



Different use of medical terminology and culture-specific models of disease affecting communication between Xhosa-speaking patients and English-speaking doctors at a South African paediatric teaching hospital

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Background. Language and cultural differences between patients and health care providers may have adverse health consequences. Red Cross War Memorial Children's Hospital is a paediatric teaching hospital in Cape Town where staff communicate mainly in English or Afrikaans, while many patients speak Xhosa as their first language.

Objectives. To examine whether differences in the definitions of common respiratory medical terminology by patients and doctors cause miscommunication and to explore culture-specific models if used by parents in their definitions.

Design. In-depth, semi-structured interviews were conducted with three speech communities, viz. 8 English-speaking doctors and 33 Xhosa-speaking parents, educated to grade 12 level or less and recruited from two areas in the hospital, the short-stay ward (Xhosa s-s) and the allergy clinic (Xhosa allergy). The sum of both groups of Xhosa-speaking patients are referred to as 'Xhosa all'. Definitions were elicited for common respiratory terminology in both Xhosa and English. Contrastive linguistic

analysis was used to identify the semantic properties for each group in order to condense the groups' definitions into representative 'core definitions'. Differences in the definitions of terminology were identified and words were classified as concordant (used in the same way) or discordant (used in different ways) by the three speech communities.

Results. Parents experience difficulty in understanding terms used by doctors and words in common use were understood differently by these two groups. Most Xhosa words were not in the doctors' vocabulary, and some common English words were not in the parents' vocabulary. Where words were in the vocabulary of both groups, significant differences existed in the number and range of definitions, with many clinically significant discordances of definition being apparent. Some common examples relevant to paediatric respiratory problems are presented. Three culture-specific explanatory models of respiratory illness, *ingqele*, *xakaxa* and *idliso*, are illustrated.

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Doctors often use specialised terminology that is not well understood by their patients. However, even names of common illnesses (such as *arthritis*, *diabetes* and *stomach ulcer*) often mean something different to the patient than to the doctor¹ and are influenced by education, culture and language.² Translators have difficulty with medical translation,³ and English disease names may be used differently by patients and doctors and may be used to refer to culture-specific models of disease.⁴ Research on similar topics in the South African literature is scanty. A study of the translation of a disability questionnaire from English into Xhosa showed that difficulty was experienced in translating medical terminology.⁵ Concepts that proved surprisingly difficult to transfer across the languages and cultures included 'mobility', 'confined to bed' and the choice of word to denote 'male'.

Red Cross War Memorial Children's Hospital is a paediatric teaching hospital in Cape Town where staff communicate mainly in English or Afrikaans, while many patients speak Xhosa as their first language. At this hospital language issues

are closely followed by socioeconomic issues as major access barriers to good care for Xhosa-speaking parents. In a recent study⁶ only 6% of doctor-patient interviews were conducted partly or wholly in the patient's home language. Of the 94% of interviews where no Xhosa was spoken by medical staff, only 21% were conducted with the aid of an interpreter. Sixty-nine per cent of parents were dissatisfied with communication, 64% cited problems with understanding the doctor, 54% had problems making themselves understood, and 38% felt unable to ask questions. This leads to significant problems with communication, leading to adverse effects such as poor adherence or incorrect dosage of medication.⁷

The aim of this study was to examine whether differences in the definitions of medical terminology by patients and doctors cause miscommunication in medical settings. Culture-specific models of illness were explored if they were raised by parents in their definitions of the terminology.

Methodology

Semi-structured interviews were conducted with subjects in three groups: 8 English-speaking doctors (Doctors), 17 Xhosa-speaking parents whose children were admitted to the short-stay ward for chest disease (Xhosa s-s) and 16 Xhosa-speaking parents of children attending the allergy clinic for asthma

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(Xhosa allergy). The sum of both groups of Xhosa-speaking patients are referred to as 'Xhosa all'. Respondents' definitions of medical and laypersons' respiratory terminology in both English and Xhosa were elicited. English-speaking doctors and Xhosa-speaking parents all defined the same list of terms in both languages. Interviews were transcribed verbatim and then translated into English. Analysis of the language interviews identified the semantic properties of each word.⁸ Different senses of the words were identified. The definitions of all the respondents were pooled, by tallying the semantic properties of each sense of the words and listing them with the frequencies of the use of each property. This allowed the author to identify the most frequently mentioned 'core' semantic property of each sense of the word, and distil these highly diverse and complex 'aggregate definitions' into concise 'core definitions' by only including semantic properties that were mentioned more than 50% as often as the 'core' semantic property.

In order to ascertain how prevalent each 'core definition' was within the respondents as a whole, each subject's original interview was then inspected to see if that 'core definition' was identifiable within their responses. 'Core definitions' that were identifiable in more than 25% of subjects' responses were compiled into the final lexicon of words and senses.

