Addict Behav. 2006;31(1):42-56.
[31] Sanders AE, Spencer AJ, Slade GD. Evaluating the role of dental behaviour in oral health inequalities. Community Dent Oral Epidemiol. 2006;34(1):71-9.
[32] Census OfNS. Household Questionnaire England_Word_ 10.2.11 Final.doc - Powered by Google Docs 2011. Available from: http://docs.google.com/viewer?a=v&q=cache:Nf8TIRsgQV0J:www.ons.gov.uk/census/2011-census/2011-census-questionnaire-content/2011-census-questions---england.pdf+Household+Questionnaire+England+Office+for+National+Statistics+2011+Census&hl=en&gl=uk&pid=bl&srcid=ADGEESi5IuPDvj9K6IUt4CTEnUSoewxZ0dhgHF4rHYd9PLlqWPGQdIO9Gr89j1EA4j_GAs7dxvHR_8afM5pUhv6yIy4haKplS3rm3W7KQu61Sup1LVXvxokT1Bw3nzMmFNwKEWGTqc-g&sig=AHIEtbOzcnmLdf4dZqf7NSZLfTAGfzrNWg&pli=1.
[33] Kelly M, Steele J, Nuttal N, et al. . Adult Dental Health Survey, Oral Health in the United Kingdom. London: The Stationary Office London, 2000. 1998.

withdrawal from the study could be at any time. Participants were provided with an information sheet explaining the aims of the study. An informed consent form was signed before participating in the study.

The confidentiality of the information obtained was in accordance with Data Protection ACT 1998. Each participant was given the choice to complete an interviewer-administered questionnaire in English or Bengali. The interview was conducted at a pre-arranged date, time and venue (e.g. Participants' homes).

2.5 Data analysis

Once the data was collected the Statistical Package for Social Sciences Software (SPSS) version 20 was used for analysis. A descriptive statistical analysis was used to report characteristics that include aspects of betel nut use whether someone chewed BNA and BNT. The knowledge about the oral cancer risk factors (BNA or BNT) and awareness about oral cancer lesion before and after the dissemination of the flyer was described.

3. Results

3.1 Description of the study participants

Due to the time frame of this project we recruited 160 users of BNA or BNT on whom this report is based. Table 1 shows the characteristics of the participants. Of the 350 individuals who were approached 160 (64% recruited from the community and 36% from Medical settings) agreed to participate. The average age of the participants who were Bangladeshi was 47years (range 18 and 83 years).

Of the participants 39% reported 'No formal qualification', 23% had 'Formal education' and 26% reported education received from their country of origin. The maximum level of education attained was at high school level.

Table 1: Characteristics of the participants

Variables	†**N (%)**
Gender	
Female	124 (77.5)
Male	36 (22.5)
Marital status	
Married	135 (84.4)
In other status	25 (15.6)
Nationality	
British	152 (95.0)
Other	8 (8.0)
Country of birth	
Bangladesh	145 (90.6)
England	13 (8.1)
Elsewhere	2 (1.3)
Main language	
Sylheti	151(94.4)
Bengali	4 (2.5)
English	5 (3.1)
English speaking proficiency (self-assessed)	
Very well	17 (10.6)
Well	27 (16.9)
Not well	88 (55.0)
Not at all	28 (17.5)
Employment	
Student full /part time	5 (3.1)
Employed	26 (16.3)
Unemployed	20 (12.5)
Never worked /long term unemployment	4 (2.5)
Home carer	75 (46.9)
Disabled/sick /unable to work	2 (1.3)
Retired	28 (17.5)

†N (%) =number and percentage

3.2 Aspects of betel nut use

3.2.1 Historical and current pattern of betel nut use

The participants were asked about their historical and current use of BNA or BNT (Appendix 1 Section 2). The current users of BNT (paan quid tobacco with betel nut or betel nut with tobacco) over the last month accounted for 76%. The current users of BNA accounted for only 24% (Figure 1).

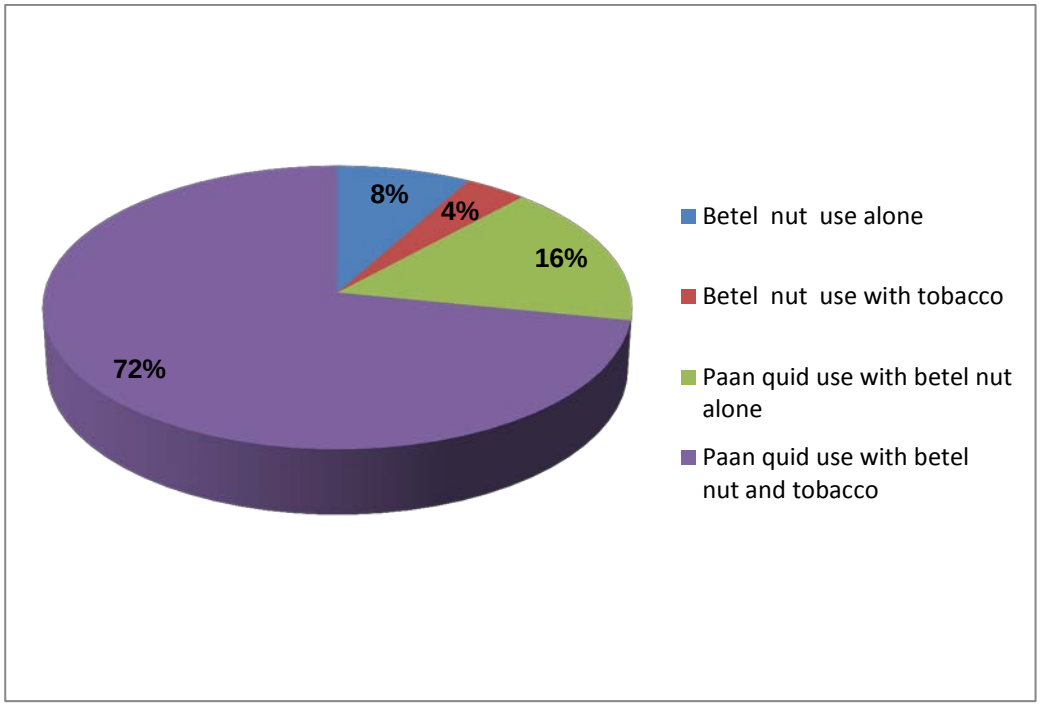

Figure 1: Current use of betel nut use alone or with tobacco

3.2.2 Social aspects of betel nut use (alone or with tobacco) and related behaviours

The age of starting to use BNA or BNT was 21 years (range 7 to 45 years). The number of continuous years using BNA or BNT was 25 years and the age range of usage was 1 to 68. Of the participants 93% were using BNA or BNT daily and 58% reported the main reason for BNA or BNT use was 'Habit', 11% reported that it 'Improved mood' and 8% reported dependence.

Table 2 shows BNA or BNT related behaviour and the social aspects of its use. Eighty four percent reported 'No pattern of use' for example BNA and BNT was used alone or with other people. Eighty eight percent reported their family and friends used it.

Table 2: Social aspects of use and related behaviour of BNA and BNT

Variables	†N (%)
Setting of use	
No pattern of use	135 (84.4)
With close friends and family	13 (8.1)
Only when alone	12 (7.5)
Carry betel nut at all times	
Yes	60 (37.5)
No	99 (61.9)
NA*	1 (0.6)
Their Family/friend uses betel nut	
Yes	140 (87.5)
No	20 (12.5)
Live with people using betel nut	
Yes	86 (53.8)
No	74 (46.3)
Supply of betel nut from	
Buy it from shops here in the UK	159 (99.4)
From abroad & from shops here in the UK	1 (0.6)
Place of purchase	
Grocery shops	146 (91.3)
Other (e.g. open market)	14 (8.7)
Country of origin of the betel nut	
Singapore	137 (85.6)
Other (e.g. Bangladesh, India)	23 (14.4)
Mode/preparation of betel nut use	
Soaked in water and then shredded (traditional)	148 (92.5)
Other (e.g. sweeten sachets, dried betel nut)	12 (7.5)

†N (%) =number and percentage;*NA =no answer

3.2.3 Betel nut use (alone or with tobacco) dependence

The average amount of BNA per serving was reported by the 160 participants as 1.91 grams. Of the 122 participants who used BNT (betel nut with tobacco or paan quid tobacco with betel nut) 111 (97%) (paan quid tobacco with betel nut) provided their tobacco amount to be weighed and the average was 0.28 grams.

Aspects of psychological dependence on use of BNA or BNT was assessed (Table 3, e.g. Q 1and 2). The average of 'Severity of Dependence' (SDS) on BNA or BNT was 5.62. However, the average for BNA was 4.40 and for BNT 6.02.

When we break this down according to gender specific use we found that 22% of women used BNA compared to 36% of men. BNT was used by 78% of female compared to 64% male. The average of severity of dependence on BNA or BNT for men and women was 4.88 and 5.83 respectively. Table 3 shows responses to different items of 'Severity of Dependence' on BNA or BNT.

