Communication access on trains: a qualitative exploration of the perspectives of passengers with communication disabilities

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ABSTRACT

Purpose: The often-invisible access barriers to public transport encountered by people with communication disabilities, who have sensory, language or cognitive impairments have gained little attention. This study investigated the experiences of people with communication disabilities on a rail network in Victoria, Australia to identify the barriers they encountered.

Methods: Twenty-one passengers with communication disabilities participated in either an individual interview or a focus group. They talked about their experiences of train travel, factors that made travelling difficult and suggestions for making travelling easier. A six-phase approach to thematic analysis was conducted to identify themes.

Results: The difficulties identified in travelling fell into three themes: (a) variable accessibility of information, (b) negative impact of a large and complex service system, and (c) an uncertain culture of help seeking and giving. Only two passengers had ever complained but all identified ways to improve the service. They suggested, better staff training, more use of communication tools, mechanisms to enable passengers to seek help, and attention to making information easier to understand.

Conclusions: For transport to be accessible to people with communication disabilities many different types of adjustment are required. Using multiple modes of communication with attention to understandability and consistent responses from public contact staff skilled to interact in multiple ways, may be the most flexible and effective means of responding to difficulties posed by the complex and unpredictable nature of train services.

IMPLICATIONS FOR REHABILITATION

- People with communication disabilities are a diverse group which includes people with physical, sensory, speech, language, and cognitive impairments.
- Public transport services need to provide a range of communication adjustments to enable people with communication disabilities to travel successfully.
- Transport services must retain and refine accessible alternatives to online information and booking systems for people with cognitive impairments to avoid widening the digital divide.
- Frequent and unavoidable changes to train services mean that skilled public contact staff, access to information and a culture of help seeking and giving are particularly important in facilitating access for people with communication disabilities.

Introduction

Access to transport plays an important role in supporting social participation [1]. The causes of transport inaccessibility or disadvantage are multifaceted, relational, and dynamic [2]. People with disabilities are particularly reliant on public transport but complex interactions between an individual’s impairment and the disabling nature of social processes and systems mean they frequently find public transport inaccessible [2–5]. As in other countries, Australian anti-discrimination policies have focussed attention on the accessibility of public transport services for people with disabilities [6,7]. In this respect, the Australian state of Victoria is considered a leader [2], allocating $230 million over the last 10 years [4]. Typically, strategies have focussed on physical barriers [8] with relatively little attention to the more invisible barriers posed by attitudes, interaction skills of staff and information systems.

Adjustments to infrastructure designed to increase access for people with physical disabilities do not necessarily address barriers experienced by those with communication disabilities. Communication is a two-way process [9,10], and people with communication disabilities are a diverse group, that includes people with developmental and acquired disabilities who have a range of physical, sensory, speech, language or cognitive impairments. However, applied researchers and practitioners are increasingly referring to people with “complex communication needs” [11], or “communication disabilities” [12,13] to refer to this meta group and draw attention to the less visible participation barriers they experience. Barriers include, negative attitudes of communication...
partners, lack of contextual cues, time pressures when using services and the lack of available communication aids to get their message across [11,12,14]. Communication access [11,15–17], is a parallel concept to physical access, defined as occurring “when people are respectful and responsive to individuals with communication disabilities, and when strategies and resources are used to support successful communication” [16, p.56].

Several studies identify improving communication access on public transport systems as a high priority of people with communication disabilities. In Canada, this was the fourth area most in need of action, behind government, healthcare, and disability services [11]. Similarly, in Hong Kong a study of people with moderate and severe speech impairment (dysarthria) identified communication on public transport as one of the five most significant environmental barriers they experienced [14]. To date however, research on communication barriers to accessing public transport has been limited to studies of people with aphasia, dysarthria, or intellectual disabilities. Greater knowledge about the common barriers experienced by people with communication disabilities and those specific to particular sub-groups will help to design universal access strategies as well as identifying when group specific adjustments are required.