The proportion of respondents in each group who were unable to attempt any definition of a particular word was used as a measure of how familiar people are with each word, and differences in these proportions were evident between the three groups. Differences in this measure were clearly visible for words that were not part of the doctors' or parents' lexicons. Differences between the three groups were confirmed by statistical analysis using Fisher's exact 2-tailed *t*-test, *p*-values of less than 0.05 being considered significant. This showed further differences between the two groups of Xhosa-speaking parents.

The list of 'core definitions' of each term was compared between the three groups and comparisons were made by looking at the semantic properties of each term. This enabled comparison of words to ascertain if they were being used similarly by different groups, and allowed categorisation of the words as 'concordant' and 'discordant'. Where the semantic properties of the 'core definitions' were similar, terms were classified as concordant; where they were dissimilar, terms were classified as discordant.

Results

Differences were found in the frequency with which the three groups attempted any definition of the words at all. Very low (significant) *p*-values (*p*-value of Doctors to Xhosa-all parents < 0.002) were found for the Xhosa words set out in Table I, showing that very few doctors are aware of any of these Xhosa words and were unable to attempt any definition as they are not in the doctors' vocabulary.

Table I. Xhosa words that doctors were not able to define

<i>Imifinya</i> (nasal mucus)
<i>Intsholongwane</i> (germs)
<i>Iphika</i> (tight chest/shortness of breath)
<i>Ukutswina</i> (to wheeze)
<i>Ukuminxana</i> (tight chest)
<i>Umkhuhlane</i> (flu-like illness)
<i>Usuhuleko</i> (infection)

Very low (significant) *p*-values were found between doctors and parents for the English words in Table II, which were not in the parents' vocabulary

The *p*-value for the word 'wheeze' comparing doctors and parents is very low, showing that very few parents compared with doctors attempted a definition of the word 'wheeze'. There is no significant difference between the number of respondents attempting to define 'wheeze' when the two groups of Xhosa-speaking parents are compared (*p* = 0.39). This surprising result means that the word 'wheeze' is not recognised or understood by either group of Xhosa-speaking parents, even those with prior exposure to the word from their attendance at the allergy clinic.

The *p*-value for the words 'tight chest' is significant, and in addition the *p*-value of 0.016 comparing the two groups of Xhosa-speaking parents represents a significant difference. Parents from the short-stay ward were far more likely to be unable to define the words than parents from the allergy clinic (11 out of 14 compared with 3 out of 12). When the two groups are compared separately with the doctors, a significant *p*-value is only found with the short-stay ward group. This signifies that there is an important difference between the parents from the short-stay ward and the other two groups (doctors and parents from the allergy clinic), with parents from the short-stay ward being significantly less able to offer a definition of the words 'tight chest' when compared with the other two groups.

For the words in Table III there was no significant difference in the frequency with which groups were able to offer a definition.

Most of the words that all groups attempted to define were English words. Only two Xhosa words were attempted by most doctors. Even where words were in both groups' vocabulary, significant differences existed in the range of definitions, with many clinically significant discordances of definition. Selected examples of discordant definitions are given below.

Overlapping sense relations or different senses in the word when used by doctors and patients

Isifuba

The word '*isifuba*' had three different senses when used by parents. It describes the anatomical chest, and a constellation

Table II. English words that parents were not able to define (*p*-values)

	Doctors/Xhosa all	Xhosa allergy/Xhosa s-s	Doctors/Xhosa allergy	Doctors/Xhosa s-s
Wheeze	0.0004	0.39		
Tight chest	0.01	0.016	0.24	0.001

Table III. Words defined by both parents and doctors

A cold	Germ
Asthma/ <i>iesma</i>	Infection
Coughing	<i>Isifuba</i> (chest)
Fever/ <i>ifiva</i>	Pneumonia/ <i>nyumoniya</i>
Flu	<i>Ukukhohlela</i> (to cough)

of signs and symptoms signifying chest disease, and is a specific disease name for a chest illness, which does not invariably correlate with a medical diagnosis of asthma. Doctors should not use the word *isifuba* as a disease name for parents as it does not comprise adequate explanation or counselling. In particular, *isifuba* should never be used as a synonym for a medical diagnosis of asthma. The word 'asthma/*i-esma*' was inconsistently defined by parents, with only a minority including the semantic properties that doctors would consider necessary for a diagnosis of medical asthma. Therefore Xhosa-speaking parents who say their children have 'esma' should be further interrogated to see if this is medical asthma or simply a sobriquet for a generic chest disease. Similarly, a medical diagnosis of asthma will need full explanation and counselling. Because some parents state that '*isifuba*' is equivalent to '*esma*' but do not define this in terms of a medical diagnosis of asthma, it is postulated that a reverse transference of meaning has occurred with '*esma*' meaning 'any generic chest disease' for some parents. For this reason, the phrase '*isifuba se-esma*' (the chest disease that is called asthma) should possibly be coined to emphasise that specific chest disease when we counsel parents about asthma.

