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Exploring lexical gaps in Australian Sign Language for the purposes of health communication

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Abstract

Until recently no linguistic research had been carried out on Australian Sign Language (Auslan) with regard to its use in healthcare settings, although anecdotal information suggests that the health lexicon of Auslan is strikingly under-developed. This paper describes a study that examined health terminology from the perspective of deaf people. Based on a thematic analysis of focus group data, the paper outlines strategies that deaf Australians report using when communicating about health concepts that do not have established signs in Auslan. Participants described a variety of communicative strategies – including the use of fingerspelling, depiction and explanations – that they employ in order to circumnavigate lexical gaps when talking about health. The study provides a crucial starting point for a discussion of the implications of lexical gaps in Auslan and highlights issues of particular relevance for interpreters who take responsibility for brokering health terms and mediating health communication.

Keywords: Australian Sign Language; Auslan; health communication; interpreter-mediated healthcare delivery; lexical gaps; signed language interpreting

1. Introduction and contextual overview

The use of terminology in health communication can be a complex issue. Misunderstandings may arise when patients do not (fully) understand the terms used by their healthcare practitioners (Spiro and Heidrich 1983; Gibbs *et al.* 1987; Hadlow and Pitts 1991; Thompson and Pledger 1993; Ong *et al.* 1995; Koch-Weser *et al.* 2009), even in monolingual

interactions involving languages that possess extensive health lexicons, such as English. The situation is likely to be even more complex for people communicating about health in languages that have under-developed health lexicons, including Australian Sign Language (Auslan), which is the focus of this paper.

Auslan has been recognized as one of Australia's community languages (Lo Bianco 1987; Dawkins 1991), used by a community of deaf signers that is estimated to number 6,500 (Johnston 2006). Because the signing Deaf¹ community represents such a small population, Auslan can be considered a language of 'limited diffusion' (Johnston and Napier 2010). Languages of limited diffusion are defined in Australia as those languages used by small and emerging communities which are geographically dispersed, sociolinguistically diverse, and have distinct cultural norms (NSW Multicultural Health Communication Service 2011). Auslan is also considered to belong in this category because deaf signers are dispersed among a much larger hearing English-speaking majority population, and therefore there is less opportunity for deaf signers to come together and use the language on a daily basis in a range of social, institutional and professional contexts. This situation has direct implications for the development and transmission of specialized vocabulary, including terms used in healthcare settings.

Extensive lexical research has revealed that Auslan has a relatively small fully conventional lexicon when compared to English (Johnston 2003, 2012). Indeed, most of the signed languages that have been studied to date also appear to have modest vocabularies when they are compared to the majority spoken languages of the communities in which they are invariably embedded. Not surprisingly, the health lexicon of Auslan is also severely under-developed, at least in relation to English, which has thousands of technical

and lay health terms (Napier *et al.* 2011). Yet, we know that deaf people *can* communicate about health issues and interpreters *can* convey health information between English and Auslan. Thus, this paper describes a study that sought to document the strategies deaf people report using in order to circumnavigate lexical gaps in Auslan in the context of health communication. Prior to outlining the findings and the implications for interpreter-mediated health communication, we first provide a brief overview of contextual information in order to set the scene for the study.

1.1. Health terminology

Comprehension and use of health terms has been shown to relate directly to personal experience and educational background (Thompson and Pledger 1993; Cerny 2008; Dahm 2010). Thus, it is frequently noted that patients tend to be less familiar with health terms and concepts than healthcare practitioners (West 1984; Meyer *et al.* 2003; Singy and Guex 2005), and practitioners are encouraged to be observant and to adjust their own use of health terminology appropriately (Bourhis *et al.* 1989; Thompson and Pledger 1993). The use of health terminology is potentially even more challenging when practitioners who speak a national (majority) language engage with patients from ethnic, linguistic and cultural minority groups, particularly when those patients are not proficient in the majority language (Riddick 1998; Perloff *et al.* 2006). In these instances the minority language user may have to rely on accessing health information through an interpreter, who may be a professional, a family member, or an ad hoc bilingual who happens to work in another role, such as a nurse or a hospital cleaner (Elderkin-Thompson *et al.* 2001; Meyer *et al.* 2010).