Several studies have investigated the public transport experiences of people with communication disabilities associated with stroke although details about the severity of their impairments is often not reported [18–22]. Smaller studies with between 7 and 24 participants involved interviews and/or observations [18–21], and a larger study with 882 respondents used a questionnaire [22]. Despite diversity of methods and sample size, these studies have some common findings. Fear was an issue for some would be passengers, for whom the risk of personal injury or perceived confidence and skills. Passengers experienced difficulties with interactions and attitudes of both staff and the general public. Potential facilitators to access were identified as increased staff assistance [20–22], improved staff's attitude and interactions [20,22] and support from other commuters [20,21]. The complex and unpredictable nature of the transport system gave rise to participants reporting stressful time pressures on completing an action or transaction heightened by a lack of consistent signage or clear public announcements [20–22]. Access to information was varied and added to the cognitive demands of the journey, particularly when a rapid interchange of verbal information was required [14]. Participants also highlighted the negative impact of an absence of contextual cues to aid communication between passengers and staff, and some participants mentioned avoiding any direct interaction and preferred to access information through the internet [20].

Two studies used observational methods to investigate barriers to travelling on public transport experienced by people with cognitive disabilities [3,23]. Some people reported difficulties in generalising and remembering information about travel and navigating stations and transport systems. Suggested strategies to facilitate access were clear maps and directions, visual and auditory prompts and staff skilled in communication.

Finding Universal Design features that accommodate the diverse group of transport system users with disabilities is challenging [8], and requires an understanding of the barriers different groups of passengers experience. For instance, transport information is increasingly available on-line but even when formatted according to web accessibility guidelines, the internet does not provide a solution for all. In particular, people with cognitive disabilities are disadvantaged in their ability to access technology predominantly through financial or literacy barriers [24,25] and may require face-to-face interactions to access information.

Anecdotal reports from a major transport provider in Victoria, Australia, which was interested in exploring communication access suggested that people with communication disabilities infrequently make complaints. This could mean either that people with communication disabilities experience few difficulties with access or if they do, that transport providers remain unaware of the barriers they need to address. The latter is more likely as complaints processes are often seen as inaccessible [26] due to a variety of reasons. These include not feeling empowered to complain [27] and difficulty accessing the required complaint format [24]. The aim of this study was to investigate the experiences of people with communication disabilities on a train service to identify their perspectives about barriers and facilitators of accessibility.

Methods

Research design

We adopted a social constructivist methodological approach [28] which reflected our focus on experiences – the subjective realities of passengers with communication disabilities. In view of the exploratory nature of the study, we used a design that incorporated qualitative methods of data collection and an inductive thematic approach to analysis [29]. The conduct of focus groups prior to individual interviews assisted in refining a semi-structured exploratory interview schedule that aimed to identify areas of good practice as well as points of difficulty in the system experienced by people with communication disabilities [13,30]. The use of individual interviews and focus groups gave participants the flexibility to choose the option most suited to their mode of communication [13].

Participants

Participants were adults with communication disabilities who travelled on a major high frequency train commuter service between a metropolitan city and a large regional town in the Australian state of Victoria. In 2015–2016, this service provided over 6.74 of the annual 17.6 million train trips state-wide, which equated to over 1700 train services and 1500 coach services each week. Participants were recruited through advertisements in newsletters of disability service organisations, direct invitation to passengers with communication disabilities known through the train company’s complaints mechanism, and word of mouth through existing disability networks. Purposeful sampling was employed to ensure passengers with a range of different types of communication disabilities were recruited. All participants provided their own written informed consent.

In total 21 regular passengers with communication disabilities volunteered to participate; 12 were interviewed individually and nine participated in one of two focus groups. Details of participants interviewed are given in Table 1, including the nature of their impairment or medical diagnosis, communication disability and communication preferences. Similar details of focus group participants are given in Table 2. Three of the participants in the second focus group were accompanied by two staff members from a disability service organisation that
Table 1. Interview participants: impairment or medical diagnosis, communication disability and communication preferences.

