Accessibility of chewing tobacco products in England

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ABSTRACT

Background The carcinogenicity of chewing tobacco is well established. It is predominantly used by the South Asian community in England. Little is known about the accessibility of the products available for use in England.

Methods Wards with high proportions or numbers of residents from the South Asian community were identified using 2001 Census data. Within each ward product purchasers identified retail outlets and purchased chewing tobacco products from them.

Results Chewing tobacco products were found in a broad variety of premises in all but one ward, and were easily accessible. Ninety-eight products were identified and purchased with a mean price of £1.82. Of the ninety four pre-packaged products purchased only 15% (95% CI: 8%, 22%) complied with legal health warning requirements.

Conclusion The study indicates the need to improve compliance with legal controls and enforcement to protect the South Asian community from health risks associated with chewing tobacco products.

Keywords methods, public health, tobacco

Background

Smokeless tobacco is a very broad term referring to more than 30 products consumed without combustion. Use may vary, being either oral or nasal. One form of smokeless tobacco is chewing tobacco, most commonly used in South Asia and the South Asian global diaspora such as the UK, which numbers more than 2 million.

Chewing tobacco products contain heterogeneous ingredients including tobacco, slaked lime, areca nut and various spices, flavourings and sweeteners¹,² (Appendix 1). Products may be commercially produced or made to individual order. These products are either placed in the mouth or cheek, and sucked, chewed or used as toothpaste. The products then remain in contact with the oral mucosa for a period of time.³ Although sharing common ingredients there may be variation in nomenclature, depending upon geographic origin. One example is the betel quid (India) or paan (Bangladesh), which share common ingredients of tobacco, areca nut and flavourings wrapped in betel leaf.

Within regions of South Asia chewing tobacco use may be higher than for cigarettes because of cost and relative lack of regulation compared with cigarettes. In England the highest self-reported use (validated by salivary cotinine) of chewing tobacco products is among Bangladeshi women followed by Indian men, Pakistani men and Pakistani and Indian women.⁴ Local surveys suggest there is a much higher prevalence of use than that reported in national surveys.⁵ Tobacco and areca nut are carcinogenic,³,⁶ increasing risk of mouth cancer, gum disease and heart disease amongst users.³ Other data suggest there is also a risk of negative reproductive outcomes for female users.¹ Chewing tobacco products, particularly zarda (Appendix 1), contain a very wide range of toxins, such as tobacco-specific nitrosamines, chromium, nickel and lead, which are significantly higher

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than the Gothiatek quality standards for snus, the Scandinavian chewing tobacco product. Some South Asian products have three times the quantity of tobacco-specific nitrosamines than Marlboro and Camel cigarettes.

Within communities there are indications that use is encouraged, as products are perceived to reduce oral pain and be beneficial to the mouth. It has also been suggested that consumers may not be aware that they are using tobacco containing products and, therefore, unknowingly compromising their general and oral health.

Regulations have been put in place to reduce the accessibility of tobacco products and influence knowledge, attitudes and the prevalence of their usage. However, there are currently significant differences in the English legal controls for chewing tobacco compared with those for cigarettes (Table 1).

Furthermore, little is known about the accessibility of chewing tobacco products in England. The grey literature suggests that in the Bangladeshi community of East London there has been a growing number of outlets, comparing 1995 with 2009, from which these products are sold.

The purpose of this study was, therefore, to establish the range, price, accessibility and compliance with legislation of chewing tobacco products available in areas of England with high numbers of South Asian residents and to explore any variation by geographic area.

Methods

The study, conducted between August 2008 and March 2009, was an audit of observed retail practice with respect to chewing tobacco products. We could find no existing examples in the literature of determining the range of products sold in particular areas. A protocol was therefore designed, aimed at ensuring a robust, consistent process across different locations.

