British Journal of Cancer (1996) 74, Suppl. XXIX, S73-S77
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Betel-quid and tobacco chewing among the United Kingdom's Bangladeshi community

R Bedi

Professor and Head, National Centre for Transcultural Oral Health, Eastman Dental Institute and Hospital, London

Abstract Betel-quid chewing is believed to be widespread among the Bangladeshi community resident in the United Kingdom. However, little is known about the prevalence and social aspects of behaviour of this habit among this community. The aims of this paper are firstly to report on a large study investigating the usage of betel-quid and tobacco chewing among the Bangladeshi community in the United Kingdom. Secondly to highlight the health education messages that should be promoted by health professionals.

Introduction

Betel-quid chewing has a long history and is widespread in India, Sri Lanka, Pakistan, Bangladesh, Thailand, Cambodia, Malaysia, Singapore, Indonesia, Philippines, New Guinea, Taiwan and China[1] (Table I). It has been incorporated into many of the religious and cultural rituals of ethnic groups within the Indian sub-continent and, as such, has gained a degree of social acceptance. It is estimated that there are 200 million people worldwide who practice the habit.[1]

The ingredients in the betel-quid (pan) vary not only between nations but also communities and individuals. However, the major components are the leaf of *Piper betel,* the nut of *Areca catechu,* lime, and katha, an extract of the wood of *Areca catechu.*[2] A brief description of each component is given in Table II. Detailed descriptions of these products are published by the International Agency for Research on Cancer (IARC) in 1985.[3]

In health terms, the key factor is whether tobacco is added to the above ingredients or not. There are at least 40 million regular tobacco chewers in the Indian sub-continent. An IARC working party concluded that while there was sufficient evidence to show that the regular chewing of betel-quid containing tobacco was carcinogenic in humans, there was inadequate evidence to demonstrate that this was also true of chewing betel-quid without tobacco.[3]

Betel-quid chewing is widespread in the Indian sub-continent but little is known about this behaviour among minority ethnic people resident in the United Kingdom.[4] In addition, there is little systematic research on the extent of oral cancer and precancerous lesions among the Asian communities in the UK, despite clear evidence from the medical literature that populations in Indian suffer higher rates of this condition than other groups.[6-8]

Among health workers, for a number of years, there has been a belief that the inclusion of tobacco into the betel-quid is primarily found among the Bangladeshi community.[9-11] This observation has been confirmed in the recent Health Education Report *Black and Minority Ethnic Groups in England.*[12]

The aims of this paper are firstly to report on a large study investigating the usage of betel-quid and tobacco chewing among the Bangladeshi community in the United Kingdom. Secondly to highlight the health education messages that should be promoted by health professionals.

The Bangladeshi community referred to in this article comprises those who consider their ethnic background to be Bangladeshi, irrespective of their country of birth or nationality.

Table I Prevalence of betel-quid chewing habits from population studies in some Asian and South Asian countries

Ref	Country	State/Region	Number	Prevalence%	Predominant habit
18	India	Ernakulum	10,287	37	Betel quid
18	India	Ahmedabad	57,718	47	Betel quid
19	India	Mainpuri	35,000	30	Tobacco
18	India	Pune	101,761	49	Tobacco/lime
20	Pakistan	Karachi	10,749	15	Pan nut
21	Sri Lanka	Central Province	1,133	42-54	Betel quid
22	Thailand	Northern	322	16-19	Areca nut*
23	Taiwan	Kaohsiung	1,299	6	Betel/nut
23	Taiwan	South Taiwan+	827	42	Betel/nut
24	China	Hunan Province	11,046	36	Areca nut*

* Betel nut: fruit of Areca catechu.L tree.
+Aboriginal inhabitants.

