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Article

Telecommunications as a means to access health information: an exploratory study of migrants in Australia

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Significance for public health

The findings of this study indicate that some CALD communities rarely access health information via telecommunications. This has implications for their ability and/or opportunity to be included in e-health innovations. The health policy shift to preventative health care – guided by health education and health literacy delivered in an online environment – may increasingly isolate CALD communities from beneficial health innovations due to their low adoption of telecommunications' use.

Abstract

*Background***.** Health policies increasingly promote e-health developments (*e.g.*, consumers' access to online health information) to engage patients in their health care. In order to make these developments available for culturally and socially diverse communities, not only do Internet accessibility, literacy and e-health literacy need to be taken into account, but consumers' preferences and information seeking behaviours for accessing health information have also to be understood. These considerations are crucial when designing major new health policy directions, especially for migration destination countries with culturally diverse populations, such as Australia. The aim of this study was to examine how people from a culturally and linguistically diverse (CALD) community use telecommunications (phone, mobile, Internet) to access health information.

Design and Methods. A case study was conducted using a questionnaire exploring the use of telecommunications to access health information among CALD people. The study was carried out at a community health centre in a socially and economically disadvantaged area of Melbourne, a city of 4 million people with a large CALD and migrant population. Questionnaires were translated into three languages and interpreters were provided. Fifty-nine questionnaires were completed by users of the community health centre.

Results. Most of the CALD participants did not have access to the Internet at home and very few reported using telecommunications to access health information.

Conclusions. The findings of the study suggest that telecommunications are not necessarily perceived to be an important channel for accessing health information by members of the CALD community.

Introduction

The Internet is a major source of health information. In 2010 the Internet and American Life Project of the Pew Research Center surveyed by phone 3001 adults in the USA about using the Internet to obtain health information. The survey revealed that 59% of respondents had searched online for health information.[1] In Europe, 71% of respondents surveyed by a 2011 European Commission considered the Internet to be a very important or important source of health information.[2] Consumers search for online health information for a variety of reasons. For example, to confirm the information provided by a health professional and to gather additional information,[3] to access information about specific health conditions for themselves or for others,[4] and to review online rankings of doctors, hospitals and other health facilities.[1] Besides seeking online health information, consumers and health professionals use other telecommunications such as email to communicate health information and services, and to participate in online communities such as support groups and bulletin boards.[5] In this article we refer to telecommunications as *the use of electronic signals to transmit information at a distance, as with telephones, radio, the Internet or television*.[6]

Parallel to these developments in consumers' health information seeking are policy developments and governance practices associated with the modernisation of health care in America, Britain and Europe. These practices are increasingly focusing on equipping health consumers with more information and power in their interactions with health professionals.[7] As far as Australia is concerned, health reforms reflect a similar emphasis.[8] Telecommunications such as Internet, email, telephone, and mobile devices can play a key role in enabling consumers to have greater access to health information and health care knowledge. While there has been growing health policy recognition of the potential benefits of telecommunications in health care and health services, less attention has been paid to the accessibility of telecommunications for some populations.[9,10] In order to make health policy developments promoting telecommunications available and consequently to meet the *health for all* goals of the Ottawa Charter[11] and Jakarta Declaration,[12] Internet accessibility needs to be taken into account, as do consumers' preferences and information seeking behaviours for accessing health information.

CALD migrant and ethnic minority groups in western societies have traditionally had poorer health outcomes than the native population due to factors such as language and cultural barriers (*e.g.*, differing health beliefs, access to services, and other social determinants of poor health).[13-15] This is the case of Australia, which includes CALD migrant and ethnic minority groups, being a migration destination country.[16-18] Research into the role of telecommunication for addressing these health inequalities is limited. The *digital divide*, *i.e.*, the inequalities between those have access to communications technologies and those who do not, is disproportionately pronounced amongst CALD communities.[19] There is some evidence on the use of telecommunications by CALD communities in health care contexts and these have been found to be effective if the individual has access to health professionals speaking his/her first language.[20,21] To this day, findings suggest that telecommunications can play a role in bridging the gap between health disparities. However, CALD communities remain under-represented in research as for the use of telecommunications in healthcare.[10,22]

This study sought to contribute to the body of evidence on the use of telecommunications by CALD communities to access health information and health services. The aim of the study was to investigate how people from CALD backgrounds use telecommunications to access health information.