The Census 2001 data identifies self-defined ethnic groups by English Local Authority Districts. For this study the categories for inclusion were Asian or Asian British (Indian); Asian or Asian British (Pakistani) and Asian or Asian British (Bangladesh). The areas with the highest and second highest number of residents from the Bangladeshi (Tower Hamlets, Newham), Indian (Leicester, Birmingham) and Pakistani communities (Birmingham, Bradford) were identified and this information was further explored at local authority ward level. This approach was based on the hypothesis that wards with high numbers or proportions of residents from South Asian communities would yield the greatest number and range of chewing tobacco products.

### Table 1 Differences in legal controls for smoked and chewing tobacco

<table>
<thead>
<tr>
<th>Legal control</th>
<th>Smoked tobacco</th>
<th>Chewing tobacco</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contents and yields information</td>
<td>Machine smoke yields</td>
<td>Ingredient disclosure</td>
</tr>
<tr>
<td>Identifying codes on packs</td>
<td>Code identifying place, time and date of manufacture</td>
<td>Not required</td>
</tr>
<tr>
<td>Excise duty</td>
<td>Liable</td>
<td>Liable</td>
</tr>
<tr>
<td>How sold</td>
<td>No quantity limits</td>
<td>No quantity limits</td>
</tr>
<tr>
<td>Age of sale</td>
<td>18 years; age of sale notice must be shown in premises selling the products</td>
<td>≥18 years; age of sale notice must be shown in premises selling the products</td>
</tr>
<tr>
<td>Advertising and promotion</td>
<td>Banned except for 1 A5 poster at point of sale</td>
<td>Banned except for 1 A5 poster at point of sale</td>
</tr>
<tr>
<td>Health warnings</td>
<td>Front: select 1 from 2 warnings 1 health warning: ‘This product can damage your health and is addictive’</td>
<td>Back: select 1 from 14 warnings</td>
</tr>
<tr>
<td>Pictorial warnings</td>
<td>Before 1 October 2009</td>
<td>Size unclear, layout and position same as for cigarettes</td>
</tr>
<tr>
<td>Rules concerning size, layout and position</td>
<td>Before 1 October 2009</td>
<td>Not required</td>
</tr>
</tbody>
</table>

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available for purchase. Although Newham has the second highest number of residents from the Bangladeshi community, Birmingham (which has the third highest Bangladeshi population) has wards with higher numbers of Bangladeshi residents than any ward in Newham. Newham’s Little Ilford ward has a Bangladeshi population of 2142 but Birmingham’s Aston ward has 4246. Aston ward was therefore used rather than Little Ilford. Pragmatic judgements were made to select wards either by population numbers (count) or proportion of the overall ward population. Six wards from four Local Authority Districts were selected (Table 2).

Bi-lingual product purchasers, most commonly community health development workers, were recruited from Primary Care Trusts local to our target areas. As local workers they were chosen for their knowledge and understanding of the local geography and context and for their language skills, and were confident about approaching shop keepers to ask about the availability of chewing tobacco products. They were trained to follow the study protocol. Using local maps which identified roads and ward boundaries they were required to, firstly, identify premises selling chewing tobacco products to the public and, secondly, to purchase samples of these chewing tobacco products. The protocol required the product purchasers to walk down each street within their designated ward area and visit every potential outlet that could sell chewing tobacco. This included those selling cigarettes plus supermarkets, corner shops, paan houses or other premises that might sell chewing tobacco products. For every identified premise that sold chewing tobacco the product purchaser completed a questionnaire. It included the date of visit, premise details such as its predominant retail activity, whether there were age restriction signage in accordance with the Children and Young People (Sale of Tobacco) Order 2007, whether cigarettes were sold within the premises, where the chewing tobacco products were displayed and types of product sold. There is no legal requirement currently to sell tobacco products behind the counter, but cigarettes are currently sold on manufacturer supplied gantries behind the cigarettes primarily to safeguard revenue and also as a means of enforcing age of sale legislation.