The study of interpreter-mediated health communication has emerged as a small but growing field, with researchers using recordings, observations or surveys to better understand the role of the healthcare interpreter (see for example, Bolden 2000; Angelelli 2004; Karliner *et al.* 2004; Singy and Guex 2005; Aranguri *et al.* 2006). Few, however, have specifically addressed the brokering of health terms between different languages. A notable exception is Meyer's (2001) study of authentic interpreter-mediated (German/Portuguese) interactions recorded in Germany, in which he investigated the ways untrained interpreters relied upon their own experiences in dealing with health terms. One interpreter, for example, who was a nurse also acting as

an interpreter, relied upon her professional experience to expand upon a health term. Thus, where the doctor had only explained that a substitution of the hip joint would likely be 'cemented', the nurse/interpreter also specified what was to be cemented, and briefly explained why it was necessary. With the exception of Meyer's study, however, there has been little concentrated focus on the brokering of health terms, and no studies have addressed terminological issues from the perspective of deaf consumers of professional healthcare interpreting services.

1.2. Health communication with deaf people

Although there has been no empirical focus on issues of health terminology in signed languages, there has been some research in recent years on the challenges that deaf patients face in accessing health care via a signed language. Both Middleton *et al.* (2010) in the United Kingdom and Iezzoni *et al.* (2004) in Hong Kong collected data from deaf and hard-of-hearing participants and identified that many respondents reported concerns, particularly a lack of deaf awareness on the part of healthcare practitioners. In the USA, research has revealed that deaf people typically belong to a low-English proficiency group who have limited access to health education opportunities and public health information (Pollard and Barnett 2009), which may result in a generally lower 'health literacy' amongst the Deaf community (Hedding and Kaufman 2012). Deaf people are generally not healthcare experts and although there are some qualified deaf healthcare practitioners in the USA (Earhart and Hauser 2008; Moreland and Agan 2012), there are none in Australia.² As a consequence, a fully developed Auslan vocabulary for health terms has not yet emerged (Cornes and Napier 2005; Napier and Johnston 2005; Johnston and Napier 2010).

Although the main focus of this paper is on deaf people's perspectives of challenges relating to health terminology, it is worthwhile to briefly note several recent studies that have examined the nature of interpreted healthcare discourse involving a signed language, given that deaf people typically rely on interpreters to access health communication. Metzger's (1999) pioneering study examined the discourse of an authentic American Sign Language (ASL)/English interpreter-mediated paediatric consultation. Her analysis revealed that interpreters impact on interaction through active management of the flow of discourse, challenging the previously idealized notion of interpreter neutrality. Based upon

interaction data recorded in Australia, Major (2012) and Major and Napier (2012) report that professional Auslan/English interpreters reduce, expand and change original utterances in pursuing accuracy and mutual understanding. These studies clearly illustrate that interpreters play an active and key role in patients' understanding of health information. It must be noted, however, that the majority of interpreters have not completed formal healthcare training. As Hedding and Kaufman (2012: 181–182) note (in reference to signed language interpreters in the US), 'unlike physicians, who are expected to learn thousands of medical words in 7-plus years of post-college training, interpreters are expected to know how to interpret medical words without even a basic medical terminology class.' It is thus envisioned that the current investigation of health terms will also contribute to our understanding of the role of the (signed language) healthcare interpreter.

1.3. Medical Signbank

Due to the lack of health vocabulary in Auslan, the Medical Signbank project was established in 2008 (www.auslan.org.au/medical). The goal of this project was to directly grow the lexicon of Auslan for health terms. At the beginning of the project there were 3,000 signs in the Auslan Signbank (www.auslan.org.au), yet only 258 of those signs were considered by the researchers to be in some way 'health-related'. Interpreters and Deaf community members were invited to engage with the online database by identifying lexical gaps and contributing signs observed in the community. Additionally, focus groups were conducted with interpreters and deaf people around Australia in order to gain more detailed insight into their perceptions of healthcare terminology and interpreting. The focus groups with deaf people concentrated primarily on lexical gaps in Auslan, while the focus groups with interpreters canvassed a wider range of topics.