<table>
<thead>
<tr>
<th>Impairment or medical diagnosis</th>
<th>Communication disability</th>
<th>Participant code</th>
<th>Number of participants</th>
<th>Speech</th>
<th>Communication aid</th>
<th>AUSLAN interpreter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autism</td>
<td>Cognitive communicative</td>
<td>DD</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cerebral palsy</td>
<td>Speech</td>
<td>AA, BB, OO</td>
<td>3</td>
<td>1</td>
<td>1 Speech Generating Device&lt;sup&gt;b&lt;/sup&gt;</td>
<td>1 Alphabet Board</td>
</tr>
<tr>
<td>Cerebral palsy/intellectual disability</td>
<td>Cognitive and speech</td>
<td>II, JJ</td>
<td>2</td>
<td>2</td>
<td>1 Picture Based Aid</td>
<td></td>
</tr>
<tr>
<td>Acquired brain injury (not related to stroke)</td>
<td>Cognitive communicative</td>
<td>HH</td>
<td>1</td>
<td>1</td>
<td>1 Speech Generating Device&lt;sup&gt;b&lt;/sup&gt;</td>
<td></td>
</tr>
<tr>
<td>Intellectual disability</td>
<td>Cognitive</td>
<td>NN, SS</td>
<td>2</td>
<td>2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deaf</td>
<td>Hearing</td>
<td>KK, MM</td>
<td>2</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deaf/blind</td>
<td>Hearing and vision</td>
<td>RR</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>12</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup>Participants used one or more means of communication in the interview.

<sup>b</sup>An electronic aid with voice output.

Table 2. Focus group participants: impairment or medical diagnosis, communication disability and communication preferences.

<table>
<thead>
<tr>
<th>Focus group (FG)</th>
<th>Participants</th>
<th>Impairment or medical diagnosis</th>
<th>Communication disability</th>
<th>Speech</th>
<th>Communication aid</th>
<th>AUSLAN interpreter</th>
</tr>
</thead>
<tbody>
<tr>
<td>FG 1</td>
<td>4</td>
<td>Cerebral palsy, Cerebral palsy and Intellectual disability, Acquired brain injury, Intellectual disability</td>
<td>Speech, cognitive and cognitive communicative</td>
<td>2</td>
<td>1 Speech Generating Device&lt;sup&gt;b&lt;/sup&gt;</td>
<td>0</td>
</tr>
<tr>
<td>FG 2</td>
<td>5</td>
<td>Acquired brain injury, Intellectual disability</td>
<td>Cognitive communicative and cognitive</td>
<td>5</td>
<td>0 Writing and Drawing</td>
<td>0</td>
</tr>
</tbody>
</table>

<sup>a</sup>Participants used one or more means of communication in the focus group.

<sup>b</sup>An electronic aid with voice output.

supports people with intellectual disability to learn travel skills. All interviewees were assigned an alphabetic code to ensure anonymity (e.g., AA). Views of focus group members are reported as being from one of the two focus groups, FG1 and FG2.

Procedures

Institutional ethics approvals were obtained prior to commencement of the study in 2015. The individual interviews took place in a private room at a not-for-profit disability organisation or in an alternative place selected by the participant. One focus group was conducted in a metropolitan city and the other in a regional city. All participants received a gift voucher for their participation.

Each focus group lasted between 60 and 90 min and was conducted by two researchers, who explained the purpose of the research and facilitated discussion. One of the researchers was a speech pathologist, skilled in facilitating interactions between people with communication disabilities and the other was a researcher experienced in working with people with intellectual disability and running focus groups. The interviews were conducted by an experienced speech pathologist.

The focus group and interview questions covered topics about frequency and experiences of train travel, factors that made travelling easier or more difficult and suggestions for making travelling easier. Interpreters were provided for participants who were deaf or deaf/blind. Interviews and focus groups were audio recorded and field notes were also written following each one. All audio data were transcribed verbatim and transcripts de-identified prior to analysis.