A product purchase protocol was also developed. Any product believed to contain tobacco was to be purchased. Chewing tobacco samples bought included fresh paan, paan masala or gutkha, zarda or khaini or other products containing tobacco for oral use, e.g. creamy snuff, qiwam or naswar. Cigarettes, rolling tobacco and dry snuff were excluded.

Product samples were purchased until no new products were available. However, data continued to be collected on all the subsequent screened premises until the whole ward had been visited.

Data extracted from each product included: the name, batch number, product category, contents, name, place and date of manufacture, packaging material, target group, language on packaging, detail of health warning, quantity and price.

All the data, appropriately anonymized, were analysed using Excel and SPSS software. Differences in responses to locality and ethnic group were analysed using contingency tables. Where appropriate mean scores and 95% confidence intervals were calculated using analysis of variance.

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### Table 2 Ward information for the three South Asian communities

<table>
<thead>
<tr>
<th>Local authority district</th>
<th>Ward</th>
<th>Ward population (headcount)</th>
<th>South Asian population (headcount)</th>
<th>South Asian population as a per cent of ward population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indian</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leicester (highest Indian population in England—count)</td>
<td>Latimer</td>
<td>11 583</td>
<td>8586</td>
<td>74</td>
</tr>
<tr>
<td>Birmingham (second highest Indian population in England—count)</td>
<td>Handsworth Wood</td>
<td>25 733</td>
<td>9716</td>
<td>38</td>
</tr>
<tr>
<td>Pakistani</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Birmingham (highest Pakistani population in England—count)</td>
<td>Bordesley Green</td>
<td>31 343</td>
<td>15 822</td>
<td>51</td>
</tr>
<tr>
<td>Bradford (second highest Pakistani population in England—count)</td>
<td>Manningham</td>
<td>16 863</td>
<td>10 118</td>
<td>60</td>
</tr>
<tr>
<td>Bangladeshi</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tower Hamlets (highest Bangladeshi population in England—count)</td>
<td>Spitalfields and Banglatown</td>
<td>12 730</td>
<td>7396</td>
<td>58</td>
</tr>
<tr>
<td>Birmingham (third highest Bangladeshi population in England—count)</td>
<td>Aston</td>
<td>27 923</td>
<td>4246</td>
<td>15</td>
</tr>
</tbody>
</table>
Results

Premises
There were 45 premises selling chewing tobacco products. The number of outlets selling chewing tobacco varied across the wards, with the highest concentration of outlets in Leicester and Tower Hamlets (Table 3). The outlets included supermarkets, newsagents, music shops and book shops. Warning notices for underage sale were present in 53% of premises. Forty nine per cent also sold cigarettes. It was observed that whilst cigarettes were only sold in gantries behind the counter, 38% of outlets sold chewing tobacco products in front of the counter.

Products
Tobacco containing products were not always easily identifiable because of similarities in packaging for products that might not contain tobacco. Ninety-eight different products were purchased and were broadly classified as those that were made-to-order according to customer preferences on site and those that were pre-packaged for sale.

Freshly made-to-order pan was available in 14 premises and four such products were purchased. As freshly made products were made to the customers specification prices fluctuated. For the products purchased the price ranged from £1.00 to £1.75, depending on the ingredients. These freshly made products were packaged in non-rigid plastic bags without listing the ingredients, date of production, weight of product, excise duty paid or health warning.

With the exception of Handsworth, chewing tobacco products were found in all wards with the greatest variety being found in Spitalfields and Banglatown (Tower Hamlets) and Latimer (Leicester). Supari with tobacco was found in 9 of 14 premises in Tower Hamlets but not elsewhere. Gutkha was found in all areas with the exception of Aston (Birmingham). In Birmingham, Bradford and Leicester the most commonly available products were paan masala with tobacco/gutkha and zarda. Zarda was the most common product in wards with high numbers of residents of Bangladeshi origin. Zarda along with gutkha was most frequently purchased in the wards with high numbers of residents from the Pakistani community. In the ward with high numbers of residents from the Indian community gutkha was the most commonly available product. However, over half the products bought in all the wards were classified as ‘other’, such as naswar, mawa, creamy snuff and qiwam.

