EVIDENCE BASED PUBLIC HEALTH POLICY AND PRACTICE

Cross-cultural adaptation of a tobacco questionnaire for Punjabi, Cantonese, Urdu and Sylheti speakers: qualitative research for better clinical practice, cessation services and research

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Objective: To develop cross-culturally valid and comparable questionnaires for use in clinical practice, tobacco cessation services and multiethnic surveys on tobacco use.

Methods: Key questions in Urdu, Cantonese, Punjabi and Sylheti on tobacco use were compiled from the best existing surveys. Additional items were translated by bilingual coworkers. In one-to-one and group consultations, lay members of the Pakistani, Chinese, Indian Sikh and Bangladeshi communities assessed the appropriateness of questions. Questionnaires were developed and field tested. Cross-cultural comparability was judged in a discussion between the researchers and coworkers, and questionnaires were finalised. Questionnaires in Cantonese (written and verbal forms differ) and Sylheti (no script in contemporary use) were written as spoken to avoid spot translations by interviewers.

Results: The Chinese did not use bidis, hookahs or smokeless tobacco, so these topics were excluded for them. It was unacceptable for Punjabi Sikhs to use tobacco. For the Urdu speakers and Sylheti speakers there was no outright taboo, particularly for men, but it was not encouraged. Use of paan was common among women and men. Many changes to existing questions were necessary to enhance cultural and linguistic appropriateness—for example, using less formal language, or rephrasing to clarify meaning. Questions were modified to ensure comparability across languages, including English.

Conclusion: Using theoretically recommended approaches, a tobacco-related questionnaire with face and content validity was constructed for Urdu, Punjabi, Cantonese and Sylheti speakers, paving the way for practitioners to collect more valid data to underpin services, for sounder research and ultimately better tobacco control. The methods and lessons are applicable internationally.

Estimates of the prevalence of the use of tobacco-related substances depend almost entirely on self-report. Clinical records of smoking habits and changes are also based on self-report. Thus, there are barriers to the accumulation of good-quality information on ethnic minority groups, particularly those who may have little or no competency in English. About 23% of immigrants to the UK, born in China, Bangladesh, India and Pakistan, have little skill in English, and more than half cannot function fully in an English-speaking environment.[1] Insufficient attention has been paid to the issues this raises in both medical practice and epidemiological studies—for example, the bias resulting from excluding non-English speakers because of language barriers between researchers and potential participants, or the collection of invalid or artefactual data from these respondents.[2] Reliable data on language ability are sparse, because they are not collected in the census in the UK, an omission that is currently under review.

Where questions intended for English speakers are translated into another language, measurement errors can arise from several sources.

1. Some bilingual translators may wish to use technically correct language, which is not the way ordinary people speak, resulting in translations in too ''high'' a form.
2. Translations may be literal or inappropriate.
3. Culturally inappropriate expressions may be retained and some questions may raise topics that are taboo by reason of religion or culture.
4. Respondents may lack acquaintance with survey situations, misinterpret what is required and lack motivation (some solutions are considered in the Discussion).
5. Researchers may not be familiar with cultural norms and may fail to recognise that there is more than one form of the same language—for example, Punjabi—and that for some languages the written and spoken forms of the language are not the same—for example, Cantonese. This may lead to a lack of administration of a standardised questionnaire as interviewers make ''spot'' translations of items into the oral form.

Lay people, ideally monolingual ones, because bilingual translators tend to be better educated and make more literary translations and less suitable translations for everyday use, should be involved in the development of questionnaires and interview schedules to achieve cultural and linguistic appropriateness.[3] When comparisons are to be made between groups, questions must be conceptually and functionally equivalent and salient for all the groups compared. In their account of how to maximise cross-cultural validity, Hunt and Bhopal have emphasised an iterative approach to translation and adaptation of questionnaires, with the close involvement of lay people (box 1).[2]

Accurate data on the use of tobacco and related substances (such as ''paan'', a form of smokeless tobacco) are essential for the development and evaluation of programmes aimed at the reduction and prevention of the use of these substances in ethnic minority groups. Previous research has shown potential problems with survey research involving ethnic