Data analysis

Data from the focus groups and interviews were entered into NVivo 10. A six-phase approach to thematic analysis of the focus groups and interview data was conducted to identify themes [31]. Two researchers checked the audio transcription data for accuracy and completeness and then read through the transcripts to become familiar with the data. They then identified any excerpts in the transcripts that referred to participants experiences of train travel and factors that influenced this. Initial codes were developed and collated, and discussed between four research team members and conceptual categories developed. Salient quotes from the interviews and focus groups were selected to provide examples of the themes and demonstrate the richness of the data.

Rigour of the research was enhanced through a range of strategies [28,30]. The credibility and authenticity of the research was enhanced by purposeful sampling of train passengers with a range of different communication disabilities and conducting both focus groups and individual interviews to explore the perceptions of passengers through various methods. The dependability and confirmability of the analysis were strengthened by verbatim transcription of the data, detailed coding of the data using NVivo 10, the creation of an audit trail and discussion of the findings at a meeting for people with disabilities which some of the participants attended. Finally, the transferability of the findings can be determined given the detailed description of the train service and passengers and quotes presented from raw data increase plausibility of the finding.

Results

Participants with communication disabilities had diverse and inconsistent experiences of train travel. Some of the diversity was associated with impairment differences among participants, while some related to inconsistent delivery of train services. Their experiences were shaped by interactions between their specific impairment and the service, the time of day they travelled, and the particular staff they encountered. The access barriers they experienced were categorised into three themes: (a) variable information accessibility, (b) negative impact of a large and complex service system, and (c) an uncertain culture of help seeking and giving. In
addition, participants gave many ideas for adjustments to make the system more accessible.

**Variable information accessibility**

This theme captured the importance of information accessibility and identified the strengths and weaknesses of the multiple mechanisms the train system used to convey information. These included, websites, portals, short message service (SMS), printed material, screens, and fixed signage. The differential experiences of participants demonstrated the importance of having diverse channels and formats for information.

Participants with physical, sensory, or speech impairments but without cognitive or visual impairments generally found information about the train system accessible, easy to use, and helpful. They used web based information and interactive ticket booking portals to prepare their route, look up timetables, book tickets and check for changes. For example, one participant said,

I must check the internet the day before, see the news, any announcements…if the trains are closed to be fixed and they change to a bus, then I know, I’m prepared one day beforehand so the internet is very important for me to plan my schedule for the day (RR).

As this comment suggests, web based information and portals, enabled some participants to take control of their interactions with the system. They could decide the pace and mode of interaction that suited their own needs, without relying on staff to adjust their communication style. One participant commented that the option of using the online booking obviated the need for spoken communication, he said “I was having trouble telling the ticketing staff what I needed which meant I would order the ticket online” (DD).

The SMS service that provided updates in real time about changes to the service was identified as useful but with drawbacks in terms of timelines; sometimes messages were received after the event when patchy mobile phone coverage limited message transfers. Some participants also mentioned that the screens on newer trains, designed to alert passengers to the next stations were useful.

Some forms of information were not accessible to people with cognitive disabilities or vision impairment. Particularly those without the skills or equipment necessary to take advantage of the flexibility of web based communication, who relied more on printed information. For example, one woman with cognitive disability and vision impairment found the printed timetable difficult to read; she did not know how to manipulate the online version to increase font size and did not have access to equipment to print out a customised version. In the focus group discussion, she wondered if she might be able to read the timetable on her iPad by zooming it with her fingers, she said “I can go boom, boom” (FG1), but had lacked the support necessary to explore this possibility.

The complexity of printed information created difficulties for some passengers with cognitive disabilities or vision impairment. Examples were given of printed timetables being confusing, the font too small, lines too closely spaced and the surface too glossy. One participant spoke of the difficulty with the 24-h clock used in timetables, “I can’t understand, 1400 or 1500 cause … I read time, now it’s just gone half past eleven, that’s normal time but I can’t understand… in the timetables” (FG2).