Price
Data on price was available for 89% of the products and on weight for 50% of the products. Prices ranged from £0.30 for a single 4 g packet of gutkha to £39.99 for a 50 g container of zarda. The prices for one of the more popular brands of zarda ranged from 50p to £1.50 for a 12.5 g container. The mean price of all chewing tobacco products was £1.82, the mode £1.00 and the median £0.75.

Health warnings
Of the 94 pre-packaged products, 93% had some English language information ranging from product name only to a full ingredients listing. Less than half (48%) of the products purchased had any form of health warning and only 15% (95% CI: 8%, 22%) complied correctly with the current legislative requirements (Table 4). Best before dates ranged from May 2002 to August 2010.

Seventy one per cent of products from Bangladesh did not have any health warning. All those Bangladeshi products that did have a warning did not adhere to the current English legislative requirement. Products from India were much more likely to have a warning but over half (58%) of these were observed to be incorrect.

Discussion

Main findings of this study
Prior to this study little was known about the sale of these products in England. This study identified the availability of a complex range of relatively cheap (compared with cigarettes) and accessible chewing tobacco products which frequently contravened the English legislative and regulatory frameworks, most commonly with regard to health warnings. Signage indicating tobacco could not be sold to purchasers aged under 18 years of age was present in just over half of the premises. Purchasers would not be easily able to tell if products contained tobacco or not. Although the majority of products that were available fell within the ‘other’ category, there was an apparent trend to indicate that different communities had different product preferences.

Table 3 Distribution of outlets by ward

<table>
<thead>
<tr>
<th>LAD (and ward)</th>
<th>South Asian ethnicity</th>
<th>Number of outlets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birmingham (Handsworth)</td>
<td>Indian</td>
<td>0</td>
</tr>
<tr>
<td>Birmingham (Aston)</td>
<td>Bangladeshi</td>
<td>6</td>
</tr>
<tr>
<td>Birmingham (Bordsley Green)</td>
<td>Pakistani</td>
<td>4</td>
</tr>
<tr>
<td>Bradford (Manningham)</td>
<td>Pakistani</td>
<td>4</td>
</tr>
<tr>
<td>Leicester (Latimer)</td>
<td>Indian</td>
<td>17</td>
</tr>
<tr>
<td>Tower Hamlets (Spitalfields and Banglatown)</td>
<td>Bangladeshi</td>
<td>14</td>
</tr>
</tbody>
</table>
What is already known on this topic

To date, studies of chewing tobacco have focused on individual behaviour and the accompanying health risks. There is only a limited grey literature about the accessibility of these products. This literature suggests that there has been little change over time in these products’ compliance with the English legislative and regulatory frameworks, and an increase in the number of premises selling products.12

What this study adds

This study has broadened the focus of research into these products, enabling the development of a more holistic understanding of their use and identifying opportunities for future control interventions.

Methodologically, a protocol for product purchase has been proposed, which offers opportunities for replication. Census data were used to identify areas with a high proportion of South Asian communities. A systematic approach enabled the identification of local businesses that might sell chewing tobacco products. Locally recruited bi-lingual product purchasers provided a good understanding of the geographic area and a shared cultural identity that enabled the building of rapport with local business owners. This enabled them to communicate effectively with the business owners, to purchase products easily and to scrutinize the packaging to ensure products contained tobacco.