Design and methods

Study design approach

A study was conducted in a socially and economically disadvantaged area of Melbourne (Australia). A questionnaire was given to a CALD community at a community health centre to explore the use of telecommunications to access health information. The questionnaire data was supplemented with interview data. This paper reports the findings of the questionnaire phase of this project. A guiding principle of this study was to engage with the CALD community without becoming a burden to the participants or intruding in private environments, while simultaneously acknowledging the challenges of sampling migrant groups.[23] As personal contact is deemed critical for both recruitment and data quality,[23] we adopted a research design focusing on a defined research site, similar to an environmental case study. This was deemed the most respectful approach to engage and increase likelihood of participation of a relatively small sample.

The environmental case study approach made use of existing relationships with organisations which provide services to members of CALD communities within the north west metropolitan region of Melbourne. Melbourne is a city of over 4 million people with a highly culturally diverse population of established migrants and newer refugees. The project advisory group endorsed the involvement of a community health centre, based within a public housing estate in the region, which has a high proportion of migrant residents with only 13% of residents born in Australia.[*] This approach allowed researchers to build trust and familiarity with the research participants by maintaining a presence at North Richmond Community Health (NRCH) for four months. Relationships with key service providers, such as reception staff within the NRCH, were developed. This removed the need to send out questionnaires to home addresses and allowed researchers to remain present while potential participants became familiar with the purpose of the research and began to feel comfortable in approaching the researchers and completing the questionnaire. At no stage did researchers approach those using NRCH services to complete the questionnaire in compliance with the ethical review guidelines. This meant that data collection required a patient and flexible approach as participants could approach the researchers and choose not to participate in the study. Due to the focus on one research site, findings are not intended to be generalisable nor are they intended to be representative of other CALD communities in Australia.

Study setting

NRCH is situated next to North Richmond Housing Estate, which includes approximately 6000 residents. Approximately 70% of these residents were born in a non-English speaking country and a significant number arrived in Australia as refugees. NRCH provides a range of services including: medical, dental, nursing, and occupational therapy, diabetes education, dietetics, speech pathology treatments, a drug safety programme, a post-acute programme, counselling, health promotion and a volunteers' programme. In response to the linguistic diversity of NRCH's clients, interpreters in Vietnamese and Chinese were employed. In addition, all reception staff was bi-lingual and represented the ethnic communities living on the estate.

The questionnaire

A brief questionnaire instrument was designed and piloted with advice from the project advisory group. The researchers conducted a pilot questionnaire at the research site with a small sample (n=7) and made observations about participants' initial responses. The pilot study participants were recruited using the selection criteria identified in Table 1. Researchers observed that participants experienced difficulties in reading in both English and their first language. Therefore, the questionnaire was modified for the main study to accommodate the literacy levels of participants. Simple demographic questions included age, first language and length of time in Australia. The questionnaire primarily consisted of closed questions, with responses limited to *yes/no*, multiple choice responses or Likert scales, and related to the following topics:

- access to telecommunications (landline, mobile phone, Internet) at home
- frequency of use of telecommunications
- range of use of telecommunications
- purpose of use of telecommunications: finding health information, contacting health services.

The questionnaire and information letter inviting people to participate in the research were translated into traditional Chinese, Vietnamese, and Sudanese Arabic, as advised by the management of the community health centre research site on the basis of the primary users of the service.

Sampling and participants

Participants were recruited from two population groups identified by the sampling criteria below. This paper focuses on the data collected from Group 1. A questionnaire was also conducted with a sample of health professionals, whose findings are not reported here.

Researchers used a passive recruitment process. Two researchers visited the site twice a week, in pairs, for a four-month period between 2011-2012. A desk was positioned in the entrance foyer of the health centre, with prominent signs in traditional Chinese, Vietnamese and Sudanese Arabic asking visitors if they met our recruitment criteria (Table 1). Chairs were placed on both sides of the desk, upon which questionnaires in various languages were displayed and pens provided.

Table 1. Sampling criteria.