Box 1: State of the art translation or adaptation procedures[2]

Work largely or wholly achieved in this project

- Translation of items by a team of bilinguals
- Comparison of translations
- Negotiation of ''best'' items
- Consultations with people who are monolingual in the target languages
- Item refinement
- Field testing with monolinguals
- Refinements as needed
- Testing for face, content and construct validity in each language

Work required to be carried out in future

- Testing for validity criterion in each language
- Testing for reliability and responsiveness
- Statistical analysis of ratings of quality of translation across different countries

minority groups.[4] In a study of 15 UK-based surveys of alcohol and tobacco, prevalence data on cigarette smoking differed by ethnic group.[4] However, these differences were inconsistent across studies. One explanation for this is the quality of the questionnaires used. Only two of the studies had used more than one translator. One study used consultations with members of the language group concerned to investigate cultural sensitivities and the other consulted lay people or monolingual people on the adequacy of the translations. None of the studies had tested the questions for validity, reliability or responsiveness, and none had compared the translated questionnaires with each other. Our pilot study with lay members of the Bengali-speaking community identified cultural and linguistic errors in existing Bengali questions on tobacco and alcohol use.[5]

These problems are pertinent to both clinical and smoking cessation practice and research. The aim of this project was to develop questionnaires on tobacco use for Punjabi, Urdu, Sylheti (an oral dialect/language spoken by people from the Sylhet region of Bangladesh) and Cantonese speakers, with face and content validity and cross-cultural comparability suitable for use in clinical practice, smoking cessation services and research.

METHODS

Ethics

In the UK, only research involving participants recruited from the health services requires ethical approval by a formal research ethics committee, but the convention is for medical academics to take advice from the local research ethics committee. The research proposal was submitted to the local research ethics committee and it was confirmed that, as volunteer participants were to be recruited from the community, research ethics committee approval was not required. The researchers' department's code of practice on ethical standards in social research involving human participants was adhered to throughout the project.

Sources of questions

UK questionnaires designed for either the general population or populations of ethnic minority groups were obtained to identify key questions for inclusion in a questionnaire on tobacco use. Surveys examined were as follows:

Box 2: Key questions were identified in each of the following areas

- Cigarette use, including cessation, dependence and context of smoking
- Bidi use (bidi is a low-cost cigarette made from tobacco rolled in a leaf)
- Cigar use
- Pipe use
- Hookah use (hookah is a large pipe in which tobacco smoke is mixed with herbs and spices and passed through water before being inhaled—a form of tobacco use fairly common in men in Muslim societies, so most relevant to Urdu and Sylheti speakers)
- Smokeless tobacco (paan, chewing tobacco along with a betel leaf and herbs or spices and lime—a form of tobacco use that is common in Sylheti speakers)

- Health Survey for England 1999[6]
- Black and minority ethnic groups in England (first and second lifestyle surveys)[7 8]
- Fourth National Survey of ethnic minority groups[9]
- Health and lifestyles of the Chinese population in England[10]
- General Household Survey[11]
- Scottish Health Survey[12]

Key questions were identified (box 2) and a questionnaire was compiled in English containing the same questions. Box 3 shows examples of some of these questions in relation to cigarette smoking.

In cases where these questions had been previously translated into Punjabi, Urdu or Chinese, the translated items were obtained. Our previous research had found that the Health Survey for England fulfilled most criteria for cross-cultural validity[5 6]; hence, it was used as the primary source, followed by other national surveys and subsequently by local surveys. If a question had not been translated for any survey, bilingual coworkers translated it.

Involvement of the ethnic minority communities in the modification of questions

Four bilingual coworkers were appointed: a Pakistani, a Bangladeshi, a Chinese and an Indian Sikh. Each coworker recruited a panel of 10 lay people, preferably monolingual,

Box 3: Sample questions

- Have you ever smoked cigarettes?
- Do you smoke cigarettes nowadays?
- Do you smoke cigarettes regularly, that is at least one cigarette a day, or do you smoke them only occasionally?
- About how many cigarettes a day do you smoke on weekdays?
- Where do you smoke?
- How easy or difficult would you find it to go without smoking for a whole day?
- How soon after waking do you usually smoke your first cigarette of the day?

from their community to be consulted throughout the project—that is, individual and group work. Except for the Bangladeshi group (described in Discussion), equal numbers of men and women were recruited across a wide age range to ensure diversity. Information sheets and consent forms were translated by a professional translating service.