Chewing tobacco products were categorized as: paan masala (with tobacco)/gutkha; zarda/khaini; supari with tobacco or freshly made paan (with tobacco). However, there are alternative ways of categorizing these products and confusions exist within the literature due to differing nomenclature and consumption practices. Freshly made paan may not contain tobacco depending on personal taste, and paan masala is listed in an International Agency for Research on Cancer Monograph as not containing tobacco3 even though some brands are reported to contain tobacco.13,14 Supari (sliced areca nut sometimes with flavourings/sweeteners, a usual constituent of paan but also chewed by itself) is described as free from tobacco15 but purchases of supari products in Tower Hamlets for this study were found, when examined, to contain tobacco.

Products were purchased which contained tobacco but which looked very similar to other products from the same manufacturer that did not contain tobacco. Identical packaging for tobacco and non-tobacco products is banned under existing legislation. This may be construed as examples of brand stretching and is illegal. The potential confusions these variations can create, for both consumer11 and enforcement agencies, emphasizes the need to develop a publicly available database of these products whose ingredients have been systematically analysed in controlled laboratory conditions using uniform criteria. This would assist the identification of chewing tobacco containing products found in retail premises and contribute to the control of contraband imports and the payment of excise duty.

Exploring the rate of chewing tobacco outlets per 1000 of specific South Asian sub-population only served to emphasize the specific commercial features of individual wards, i.e. whether premises were present or not, rather than the characteristics of the population. Outlet density per 1000 population for the Indian population ranged from 0.21 to 1.98; for the Pakistani population from 0.25 to 0.33 and for the Bangladeshi population from 1.41 to 1.89. Research published recently on density of outlets around schools16 linked outlet density to the likelihood of young people’s self-reported experimentation with tobacco. This may also be the case for young people living in areas where there is easy access to chewing tobacco products. High outlet density may also be a route of introduction to chewing tobacco in the wider, non-Asian community, and may warrant further research.

Of most concern in this study was the lack of adherence of products to the legislative framework including the provision of correct health warnings, inclusion of duty, product ingredient information or place of origin. For products made ‘on site’ the packaging did not contain any

<table>
<thead>
<tr>
<th>Wording of health warning</th>
<th>Bangladesh</th>
<th>India</th>
<th>Unknown</th>
<th>Pakistan</th>
<th>Other (Egypt, Belgium and UK)</th>
<th>Total (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No health warning</td>
<td>22</td>
<td>4</td>
<td>14</td>
<td>6</td>
<td>3</td>
<td>49 (52)</td>
</tr>
<tr>
<td>Correct health warning</td>
<td>0</td>
<td>13</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>14 (15)</td>
</tr>
<tr>
<td>Incorrect health warning</td>
<td>9</td>
<td>18</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>31 (33)</td>
</tr>
<tr>
<td>Total</td>
<td>31</td>
<td>35</td>
<td>17</td>
<td>6</td>
<td>5</td>
<td>94</td>
</tr>
</tbody>
</table>
information at all. Whilst these are made to individual specifi- 
cation it is important that consumers are made aware of 
the contents of the product. The majority of pre-packaged 
products, in particular those imported from Bangladesh, did 
not contain any form of health warning. On import into the 
country, products that do not comply should be identified 
and removed from the market.

These products cost little compared with cigarettes. 
Low cost is a recognized contributory factor to cigarette 
consumption\(^{17}\) so may also encourage chewing tobacco 
initiation and continued use. Evidence from Tower 
Hamlets over a 14 year period indicates that prices for 
fresh paan with tobacco have not increased over this time 
period\(^ {12}\) even though the price of a pack of 20 cigarettes 
in the UK has increased by £2.97 (a 110% increase), 
77% of which is tax.\(^ {18}\) Knowledge of the contents of 
these products would enable the appropriate revenue to 
be collected before being released into the open market.
The presence of an informal import market, reinforced by 
the ease of travel to and from South Asia, might however 
create significant barriers to the successful implementation 
of this activity.