Information conveyed by the use of fixed signs and monitors, which was often real time updates about services, posed difficulties for some participants. Screens worked well for the visually able but for others it “depended how dark it was – and you have to be fairly close to them” (FG2). The height of station signage was a problem for several participants. One said, “Sometimes the signage is quite high and far and quite glary and bright, it is not easy vision for me and people crossing and walking around, people going all over the place” (RR). Platform design and lack of signage created barriers to access. For example, the designation of two parts of a platform, as A and B, without clear visual signs pointing to the separation between the two parts or the two trains that might be waiting caused problems. Some participants reported the signage was so bad that they found it difficult to know which train to catch; one person had caught the wrong train and ended far away from her destination.

Announcements broadcast across a station or train, often in quick succession to alert passengers to changes not displayed on screens, were inaccessible to people who were Deaf or hard of hearing. One participant said “so I never know what to do in that situation so I just follow the other people. That’s hard for me because I want to know what’s going on. I’d love for them to have something like a TV monitor” (KK). Even when they could hear it, some participants found the information broadcast difficult to comprehend and lacking descriptive details. At stations, high levels of noise created difficulties for staff to understand people who used speech generating devices to get their message across. Poor platform lighting made station names inaccessible when train windows were tinted, especially at night.

**Negative impact of a large and complex service system – “Every time it seems to be different”**

This theme captured the negative impact of the large and complex system associated with production of train services on access for people with communication disabilities. Participants talked about inconsistent infrastructure, the unpredictable services and variability in access to and responses of staff. As already described the train system used by study participants comprised an array of lines servicing a large geographic area and thousands of passengers every day. Its infrastructure was extensive, expensive and fixed meaning that change was a slow and often piecemeal process. The size and complexity of the system meant that fixed parts, stations, railway lines, engines, carriages were in a constant state of flux, as faults occurred, faulty or old items replaced and new ones introduced. As a result of this, and weather or accidents, things such as timetables, travel times and even the mode of transport (e.g., coaches often replaced trains) were changed at short notice. The workforce too, was large and diverse, constantly changing as people were hired, retired, let go, moved roles or received new training. These characteristics led to services that were unpredictable and inconsistent. Conversely, predictability and consistency were identified by many people with communication disabilities as important factors influencing their access to the service and ease of travel.

**Inconsistent operations and infrastructure**

The absence of a consistent platform designated for each line or destination, meant that rather than using their prior knowledge or having a fixed point for reference, participants had to locate the right platform for each journey, increasing their reliance on real time communication of information. Locating the right platform in good time was often made more difficult by last minute platform changes, which created additional barriers. For example, increasing the distance to walk, as one participant said “I need to have a regular platform that I can get used to, if the platform changes or if I’m in the last carriage and I’m really far and have to walk a
long distance, it’s really hard” (RR). Platform changes constituted a barrier for passengers who also had physical disabilities and preferred to position themselves close to their train ahead of time to reduce their stress, the need to seek help, and the likelihood of getting on the wrong train.

Differences in design of the trains that were in service made travel more difficult and participants drew attention to inconsistencies in the way doors opened, signage, and where specific seating or the emergency buttons were located. Not knowing these things led to feelings of anxiety, as one participant said “I hate getting on the older trains because I never know if I am on the right one or not” (MM).

**Unpredictable skills and availability of staff**

Many participants mentioned positive interactions with staff skilled in adjusting their style of communication and willing to provide assistance as important to their travelling experiences. When a participant travelled regularly and staffing was consistent, staff often became familiar with their needs. One participant stated most of the staff at his local station knew him well “I've had basically positive experiences, the station master, who knows me says Hi H, okay, call the train ahead” (HH). Another participant described how the staff had adapted their communication now they were familiar with her, she said, “they will make sure they mime it or they'll write it down for me” (MM).

Skilled staff were however not a consistent feature of the service, and some participants reported being ignored or passed on to others. One participant said for example, “some conductors do help, where you get off and then support and other conductors wouldn't give a hoot” (FG1) and another said, “sometimes I feel like they [staff] look down at you because you’re not normal” (DO). One participant talked about ascertaining whether a staff member was going to be helpful or not by their body language or facial expression.