One-to-one consultations, lasting <1 h, between coworkers and participants, assessed the cultural and linguistic appropriateness of tobacco-related questions in the relevant language. Participants gave their opinion on the understandability of each question, explained the meaning of particular words or phrases, and suggested preferable ways of asking the question. They were also asked whether respondents from their community would give truthful answers. Some background information about community attitudes towards tobacco use was also gathered.

Consultations took place either in the participant's own home or at community premises, and were audiotaped. Following a topic guide, coworkers made notes throughout the consultation. Findings were discussed with the researcher (LH) throughout data collection. Another team member (RSB) listened independently to Punjabi and Urdu tapes and provided comments. Consultation outcomes were recorded and collated by the researcher.

These one-to-one consultations allowed participants to become familiar with the task and to give their own opinions without being influenced by others. Subsequent discussions, lasting 2 h, were designed to review translations for each item suggested during one-to-one consultations, and achieve group consensus.

Two discussion sessions, one with men and the other with women, were conducted with each of the Punjabi and Urdu participant panels, and one with Sylheti men. Separation by sexes was thought to be unimportant by the Cantonese coworker, but groups were separated into younger and older participants. Owing to practical constraints, no discussion group included Sylheti-speaking women (reasons in Results). Table 1 shows the attendance of participants from the panel at the discussions: all 10 members of the Cantonese-speaking and Urdu-speaking panels attended, seven Punjabi speakers attended and only two of the five Sylheti men attended.

The researcher and the relevant coworker were also present. RSB attended the Punjabi, Urdu and Sylheti male discussion sessions.

Questionnaire items were modified after these discussions. Coworkers provided handwritten lists of modified questions, taking external advice on the translation if necessary. These questions were compiled into a questionnaire format with appropriate instructions.

Testing the resultant questionnaire and maximising cross-cultural comparability

The draft questionnaire was field tested by administering it to a sample of about 20 respondents from each language group. Coworkers recruited the sample via community groups, personal contacts and community events. In addition to noting the answers given by respondents, coworkers recorded any instances of hesitation, confusion or requests for clarification. Owing to time constraints (reasons in Results), the Sylheti questionnaire was not field tested, obviously reducing our confidence in its face validity (although it may still be the best available).

To ascertain the comparability of each version with the others, a final discussion took place between the research team and coworkers. For each item, the coworker provided a literal back translation into English. In this way, each question was checked for equivalence and comparability to every other language and to English. Where necessary, changes were made to ensure comparability.

Subsequently, the final questions in each language were incorporated into a dual-language format questionnaire.

Table 1 Participants in four discussion groups

	Number of participants attending	
Language group	Discussion group 1	Discussion group 2
Cantonese	4 (2 men, 2 women)	6 (3 men, 3 women)
Punjabi	3 men	4 women
Urdu	5 men	5 women
Sylheti	2 men	0 women

RESULTS

Overall findings

Modifications were required for all language versions of the questions. Mostly, modifications took the form of substituting more easily understood words or phrases, omitting some words that were difficult to translate or understand or were unnecessary (such as approximately or at all) and finding more appropriate expressions. Examples of some of the modifications are detailed in the subsequent sections, together with findings relevant to cross-cultural comparability of content, social acceptability of tobacco, construction of questionnaires and field testing feedback.

Cantonese questionnaire

Translation

Participants found some expressions and words cumbersome. Some translations were too literal; others violated the conventions of sentence structure.