Table II Ingredients commonly used in the preparation of a betel-quid

Ingredients	*Notes*
Betel Leaf (Piper betle L) also known as pan	Mostly chewed but the stem or the inflorescence of Piper betle may also be consumed. The leaf is folded into a funnel shape and all other ingredients are added into it, resulting in a quid
Areca Nut (supari or in Sylheti dialect as gua) is a seed of the Areca catechu tree	The fibrous pericarp of the fruit is removed and the seed or the endosperm used for chewing. These may be consumed fresh, dry, boiled, fermented or roasted.
Lime (Calcium hydroxide, also called chun or chunam)	Prepared from limestone or coral. This is smeared onto the leaf.
Catechu (Kattha, Khat or Khair)	Resinous extract from the matrix of the Acacia tree or from the leaves of the Gambia tree. This astringent substance has a high tannin content and is smeared onto the betel leaf.
Tobacco	This is shredded, sun dried tobacco from Nicotina tobaccum or N. rustica.
Examples of smokeless tobacco products are:	
• **shaddah**	This is available in 2 types: Fanfatha and Gulfatha, the latter being the milder of the two.
• **jurdah**	Available as Dulal, Biza Patha Jurdah and Baba Jurdah.
• **khaini**	A raw powdered tobacco and lime consumed in North East India, particularly in Bihar where betel quid use is rare. Abuse of Khaini is known to give rise to exophytic gingival cancers.
• **naswar**	Consumed largely in Pakistan and Arab countries. This is partially cured tobacco and lime with several other components such as ash, cotton oil or sesame oil.

Betel-quid and tobacco chewing - the Aston study

According to 1991 National Census information, the second largest concentration of Bangladeshis in the UK are resident in the city of Birmingham.[13-14] Birmingham's Aston ward contains the city's highest concentration of Bangladeshi residents, 3,000 in total, i.e. 11.2% of the ward population. Almost a quarter (23.5%) of Birmingham's Bangladeshi population live in Aston and, as Table III clearly shows, Aston ward is an area of multiple deprivation. It having a Townsend score of 10.6.[15]

Table III Aston electoral ward

Bangladeshi Population	Aged 0-15	Aged 50+	Born in UK
3000	50%	12.2%	38.5%

Unemployed	Households with no car	Households with long term illness
42.1%	69.4%	11%

The initial sampling frames were constructed by recruiting three experienced Bangladeshi social workers who all worked in Aston. Using surnames, they were able to identify Bangladeshi households from the local electoral register. In this way 699 Bangladeshi households were selected. A systematic sampling procedure was then used to reduce this to 127 households which formed the sample for this study (Table IV). Pilot studies had shown the importance of face to face interviews in the respondents' own language, in preference to a postal questionnaire. A pre-tested interview questionnaire was produced which explored attitude, knowledge of the health risk and behaviour towards betel-quid chewing and the use of tobacco and alcohol. All the respondents were interviewed in their own home by trained Bangladeshi interviewers, specially selected for their fluency in *Sylheti* dialect, spoken by Bangladeshis resident in Aston. It was recognised that, owing to the sensitive issues covered in the questionnaire, all the interviewers should be of the same sex as the respondent. This was also considered to be culturally more appropriate.

Table IV Community and household response rates

Households surveyed	Households refusing	Households at which adults were interviewed	Total no. of interviews
128	1	84 (71.2%)	334

All the interviewers worked in pairs and approached the listed households to ascertain the number of adults aged 18 years and over and to conduct a separate interview with each. Interviewers were required to call at an address up to three times in order to make contact with householders. Care was taken to ensure that repeat calls were on different days and at different times to maximise the chances of someone being at home. Interviewers could return to an address as many times as necessary to interview all adults once initial contact had been made.

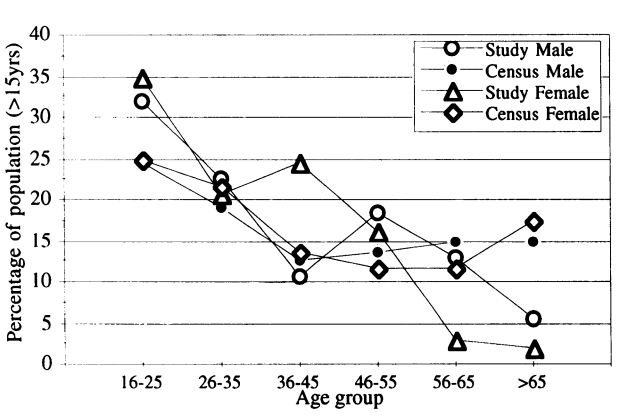

Figure 1 Comparison of ward and study population by age

Results of the Aston Survey

The distributions seen in the study population and the local population largely agree with the figures given in the Census population (Figure 1).