	Members	Characteristics
Population group 1	Individuals	- Be present at the North Richmond Community Health Centre; - Have a first language other than English; - Be over the age of 18
Population group 2	Health professionals	- Self-report currently, or having previously, worked with people from culturally and linguistically diverse backgrounds; - Currently work in a primary health care or community health setting; - Currently work within the research region (north west metropolitan melbourne)

Potential participants self-identified: users of services at the health centre who chose to approach the research team were asked if they spoke a language other than English and invited to take the plain language statement and the questionnaire in their language of choice. Not all potential participants who approached the researchers chose to participate in the study. The majority of participants completed the questionnaire and returned it immediately, though a marked box was left at the centre for those who wished to complete it elsewhere or at a different time. On some occasions, interpreters employed by NRCH were present and assisted participants to complete the surveys. Potential participants were asked whether they spoke any languages other than English and if they answered *yes*, they were informed of the nature of the study and offered an advertisement and the plain language statement in the language they preferred. In most cases the participants chose to sit at the questionnaire station and complete the questionnaire immediately in the presence of the researchers. Other participants completed questionnaires in the waiting room. On one occasion during data collection, the research team arranged for three interpreters (1xHakka – a Chinese variety –, 1xtraditional Chinese, 1xVietnamese) to be available at the research site and to support the completion of questionnaires where needed.

The research received ethical approval by the Human Research Ethics Committee at the University of Melbourne (ref. 1136528). Participants were informed of their ethical rights in non-technical language and were given full information about the project before being asked to provide informed consent to take part.

Analysis of questionnaire data

Sixty four questionnaires were returned, with 59 of these considered valid according to our selection criteria (Table 2). A descriptive and quantitative analysis was conducted using the questionnaire data. Data were stored on an MS Excel spreadsheet. Frequencies, averages and percentages were calculated using simple formulae. Each questionnaire item was interrogated and key findings are presented in the Results section.

Results

Findings are reported under the following subheadings: sample demographics, access to telecommunications, use of telecommunications to find health information, and accessing health information despite language barriers.

Sample demographics

The demographic characteristics of study participants are summarised in Table 3. The majority of CALD questionnaire respondents were women (59%). Two thirds (68%) of respondents were ≥51 years old and the mean age was 59 years. This may reflect an older demographic for the North Richmond Housing Estate, or may be skewed by sampling times. Indeed, researchers distributed and collected questionnaires at the NRCH on week days only, between the business hours of 9.30 a.m. and 4.00 p.m.

Almost 70% of participants reported living in Australia for >16 years, whereas only a minority consisted of recently arrived migrants (only 7% of respondents reported living in Australia for ≤5 years). Translated questionnaires were completed by 59% of the participants (n=35). These findings indicate that this sample was largely made up of residents over the age of 50 years who had lived in Australia for two decades or more, and with a high proportion of these residents opting to complete questionnaires in their first language. The dominant languages spoken by respondents were Hakka (35.6%), Vietnamese (32.2%) and Mandarin/Chinese (15.3%).

Access to telecommunications

Most questionnaire respondents reported having access to landlines (n=46/78%) and mobile phones (n=33/56%). Just over one quarter had access to the Internet (n=16/27%) at home, with the figure for email use which was slightly lower (24%). A total of 22 participants (37%) reported having home access to a landline telephone only and answered *no* to mobile phone, Internet and email access. One participant reported having access to none of the four telecommunication categories, while nine participants (15%) reported having access to all four. One of these nine participants asked her daughter to complete the questionnaire on her behalf and reported that her daughter was also the one who used the Internet and made phone calls on her behalf. These outcomes are summarised in Figure 1.

Landlines were reportedly used some of the time but not every day (Figure 2). Every day use of mobile phones was slightly higher than every day use of landlines but overall access to mobile phones was lower. A total of 15 participants (25%) reported never using the Internet.

Use of telecommunications to access health information

Just over one third of the participants (n=21/35%) reported using landlines to find health information. Less than half of those with access to landlines reported using this medium for accessing health information (45.7%). Around 22% (n=13) reported using mobile phones to find health information, with this figure representing 39.4% of those with access to mobiles. Only 16% (n=10) reported using the Internet to find health information. Although this is low with respect to our total sample, it represents a majority (62.5%) among those who indicated having access to the Internet at home. The number of respondents using different types of telecommunication devices to find health information is outlined in Figure 3. The questionnaire data suggests that access to the Internet and/or email is lower than the local government area average of 84%.

Accessing health services despite language barriers

A significant proportion (64.4%) of participants reported using face-to-face interpreters either *always* (n=21) or *sometimes* (n=17) when

Table 2. Number of valid questionnaires completed and returned.

Questionnaires completed	Questionnaires included°
64	59

°Questionnaires were excluded when the participants reported that English was their first language.