The terms ''weekends'' and ''weekdays'' in ''About how many cigarettes do you usually smoke on weekdays?'' were deemed inappropriate, as most Chinese people were employed in the catering trade and did not divide the week in this way. The question was modified to read ''About how many cigarettes do you smoke a day?'' The translation of ''cigar'' was regarded as more appropriate for Mandarin or Taiwanese speakers than for Cantonese, and was changed accordingly. The translation of the word ''bowl'' (wuin) as in ''bowl of tobacco'' was understood by respondents to refer to a rice bowl and was replaced by a preferable term (tok).

Content

The Chinese in Scotland do not use bidis, hookahs or smokeless tobacco. These questions were hence omitted.

Social acceptability

Participants thought that smoking was taboo for women and that truthful answers might not be obtained unless strict anonymity was ensured.

Oral and written forms of Cantonese

Spoken and written forms of Cantonese are constructed in a different way. As the questions were to be administered verbally, we developed a phonetic version of each item, in which questions were written in the oral form of the language, to avoid a lack of standardisation arising from spot translations. A brief consideration of the issue of tonality is given in the Discussion.

Field testing

Field testing showed that respondents found the questionnaire items simple and straightforward and had no problems answering them.

Punjabi questionnaire

Translation

Some words and expressions were changed to make the questions understandable. For example, the English word ''weekend'' had been used and was changed to ''shumivaar ethvaar tak'', meaning ''Saturday and Sunday''. The Urdu-derived word ''bakaidah'' had been used for ''regularly'', but most respondents recommended that it was replaced by the more familiar ''lagatar''. The terms ''cigarettes'' and ''bidis'' were used interchangeably by Punjabi speakers; thus, the word ''bidi'' had to be qualified as ''desi bidi'' (ie, a bidi from the homeland). ''Savan'' for ''use'' was seen as a Hindi word and was replaced by ''vurtheo''; the word ''sheay'' for ''substances'' was seen as too formal and was replaced by ''cheez''. The translation for ''how long'' as in ''How long is the paan kept in your mouth?'' was ''suma''. This was replaced by ''dir'' as ''suma'' was perceived to refer to an inappropriately long time span. In addition, some grammatical and spelling modifications were needed.

Content

Hookah use was not seen as relevant to UK Sikhs, and these questions were omitted.

Social acceptability

Smoking is strictly forbidden in the Sikh codes of behaviour and is regarded as particularly reprehensible in women. Nevertheless, some Sikhs of both sexes do smoke. It was suggested that people would be reluctant to admit to smoking unless ensured of strict anonymity and, preferably, asked by someone other than a Sikh, and for medical or research purposes (we have no information on whether this would apply in clinical situations).

Field testing

It was difficult to recruit smokers for the field test because of the taboo, and those thought by the coworker to be smokers denied it when asked. Thus, only 10 respondents were recruited. Few problems were encountered with the questions.

Urdu questionnaire

The omission of redundant words, the addition of clarifying words or expressions and changes in sentence structure, word order and actual translation were all required. For example, ''plain'' cigarettes had been translated as ''mamuli'', which means ''not good'' or ''ordinary''. To remove ambiguity this was changed to ''begar filter wali'', which means ''without filter''. ''Hand rolled'' had been translated literally and was thought more easily understood if rendered as ''made with hands''. The original translation of ''weekdays'', ''hafta'', was understood as a full seven-day week and was changed to ''pir say juma taq'', meaning ''Monday to Friday'', and the words ''haftey itwar'', meaning ''Saturday and Sunday'', were added after the use of the English word ''weekends''. Where the word for ''smoking'' had been translated as ''tobacco noshi'', this was replaced by the less formal ''cigarette''.

The word ''nowadays'' had originally been translated from a word meaning ''currently'' (durjeyzeel). This was regarded as formal and was hence removed. The phrase ''paan with jorda'' was not understood by everyone and the word ''jorda'' was replaced by ''tobacco wallah paan''. The word ''khatay'' (eat) was preferred to the original ''chabatay'' (chew) in questions on chewing tobacco-related substances.

Content

All forms of tobacco use covered in the questionnaire were seen as appropriate to the Pakistani community.

Social acceptability

There was no unequivocal prohibition on smoking in the Pakistani community, although it was thought that women should not smoke for religious reasons. Thus, women would be more likely than men to conceal their smoking. Smoking was becoming more acceptable among young people, but they would not smoke in front of their elders out of politeness. Hookahs were acceptable for older people and the use of sweet paan by women was not frowned upon.