An overview of the Medical Signbank project, including a description of the online database and the conceptual framework for the overall project, can be found in Johnston and Napier (2010). The findings of the focus groups with interpreters have also been reported elsewhere: Napier *et al.* (2011) describe challenges reported by Auslan/English healthcare interpreters, which include role challenges, socio-political/cultural challenges, and terminological challenges, the latter relating to linguistic register differences between patients and healthcare practitioners, and the difficulties interpreters face when

they encounter unfamiliar health terms. The current paper focuses specifically on strategies that deaf people report they and interpreters use to circumnavigate gaps in the health lexicon of Auslan. Implications for interpreters and for interpreter-mediated interaction are nonetheless frequently evident, and are addressed throughout the paper.

2. Research method

Focus groups were held with deaf Auslan users across three cities in Australia: two each in Melbourne, Sydney and Brisbane. Focus groups have been shown to be an effective approach to conducting qualitative research as they rely on face-to-face interaction within the interviews to elicit data (Morgan 1997), and they can encourage participation from people reluctant to be interviewed on their own or who feel they have nothing to say (Kitzinger 1995). Deaf research assistants from the local community were employed to help organize and conduct the focus groups. All three of the research assistants were female native signers of Auslan.

Participants were recruited by the research assistants using 'purposeful sampling' (Patton 2002). That is, participants with known experience in the healthcare setting were recruited, based on the research assistant's knowledge of their local Deaf community. The majority of participants were familiar with each other and with the research assistant in their city. A total of 30 deaf people (19 female and 11 male) participated in the focus groups, and each focus group consisted of between four and seven participants. One focus group in each city targeted native signers (those who acquired Auslan before the age of six) while another targeted non-native signers (those who acquired Auslan after the age of six). Participants ranged from 20–85 years old, and all reported to use Auslan in their daily lives.

The focus groups, though semi-structured with pre-determined prompt questions, were largely informal and conversational. The duration of the shortest focus group was 35 minutes and the longest was 1 hour 4 minutes. Altogether approximately 4.5 hours of discussion data were collected. The focus groups were conducted in Auslan, and participants were prompted to discuss how they use Auslan to talk about health, their experiences with interpreters in health settings, and their strategies for navigating lexical gaps. Participants were encouraged to supplement their answers with examples and narratives based on their own experiences.

3. Findings and discussion

For the purpose of analysis, the video recordings of the focus groups were translated into English. The translation was completed by an accredited Auslan-English interpreter, and analysis of the translation was conducted thematically using NVivo discourse analysis software. Of the data that relates to gaps in the health lexicon of Auslan, the focus group responses cluster around six issues, including the inadequacy of communicating through written notes and a variety of strategies used in the absence of lexical equivalents, such as the use of fingerspelling, the creation of nonce signs and the use of explanations. These themes are addressed successively below and are illustrated using representative quotes from the data. It should be noted that there is some overlap between the categories and often participants suggested more than one strategy. There were also several instances when participants contradicted themselves during the same conversation.

3.1. *The inadequacy of communicating through written notes*

Despite the fact that many deaf people are bilingual (that is, they have at least a functional use of English alongside fluency in Auslan), focus group data revealed that patient-practitioner communication through the use of written notes is regarded as problematic. Participants explained that health communication was more meaningful to them when accessed in Auslan rather than written English. One participant recalled a negative experience when she had tried to write notes with her doctor, primarily due to the doctor's attitude:

I tried writing notes but it was slow. And I could tell that the doctor was frustrated writing notes as well. They wanted to hurry up and didn't have the time to write a full explanation down. So I thought, 'enough of this', and booked an interpreter through NABS for the first time. [Mary,³ Brisbane]

Another participant commented that she had thought she could cope with writing notes, but that the amount of information exchanged meant the technique was inadequate:

Recently I had a problem with a nerve... it was a nerve attack down the side of my face and it gave me a headache and made my face spasm. So I went to the doctor, but I thought, 'I don't need an interpreter, I'll just write it down and that will be fine'. So we did write it down, but what the doctor wrote started to overwhelm me. What if this happened

again in the future, how would it affect me and so on... [When I booked an interpreter] the interpreter could elaborate and be more visual. They could help me understand better how it would affect my future and allowed me to ask many more questions and get more information than I could have if I wrote everything down. So in that situation, it was better to have the interpreter. [Ann, Sydney]

Although communication through writing may suit some deaf people, the comments above show that for others it has a detrimental effect on understanding crucial information in a time-pressured environment. The focus group participants did, however, report other strategies that they felt they (and interpreters) could effectively use to discuss health issues, as outlined in sections 3.2 to 3.6.

3.2. *Sharing existing signs*

Focus group participants explained that in some cases, they know the sign for a term but it is evident that the interpreter does not. In these instances, deaf patients will often provide the interpreter with the sign, thus sharing signs that exist within the community. For example, one participant explained:

If they fingerspell something, I may ask, 'do you mean this?' and show them a sign. [Nancy, Brisbane]

Others reported that they do not offer signs to interpreters unless requested. It is often the case, however, that neither the interpreter nor the deaf patient knows an Auslan sign for a particular health concept. This is either because they have had no previous experience with the concept/sign, or because there is in fact no established sign, a situation that is not unexpected for a language of 'limited diffusion'. In such cases the deaf person and interpreter must agree on some other way to designate the concept, and it is these 'other' strategies that we now address.

3.3. *Fingerspelling*

Fingerspelling is the manual representation of the English alphabet on one's hands in order to 'spell out English words in the air'. It is an important language contact strategy that Auslan signers use to borrow words from English (Johnston and Schembri 2007), and it represents one way that health concepts with no known Auslan sign may be expressed. Participants in our data mentioned fingerspelling as a common and effective strategy for dealing with lexical gaps. Three participants claimed that it is the *only* appropriate strategy to use in the healthcare setting because it is 'safer' and 'more appropriate', for example:

For me personally, I'd prefer they keep fingerspelling it. It's more appropriate to use the proper word. It's more professional. It's more appropriate to match what's being said. [Natasha, Brisbane]

Most participants who mentioned fingerspelling, however, also stressed that it should be used alongside other strategies. With regard to Natasha's comment above, for example, it must be stressed that fingerspelling demands a certain level of English literacy, especially when expressing technical English medical terms. Because many deaf people have acquired written English as a second and not a first language, fingerspelling must be used with care. Hedding and Kaufman (2012) suggest that the use of fingerspelling alone risks conveying an incomplete or erroneous message to the deaf patient.

In contrast to the three participants who preferred fingerspelling, other participants gave reasons why fingerspelling is not always an ideal option, for example:

I take nine or ten different medications every day. And when I arrive at the appointment the interpreter just fingerspells everything. I tell them, 'oh, all that fingerspelling, it's making me cross-eyed. Change it to make sense to me. Make it shorter, don't fingerspell the whole thing.' [Deborah, Melbourne]

Overall, our data reveals little agreement on how fingerspelling should be used in health contexts. Interpreters therefore must take responsibility for judging the level of a deaf person's fluency in English, and subsequently, the level of fingerspelling that is appropriate to use with different patients. This finding corroborates other preliminary language contact research in Auslan, which has identified that individual deaf people use fingerspelling, and other contact features such as mouthing, in different ways, and this seems to be influenced by whether or not they are native users of the language (see Napier 2006).

3.4. Creating nonce signs

Focus group participants were asked if they ever create signs on the spot (in other words, if they ever create nonce signs or neologisms) when faced with health-related concepts that have no Auslan signs. Two participants in our focus groups adamantly replied that they would never do this. A participant from Melbourne, for example, explained:

No, I've never made up signs, never. You fingerspell it or you just try and explain what the word means. You just give it a try. [Phoebe, Melbourne]

A participant from Sydney explained that making up signs might encourage inappropriate signs to be spread throughout the community:

Making up a sign? I don't think that's a good idea. If an interpreter makes up a sign for a word, because the deaf person doesn't have a sign for that, they will start to use it. Then it could start to spread. But later we might find a more appropriate sign that's clearer. [Francis, Sydney]

However, we know from our experience as interpreters and researchers, and from talking to interpreters, that deaf people frequently create signs, even if it is only for the purpose of facilitating mutual understanding within one interaction (Napier *et al.* 2011). With regard to the participants' comments above, it is possible that we were not clear in asking about the creation of nonce signs in local contexts, and that the participants thought the question referred to creating signs in some kind of official capacity.