Demography of betel-quid chewers

The percentage of males and females within each age group who chew betel-quid significantly increases with age ($p<0.001$). This is also true of male smokers ($p<0.001$); very few Bangladeshi women smoke. The age and gender breakdown of pan and tobacco chewing and smoking, for both sexes, is illustrated in Figure 2.

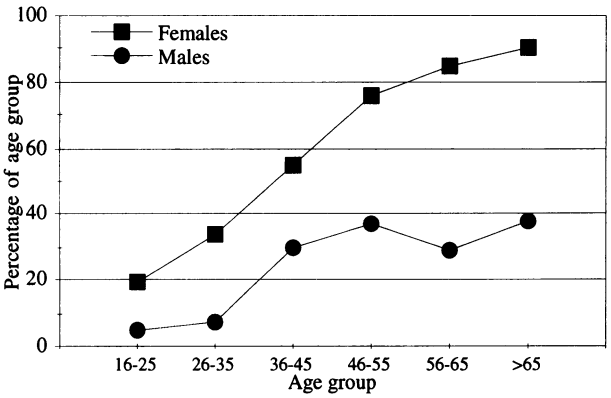

Figure 2 Inclusion of tobacco in betel-quid. (Two point moving average)

Most people chew betel-quid on a daily basis, (males: 92%; females: 96%) and the habit most often begins during the teens, for both sexes. Figure 3 illustrates the age at which individuals started chewing by age group and gender. The main reason given for taking up the habit was that everyone else, i.e. family and friends, normally chewed. This was reported equally by both sexes. However, more males than females gave the further reason that they 'liked the taste'. This difference between gender was highly significant ($p<0.001$). Of all those who had, at any time, chewed betel-quid, only eight males (9%) and 4 females (4%) have successfully given it up. Furthermore, no clear or consistent reason was given as to why.

Purchaser of betel-quid

It is usually the head of the household who purchases the betel-quid as seen in Figure 4 ($p<0.001$). This is predominantly men,

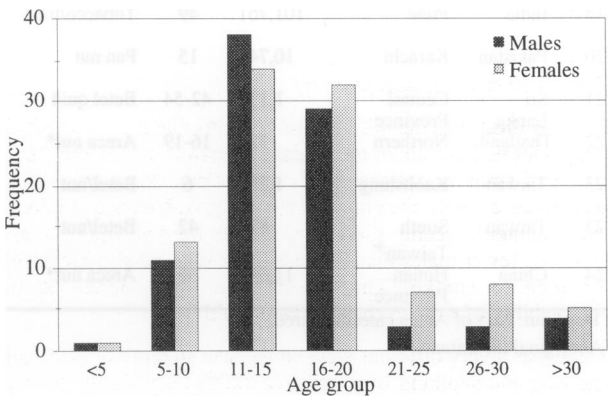

Figure 3 Age at which betel-quid chewing began

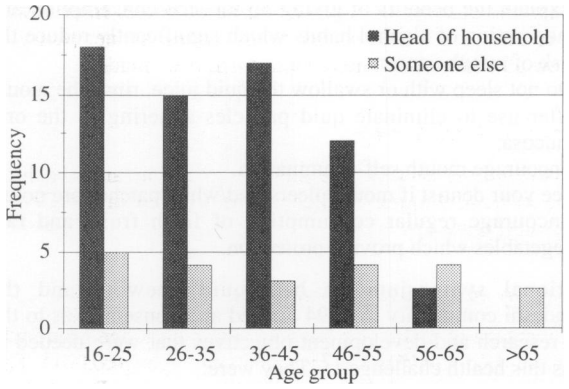

Figure 4 Purchaser of responder's betel-quid within household

since the head of the household is usually male; significantly fewer females buy their own quids ($p<0.001$).