Table 3: Responses of whole sample for SDS-Betel nut (alone or with tobacco) items

SDS-Betel nut (alone or with tobacco) items	**Never †N (%)**	**Sometimes N (%)**	**Often N (%)**	**Always N (%)**
1. Did you ever think that your betel nut use (alone or with tobacco) was out of control?	53 (33.1)	73 (45.6)	20 (12.5)	14 (8.8)
2. Did the prospect of not using any betel nut (alone or with tobacco) make you anxious or worried?	47 (29.4)	79 (49.4)	20 (12.5)	14 (8.8)
3. Did you worry about your betel nut use (alone or with tobacco)?	28 (17.5)	93 (58.1)	24 (15.0)	15 (9.4)
4. Did you wish you could stop using betel nut (alone or with tobacco)?	17 (10.6)	96 (60.0)	26 (16.3)	21(13.1)
5. How difficult would you find it to stop or go without using betel nut (alone or with tobacco) for the whole week?	**Not difficult**	**Quite difficult**	**Very difficult**	**Impossible**
	30 (18.8)	80 (50.0)	44 (27.5)	6 (3.8)

†N (%) =number and percentage

The average use of self-reported BNA or BNT per week was 6.74 days and the range was 2 to 7 days. Ninety three percent (93%) of the participant used it daily.

The average number of times using BNA or BNT per day was reported as 8. The average of minutes keeping BNA or BNT in mouth was 16 minutes. Table 4 shows other aspects of BNA or BNT consumption behaviour related to dependence.

Table 4: Aspects of BNA or BNT use dependence

Variables	†N (%)
Use after wake up	
Within one hour	33 (20.6)
1-2 hours	64 (40.0)
More than 2 hours	63 (39.4)
Betel nut would most hate to give up	
The first one after waking up	50 (31.3)
All others (e.g. heavy meal)	110 (68.8)
Use frequently after waking up	
Yes	55 (34.4)
No	101 (63.1)
NA	4 (2.5)
Use betel nut even if ill	
Yes	50 (31.3)
No	105 (65.6)
NA†	5 (3.1)
Intentionally swallow betel nut	
Never	24 (14.4)
Sometimes	58 (36.3)
Always	79 (49.4)
last use of betel nut in a day	
Morning (before 12 pm)	3 (1.9)
Afternoon (12-5 pm)	6 (3.8)
Evening □ After 5 pm	29 (18.1)
□ Before sleep	122 (76.3)
Sleep with areca nut in mouth	
Yes	6 (3.8)
No	153 (95.6)
NA	1 (0.6)

†N (%) =number and percentage; †NA= no answer

3.2.4 Motivation to stop betel nut (alone or with tobacco)

The majority of the participants (116 [72.5%]) did not try to give up using BNA or BNT over the last 12 months. The remainder (27.5%) reported an average of two attempts and the range was 1 to 11. The average for the longest period of stopping BNA or BNT was 52 days and the range from relapsing on the same day (0 days) to 240 days. The main reason for quitting was related to health. However, restarting was related to their social environment (availability at home and peer pressure) and dependence-specific factors like craving, withdrawal symptoms and habit. Table 5 reports a range of motivations to stop using BNA or BNT. Of the participants 31% did not receive any education or information

about the risk of using BNA or BNT. 78% reported being aware of service (s) that helped to stop BNA or BNT. The BME Tobacco Project (BSTP) was identified by 68% as their source of health education and information about the impact of BNA or BNT.

Table 5: Motivations to stop BNA or BNT

Motivations	**†N (%)**
a) I don't want to stop use BNA or BNT	14 (8.8)
b) I think I should stop BNA or BNT but don't really want to.	20 (12.5)
c) I want to stop betel nut use BNA or BNT but haven't thought about when.	21 (13.1)
d) I REALLY want to stop BNA or BNT use but I don't know when I will.	43 (26.9)
e) I want to stop BNA or BNT use and hope to soon.	31 (19.4)
f) I REALLY want to stop chewing BNA or BNT use and intend to in the next 3 months.	19 (11.9)
g) I REALLY want to stop BNA or BNT use and intend to in the next month	12 (7.5)

†N (%) =number and percentage

Finally, Table 6 reports responses to what might support quitting BNA and BNT. When participants were asked 'what would enable them to quit BNA and BNT, 77% indicated that they will give up for their health conditions followed by advice given by health professionals.

Table 6: Responses of the participants of what can help or make them quit using betel nut use alone or with tobacco

Exploratory variables	**Not at all †N (%)**	**Somewhat N (%)**	**Very much N (%)**
a) Increase in price of betel nuts	85 (53.1)	62 (38.8)	13 (8.1)
b) Restrictions of chewing in public places	59 (36.9)	52 (32.5)	49 (30.6)
c) Illegalization of betel nuts chewing	28 (17.5)	74 (46.3)	58 (36.3)
d) Health conditions	12 (7.5)	70 (43.8)	77 (48.1)
e) Advice from health professionals*	19 (11.9)	104 (65.0)	37 (23.1)
f) Free or cheap stop-betel nuts medications*	24 (15.0)	104 (65.0)	31(19.4)
g) Availability of telephone help line	41(25.6)	100 (62.5)	18 (11.3)
h) Information about risks and labels on betel nut packs	40 (25.0)	80 (50.0)	38 (23.8)
k) Family pressure	82 (51.3)	60 (37.5)	18 (11.3)
L) Religion	62 (38.8)	71 (44.4)	27 (16.9)
M) Self-image/appearance	70 (43.8)	63 (39.4)	27 (16.9)

†N (%) =number and percentage; * Missing values

3.3 Aspects of health

3.3.1 General and oral health

Table 7 shows that 52% and 48% of the participants reported 'Very good' and 'Good' general and oral health respectively. Eighty eight participants (55%) reported health condition(s) the main one being diabetes (51%) followed by high blood pressure (46%) and elevated cholesterol (41%). As for oral health, 61 (38%) reported oral health conditions and of these 53 described those conditions as gum diseases (28%) toothache (47%), both tooth ache and gum disease (13%), oral pain (6%) and other (6%).

A significant proportion of the participants (23%) perceived BNA and BNT as good for their oral health e.g. relief of oral pain (tooth ache) and 'makes teeth strong'. Among the participants who did not visit the dentist regularly, reasons included 38% did not perceive a need to, 28% attended only with symptoms and 12% because they were anxious.

Table 7: Aspects of general and oral health

Variables	†N (%)
Self-rated general health	
Very good	14 (8.8)
Good	69 (43.1)
Fair	60 (37.5)
Bad	15 (9.4)
Very bad	2 (1.3)
Self-reported general health conditions	
Yes	88 (55.0)
No	71 (44.4)
Self-rated oral health	
Very good	3 (1.9)
Good	73 (45.6)
Fair	62 (38.8)
Bad	21 (13.1)
Very bad	1 (0.6)
Missing	1 (0.7)
Self-reported oral health condition (s)	
Yes	61 (38.1)
No	98 (61.3)
Missing	1 (0.6)
Perception of betel nut use good for oral health	
Yes	37 (23.1)
No	105 (65.6)
NA	18 (11.3)
Dental attendance	
For regular check-up for instance once or twice a year	63 (39.4)
For an occasional check-up for instance once every other year or less	28 (17.5)
Only when in pain	50 (31.3)
Never been/gone to dentist	16 (10.0)
NA	3 (1.9)

†N (%)=number and percentage; NA= no answer

3.3.2 Knowledge and awareness of oral cancer

Participants' knowledge of demographic, oral-health-related risk behaviours and oral cancer awareness were assessed before the administration of the flyer. Table 8 exhibits the results of 160 participants' assessment. Between 40-60% of the participants had no knowledge about oral risk factors or awareness of oral cancer.

Table 8: Knowledge and oral cancer awareness for 160 participants

Variables	Yes †N (%)	No N (%)	*DK N (%)
Knowledge			
a. You are more likely to get mouth cancer at any age	133 (83.1)	6 (3.8)	21 (13.1)
You are more likely to get mouth cancer if you			
b. Smoked tobacco (cigarettes, cigars, bidi, roll ups or pipe, water pipe [hookah])	138 (86.3)	4 (2.5)	18 (11.3)
c. Chewed betel nut (supari , gua, betel nut) with or without tobacco	74 (46.3)	24 (15.0)	62 (38.8)
d. Chewed tobacco	96 (60.0)	18 (11.3)	46 (28.8)
e. Chewed paan with tobacco	95 (59.4)	17 (10.6)	48 (30.0)
f. Chewed paan with betel nut (supari , gua, betel nut) but without tobacco	61 (38.1)	31 (19.4)	68 (42.5)
Awareness			
g. Are you aware that a small lesion in your mouth can develop into oral cancer?	62 (38.8)	15 (9.4)	83 (51.9)
h. Are you aware that early treatment can prevent a lesion to develop into oral cancer?	77 (48.1)	10 (6.3)	73 (45.6)

†N (%) =number and percentage; * DK=Do not know

3.3.2.1 Phase 1 and Phase 2: pre and post-flyer knowledge and awareness of oral cancer

Fifty six participants (56%) agreed to participate in a post-flyer assessment of knowledge and awareness about oral cancer. Of the 56 participants who were re-interviewed in two weeks after reading the flyer 94.6% reported that the flyer was easy to read and the whole sub-sample reported that the flyer was useful. However, the size of the font was reported by 23% as too small to read. The average number of readings of the flyer was 2 times and

the range was one to eight times. Participants' Knowledge of demographic and oral health related risk behaviours and oral cancer awareness were assessed after reading the flyer. There was a significant increase in the percentage of correct answers after reading the flyer (Table 9). For example the number of participants who knew that BNA or BNT increased their risk of getting oral cancer at any age increased from 86% to 95% after reading the flyer. Notably, the response for the chewing tobacco as a risk factor for oral cancer increased from 70% to 98%.