Participants thought that staff had varying degrees of skills and comfort in communicating with passengers with communication disabilities. Some staff were recalled as responsive and helpful, as one participant reported, “if they [staff] don’t understand you, they will ask you twice” (FG1), and another said she was allowed all the time she needed to get her message across. Others said, “they will do like ten (shows ten fingers) or if they are not quite 100% sure they’ll just like (does shrugging gesture). Sort of using their body language as well” (MM), and “we were able to write something to him and we asked is this train going to Moorside and he wrote down yes so it was quite a relief” (RR). In contrast, some participants drew attention to some staff’s poor skills in communicating with people with disabilities, and reported being ignored and the conversation being directed at a companion. One said she had trained her companion to walk away so that the staff person could only direct communication at herself.

Participants said that staff were not always available to provide the support they needed, noting their absence at unmanned stations and their lack of visibility at times, despite their fluorescent vests. One participant commented that “often you don’t see the staff … they only come by pretty much once, maybe twice to check tickets and then you don’t see them anymore” (DD). One of the focus group members talked about scheduling a journey to travel at off peak times as staff were more likely to be available.

Inconsistencies which are inevitable in a large and complex service system, meant that the train service changed with each journey. Barriers created by inconsistency and change, meant that access to information (discussed in the previous section) and the culture around help seeking and giving (discussed in the next section) became more important in facilitating access.

**An uncertain culture of help seeking and giving**

This theme captured the uncertain expectations of both passengers and staff about seeking and giving help that created barriers to access for people with communication disabilities. Direct individual support from staff was the most flexible form of adjustment that compensated for many of the barriers experienced by participants. However, few cultural norms were apparent about the way help should be sought or offered, and both passengers and staff appeared uncertain about the best approach to take.

Some participants’ accounts suggested they wished to be regarded as similar to other passengers but to also have their need for assistance recognised and met without being singled out as different. Illustrating this one man wanted to be asked to show his ticket, even though many people with disability travel with concessions and do not require a ticket. This view was not shared by all participants, with one focus group member preferring to be easily identified such as by wearing a badge that staff would notice. Another found this idea to be problematic and “derogatory” (OO). Negative experiences of help seeking meant some passengers found asking for help difficult. One participant talked about avoiding interactions as he has been patronised in the past, and said he had not had “the courage to say I find communicating what I need difficult because I have autism” (DD).

Several passengers who did not want to be identified as needing help preferred it to be routinely offered so they could choose whether to accept it or not. One participant said, “I normally ask someone to help but it is hard if I am having a bit of a self-conscious day and when I don't want to talk to anyone so it would be good if someone was there to help me” (FG1).

Participants thought that some but not all staff recognised a need for help and offered it without having to be asked as these examples show. Participants reported conductors phoning taxis for them to alert the taxi driver to changes in the timetable and the new arrival time. A participant with physical as well as communication disabilities, said about booking office staff, “they help me because I can’t physically take my money out … they walk around and greet me on the other side [of the counter]” (OO). Another participant whose service was being transferred from a train to a coach was relieved when staff ordered her a taxi instead. She said “they just say look we’ll get a taxi for you and they are really understanding because obviously with me if I am travelling on my own, my balance, coordination affects me” (NN).

**Suggestions to improve accessibility**

Although participants reported a number of barriers, only two had made formal complaints. However, all suggested strategies to improve the service, which included; training for frontline staff, availability of communication tools for both staff and passengers, easier ways to enable passengers to indicate they needed help, more use of multiple modes of communication and greater attention to making communication understandable.

**Better skilled staff and use of low tech aids**

Participants suggested staff needed increased awareness of the range of communication disabilities and to develop their skills in making appropriate accommodations, such as, speaking directly to the passenger, wait and listen, and using alternate methods of
communication. They identified some specific skills, as one participant said, about staff “they need to have more like eye-to-eye contact because they see my husband as being my carer and they always talk to him and I get so offended” (NN) and another “to be patient with the people, who you are talking to, and don’t rush them and stress them out” (FG1). Participants also highlighted a need for staff to notice and respond to the differing types of adjustment required by people with different disabilities. For example, one participant said, “they need to be more aware that Deaf people are on the train and if they know where we are sitting they can come and alert us to anything that other people are being alerted to” (KK). Participants who had experienced booking staff finding it difficult to understand them, suggested that having low tech tools on the counter, such as a communication board, would help staff better understand what they wanted. They also suggested the website as a repository for communication aids and downloadable materials relevant to people with a variety of communication disabilities.