Table 3. Demographic characteristics of study participants.

	n=593 Range	Percentage
Age	18 to 30	5
	31 to 50	27
	51 to 70	49
	71+	19
Length of time in Australia	0 to 5	7
	6 to 15	24
	16 to 25	39
	26 to 30	17
	30+	13
First language	Mandarin/ Chinese	16
	Vietnamese	29
	Hakka	39
	Other°	19

°Tetum, Somali, Dinka, French, Tamil, Greek, Oromo, Urdu.

engaging with health services. Telephone interpreters were reportedly used either *always* (n=9) or *sometimes* (n=24) by 55.9% of the participants. A total of 27% of participants reported never using a face-to-face or telephone interpreting service when communicating with health professionals, but a number of these reported relying on family members to translate and in some cases a family member was present while they were completing the questionnaire. Findings on the use of face-to-face/telephone/no interpreting service are provided in Figure 4.

In conclusion, this data suggests that language was a significant issue for the respondents. Of them, 76% reported being overall satisfied with the available health services, with 16% being *somewhat satisfied*.

Limitations of the study

Before providing the results and describe them in the next sections, the several limitations of this study will be acknowledged.

Although researchers believe they were successful in accessing a hard-to-reach population, several factors serve to limit the completeness of data collected. First, while 59 valid questionnaires were returned, responses to some questions – particularly frequency of telecommunication device use – were incomplete. Second, several demographic items that may impact on the interpretation of the data were omitted from the questionnaires, such as participants' education, family size, employment and living arrangements. Third, the initial decision to simplify the questionnaire as much as possible to aid translation and accessibility to those with low literacy, also became a limitation. Fourth, the sample is highly specific to this centre and its location in a housing estate, not being representative of Australia's migrant population. The fact that results could not be generalised more broadly influenced the study design.

Discussion

As suggested by the findings above, telecommunications appeared to play a minimal role in the health information seeking behaviours of CALD communities. One possible explanation for this can be found in the particulars of our study sample: NRCH is situated in a housing estate, whose residents make up the vast majority of its client base. Given the close geographic proximity of the residential buildings to the health centre, the residents are possibly used to attending the centre to obtain relevant information in a face-to-face meeting, so that there is no pressing need to use telecommunications. As residents can easily attend the centre in person, the perceived language barriers associated with accessing relevant information through means other than face-to-face contact may pose a considerable hurdle. Language barriers are likely to be an important aspect in our sample. As a matter of fact, the best representative individuals of our sample were older, settled migrants who made significant use of translation services in engaging with health services, and who demonstrated a preference for their first

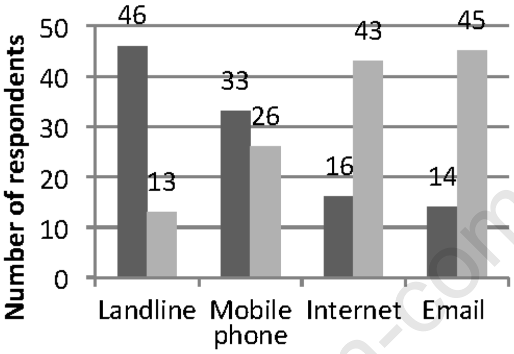

Figure 1. Access to telecommunications at home.

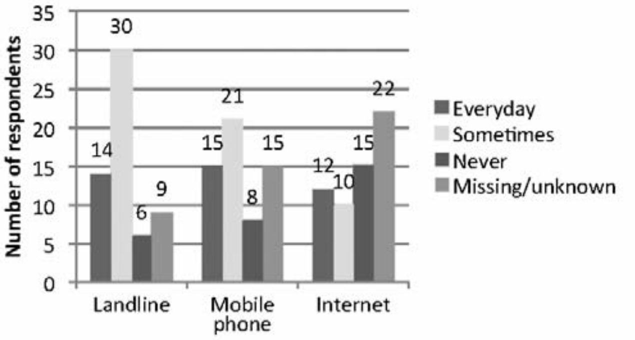

Figure 2. Frequency of use of telecommunications.

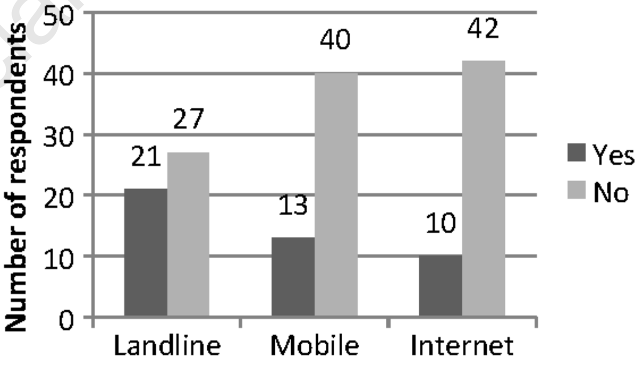

Figure 3. Use of telecommunications to find health information.