Table 9: Knowledge and oral cancer awareness before and after reading the flyer for 56 participants

Variables	Pre-flyer			Post-flyer		
	Yes †N (%)	No N (%)	DK N (%)	Yes N (%)	No N (%)	*DK N (%)
Knowledge						
a. You are more likely to get mouth cancer at any age	48 (85.7)	3 (5.4)	5 (8.9)	53 (94.6)	0 (0.0)	3 (5.4)
You are more likely to get mouth cancer if you						
b. Smoked tobacco (cigarettes, cigars, bidi, roll ups or pipe, water pipe [hookah])	44 (78.6)	2 (3.6)	10 (17.9)	52 (92.9)	2 (3.6)	2 (3.6)
c. Chewed betel nut (supari , gua, areca nut) with or without tobacco	24 (42.9)	12 (21.4)	20 (35.7)	55 (98.2)	0 (0.0)	1(1.8)
d. Chewed tobacco	39 (69.6)	3 (5.4)	14 (25.0)	55 (98.2)	0 (0.0)	1(1.8)
e. Chewed paan with tobacco	37 (66.1)	4 (7.1)	15 (26.8)	55 (98.2)	0 (0.0)	1(1.8)
f. Chewed paan with betel nut (supari , gua, areca nut) but without tobacco	22 (39.3)	12 (21.4)	22 (39.3)	50 (89.3)	4 (7.1)	2 (3.6)
Awareness						
g. Are you aware that a small lesion in your mouth can develop into oral cancer?	21(37.5)	7 (12.5)	28 (50.0)	51(91.1)	2 (3.6)	3 (5.4)
h. Are you aware that early treatment can prevent a lesion to develop into oral cancer?	36 (64.3)	3 (5.4)	17 (30.4)	49 (87.5)	1(1.8)	6 (10.7)

†N (%) =number and percentage; * DK=Do not know

Table 10, Appendix 3 illustrates in detail the changes in knowledge about oral cancer risk factors and awareness of oral cancer and oral lesion after reading the flyer.

Figures (a) to (h) illustrate the answers for knowledge and awareness of oral cancer before and after reading the flyer.

Knowledge of oral cancer risk factors before and after reading the flyer

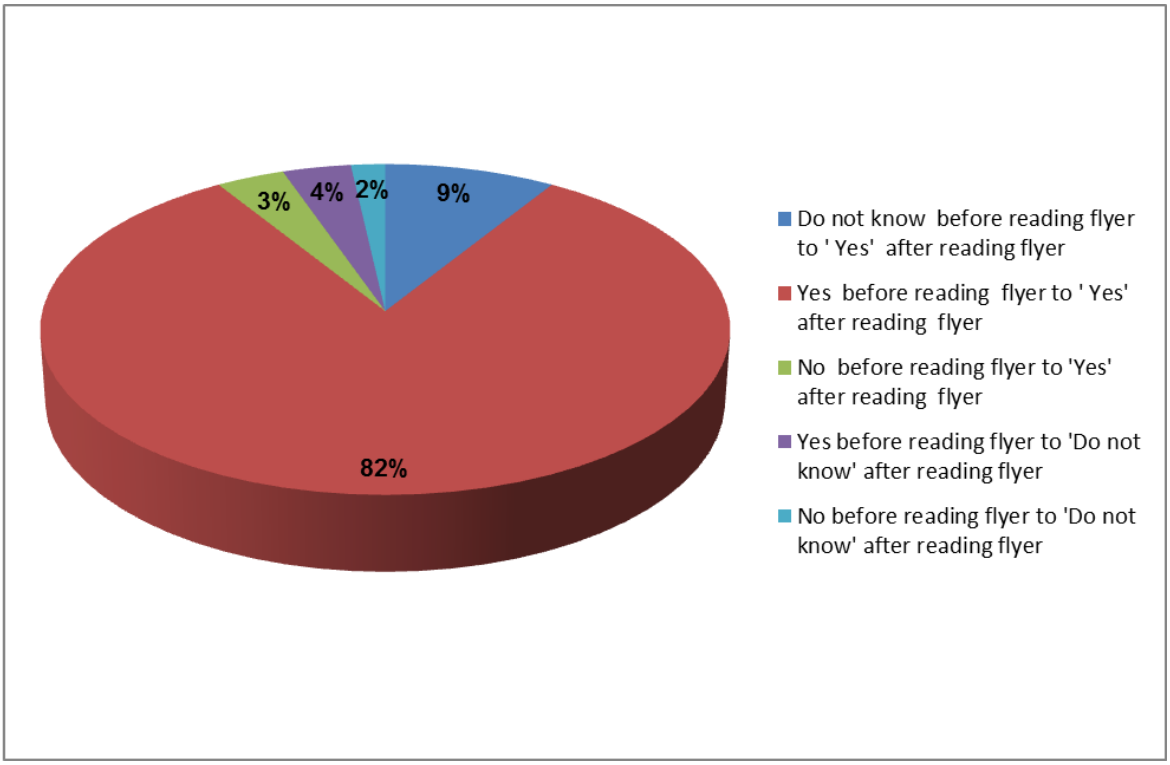

Figure a: 'You are more likely to get mouth cancer at any age'?

As for knowledge about risk factor for oral cancer, Figure a illustrates that the whole group (9%) who reported 'Do not know' about age as risk factor for oral cancer showed improvement in their knowledge after reading the flyer and responded positively 'Yes'. Of the 86% who reported 'Yes' for contracting oral cancer at any age before reading the flyer, 82% remained positive in their response after reading the flyer.

You are more likely to get mouth cancer if you;

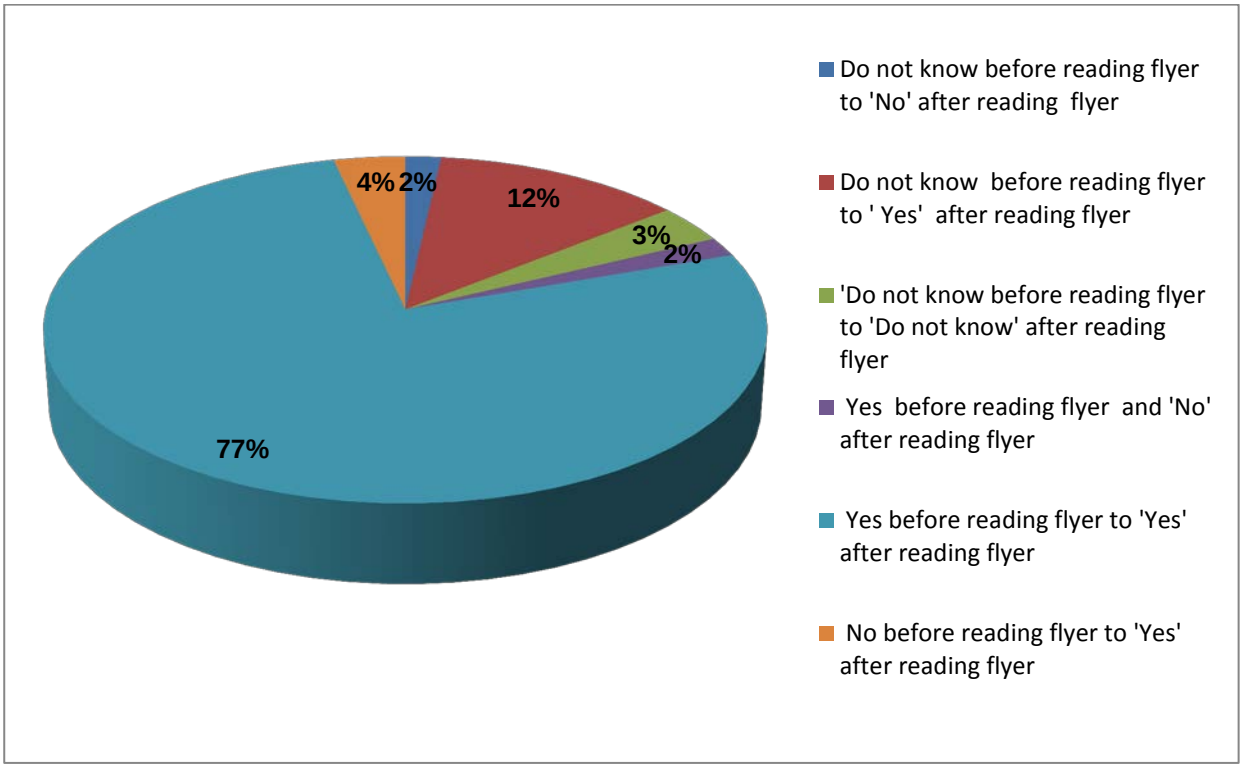

Figure b: Smoked tobacco (cigarettes, cigars, bidi, roll ups or pipe, water pipe (hookah)?