Inclusion of tobacco in the betel-quid

Only 37% of the males interviewed chewed betel-quid mixed with tobacco, whilst 81% of women added tobacco to the pan. This difference between the sexes is highly significant ($p<0.001$), and is in marked contrast to tobacco consumption through smoking. In total, as many as 65 (39%) of all men chewed betel-quid and smoked, whereas very few women smoked at all. Nevertheless, in all, 85% of men used tobacco in some way, compared to 82% of all women. More women than men chewed betel quid ($p<0.001$), and women were more likely to put tobacco in their betel-quid mixture (Figure 2). Therefore, a similar proportion of the population, by gender, used tobacco, either for smoking or chewing. The number of individuals who consumed four or more betel-quids per day increased with age (Figure 5). This may be indicative of increasing addiction to the tobacco used, and warrants further investigation.

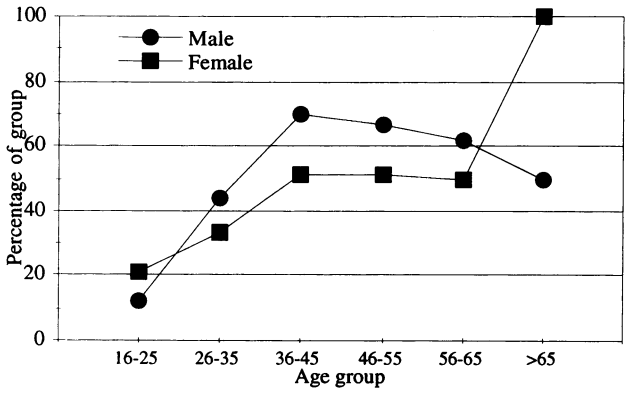

Figure 5 Percentage of population consuming four or more betel-quids per day

Perception of social acceptability

Figure 6 illustrates the differing perceptions that male and female Bangladeshis have about the social acceptance of chewing betel-quid and smoking tobacco. It is quite clear that there is wide acceptance of male chewing and smoking, with over one-third of the community seeing these practices as normal. Interestingly, however, fewer males than females think it is socially acceptable for men to smoke. This observation also applies to the acceptability of women chewing betel-quid.

There was a very different view on the acceptability of betel-quid chewing and smoking by women ($p<0.001$); generally, this was condoned by the female respondents but not by the men.

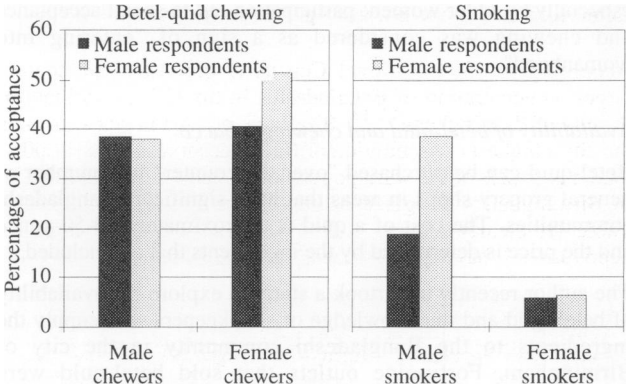

Figure 6 Acceptability of chewing betel-quid and smoking by gender

However, there was no overall significant differences between the sexes ($p>0.10$).

Not surprisingly, there was general disapproval of children chewing betel-quid or smoking, although 5% of respondents did think that it was socially acceptable for children to chew betel-quid, perhaps reflecting the broad tolerance towards betel-quid chewing.

Perceptions of the health risk

A summary of the kind of ailments that respondents listed for betel-quid chewing, if any, is given in Table V.

Table V Perceived health risks of betel-quid chewing

None	Don't know	Teeth problems	Bad stomach	General ill health
29.4%	18.7%	17.4%	12.5%	6.7%
General cancer	**Mouth cancer**	**Other**	**Lung Cancer**	**Heart disorders**
6.4%	4.3%	2.1%	1.2%	1.2%

Socio-behavioural model of the betel-quid behaviour among Bangladeshi women

A socio-behavioural model has been advocated which may, in part, explain the widespread practice of adding chewing tobacco into the betel-quid among this community (Figure 7).[16] The model illustrates the social pressures on young Bangladeshi women to introduce chewing tobacco into their betel-quid. Results of the study confirmed the community perception that betel-quid chewing starts during the teenage years and that the inclusion of chewing tobacco occurs just prior to engagement and marriage. Adding tobacco to the betel-quid was so prevalent among the women that over 80% of the adult female population engaged in this habit. It was believed to have few health risks and was seen as socially acceptable. Women who did not chew tobacco were considered deviant by the community, and