Twelve participants stated that they would be willing to create a sign to fill a gap, particularly in cases of ongoing conditions where the same concepts would be discussed more than once. Participants explained that the creation of nonce signs can save interpreters from having to fingerspell words repeatedly. It was also reported that the creation of a nonce sign can help the 'flow' of the interaction, for example:

I know with one interpreter they had to fingerspell 'cholesterol' a lot. But I said to just fingerspell the letters 'C-H'. I shortened it. I knew what the word meant so it saved a lot of time with the fingerspelling. [Samantha, Brisbane]

While participants were not specifically asked how they undertake the creation of nonce signs, six participants mentioned the abbreviation of fingerspelled words (as in Samantha's example above). Most participants who commented on using abbreviated fingerspelling pointed out that it is important to first spell the word in full. In the following example, Nancy is referring to the English term 'jaundice':

First you fingerspell it. Then when you have to repeat it you can just sign 'J'. If interpreters have to fingerspell it again and again it takes too long and you just want them to hurry it up. [Nancy, Brisbane]

These examples support our view that deaf people can create and are creating their own nonce health-care signs when needed. Future research could usefully explore the success of this strategy with regard to negotiating the meaning of health terms within actual interaction, as well as broader implications for language development. It has been documented,

for example, that abbreviated fingerspellings are common in Auslan discourse, and that many of them become lexicalized over time and are incorporated into the Auslan lexicon (Johnston and Schembri 2007). Thus, it is reasonable to expect that this is also one mechanism through which new health signs may well come into being. However, given that the use of Auslan in healthcare settings is relatively new, natural processes of lexicalization – such as through fingerspelling reduction – will take time to unfold.

3.5. *Depiction*

In addition to fingerspelling and the creation of nonce signs, many participants reported using partly lexical and non-lexical strategies such as depicting signs, pointing, and gesturing (six participants), as well as drawing pictures or referring to scale models (four participants). In using these strategies, participants mentioned the importance of working together with healthcare practitioners to reach an understanding of the term or concept. For example:

You need to help each other. The doctor has a computer, so if you don't know what something means you can just ask the doctor to find a picture for you on the computer to show you. [Nancy, Brisbane]

Participants also reported the use of pointing in place of lexical items, particularly for parts of the body and for visible objects. Ellen explained this process in some detail:

When the doctor is talking about the names of things, I get the interpreter to fingerspell it once and from then on just refer back to it at a point in space and say 'that'... for example, when we're talking about my spine, you can put it in space like this with number 1, 4, 3 whatever. You can point to each one repeatedly: 'that' or 'that'. For the tablets, it's much easier to just point to them: 'this one', 'that one' and so on. It's much easier I think, for me anyway. [Ellen, Melbourne]

The 'space' that Ellen refers to is the signing space in front of one's body. Pointing seems to be preferred to lexical signs in some cases, simply because signers are adept at using the space around them. For Auslan signers, it is often more efficient to point to a body part or to an object in the consultation room rather than to designate the concept with an arbitrary sign.

In addition to pointing, some participants referred to the use of depicting signs (often referred to as 'classifier' signs) to express health concepts.