In Figure b, there was a significant increase in knowledge 'you are more likely to get oral cancer if you smoked tobacco (cigarettes, cigars, bidi, roll ups or pipe, water pipe (hookah)' after reading the flyer those compared to the pre flyer knowledge. 12% who did not know 'you are more likely to get oral cancer if you smoked tobacco (cigarettes, cigars, bidi, roll ups or pipe, water pipe (hookah)' before the reading of the flyer were 'Yes' after reading the flyer. 77% said 'Yes' before and after reading the flyer reflecting that the knowledge of risk associated with smoking tobacco was high.

You are more likely to get mouth cancer if you;

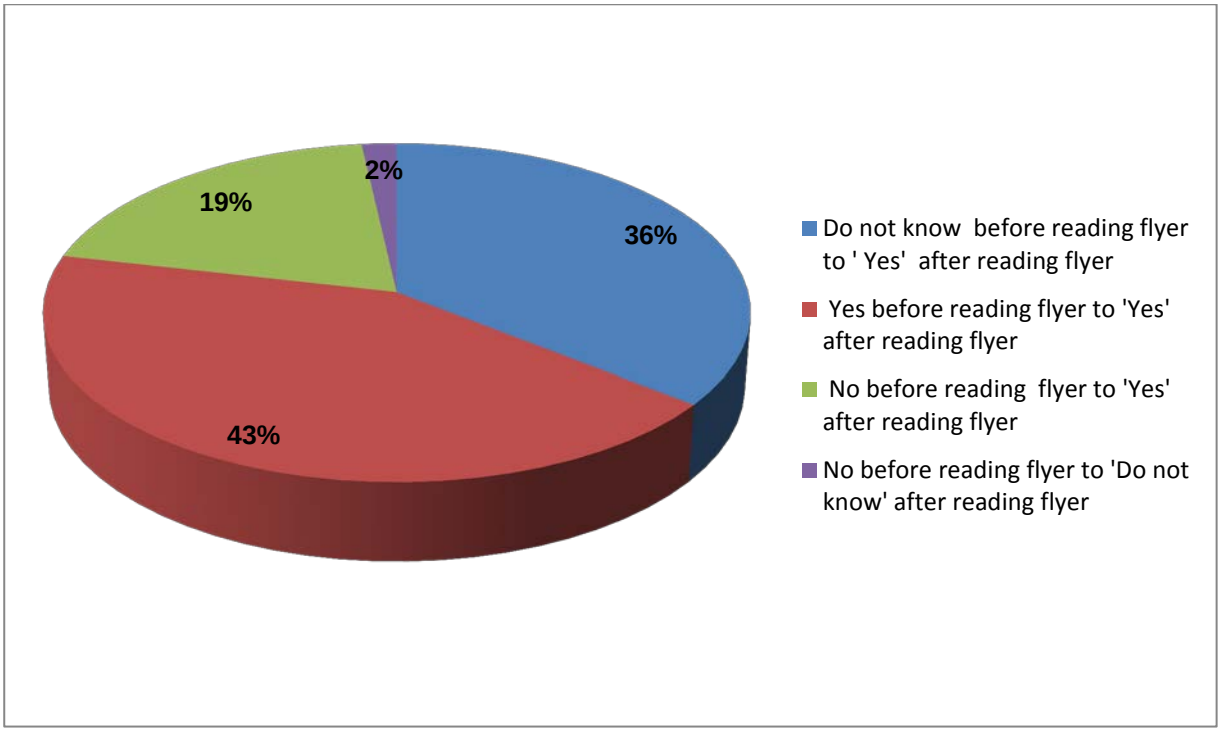

Figure c: Chewed betel nut (supari, gua, areca nut) with or without tobacco?

Those who were asked whether chewing betel nut with or without tobacco causes oral cancer, 43% said ‘Yes’ before and after reading the flyer. However for those who said ‘Don’t know’ to ‘Yes’, 36% showed an increase in their knowledge after reading the flyer. Again, the ‘No’ before and ‘Yes’ after seeing the flyer were at 19% (Figure c).

You are more likely to get mouth cancer if you;

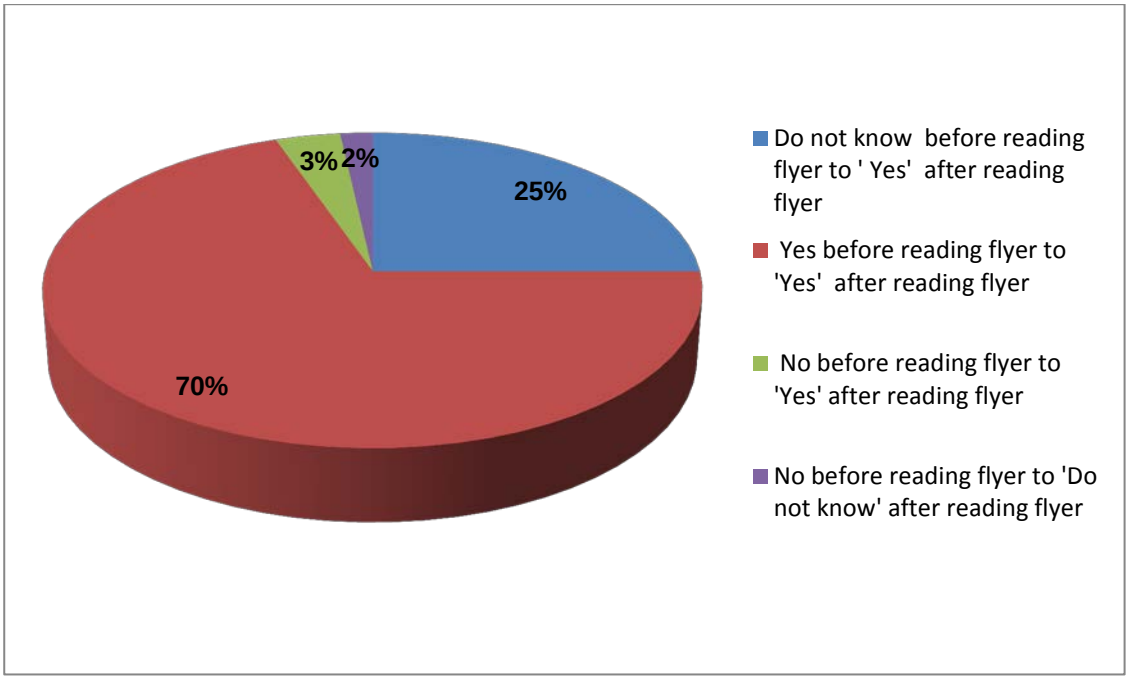

Figure d: Chewed tobacco?

Seventy percent of those who were asked if 'Chewed tobacco' alone causes oral cancer 70% said 'Yes' before and after reading the flyer. Those who 'Did not know' before reading the flyer reported a 'Yes' after reading it. Those who said 'No' before the flyer 3% reported a 'Yes' after reading the flyer (Figure d).

You are more likely to get mouth cancer if you;

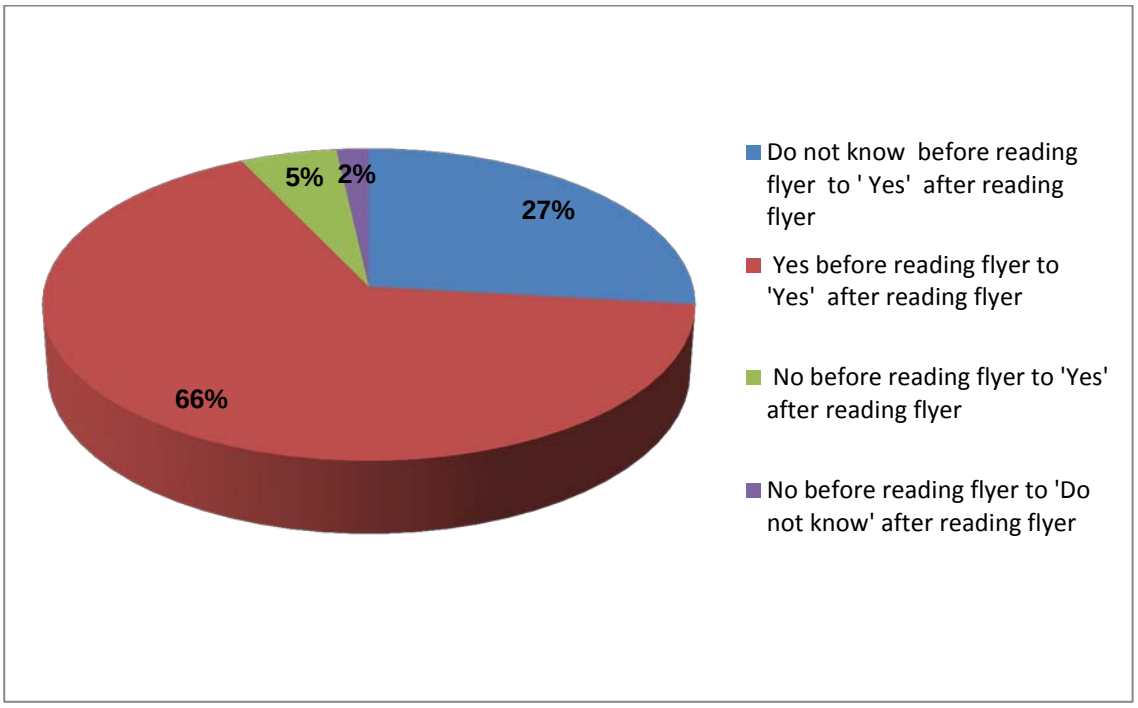

Figure e: Chewed paan with tobacco?