**Increased clarity and multiple modes of communication**

Participants suggested that multiple modes of communication were needed to ensure information or messages were received and understood by more passengers in addition to relying on staff or announcements to relay information. They thought it was necessary to have written information, real time updates on the website and reliable consistent access to the internet to access these updates. One said, if “you’re stuck in the middle of bush where there’s no (internet or phone) services that makes it a little bit difficult” (MM). In reference to platform changes one participant suggested staff should provide prompts “if there is a platform change, somebody must go round and tag you and give you two or three minutes after the changed platform, give you that time to get on the platform” (FG1).

Participants suggested the need for clearer and more descriptive information, such as announcements about platform changes that said, “passengers please go right all the way past the bridge rather than just saying go to platform 4B” (DD). Other suggestions included, alternative and more accessible formats for timetables, greater use of pictures to represent different destinations, and clearer signage at stations.

**More cues about help seeking and giving**

Establishment of a help point on the platform to enable passengers to signal they wanted assistance was one suggestion for managing the sometimes-low visibility of staff, and dilemmas about help seeking and giving. A focus group participant, suggested placing “a disability logo on the platform” (FG2). Another suggestion to address difficulties with help seeking was development of a downloadable communication aid, to serve as an introduction card explaining that assistance was required which could be handed to staff in order to alert them quickly to individual needs. Other more general suggestions were emphasising the accessibility of the train system to all citizens by the inclusion of more images of people with disabilities in the marketing material, and to increase the familiarity of the system by people with disability and their supporters through open station events.

**Discussion**

This is the first Australian study about the experiences of people with communication disabilities travelling on a large public transport service. Unlike studies in other countries it includes the broad range of people included under the umbrella of communication disabilities. The diverse barriers to access identified were similar to those found in other studies about travel experiences of people with post stroke disabilities, or community participation more generally for people with communication disabilities. These were inaccessible information [11,12,21,22], negative or inconsistent staff interaction skills or attitudes towards people with disability [11,21], and inflexible and complex systems that require significant cognitive capacity to navigate, or face to face interactions in rushed circumstances or noisy environments [11,12,14].

Similarly, many of the suggestions for improvements have been identified in earlier studies, including multi modal information channels [11,12,21,22], strategies to avoid the need for face to face interactions communication aids to support interactions between staff and passengers and staff training about diversity and communication [11,12,22].

Including a broader group of people with communication disabilities has added to knowledge about common issues such as access to information, and the need, in some instances, to tailor adjustments to specific impairment sub-groups or take into consideration individual personal preferences. The findings suggest that the type of anxiety about transport use identified in people with aphasia and need for a supportive companion [19] is not found among people with other types of communication disabilities. Of particular note, is the important role of technology in facilitating access to information and transactions for people without cognitive or vision impairment identified in this and other studies [3,12]. Given the fast pace of development, transport providers need to find efficient ways of staying up to date and quickly incorporating new technology into their information and operating systems. For example, since the data collection was undertaken for this project in 2015, advances in mobile phone technology and internet connectivity has enabled all conductors to use interactive apps on these devices to assist with communication. However, technology is not equally accessible, and the finding that on line booking and information appears to be largely inaccessible to people with cognitive or visual impairments is important. Transport services must find alternative ways of facilitating the flow of information and transactions for these groups, to avoid widening the digital divide and further disadvantaging these groups [30]. Alternatively, from a longer-term cost benefit perspective, transport services may be interested in investigating ways to support access to online information for people with intellectual and developmental disabilities, which has been a much-neglected area [24,25].