Respiratory distress

English words signifying respiratory difficulty were not understood by Xhosa parents, and doctors will have to use interpreters or use basic Xhosa to ask about this constellation of symptoms and signs. The Xhosa word '*ukuminxana*' (to narrow by coming together) best represented to Xhosa parents what doctors mean by respiratory difficulty or 'respiratory distress'. The Xhosa word '*iphika*' may be an acceptable substitute as it was uniformly understood by parents. However, this word can also be used to refer to someone who has no respiratory illness and is simply 'short of breath' or 'has a stitch' from exertion, whereas '*ukuminxana*' is never a feature of well people. A useful alternative phrase is '*ukuwaleka kwesifuba*' (to be closed in the chest).

Fever/*i-fiva*

'Fever' is used as a synonym for 'raised body temperature' by doctors, but is used as 'an illness with fever, coryza and

feeling unwell' by parents. A parent may therefore respond to the question '*unefiva?*' (does he/she/you have fever) in the negative if the child is pyrexial but has no other symptoms of upper respiratory illness. The best Xhosa word for pyrexia is '*ushushu*', and the word 'fever/*ifiva*' should be avoided.

Different degrees of technological explanations of the 'same' word

The definitions of some words differed in that they represented the 'same' model of disease but with a different degree of technological explanation. For example, the word 'infection' was defined by doctors as 'A disease caused by micro-organisms entering the body' or 'The foreign micro-organisms that enter the body to cause disease'. Parents defined 'infection' as 'a disease contracted from someone else'. 'Germ' was defined as 'An organism such as a virus or bacteria that enters the body from outside and causes disease' by doctors, and as 'Things obtained from dirty places or via food' by parents. Counselling for infectious diseases therefore needs to be more thorough if physicians are to achieve a more complete explanatory model that persuades the patient to adhere to their treatment regimens. In the following quotations translated from interviews held in Xhosa, words that are not translated from the original are in bold type. They illustrate the explanatory model of infectious diseases held by a sample of Xhosa-speaking parents.

Q: What about **infection**?

A: I wouldn't be able to explain it. If a child has **isifuba** and is X-rayed, the X-ray is going to tell one that the child has **infection**. They often say they see an **infection** someplace, so I want to know what is an **infection** and they say that they also can't explain what it is but it's something they see which is internal.

Q: Do you know how it comes by?

A: It depends. You get some from the water, it varies. **Cholera** is begotten from unclean water.

Q: **Germ**.

A: It's a **virus**.

Q: **Infection**?

A: I think it's the result of, I would say it's the result of the particular **virus** one has.

Q: So you are first entered by the virus and then what does the virus do?

A: When it gets into your body it changes and become an **infection**.



Q: How would you explain *intsholongwane*?

A: It's when I speak of something dirty, then it's called *intsholongwane*, or perhaps one has dirty nails for example, it is then said that one *intsholongwane* will enter one.

Q: So in your opinion *intsholongwane* is dirt?

A: Yes.

Q: Germs?

A: It's the same thing, or perhaps a fly sits on your food while eating, those are germs, it's dirt.

Q: Infection?

A: *Infection* is being dirty ... perhaps inside the body, perhaps getting a *discharge* and getting what's called an *infection* so it's being dirty on the inside.

Culture-specific models of disease

Discrepancies between parents' and doctors' explanatory models were exposed in the definitions of certain terminology. Three major explanatory models were raised, *ingqele* (the cold that enters the body to cause disease), *xakaxa* (mucus present at birth if not removed accumulates to cause childhood chest disease) and *idliso* (poisoning via food).

Ingqele

The parent's models of pneumonia differed markedly from those of doctors, with focus on *ingqele* ('cold') as an aetiological factor for pneumonia. *Ingqele* enters the body and settles in the lungs through exposure to the cold environment or from drinking cold beverages. *Ingqele* may be acquired during pregnancy and passed on to one's unborn child. For Xhosa-speaking parents, the two core senses of pneumonia are 'The cold that enters a person to cause disease' and 'The disease that one acquires when one is entered by *ingqele* or cold'.

Xakaxa

The second important model for causation is that of *xakaxa*, conceived of as a cause for '*isifuba*' or '*i-esma*'. *Xakaxa* refers to a thick mucoid secretion present in the child at birth that needs to be removed by the birth attendant to prevent it increasing and accumulating until it causes chest diseases. Children who have chronic chest diseases are suffering due to the presence of *xakaxa* in the chest, something like *imifinya* (nasal mucus) or *isikhohlela* (sputum), but white not yellow. It can become visible when expectorated as thick sputum, or vomited up from the stomach.