When asked whether chewing paan with tobacco was a risk for oral cancer 66% reported 'Yes' before and after reading the flyer. However, 27% who ' Do not know' before reading the flyer, reported 'Yes' after seeing the flyer (Figure e).

You are more likely to get mouth cancer if you;

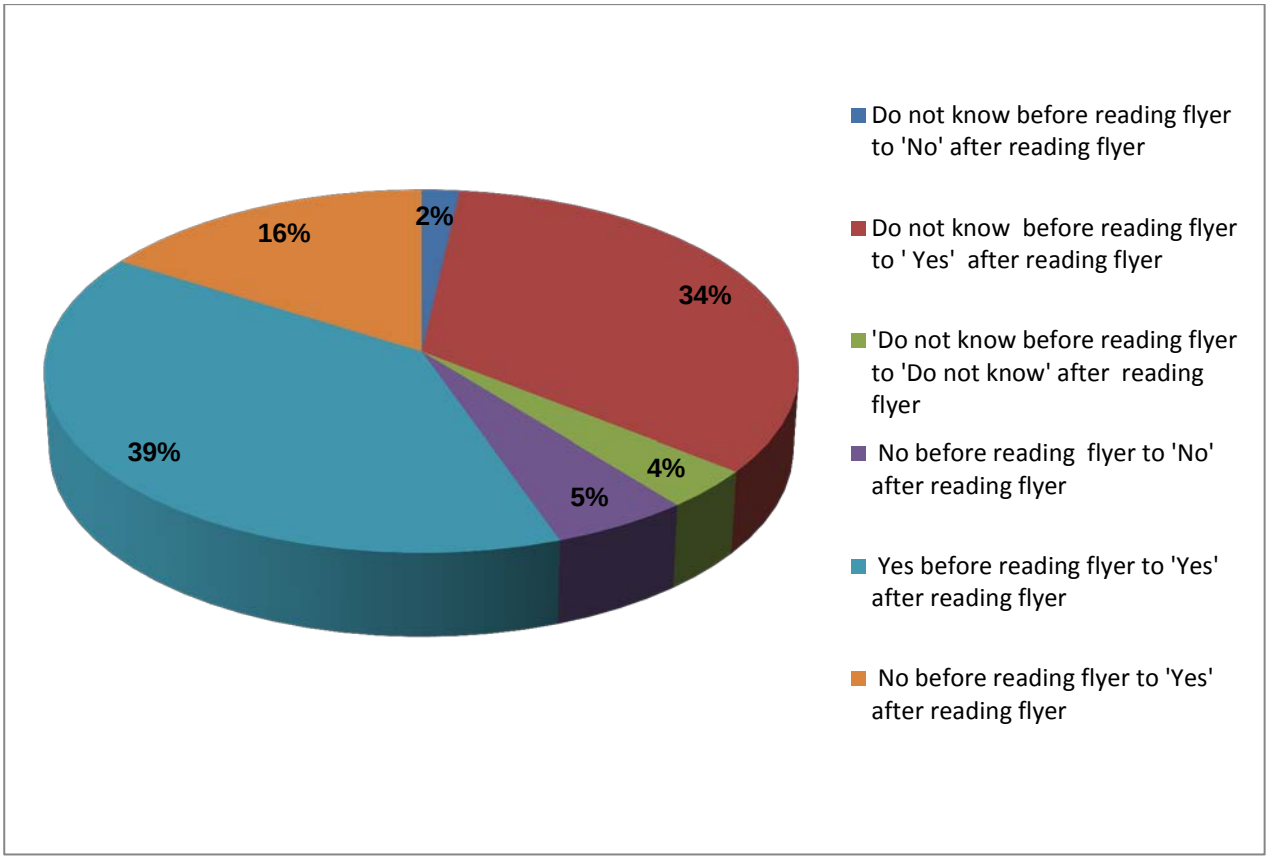

Figure f: Chewed paan with betel nut (supari, gua, areca nut) but without tobacco?

Participants were asked about whether chewing betel nut in paan without tobacco was a risk factor for oral cancer, 39% reported 'Yes' before and after reading the flyer, However, 34% who 'Did not know' replied 'Yes' after reading the flyer. Those (16%) who said 'No' before reading the flyer also said 'Yes' after seeing the flyer.

Awareness of oral cancer lesions and treatment before and after reading the flyer

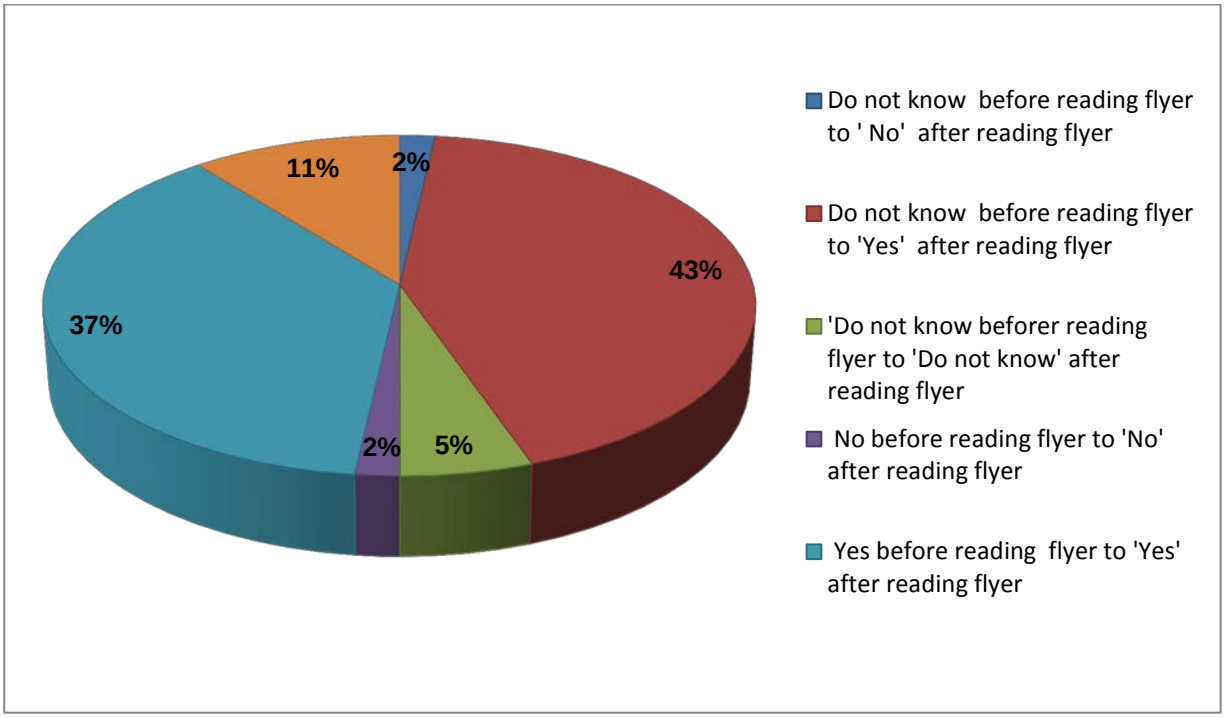

Figure g: Are you aware that a small lesion in your mouth can develop into oral cancer?

Figure (g) shows 37% of the participants were aware that a small lesion in the mouth can develop into cancer. However, 43% 'Did not know' before reading the flyer and reported 'Yes' after reading the flyer.