Field testing

Field testing showed that some people who had lived in the UK for some time were more familiar with the English translations for commonly used words than the Urdu translation—for example, understanding ''Monday to Friday'' better than its Urdu equivalent, ''pir say juma taq''. Notably, the survey had no option for people who described themselves as current smokers to say whether they were regular or occasional smokers. This may be especially important in this group, as many people smoke on social occasions but not at other times.

Sylheti questionnaire

It proved extremely difficult to recruit a Sylheti–English speaking coworker. Thus some phases of the research had to be omitted. All the items had been translated from English into Sylheti using the Bengali script by the coworker, as no written form of Sylheti is in current use. These were then rendered into phonetic English.

Translation

Modifications were required. For example, the word ''kijat'' was preferred to the word ''kunjati'' for ''brand''. The translation ''ki rakam'' was preferred to ''kundharaner'' for ''type'' as in ''type of cigarette''. Bangladeshi people were not familiar with cigars, and there is no word for ''cigar'' in Sylheti. It was suggested that a photograph might clarify the situation (drawings were not mentioned). The word ''poriman'' was preferred to ''kotokhani'' to express ''how much?'' as it is more accurate in terms of quantity. The translation of ''Do you inhale the smoke (take it into your lungs)?'' was modified to use ''giloyni'' (swallow) instead of a direct translation for ''inhale'', and the word for ''lungs'' was omitted as it was thought that most Sylheti speakers would not understand this term.

Social acceptability

Within the Bangladeshi community smoking was not acceptable as Islam forbids addiction to any substance. However, it was agreed that smoking was a habit for some Muslims, although much less acceptable in women than in men. Smoking using a hookah was uncommon in Scotland owing to the absence of strong sunlight for drying the tobacco. It was more acceptable to chew paan, which was common among women and men. It was thought that truthful answers to questions on smoking might be more likely if the questions were put by a doctor or by an independent researcher.

Field testing

Owing to time constraints, no field testing was carried out. However, the participants from the discussion group found the final questionnaire acceptable and easy to understand.

Cross-cultural comparability

A final discussion between the research team and coworkers led to a few changes, which made the four questionnaires more comparable. For example, in the Cantonese version, the merging of weekends and weekdays made the question more

appropriate, and this was changed on all questionnaires, including the English version.

DISCUSSION

Cross-cultural validity of questionnaires is a relatively neglected issue for researchers working in multiethnic populations. Although there is much heterogeneity and diversity within ethnic and linguistic groups, valid questionnaires in languages of the ethnic minority groups remain necessary for survey research on representative samples, especially those comparing between groups. The same issues arise in asking questions in the medical history, and in establishing baselines in smoking cessation services. Remarkably, little original research is published on this topic in the medical, epidemiological and public health science literature. Bhopal *et al*[4 5] have pointed to the possible adverse effect on the quality and value of UK cross-sectional studies on tobacco use in ethnic minority populations, which show major fluctuations over short time periods that are probably artefacts, and substantial gaps between self-reported and cotinine-adjusted prevalences. Our work shows the use of best-practice principles to maximise cross-cultural validity (box 1),[2] and, to our knowledge, treads new methodological ground in the fields of self-report, ethnicity and health, and tobacco.

This project proved arduous. Although this paper reports on the primary outcomes, the practical challenges and specifics of carrying out research with bilingual coworkers will be considered in a future paper.

This project showed that many changes were necessary in existing translations of key tobacco-related questions, including those prepared nationally. New translations of questions were developed; core questions were compiled, including some culturally-specific questions in four languages; a tobacco-related questionnaire was constructed and tested for understandability, linguistic and cultural appropriateness and face validity. Cantonese and Sylheti questionnaires were developed in an innovative way that allows standardisation of questionnaire delivery at interview without the need for interviewers to translate on the spot. Although we could produce a phonetic version of Sylheti using the Roman script, this approach would not have been suitable for Cantonese, as this is a highly inflected language and the sounds made are subtle and different from the English phonetics. The alternative that we adopted was to write the oral Cantonese using the Chinese script. As the tone is very important in Cantonese, interviewers would need a thorough training.