Idliso

The third most common traditional model in our sample, after *ingqele* and *xakaxa*, is *idliso*. *Idliso* is the causation of illness, with malicious intent by another person, via the medium of food. *Idliso* is usually but not necessarily conceived as requiring the physical placement of this poison on food. In these cases, *idliso* takes place via witchcraft or magic.⁹ In cases

of *idliso* sorcery, the harmful substance is often believed to embed itself or settle in the chest area. To correct this, it must be removed by taking an emetic to vomit it out. Emetics are given for a wide range of symptoms, such as nausea, debility or body pain as a corrective procedure, and are used as an expectorant to relieve the chest by clearing the air passages. Even diseases like tuberculosis can be 'caused by a poison inside'.

Discussion

Language and cultural barriers cause significant difficulties for Xhosa-speaking parents of children at Red Cross War Memorial Children's Hospital. Most of the Xhosa words studied were not in the doctors' vocabulary, and some common English words, such as 'tight chest', 'wheeze' and 'shortness of breath', were not in the parents' vocabulary. These words should therefore be avoided, or explained in full with the aid of an interpreter. Where words were in both groups' vocabulary, significant differences existed in the definitions, with many clinically significant discordances of definition being clear. Culture-specific explanations of disease accounted for much of the discordance in definitions between Xhosa-speaking parents and English-speaking doctors.

Interpreters should be made more widely available, and doctors should be educated in how best to utilise their services. Doctors should learn basic greetings and questions in African languages, and learn more about patients' culture and models of illness. Jargon terminology should be avoided or used with full explanation aided by an interpreter.

The word '*isifuba*' should be avoided as a disease name. The word '*asthma/i-esma*' should be explored further if used by a patient to determine whether it refers to any generic chest disease or symptoms or to a specific chest disease. This chest disease may not be compatible with a medical diagnosis of asthma. If the word '*asthma*' is used for counselling a patient about asthma, full explanation will be needed, and it may be useful to refer to '*isifuba se-esma*'. Words referring to 'respiratory distress' include '*ukuminxana*', '*iphika*' and '*ukuvaloka kwesifuba*'. The word 'fever' as used by English-speaking doctors is not equivalent to the word '*ifiva*' used by Xhosa-speaking patients, and should be avoided. '*Ushushu*' may be used to refer to a raised body temperature.

Conclusions

A frequently updated systemic study of the use of medical language by Xhosa speakers needs to be compiled and taught to health workers in order to improve communication and ultimately the quality of care for patients. In addition health workers should be aware of common culture-specific models of illness in order to effectively negotiate a shared explanatory model that will improve their relationships, communication and patients' adherence to medical advice and treatment.



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The effects of a language barrier in a South African district hospital

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Background. Communication between health workers and patients at Hottentots Holland Hospital (HHH) is hindered by staff and patients not speaking the same language. HHH is a district hospital in the Cape Town Metropolitan District of the Western Cape where staff mainly speak Afrikaans or English and a large number of patients mainly Xhosa.

Objectives. The study aimed to explore the effects of this language barrier on health workers and patients at HHH.

Design. Three focus group interviews were held with 21 members of staff and 5 in-depth patient interviews were conducted.

Results. The language barrier was found to interfere with

working efficiently, create uncertainty about the accuracy of interpretation, be enhanced by a lack of education or training, cause significant ethical dilemmas, negatively influence the attitudes of patients and staff towards each other, decrease the quality of and satisfaction with care, and cause cross-cultural misunderstandings.

Conclusion. The effects of the language barrier were considerable and persistent despite an official language policy in the province. The training and employment of professional interpreters as well as teaching of basic Xhosa to staff are recommended.

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Although South Africa is a country with eleven official languages, most health care workers can only speak one or two, and it is obvious how this can lead to major problems when it comes to providing good quality health care. Language barriers are associated with reduced patient satisfaction,¹ fewer return visits² and poorer adherence with medication such as antiretroviral therapy.^{1,3,4}

Errors occur frequently in interpretations provided by untrained nurse-interpreters⁵ and yet in South Africa interpretation is most often an *ad hoc* duty provided by nurses,

ancillary staff or even patients and relatives⁶ (and Lesch HM – unpublished data). Although the use of trained interpreters is associated with a higher quality of patient-physician communication, their non-availability implies that other factors, such as cost, preclude greater use of their services.⁷ In the absence of a bilingual physician or a professional interpreter clinical decision making tends to be more cautious and expensive.⁸ Specific training of primary care physicians can improve the perceived quality of communication from the perspective of patients who do not speak the local language.⁹

This study took place at Hottentots Holland Hospital (HHH), a district hospital situated 30 km from Cape Town. It serves a population who mainly speak English, Afrikaans or Xhosa. A significant number of patients can only speak Xhosa, and although most of the staff are fluent in Afrikaans or English, only a handful of personnel can speak Xhosa and there are no official interpreters.

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