Depicting signs are partly lexical signs that have both gestural and lexical components that work to depict, or demonstrate, meaning (see Liddell 2003; Johnston and Schembri 2010 for more detailed descriptions of depicting signs). These signs cannot be included in dictionaries because of their non-lexical properties and the fact that they are heavily context dependent (Johnston and Schembri 1999). As one participant explained:

You could possibly use classifiers [depicting signs]. I think using them is really important. You don't focus on fingerspelling but you try and show the meaning of the word instead. [Jason, Sydney]

In this example, Jason is framing the use of depiction against fingerspelling, and his knowledge of English. This means that when the English term is not understood, and there is no known sign, he requires an interpretation of the term into Auslan using both lexical and non-lexical resources. The data suggests that interpreters need to possess enough of an understanding of the health concept in the first place, so that they are able to unpack it and describe it visually and accurately. This comment also highlights a possible preference for providing visual cues when possible (as in the use of pointing above).

The use of depicting signs reported above is corroborated by Ferrara (2010), who conducted additional informal conversations with the same native Auslan focus group participants. Her examination of the conversations revealed that depicting signs are a significant strategy used by signers in expressing health-related concepts, including physical characteristics, symptoms, conditions and medical procedures.

In terms of general sign language development, many lexical signs originate as depicting signs (Brennan 1992; Sandler and Lillo-Martin 2006; Johnston and Schembri 2007). Along similar lines to fingerspelling, this process of lexicalization needs further investigation with regard to the development of health vocabulary. We must also note that some of the quotes thematically analysed into this category may easily overlap with the category of 'creating nonce signs', given that the use of a depicting sign essentially entails the creation of a new context-dependent sign.

3.6. *Explaining*

The most frequent strategy reported by participants was that when faced with a lexical gap, the interpreter should 'explain it' (17 out of 30 participants). The categorization of these comments was

difficult, given that many participants did not say how a concept should be explained. It is probable that 'explaining it' refers to a number of strategies mentioned above, including the use of fingerspelling, depiction and pointing. Furthermore, some participants confused not being familiar with the English term and Auslan not having a term for a known concept; that is, some of the comments here refer more to interpreting and discourse strategies than to bridging lexical gaps. In terms of a thematic category, therefore, 'explaining' was problematic, although the data itself raises many interesting points for discussion.

Many participants simply said that English words without equivalent signs in Auslan need to be explained, for example:

I ask them to repeat it. I ask what it means. I ask them to explain to me very clearly what that word actually means. [Natasha, Brisbane]

Some participants elaborated on the process and said that they would prefer the word to be fingerspelled first, and this should be followed by an explanation of the meaning, for example:

I would want it fingerspelled. But I would also want the interpreter to elaborate. Give me the word and explain the meaning so that I understand it and can get a picture in my mind. [Ann, Sydney]

Most of the 'explain it' comments intimate that the interpreter (rather than the healthcare practitioner) should explain the word. We also recognize that interpreters may engage in extended explanations in instances where healthcare practitioners provide insufficient explanations, and interpreters judge that expanded explanations are necessary to accurately convey concepts. Unlike bilingual nurses acting as interpreters, however, who may explain terms based on their professional expertise (for example, Meyer 2001), professional healthcare interpreters tend not to be trained healthcare professionals (Napier *et al.* 2011; Hedding and Kaufman 2012). Our focus group data thus raises an important question: when deaf patients request that interpreters explain concepts, should interpreters adopt this responsibility?

Angelelli's (2004) study of 392 authentic (spoken language) interpreted hospital interactions in the USA revealed that interpreters do take responsibility for expanding upon and explaining health concepts, although she does not necessarily take a position on whether it is appropriate for interpreters to engage in this type of activity. Hale (2007) has heavily criticised Angelelli's work for her lack of stance on the

issue, and we agree that some caution is warranted. The ideal scenario would be for healthcare practitioners to be the first point of contact for any explanation of health terms that is required. However, even if healthcare practitioners take the responsibility for explaining health concepts, interpreters still need to draw upon their own health literacy in order to relay an explanation. Given that such elaborations will rarely be based on formal healthcare training, there may be a lack of awareness around this process as it affects healthcare interaction. To illustrate, when a sign language interpreter needs to express where something is on the body or to explain how a procedure is carried out, he or she often needs to commit to the location or shape of the referent, before a sign can be produced. An example of this is the term 'injection'. Auslan grammatically requires the signer to position the sign for 'injection' on the body, or at least to indicate at which location on the body the action is to happen. English, on the other hand, permits a more ambiguous structure, so the phrase 'you need an injection' may omit certain details (such as the location of the injection) and the utterance is still grammatical.