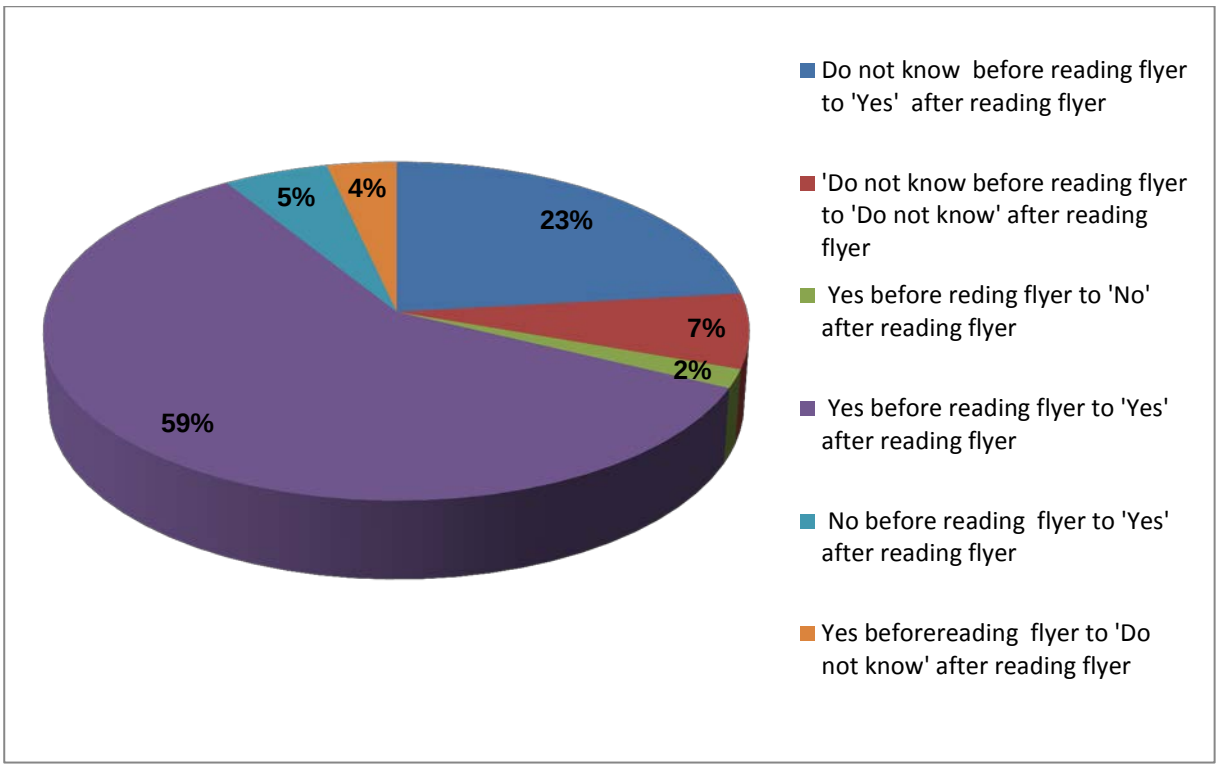

Figure h: Are you aware that early treatment can prevent a lesion to develop into oral cancer?

In Figure (h) 59% were aware that early treatment can prevent the lesion from developing into oral cancer. Those who 'Did not know' 23% before reading the flyer, said 'Yes' after reading the flyer.

4. Implications and recommendations

- There was a gender difference in consumption of BNA and BNT, 22% female and 36% male use betel nut alone. The use of betel nut with tobacco is highest among females than males; as a result any cessation work should consider gender differences in the use of BNA and BNT. It must be taken in to consideration that men are more likely to be concurrent users of BNT, BNA and cigarettes[34].
- Dependence increased when using betel nut with tobacco, indicating that tobacco cessation intervention should consider this in management of users receiving advice to quit.
- Ensure that people attend the Dentist regularly as using BNA and BNT has been acknowledged as a risk factor for oral cancer.
- A significant number of people using BNA and BNT do so as a habit. Therefore periodical campaigns targeting this community, highlighting the evidence based risks of oral cancer when consuming BNA and BNT. There are projects to support BNT users by providing eight weeks of behavioural support and nicotine replacement products. Though the evidence for supporting people use betel nut alone is new ground, it might be worth doing a pilot study looking in to the appropriate behavioural support for people who want to give up betel nut use only.
- High percentages of participants reported chronic health conditions. Therefore, GP and other health professionals should be made aware of the findings of this work to identify high risk individuals i.e. those who chew BNA or BNT with a chronic health condition and to make appropriate referrals for further support. Particularly it was identified that a number of users will only quit if they have a health condition.
- There was a belief that betel nut is good for oral health and there is a need to change this belief by promoting evidence based information about the risks of oral cancer and betel nut. This can be done by producing information posters and flyer to educate the community about the risks of using BNA and BNT.
- A demonstration of the long term behaviour change needs to be encouraged and monitored through the provision of a culturally sensitive programme blueprint that could, potentially, be disseminated across others regions in the UK where similar Asian communities also consume betel nut.
- The use of betel nut alone in this study was very small compared to the use of betel nut adjunct to tobacco. Further long term studies need to be carried out in other

[34] Croucher, R. E., Islam, S. S., & Pau, A. K. (2007). Concurrent tobacco use in a random sample of UK-resident Bangladeshi men. *J Public Health Dent, 67*(2), 83-88.

South Asian communities residing in the UK to discover patterns and characteristic of users; are they the same as the Bangladeshi community?

- In our sample 86% of betel nut used is from Singapore, however, there is no knowledge regarding the quality assurance of this product (labelling and safety information). Future work may be considered by the FSA, Trading Standards and Local Authorities to investigate safety labelling of betel nut products.
- The flyer that was created for this study has shown significance influences on knowledge and awareness. A further improvement to this flyer is needed based on the suggestions made by the participants such as; to make the text bigger and increase the size from A6 to A5.

5. Project steering group

Saba Kassim (Postdoctoral Research Assistant, Department of Dental Public Health, Queen Mary, London University-Principle Investigator, Email: saba262003@gmail.com)

Shamsia Begum (Manager of BME Stop Tobacco Project, co-investigator, Email:s.begum@qmul.ac.uk)

Ely Mirzahosseinkhan, Consumer Engagement Manager, Food Standards Agency, co-investigator, Email: Elham.Mirzahosseinkhan@foodstandards.gsi.gov.uk)

Abul Khurshed BME Stop Tobacco Project advisor

Kamran Nahar BME Stop Tobacco Project advisor

Shajue Begum BME Stop Tobacco Project advisor

Dipul Ghosh BME Stop Tobacco Project advisor

Appendix 1: Main interview questionnaire

Barts and The London
School of Medicine and Dentistry

Number			

Study Title: Betel nut use among communities in East London, UK: An Exploratory Cross Sectional Study

Introduction:

We are carrying out a social research about betel nut (gua/supari/areca nut) use among communities in East London, UK. These questionnaires are about your betel nut use.

Confidentiality:

Your answers will be strictly confidential and will only be used to help us in our social research. Your name will not be used on the form and you do not have to answer any questions that you do not wish to.

Please ask me if you have any question.

Thank you for your help.

Interview date: ……

Interview time: ……

Location of the interview: ……

Interviewer: ……

Section 1. Social aspects of betel nut (gua/supari/areca nut) use

1. Have you ever chewed (at least one or two chew)?

If chosen one of the following go question 2, if Not End the interview

□ Betel nut **(**gua/supari/areca nut) alone
□ Betel nut (gua/supari/areca nut) with tobacco
□ Paan quid with betel nut (gua/supari/areca nut)
□ Paan quid with betel nut (gua/supari/areca nut) and tobacco
□ Paan quid with tobacco only

2. Do you currently chew *(at least once in the previous month)*?

□ Betel nut **(**gua/supari/areca nut) alone
□ Betel nut (gua/supari/areca nut) with tobacco
□ Paan quid with betel nut (gua/supari/areca nut)
□ Paan quid with betel nut (gua/supari/areca nut) and tobacco
□ None of the above ***End the interview if choose this answer otherwise go to the following questions***

3. How old were you when you started chewing betel nut (gua/supari/areca nut)?

---

4. For how many years have you been chewing betel nut (gua/supari/areca nut) continuously?

---

5. How many days in a week do you chew betel nut (gua/supari/areca nut), in the last 12 months?

---

6. What is the main reason for chewing betel nut (gua/supari/areca nut)? *Please number as well additional reasons*

□ Improve mood
□ Mouth freshener
□ Improve performance/alertness
□ Habit
□ Prevent boredom
□ Dependence
□ Help digestion
□ Good for teeth
□ Aids social interaction
□ Reduces body ache
□ Reduces oral pain (please tick one □Tooth pain □ Pain from mucosal lesion □ both)
□ Reduces morning sicknesses (pregnant)
□ Other----------

7. Do you use betel nut (gua/ supari/areca nut) in..?

□ Social gatherings e.g. marriage ceremony
□ Only when alone
□ No pattern of use
□ with close family and friends

8. Do you carry betel nut (gua/ supari/areca nut) with you?
□ Yes
□ No
□ N/A

9. Is there anyone in your family/friend who chews betel nut (gua/ supari/areca nut)?

□ Yes
□ No
□ do not know
□ N/A

10. Do people you live with chew betel nut (gua/ supari/areca nut)?
□ Yes
□ No
□ Do not know
□ N/A

11. You often have your personal supply of betel nut (gua/supari/ areca nut)....

□ Buy it from shops here in the UK
□ From abroad
□ Both

12. Where do you often buy your betel nut (gua/supari/areca nut)?
□ Paan shop
□ News agents
□ Grocery shops
□ Open market
□ Other describe ----------