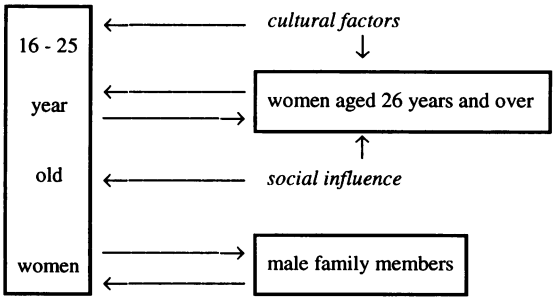

Figure 7 Socio-behavioural model highlighting principle variables which encourage tobacco chewing among Bangladeshi women [16]

especially by older women; participation led to social acceptance and chewing was considered as a sign of "entering into womanhood".

Availability of betel-quid and chewing tobacco

Betel-quid can be purchased "over the counter" in a number of general grocery shops in areas that have significant Bangladeshi communities. The cost of a quid is approximately 30-50 pence and the price is determined by the ingredients that are included.

The author recently undertook a study to explore the availability of betel-quid and the knowledge of shopkeepers who supply the ingredients to the Bangladeshi community in the city of Birmingham. Forty-nine outlets that sold betel-quid were identified in the four electoral wards of Aston, Sparkhill, Sparkbrook and Small Heath. These wards were chosen as they had a Bangladeshi community greater than 5%. Each outlet owner was either Indian, Bangladeshi or Pakistani and was interviewed by trained multilingual interviewers. Results showed that 98% (n=48) of shopkeepers sold the betel-quid ingredients separately, while 74% (n=36) were selling varying types of cured tobacco for inclusion into the betel-quid. The majority of shopkeepers showed that they did not perceive that the chewing of betel-quid or the inclusion of tobacco could cause any health problems, with only 8 shopkeepers believing that mouth cancer was a potential health risk from chewing tobacco.

In conclusion, the sale of betel-quid and chewing tobacco was commonplace and the shopkeepers who sold these products did not perceive that they caused any health risks and therefore placed no age restrictions on their purchase.

Health education messages

Warnakulasuriya has proposed 7 key messages.[1]

- Discourage children and young adults from adopting betel-quid chewing habits.
- Adults must be encouraged to give up betel-quid and other smokeless tobacco habits.
- Explain the benefits of giving up tobacco consumption and moderation of alcohol habits which significantly reduce the risk of mouth cancer.
- Do not sleep with or swallow the quid juice, rinse the mouth after use to eliminate quid particles adhering to the oral mucosa.
- Encourage mouth self-examination.
- See your dentist if mouth ulcers, red/white patches are noted.
- Encourage regular consumption of fresh fruits and raw vegetables which provide protection.

A national symposium on betel-quid chewing and the Bangladeshi community in 1994 arrived at a consensus as to the future research and development objectives that were needed to address this health challenge.[17] They were:

- To develop oral health promotion messages for the minority ethnic communities in the UK in relation to betel-quid and/or tobacco chewing.
- To assess dental knowledge and personal values and the social pressures on individuals, especially females, regarding betel-quid and/or tobacco chewing.
- To evaluate and implement school-based oral health programmes in areas containing a high proportion of the UK's Bangladeshi community.
- To evaluate the effectiveness of using 'ethnic mass media' in oral health promotion.

Acknowledgements
The Aston project was funded by the Department of Health.

Material in this paper has been published in: Bedi R, Gilthorpe MS. The prevalence of betel-quid and tobacco chewing among the Bangladeshi community resident in a United Kingdom area of multiple deprivation. *Primary Dental Care*; 2:39-42 (1995). It has been reproduced by the kind permission of the editor.

I am also grateful to Dr K Warnakulasuriya, Department of Oral Medicine and Pathology, King's College School of Medicine and Dentistry for his permision to use Table I.

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