It is interesting that no deaf people in our focus groups were concerned about interpreters misunderstanding or incorrectly explaining health information. This issue highlights the need for further study of authentic interpreter-mediated healthcare interactions, rather than relying solely on reported data, so that any decision-making on the part of the interpreter can be analysed in relation to the surrounding interactional context. It also reveals the importance of healthcare practitioners and interpreters working collaboratively together to enhance health communication and to achieve 'optimal results' (Hale 2007), particularly with regard to concepts that require explanation.

4. Limitations of the study

Before concluding this paper, there are some limitations to the study that are worth noting. To begin with, there is limited generalizability of the results, as we targeted deaf people with a genuine interest in discussing their health experiences, and it is unlikely that the 30 participants in our focus groups are fully representative of the entire Deaf community in Australia. The limitations of relying solely on reported data must also be acknowledged, particularly the fact that it is difficult – if not impossible – for participants to recall, or even

notice at the time, exact details of interaction (Silverman 2006). Thus, our findings have uncovered rich details of participants' perspectives and opinions and have highlighted many avenues for future research, but may not have captured the full picture in terms of what happens in actual healthcare interaction. A future study could usefully build upon our focus group findings by examining how health terms are negotiated in naturally occurring, discursive interaction, in both interpreter-mediated and monolingual Auslan contexts. A future study could also include the views of healthcare practitioners, as it would be illuminating to gain insight into practitioners' perceptions of the strategies that deaf people report using to navigate English health terms.

5. Conclusion and recommendations

The focus group data reported in this paper confirms that despite an under-developed health lexicon in Auslan, deaf people possess a variety of strategies for expressing health concepts including fingerspelling, creating nonce signs and using partly or non-lexical strategies such as depiction, pointing and gesturing. This data complements similar discussions with Auslan interpreters (Napier *et al.* 2011) and provides evidence of strategies used by deaf people for interpreters to consider adopting, if they have not already. The data from the focus groups illustrates that individual deaf people have their own preferences; thus it is not possible to suggest that one strategy, or combination of strategies, is more common or more preferred than others. Clearly, the study participants expect competent interpreters to be flexible and to accommodate to the requirements of different clients and different situations. Often, deaf people's preferences for the negotiation of English health terms depend on their level of bilingualism.

Fingerspelling appears to be a useful option for borrowing words directly from English, although this strategy is only appropriate in situations where the deaf person possesses an adequate level of English literacy. Participants also reported that repeated fingerspelling can be tiresome and time consuming. The creation of nonce signs is another innovative approach used by deaf people and interpreters, although our data does not provide enough information on which to base a detailed description of this process.

Another common strategy reported by participants was for interpreters to explain health concepts, although we stress caution in using this strategy without consulting the doctor present. After all, 'an incorrect explanation of symptoms to the practitioner or incomplete instructions to the patient can have serious ramifications: the wrong diagnosis or treatment can be life threatening' (Napier *et al.* 2010: 112). Further research based on situated interaction data is needed to fully investigate the consequences of the linguistic and communicative strategies reported by deaf people in this study, as well as by interpreters (Napier *et al.* 2011). This will enable a deeper understanding of the impact of various strategies on the healthcare outcomes of deaf people.

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Notes

1. Many readers will be familiar with the fact that in deaf/signed language linguistics and interpreting literature the 'D/d' convention is used to distinguish between members who use the signed language of a linguistic and cultural minority community (Deaf) and those who have a hearing loss but do not use a signed language or identify themselves with this linguistic minority (deaf) (for example, Lane *et al.* 1996; Ladd 2003). We have opted to use the uppercase 'D' when referring to the Deaf population or community as a whole, and the lowercase 'd' when mentioning deaf people, individuals or patients, so as to not make any judgments about their linguistic or cultural status as signed language users.
2. There are some exceptions to this in mental health services, with deaf specific services employing deaf counsellors.
3. Pseudonyms are used throughout this paper to protect the identity of the participants.

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