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Using mobile technology to overcome language barriers in medicine

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ABSTRACT

Australia has a large migrant population with variable fluency in English. Interpreting services help ensure that healthcare services are delivered appropriately to these populations. However, the use of professional interpreters in hospitals is expensive. There are also issues with service availability and convenience. Mobile devices containing software with translating abilities have promising potential to improve communication between patients and hospital staff as an adjunct to professional interpreters. It is highly convenient and inexpensive. There are concerns about the accuracy of the interpretation done with such software and more research needs to be carried out to support or allay these concerns. For now, clinically important and medicolegal related interpretation should be undertaken by professional interpreters whereas less crucial tasks may be performed with the help of interpreting software on mobile devices.

KEYWORDS

Language – Mobile applications – Software – Technology – Translating

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Australia has a large community of migrants with first generation Australians making up 27% of the population in 2011.[1] Although 51% of migrants who arrived before 2007 reported to be fluent in English, 53% spoke a language other than English at home and 2.6% did not speak English at all.[1] Of the migrants who arrived more recently, only 43% were reportedly fluent in English while 3.1% did not speak English at all.[1] Interpreting services are therefore important in ensuring healthcare services are delivered optimally to patients who are unable to speak English.

However, there are various issues affecting the proper use of interpreting services such as availability and cost. Mobile technology enabled with interpreting software could potentially solve these issues. The objective of this article is to highlight these issues during the care of a non-English speaking patient with a complex past medical history and how mobile technology played a role as an adjuvant option of improving communication with the patient.

Case History

A 37-year-old Persian speaking patient from Iran arrived in Australia as an asylum seeker. He had a past history of perineal radiotherapy for a perineal malignancy as a boy in Iran. He also had major abdominal surgery secondary to a motor vehicle accident approximately 12 years earlier. He presented to the hospital with a blocked Mitrofanoff appendicovesicostomy conduit and perineal vesicocutaneous fistulas. The urology team admitted him for computed tomography and magnetic resonance imaging, a diagnostic cystoscopy and conduitography for surgical planning. He had a cystectomy and ileal conduit urinary diversion performed at a later date.

The team used a professional Persian interpreter during the initial encounter to help with history taking, obtaining consent for insertion of a 12Fr indwelling catheter into the Mitrofanoff appendicovesicostomy and consent for the above investigations. Once the team decided to perform a cystectomy and ileal conduit formation, the plan was discussed with the patient with the help of a professional interpreter and informed consent for the surgery obtained. Stoma nurses and continence nurses then discussed the stoma care and equipment, also with the help of a professional interpreter.

Some issues arose with the use of a professional interpreter, namely timing inconveniences and high costs. The team reviewed the patient every morning and evening during the ward rounds, and occasionally during the day to discuss new findings and update the current plan. However, it was difficult to organise having a Persian interpreter present at 7.30am or after 5pm as they were not easily available after hours. Telephone interpreting services proved to be easier to organise but it was difficult to explain diagrams over the phone and there were also limited portable phones that had speaker capability.

In addition, nursing and support staff had to attend to the patient multiple times a day for medication and meal rounds, and it was difficult for them to communicate with

Table 1 Comparison of rates charged by Australia's Translating and Interpreting Service and the pay rates of doctors from Western Australia (WA)[4,5]

Service	Qualifier	Details	Charge	Equivalent hourly rate
Prebooked telephone interpreting	Standard hours	First 30 minutes (or part thereof)	$62.59	$125.18
		Each additional 15 minutes	$27.17	$108.68
	After hours	First 30 minutes (or part thereof)	$100.21	$200.42
		Each additional 15 minutes	$43.34	$173.36
Standard interpreting on site	Standard hours	First 90 minutes (or part thereof)	$176.77	$117.85
		Each additional 30 minutes	$58.41	$116.82
	After hours	First 90 minutes (or part thereof)	$282.59	$188.39
		Each additional 30 minutes	$93.61	$187.22
Full day interpreting on site	Standard hours	Every 30 minutes	$47.52	$95.04
	After hours	Every 30 minutes	$76.45	$152.90
	Minimum charge	Each weekday	$761.42	–
		Each weekend / public holiday	$1221.99	–
Postgraduate year 3 resident in WA	Standard hours	Every 60 minutes	$40.53	$40.53
Postgraduate year 5 registrar in WA	Standard hours	Every 60 minutes	$46.81	$46.81

the patient without an interpreter. It was also challenging to get the whole urology team together when an interpreter was booked; stoma and continence nurses were often busy with other duties. Interpreters often had to wait for them and so this was an unnecessary cost to the hospital as no actual interpreting work took place.

Faced with these issues, the team used Google Translate™, a free online language translation service on a smartphone. This technology allows two-way interpretation; the team typed or spoke into Google Translate™, which translated it into written Persian words that can be either read from the screen or voiced out using the embedded speech engine and vice versa. Patient information documents regarding ileal conduit diversion and stoma care were translated into written Persian using Google Translate™ for the patient to read. This allowed the team to communicate with the patient at any time without having to book a professional interpreter each time, except when informed consent for surgery was obtained, and when stoma and continence nurses had a discussion with the patient.

Discussion

Professional interpreting services are expensive. In its federal budget, the Australian government allocated $54.3 million for translating and interpreting services in the 2013–2014 Refugee and Humanitarian Program.[2] In 2006–2007, the five major hospitals in Western Australia alone spent $2.1 million on interpreting services.[3] In Australia, the rates charged by the government's Translating and Interpreting Service range from two to four times the base pay rate of doctors with a few years of working experience (Table 1).[4,5] The pay rates of professional interpreters are also highest during the first 30–90 minutes of service. Although the urology team's ward round rarely takes more than 15 minutes per patient, the hospital will still be charged for the full 30–90 minutes of interpreting services.

In contrast, the use of Google Translate™ on a smartphone is both convenient and inexpensive. Patient review and ward rounds can be done spontaneously whenever the treating team is free, including after hours. Simple procedures such as an indwelling catheter change and intravenous cannulation can be performed conveniently by describing the procedure using Google Translate™ instead of having to arrange telephone or onsite interpreting services. There was also no shortage of Google Translate™ enabled smartphones as everyone in the treating team had one. With this technology, nursing staff could describe the prescribed medications to the patient and respond better to patient requests for analgesia and antiemetics. Kitchen staff also made use of this technology to discuss food options appropriate to the patient's religion. Furthermore, he was satisfied with the use of Google Translate™ instead of a professional interpreter as the team managed to answer most of his questions.

Conclusions

Professional interpreting services in healthcare are important for patients with limited English proficiency. These services need to be used more efficiently to minimise unnecessary costs while providing quality healthcare. The various free translating software programs available on mobile technology may help solve the issues of inconvenience and cost

surrounding the use of professional interpreting services. However, more studies need to be carried out to investigate the accuracy of these applications in comparison with professional interpreting services and whether their use results in any significant clinical consequences. With improvement, mobile technology with translating software may be used more widely in clinical settings in the future.

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