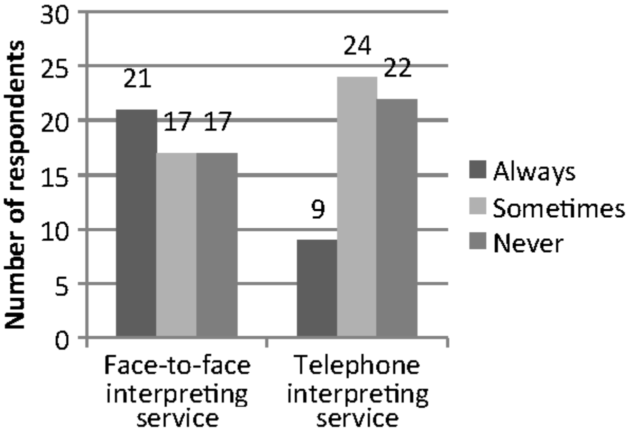

Figure 4. Use of interpreting service when engaging with health services.

language for written information when conducting the questionnaire, thus indicating a low level of English proficiency.

Another possible explanation is partly due to the relatively low accessibility to various forms of telecommunication options when compared to the broader population. This is particularly true for the access to the Internet as our sample indicates that only 27% had access to it compared to 84% in the local government area.[24] Very few participants in this study had access to landline, mobile *and* Internet, with most of them who relied on either landlines only or on landlines and mobile phones. It was outside the scope of this study to determine barriers/facilitators to *accessing* telecommunication devices, but possible reasons identified elsewhere among disadvantaged groups in Australia include: English language literacy, technological literacy, education, income, housing situation, social connection, health status, employment status and trust.[25] With respect to our sample, it is possible that along with evident language issues, the cost of telecommunications may be a significant barrier: the principal income source for the people living on the estate is age or service pension, followed by disability support pension. Also, 34% of people living in Richmond public housing properties are over the age of 55. For these participants, age may present a barrier to accessing telecommunications. As already said above, the level of use of telecommunication devices to access health information was found to be low. Still, it was an option used by the participants in this study, particularly when considering the Internet. Indeed, the proportion of people who reported having and using the Internet to access health information is 62.5%, which is higher than for other devices. Identifying the reasons for low Internet access was outside the scope of this research, so drawing any conclusion from these ouctomes is difficult. It could be, however, that once barriers to accessing the Internet at home are overcome, then the Internet may well be a viable and useful source of health information for disadvantaged groups, such as CALD communities. On the whole, however, further research in this area is needed.

The findings presented here represent a snapshot of current access to and use of telecommunication devices to gain health information in one environmental case study. They also have significant relevance to health policy developments promoting online health information to access a broad range of consumers. Of particular importance is the comparatively low level of accessibility of telecommunication devices in the study population. If policy changes lead to the increasing integration of telecommunication devices into health information and service provision, and thus to the need for service users to make use of telecommunications devices, groups such as the CALD community described here are likely to be increasingly disadvantaged with respect to their health.

The Internet and other forms of telecommunications hold enormous potential to provide health information to individuals and communities to address prevention of chronic disease, to assist in decision making about treatments and where to access health care. However, health policy makers, health professionals and health service decision makers may overestimate the use of these technologies by communities, in particular by marginalised communities such as CALD ones. For them, language barriers and literacy levels in English and their own language may pose considerable barriers.[10]

The findings from this study have provided much needed information on groups underrepresented in research as for the use of telecommunications in healthcare. The findings show that an older settled migrant population in Melbourne (Australia) has little experience in using telecommunications to access health information, including online information. However, approximately two thirds of those who have access to the Internet reported using it for purposes that they felt could be deemed as accessing health information. Ongoing research making use of a range of methodological approaches is required to *drill down* into how key terms, such as health information, are understood by individuals and population groups. This is the first step in understanding the reasons why these individuals use or do not use telecommunications with regards to their health and well-being. In-depth research with larger sample sizes is needed into the health information seeking behaviours of these communities to better understand culturally and linguistically diverse communities' health preferences and behaviours.

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