Limitations of this study
The study protocol hypothesized a correlation between 
South Asian ward populations and numbers of outlets 
selling chewing tobacco. However, research conducted 
across the entire Borough of Tower Hamlets\(^ {12}\) found that 
the highest density of outlets were not necessarily in 
wards with the highest numbers of residents of 
Bangladeshi origin. This suggests the need to refine the 
protocol in future studies to ensure that several wards 
with high numbers of residents from the South Asian 
community are sampled.

The reliance on one ward in an area meant that the idio- 
syncrasies of that ward, including whether it happened to 
include a shopping precinct/street, may have had an effect 
on the number and type of outlets within that locale. For 
example in Handsworth (Birmingham) no premises visited 
apparently sold chewing tobacco products. However, some 
products purchased in this ward, such as slaked lime and 
areca nut, are key constituents of paan and it would there- 
fore suggest that chewing tobacco products may well be 
available but the product purchase mechanism did not 
identify these. The systematic inclusion of product weights 
would have been helpful. However, as products were 
being collected from across the country and some were 
prone to deterioration it was not possible to have one weigh 
point.

Chewing tobacco products were found within a very 
wide range of premises. The protocol required the 
product purchasers to enter every business, including 
one which provided services such as fast food outlets, 
to ensure chewing tobacco products were not sold. It is 
acknowledged that some owners may not have revealed 
that they sold these products to the product purchasers 
so these premises would not have been included. Some 
premises that sell these products may have been over- 
looked, such as mobile units, which were not trading on 
the day of product purchase. Access to products brought 
into the country for personal consumption and distribu- 
ted amongst friends and family in an informal market 
has also not been accounted for.

Whilst cigarettes were only sold in gantries behind the 
counter chewing tobacco products were situated in a variety 
of areas within individual premises, from in front to behind 
and under the counter. In some cases the product was on 
open shelving or on the shop floor, away from the counter. 
This variation may have led to some products being over- 
looked. Furthermore, products kept under-the-counter 
relied upon the product purchaser developing sufficient 
trust with the business owner in order to make a purchase 
possible.

Conclusion
To conclude, this study has identified that in five of the 
six sampled areas in England with high numbers of resi- 
dents of South Asian origin chewing tobacco products 
are easily obtained, cheap and accessible. The range of 
products is complex and compliance with legislation such 
as health warnings is limited. The results indicate a need 
to improve the control of these products in order to 
protect the South Asian community from health risks 
related to chewing tobacco products and to combat any evasion of duty.

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Ferdous Ahmed, Manu Dahiya, Tunmise Awojobi and 
Amina Begum.
Funding

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References


Appendix 1

Chewing tobacco products commonly used in the UK

- Betel quid (paan) with tobacco normally includes lime and sliced areca nut, wrapped together in a leaf from the piper betel vine.2,19
- Gutka (or Gutka) is a pre-packaged product, containing chopped areca nut, but can also contain sliced lime, catechu, spices and powdered tobacco.1,2,20 If tobacco is omitted, the mixture is called ‘pan masala’1, although as has been discussed the study found paan masala products which contained tobacco.
- Supari is essentially sliced or crushed areca nut, which can be bought loose or pre-packaged and is used on its own or in betel quid. The study purchased supari products, which contained tobacco.
- Niswar can contain powdered tobacco, slaked lime and indigo, being made at home or pre-packaged.21 All can be stored, often in the buccal sulcus, for varying lengths of time, with implications for the health of adjacent oral tissues as well as more distant sites.
- Qiwam (kimam) contains tobacco, spices (cardamom, saffron and/or aniseed), additives such as musk. This is a paste which is placed in the mouth and chewed, it can also be one of the additions to a betel quid.
- Zarda contains tobacco, lime, spices, vegetable dyes, areca nut and can also be used as ingredient in betel quid.
- Creamy Snuff or tobacco toothpaste contains tobacco, clove oil, glycerin, spearmint, menthol, camphor. It is often used to clean teeth.
- Mawa contains tobacco, slaked lime, areca nut and is placed in the mouth and chewed for 10 to 20 min.