13. Do you know the country of origin of the betel nut (gua/supari/areca nut) that you often chew?
□ Bangladeshi
□ Singapore
□ Indian
□ Other describe ----------

14. How do you have your betel nut (gua/supari/areca nut)?
□ Soaked in water and then shredded (traditional)
□ Sweetened (sachets)
□ Other describe ----------

Section 2. Betel nut (gua/supari/areca nut) dependence

a. Fagerstrom Test (adapted) for betel nut (gua/supari/areca nut) dependence (Heatherton et al., 1991)

1. How much betel nuts (gua/supari/areca nut) do you use per serving?

If client uses both tobacco and areca nut then take weigh for both

---------- gram of traditional areca nut
---------- gram of tobacco
----------sachets

2. What time do you often wake up?

---

3. How soon after waking up do you use your first betel nuts (gua/supari/areca nut)?

□ Within one hour
□1-2 hours
□ More than 2 hours

4. Which chew would you most hate to give up?

□ The first one after waking up
□ All others (e.g. heavy meal) _____

5. Do you chew more frequently during the first hours after waking up than during the rest of the day?

□ Yes
□ No
□ N/A

6. Do you chew even if you are so ill that you are in bed much of the day?

□ Yes
□ No
□ N/A

7. How many times in a day do you often use betel nut (gua/supari/areca nut)?

_____

8. For how long (minutes/hours) you keep the betel nut (gua/supari/areca nut) chew in your mouth in a day?

_____minutes
_____hours

9. How often do you intentionally swallow betel nut (gua/supari/areca nut)?

□ Never
□ Sometime
□ Always
□ N/A

10. When is it often your last chew of betel nut (gua/supari/areca nut) in a day?

□ Morning (before 12 pm)
□ Afternoon (12-5 pm)
□ Evening (Tick one □ After 5 pm □ Before sleep)

11. Do you go to sleep with betel nut (gua/supari/areca nut) in your mouth?

□ Yes
□ No
□ N/A

b. <u>Severity of Dependence on betel nut (gua/ supari/areca nut) (Gossop et al,1995)</u>

In the last 12 months,

1) Did you ever think that your betel nut consumption (gua/supari/areca nut) was out of control?

Never	Sometimes	Often	Always or nearly always

2) Did the prospect of not chewing betel nut (gua/supari/areca nut) make you anxious or worried?

Never	Sometimes	Often	Always or nearly always

3) Did you worry about your chewing betel nut (gua/supari/areca nut)?

Never or almost never	Sometimes	Often	Always or nearly always

4) Did you wish you could stop chewing betel nut (gua/supari/areca nut)?

Never	Sometimes	Often	Always or nearly always

5) How difficult would you find it to stop or go without betel nut (gua/supari/areca nut) for a whole week?

Not difficult	Quite difficult	Very difficult	Impossible

Section 3. Motivation to quit chewing betel nut (gua/supari/areca nut)

1. Have you ever tried to give up chewing betel nut (gua/supari/areca nut)?

□Yes if Yes How many times _____ longest period of refraining/giving up _____
Go to Question 2
□ No if No go question 4
□ N/A if NA go question 4

2. What was the main reason that made you to give up chewing betel nut (gua/ supari/areca nut)?

---

3. What was the main reason that made you re-start chewing betel nut (gua/ supari/areca nut)?

---

4. Which of the following describes you? *Motivation To Stop Scale* ***(MTSS) (Kotz et al, 2013)***
Please tick only one
(a) I don't want to stop chewing betel nut (gua/ supari/areca nut)
(b) I think I should stop chewing betel nut (gua/ supari/areca nut) but don't really want to.
(c) I want to stop chewing betel nut (gua/ supari/areca nut) but haven't thought about when.
(d) I REALLY want to stop chewing betel nut (gua/ supari/areca nut) but I don't know when I will.
(e) I want to stop chewing betel nut (gua/ supari/areca nut) and hope to soon.
(f) I REALLY want to stop chewing betel nut (gua/ supari/areca nut) and intend to in the next 3 months.
(g) I REALLY want to stop chewing betel nut (gua/ supari/areca nut) and intend to in the next month

5. If you want to give up chewing betel nut (gua/ supari/areca nut), what do you think will make/help you quit?

Variable	Not at all	Somewhat	Very much
i) Increase in price of betel nuts			
j) Restrictions of chewing in public places			
k) Illegalization of betel nuts chewing			
l) Health conditions			
m) Advice from health professionals			
n) Free or cheap stop-betel nuts medications			
o) Availability of telephone help line			
p) Information about risks and labels on betel nut packs			
k) Family pressure			
L) Religion			
M) Self-image/appearance			

6. If you want to quit chewing betel nut (gua/ supari/areca nut), are you aware of service (s) that help quitting betel nut (gua/ supari/areca nut)?

□ Yes
□ No
□ N/A

7. Have you ever received any education/information about betel nut (gua/ supari/areca nut) and its effects?
□ Yes Source _____
□ No
□ N/A

Section 4. General and oral health

1. How would you describe your current health in general?

□ Very good
□ Good
□ Fair
□ Bad
□ Very bad
□ NA

2. Do you have any health condition (s)?

□ Yes (please describe.....)
□ No
□ NA

3. Chewing betel nut (gua/ supari/areca nut) is good for oral health?

□ Yes (please describe.....)
□ No
□ NA

4. How would you describe your current oral health in general?

□ Very good
□ Good
□ Fair
□ Bad
□Very bad
□ NA

5. Do you have any oral health condition (s)?

□ Yes (please describe.....)
□ No
□ NA

6. Do you personally go to the dentist.....?

□ For regular check up for instance once or twice a year
□ For an occasional check up for instance once every other year or less (Answer Q 7)
□ Only when in pain (Answer Q7)
□ Never been/gone to dentist (Answer Q7)
□ NA

7. What is the main reason for occasional/ never going or only going when in pain?

_____

8. You are more likely to get mouth cancer *(Humphris et al, 1999 ; Adult Dental Health Survey, 1998)*:

a. At any age	□ Yes	□ No	□ Do not know
You are more likely to get mouth cancer if you (b-f) b. Smoked tobacco (cigarettes, cigars, bidi, roll ups or pipe, water pipe[hooka])	□ Yes	□ No	□ Do not know
c. Chewed betel nut (supari , gua, areca nut) with or without tobacco	□ Yes	□ No	□ Do not know
d. Chewed tobacco	□ Yes	□ No	□ Do not know
e. Chewed paan with tobacco	□ Yes	□ No	□ Do not know
f. Chewed paan with betel nut (supari , gua, areca nut) but without tobacco	□ Yes	□ No	□ Do not know
Oral Cancer Awareness			
g. Are you aware that a small lesion in your mouth can develop into oral cancer?	□ Yes	□ No	□ Do not know
h. Are you aware that early treatment can prevent a lesion to develop into oral cancer?	□ Yes	□ No	□ Do not know

Section 5. Socio-demographic and Socio-economic characteristics

1) How old are you?

---------- Years

2) What is your sex?

□ Male
□ Female

3) Marital status

□ Never married (single)
□ currently married
□ Separate but still legally married
□ Divorced
□ Widowed
□ Cohabiting

4) What is your country of birth?

□ England
□ Wales
□ Scotland
□ Northern Island
□ Republic of Ireland
□ Elsewhere name of country……

5) How would you describe your national identity?

□ English
□ Welsh
□ Scottish
□ Northern Irish
□ British
□ Other, write in----------

6) What is your ethnic group?

Choose **one** section from A to E, then tick **one** box to best describe your ethnic group or background

A White

□ English / Welsh / Scottish / Northern Irish / British
□ Irish
□ Gypsy or Irish Traveller
□ Any other White background, write in

B Mixed / multiple ethnic groups

□White and Black Caribbean
□White and Black African
□White and Asian

C Any other Mixed / multiple ethnic background, write in

□ Asian / Asian British
□ Indian
□ Pakistani
□ Bangladeshi
□ Chinese
□ Any other Asian background, write in----------

D Black / African / Caribbean / Black British
□ African
□ Caribbean
□ Any other Black / African / Caribbean background, write in
E Other ethnic group
□ Arab
□ Any other ethnic group, write in_____

7) Which of these qualifications do you have?
Tick **every** box that applies if you have **any** of the qualifications listed
If your UK qualification is not listed, tick the box that contains its nearest equivalent
If you have qualifications gained outside the UK, tick the 'Foreign qualifications' box and the nearest UK equivalents (if known)
□ 1 - 4 O levels / CSEs / GCSEs (any grades), Entry Level, Foundation Diploma
□ NVQ Level 1, Foundation GNVQ, Basic Skills
□ 5+ O levels (passes) / CSEs (grade 1) / GCSEs (grades A*- C), School Certificate, 1 A level / 2 - 3 AS levels / VCEs, Higher Diploma
□ NVQ Level 2, Intermediate GNVQ, City and Guilds Craft, BTEC First / General Diploma, RSA Diploma
□ Apprenticeship
□ 2+ A levels / VCEs, 4+ AS levels, Higher School Certificate, Progression / Advanced Diploma
□ NVQ Level 3, Advanced GNVQ, City and Guilds Advanced Craft, ONC, OND, BTEC National, □ RSA Advanced Diploma
□ Degree (for example BA, BSc), Higher degree (for example MA, PhD, PGCE)
□ NVQ Level 4 - 5, HNC, HND, RSA Higher Diploma, BTEC Higher Level
□ Professional qualifications (for example teaching, nursing, accountancy)
□ Other vocational / work-related qualifications
□ Foreign qualifications
□ No qualifications