We recommend close collaboration between the researchers and interviewers to ensure understanding of the items, purpose of the questionnaire and accurate questioning (including the tone). Communication between researchers and bilingual employees is vital across all languages in cross-cultural survey research. Interviewers also have a crucial role in explaining the aim of the questionnaire (often to respondents who are unfamiliar with the mode of information gathering), motivating respondents and giving assurance of anonymity and confidentiality, and thus are in a position to directly influence response validity. In-depth training and understanding are essential to maximise good-quality data collection.

When smoking or tobacco use, or indeed any other activity, is regarded as unacceptable in a certain group, great care must be taken to reassure respondents of anonymity and confidentiality, and of the need to obtain accurate responses so that benefits accrue to the health of the community in future anti-smoking strategies. This study indicated that sensitive questions asked by a high-profile member of the community who is personally known to the respondent may lead to socially acceptable and inaccurate answers.

The project findings can feed into the wider challenge of increasing the validity of tobacco-related data gathered from these and other ethnic minority groups. The results will contribute to initiatives and programmes aimed at control of tobacco-related harm. The insights gained will be transferable to other areas of health research that uses self-reported data. Subsequent work could expand the existing questionnaire to focus on other tobacco-related knowledge and attitudes, other health-related behaviours and demographic data.

We are currently planning to conduct studies on criterion validity and reliability of the questionnaires. This work will also incorporate re-formatting of developed questionnaires and producing a culturally appropriate introduction to each language version.

Knowledge and experience internationally on the issues raised in this paper are extremely limited, particularly in medical practice, epidemiology and public health.[2] The methods, lessons and outcomes are relevant to clinical

What is already known on this topic

- The principles for maximising cross-cultural comparability are known, but seldom applied.
- Differences between the UK national prevalence surveys on smoking by ethnic group, and lack of attention to maximising cross-cultural validity in previous surveys, indicate the presence of data artefacts.

What this paper adds

- The principles for maximising cross-cultural validity were surprisingly difficult to implement.
- Many changes to the existing UK tobacco questionnaires were needed to make questions understandable.
- A tobacco-related questionnaire, tested for linguistic and cultural appropriateness and face validity for Urdu, Punjabi, Cantonese and Sylheti speakers, has been developed.
- An innovative method is presented to standardise administration of questionnaires for Cantonese and Sylheti speakers: the oral Cantonese version was written in the standard Chinese script, and the spoken Sylheti was written phonetically using the Roman script.
- The methods, lessons and outcomes are relevant to clinical practice, smoking cessation services and research, and are relevant to multiethnic societies internationally.

Policy implications

- The priority for policy, strategy and healthcare planning relating to the control of tobacco consumption by ethnic group will be judged better in future as the tools for collecting accurate information are developed.
- This paper shows how this can be done and provides questionnaires with face validity for four linguistic groups.

practice, smoking cessation services and research, and are relevant to multiethnic societies internationally. The questionnaires we have produced[13] can be used by medical practitioners, those delivering smoking cessation services and researchers conducting interview-based surveys—they are probably the best currently available for use in Urdu, Cantonese, Sylheti and Punjabi speakers, together comprising a large proportion of the ethnic minority populations in the UK whose preferred language is not English. Exact statistics, especially in language proficiency, are not available, but general information is on the internet (http://www.cilt.org.uk/faqs/langspoken.htm). These four languages were among the 12 languages supported by a telephone helpline at the 2001 census, indicating their importance. In the Health Survey for England 1999,[6] Punjabi, Urdu, Sylheti and Cantonese were the main spoken languages for a substantial minority (20–50%) of Indians, Pakistanis, Bangladeshis and Chinese, respectively (http://www.archive.official-documents.co.uk/document/doh/survey99/hse99-t14-27.htm). These populations also provide an important challenge to tobacco cessation services, where communication is the key to success. Our questionnaires lay a new foundation for tackling the challenge.

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