That neither many of these barriers nor proposed improvements are new, raises questions about transport providers’ awareness of communication access issues and the apparent failure to address these. This may be because of the relative invisibility of this group who are easily ignored and the reactive rather than proactive attention given to issues of communication access by transport providers. The transport provider in this study used complaints as a key indicator of improvements required in its services. Our finding that only two participants had complained together with the provider’s anecdotal impression about a low level of complaints from this group, suggests issues of communication accessibility may rarely come to the attention of providers. Ironically, one reason for this may be that complaints mechanisms are inaccessible or require significant time and energy that people with communication disabilities cannot afford [26,27]. Recognition that people with disabilities are “experts by experience” [32] with much to contribute to identifying and removing disabling barriers.
has gained ground in government and disability sectors in Australia over the past decade. Our findings suggest transport providers should look beyond complaint mechanisms, and find alternative ways for becoming aware of and finding solutions to often nuanced and invisible barriers experienced by people with communication disabilities. One way of doing this is to ensure a cross section of people with communication disabilities are involved in service specific consultative or reference groups as well as state or national bodies. If representation is to be effective however, adequate individual support to appointees, and adjustment to the way business is conducted in this type of group are necessary [33].

Similar to earlier studies [20–22], our findings point to the negative impact of size and complexity of transport systems on service consistency and predictability, and consequently accessibility for people with communication disabilities. In particular, our findings draw out the difficulties posed by differing carriage designs, fixed signage and communication systems for informing passengers about late changes to departure platforms. Given the scale of transport services, changing equipment and infrastructure such as this is a lengthy and costly proposition. Staffing is a more flexible part of transport systems, and staff with the right skills can compensate for many of the more fixed system shortcomings identified in this study. Creating a body of skilled staff with positive attitudes towards diversity that consistently adjusts interactions to take account of communication difficulties may be an effective investment in communication access for transport providers. One way of doing this may be to encourage individualised interactions that promote the concept of seeing the person first, with unique personality and needs rather than being defined by disability type. To build consistently responsive and skilled public contact requires inclusion of communication and disability awareness training for all new and existing staff and regular refresher sessions to maintain focus and currency of their knowledge. Notably, the transport service involved in this study accepted this recommendation and is rolling out this type of training for all public contact staff. Staff well trained in communication and sensitive to diversity may also influence the attitudes and behaviour of other passengers towards people with disabilities and change the uncertain culture of help seeking and giving identified. For example, staff who are competent and confident communicators will role model to others the patience and respect necessary in interactions with people with communicative disabilities. If passengers with communication disabilities can confidently expect a positive response, asking for help may be a less risky exercise for them and possibly alleviate the fear of would-be travellers identified in other studies [18,22]. Importantly too, having staff skilled in communication will have flow on benefits for other passengers, particularly the high number of international visitors to Australia who do not have English as their first language.

**Limitations**

This small study of one train service in Victoria, Australia included a cross section of people with communication disabilities. Most participants, however, had lifelong communication disabilities relating to autism, cerebral palsy, intellectual disability or sensory impairments. Only one person with an acquired communication disability was included and no one with post stroke aphasia. The methodology means that findings are not generalisable and the data from focus groups and interviews were analysed together rather than separately.

**Conclusions**

This study provides the basis for a larger survey design to investigate the common and group specific barriers to transport for people with communication disabilities. The qualitative detail about actual and anticipated facilitators could also be used to design and trial an intervention to improve communication access. The results have highlighted the multifaceted issues that must be addressed to make transport more accessible for people with communication disabilities. The study has identified potential drawbacks of including people with differing sensory, cognitive and communicative disabilities as one group, as some adjustments are specific to particular sub groups. Moreover, the data suggest the importance of individual preferences about identification as a person with disability or seeking help that must also be taken into account by transport services. The common issue of accessible information is likely to become easier for some groups as technology advances occur, and for others the information and interaction difficulties can be minimised by public contact with low tech resources, positive attitudes and communication skills.

Although many transport organisations already provide disability awareness training to staff, the need for this to include specific communication strategies and resources to enable clear, effective interactions with passengers with communication disabilities is paramount.

**Note**

1. On this service coaches replace trains when necessary due to weather, faulty systems or repair work.

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