8) What is your main language?
□ English
□ Bengali
□Sylheti
□Hindi
□ Gujarati
□ Other ----------

9) How well can you speak English?
□ Very well
□ Well
□ Not well
□ Not at all

10) What is your post code?
----

11) Employment status, are you currently.....?
□ Student full /part time
□ Employed, full and specific job----------
□ Unemployed
□ Never worked /long term unemployment
□ Home carer
□ Disabled/sick /unable to work
□ Retired
□ Other ----------
Thank you for taking the time to answer the questionnaire

Contact details if voluntary accepted to be re-interviewed

Agreed place to meet and re-interview (convenience for both researcher and voluntary)

Tel:

Date:

Time:

Section 6. Post Flyer Questionnaire

Number			

1) **Did you find the flyer easy to read?** □ Yes □ No □ Do not know

2) **Did you find the flyer leaflet useful?** □ Yes □ No □ Do not know

3) **How many times did read the flyer?** ----------

4) **What aspects of the flyer should be improved?** ----------

5) **You are more likely to get mouth cancer *(Humphris et al, 1999; Adult Dental Health Survey, 1998)*:**

a. At any age	□ Yes	□ No	□ Do not know
You are more likely to get mouth cancer if you (b-f)			
b. Smoked tobacco (cigarettes, cigars, bidi, roll ups or pipe, water pipe [hookah)	□ Yes	□ No	□ Do not know
c. Chewed betel nut (supari , gua, areca nut) with or without tobacco	□ Yes	□ No	□ Do not know
d. Chewed tobacco	□ Yes	□ No	□ Do not know
e. Chewed paan with tobacco	□ Yes	□ No	□ Do not know
f. Chewed paan with betel nut (supari , gua, areca nut) but without tobacco	□ Yes	□ No	□ Do not know
Oral Cancer Awareness			
g. Are you aware that a small lesion in your mouth can develop into oral cancer?	□ Yes	□ No	□ Do not know
h. Are you aware that early treatment can prevent a lesion to develop into oral cancer?	□ Yes	□ No	□ Do not know

Thank you for taking time to fill this questionnaire

Appendix 2: Betel nut advice flyer

Betel nut: the facts

Food Standards Agency food.gov.uk · TOWER HAMLETS · Barts and The London School of Medicine and Dentistry

1. Betel nut (also known as areca nut, gua or supari) is chewed with paan leaf, slaked lime, spices, flavourings, sada, zarda and sweeteners, and can be harmful to your health.
2. Smokeless tobacco like sada and zarda increase your risk of getting mouth cancer. Chewing betel nut can also increase your risk of mouth cancer.
3. Common signs of mouth cancer are white, red or speckled patches, ulcers or sores that don't heal within two weeks, lumps or thickening or persistent soreness. Speak to your dentist if you have any concerns.
4. Consumers should look out for alternative paan masala products that do not contain betel nut, gua, supari or tobacco.
5. Children should be encouraged to eat healthy snacks such as fruit and avoid products containing betel nut (gua or supari.)
6. For information and advice in Bengali or English on stopping betel nut or tobacco contact:

Bangladeshi Stop Tobacco Project
0207 882 8669 (women) 0207 882 8660 (men)

For further information about the safety of betel nut:
Food Standards Agency
herbals@foodstandards.gsi.gov.uk

Betel nut: the facts

Food Standards Agency food.gov.uk · TOWER HAMLETS · Barts and The London School of Medicine and Dentistry

১. সুপারি বা গোয়া যা পান, চুন, সুগন্ধি মসলা, সাদা, জর্দা ও মিষ্টি জাতীয় উপাদানের সাথে মিশিয়ে খাওয়া হয় তা স্বাস্থ্যের জন্য খুবই ক্ষতিকর।

২. 'সাদা' এবং 'জর্দা' খেলে 'মুখের ক্যান্সার' হওয়ার ঝুঁকি বেড়ে যায়। সুপারি/গোয়া খেলে ও 'মুখের ক্যান্সার' হওয়ার ঝুঁকি বেড়ে যায়।

৩. মুখের ক্যান্সারের প্রাথমিক লক্ষন গুলি হলো - মুখের ভিতরে সাদা, লাল অথবা অন্য রঙের দাগ, কোন ঘা বা ক্ষত যা দুই সাপ্তাহের মধ্যে ভাল হয় না, মুখের ভিতর বড় মাংসপিন্ড অথবা দীর্ঘস্থায়ী ক্ষত। যদি এই ব্যাপার গুলি চিন্তার কারন হয় তাহলে আপনার জিপি বা ডেন্টিস্টের সাথে যোগাযোগ করুন।

৪. সুপারী/গোয়া খাওয়া বাদ দিয়ে এর বদলে সুপারী/গোয়া, সাদা, জর্দা মিশানো নাই এমন পান মসলা খেতে পারেন।

৫. ছোট ছেলেমেয়েদের সুপারী বা গোয়া খেতে দিবেন না, এর বদলে স্বাস্থ্যকর খাবার এবং ফল খেতে দিন।

৬. সুপারী/গোয়া এবং সাদা/জর্দা ছেড়ে দিতে চাইলে, তথ্য এবং পরামর্শের জন্য বাংলা/ইংরেজীতে যোগাযোগ করুন:

বাংলাদেশী স্টপ টোবাকো প্রজেক্ট
0207 882 8669 (মহিলা) 0207 882 8660 (পুরুষ)

সুপারী সংক্রান্ত বিস্তারিত তথ্য বা পরামর্শের জন্য "ফুড স্ট্যান্ডার্ড এজেন্সী" এর সাথে ই-মেইলে যোগাযোগ করুন :-
herbals@foodstandards.gsi.gov.uk

Appendix 3: Supplementary

Table 10: Details of knowledge and oral cancer awareness changes pre and post flyer for 56 participants

Explanatory variables	Yes-Yes †N (%)	Yes-No N (%)	Yes-DK N (%)	No-No N (%)	No-Yes N (%)	No-DK N (%)	DK-DK N (%)	DK-No N (%)	DK-Yes N (%)
Knowledge									
a. You are more likely to get mouth cancer at any age	46 (82.1)	0 (0.00)	2 (3.6)	0(0.00)	2 (3.6)	1 (1.8)	0 (0.00)	0 (0.00)	5 (8.9)
You are more likely to get mouth cancer if you b. Smoked tobacco (cigarettes, cigars, bidi, roll ups or pipe, water pipe [hookah])	43 (76.8)	1 (1.8)	0 (0.00)	0(0.00)	2 (3.6)	0 (0.00)	2 (3.6)	1 (1.8)	7 (12.5)
c. Chewed betel nut (supari , gua, areca nut) with or without tobacco	24 (42.9)	0 (0.00)	0 (0.00)	0(0.00)	11 (19.6)	1 (1.8)	0 (0.00)	0 (0.00)	20 (35.7)
d. Chewed tobacco	39 (69.6)	0 (0.00)	0 (0.00)	0(0.00)	2 (3.6)	1 (1.8)	0 (0.00)	0 (0.00)	14 (25.0)
e. Chewed paan with tobacco	37 (66.1)	0 (0.00)	0 (0.00)	3 (5.4)	0 (0.00)	1 (1.8)	0 (0.00)	0 (0.00)	15 (26.8)
f. Chewed paan with betel nut (supari , gua, areca nut) but without tobacco	22 (39.3)	0 (0.00)	0 (0.00)	3 (5.4)	9 (16.1)	0 (0.00)	2 (3.6)	1 (1.8)	19 (33.9)
Awareness									
g. Are you aware that a small lesion in your mouth can develop into oral cancer?	21 (37.5)	0 (0.00)	0 (0.00)	1 (1.8)	6 (10.7)	0 (0.00)	3 (5.4)	1 (1.8)	24 (42.9)
h. Are you aware that early treatment can prevent a lesion to develop into oral cancer?	33 (58.9)	1 (1.8)	2 (3.6)	0(0.00)	3 (5.4)	0 (0.00)	4 (7.1)	0 (0.00)	13 (23.2)

Yes-Yes=positive response before and after flyer; Yes-No=changed from pre-flyer positive response to post flyer negative response; No-Yes=change from negative pre-flyer to positive flyer; No-No=negative response pre and post flyer; DK-DK= negative response pre and post flyer; DK-Yes change from negative pre-flyer to positive after flyer reading; DK-No= negative response pre and post flyer; †N (%) =number and percentage; * DK=Do not know