

## ORIGINAL ARTICLE

# English language proficiency and hospital admissions via the emergency department by aged care residents in Australia: A mixed-methods investigation



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## Abstract

Residents of Residential Age Care Facilities (RACFs) have particularly high rates of Emergency Department (ED) visits, with up to 55% being potentially avoidable (e.g. not resulting in a hospital admission). This is concerning as ED visits by RACF residents are associated with negative outcomes including longer hospital stays, iatrogenic illness, complications and mortality. Limited English proficiency (LEP) has significant negative impacts on the healthcare quality and outcomes for older people but has not been studied as a factor in ED visits from RACFs. This study aimed to examine if RACF residents with LEP have a lower rate of hospital admission via the ED compared to non-LEP controls and identify any associated factors. We hypothesised that LEP-related communication difficulties would reduce the ability to manage minor health

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issues in the RACF, leading to a lower proportion of LEP ED transfers being admitted. We used a parallel mixed-methods design, comprising a quantitative matched cohort study of ED visit data from two Local Hospital Networks (LHNs) in South-East Melbourne, Australia and secondary thematic analysis of 25 interviews with LEP residents, family carers and staff from two RACFs in the same region. We found no differences in the proportion of hospital ED transfers that led to admission (LHN1, 87.1% LEP, 85.6% non-LEP controls,  $p = 0.57$ ; LHN2, 76.0% LEP, 76.9% non-LEP controls,  $p = 0.41$ ) and no direct qualitative evidence suggesting that resident LEP affected decisions to transfer residents to ED, despite communication difficulties being reported during the transfer process. These results may be due to the high level of family carer involvement in residents' care identified in the qualitative study. However, additional research using different measures of LEP is recommended to further explore a broader range of cultural and linguistic factors in both rates of ED presentations and the decision-making processes underpinning resident transfers to ED.

#### KEYWORDS

care of elderly people, emergency department, interpreters, language, limited English proficiency, nursing homes

## 1 | INTRODUCTION

Australia has an ageing population that is increasingly multicultural, with one in three Australians over 65 born overseas, mostly from non-English speaking countries; an increase of 25% since 1981 (Australian Institute of Health & Welfare, 2018). Limited English proficiency (LEP) affects five percent of older Australians (Australian Institute of Health & Welfare, 2018). LEP is defined as 'the limited ability or inability to speak, read, write or understand the English language at a level that permits the person to interact effectively with healthcare providers or social service agencies' (Jacobs et al., 2003, p. 72) and is a recognised structural determinant of health (Nguyen & Reardon, 2013). LEP amongst older people is known to contribute to reduced quality of healthcare; worse health outcomes and health-related quality of life; impaired adjustment to ageing and chronic illness; poorer health literacy; reduced willingness to seek medical care; under-reporting of symptoms; and increased fears of being misunderstood (Mui et al., 2007; Nguyen & Reardon, 2013). Among older people with LEP, those living in residential aged care facilities (RACFs) may be especially vulnerable as they experience the dual characteristics of those living in a RACF (e.g. older age, frailty, chronic illness and limitations in activities of daily living) (Graverholt et al., 2014), and LEP where there is linguistic discordance between them and English-speaking staff.

Older people have higher rates of Emergency Department (ED) visits and hospitalisation than the general population (Arendts & Howard, 2010; Graham et al., 2009; Mazza et al., 2018). Residents of RACFs have particularly high rates of ED visits, with an international systematic review reporting at least three ED visits per ten residents/beds per year (Arendts & Howard, 2010). This is in light of up to 55% of transfers from RACFs to ED being

#### What is known about this topic

- Residents of residential age care facilities have particularly high rates of emergency department visits and hospital admissions.
- Older people with limited English proficiency experience reduced quality of healthcare and worse health outcomes, especially where there is linguistic discordance between them and a care provider.

#### What this paper adds

- There was no difference in rates of hospital admission via the emergency department between residential aged care facility residents with limited English proficiency and Australian-born English-speaking residents.
- Family carers of residential aged care facility residents appear to be commonly used to mediate and interpret between staff and residents during the process of transfer to emergency departments.

classified as 'avoidable', 'inappropriate' or 'potentially preventable' (Lemoyne et al., 2019). There is no agreed definition of 'potentially avoidable' ED visits, but common features include conditions that could have been prevented or addressed at an earlier stage or could have been managed safely in a RACF or by a primary care physician (Finn et al., 2006; Finucane et al., 1999; Lemoyne et al., 2019; Mazza et al., 2018). Such conditions include falls, fever, decline in function, reduced food or fluid intake, shortness

of breath, cardiac conditions, pneumonia and urinary incontinence (Lemoine et al., 2019). For the purposes of this study, we adopted the broader definition of a potentially avoidable ED visit as one that does not result in a hospital admission (Canadian Institute for Health Information, 2014). Australian data has estimated 13.1% of RACF resident presentations to ED were potentially avoidable (Finn et al., 2006). This is concerning as ED visits by RACF residents are associated with negative outcomes including: longer hospital stays (Australian Institute of Health & Welfare, 2007); iatrogenic illness, for example, infection, functional and cognitive decline, medication errors, ulceration (Bergman & Clarfield, 1991; Finucane et al., 1999; Graverholt et al., 2014; Lukin et al., 2016); and higher mortality (Lemoine et al., 2019).

Research shows that LEP has a negative impact on communication with health providers (Divi et al., 2007; Graham et al., 2009) and results in higher hospitalisation rates (Flores, 2005), longer hospital stays (Mahmoud et al., 2013), and lower satisfaction with care (Sarver & Baker, 2000). Poor communication between older culturally and linguistically diverse adults and healthcare workers has been shown to lead to health disparities and discrimination, miscommunication, unmet needs and difficulties providing care (Mui et al., 2007; Weng & Landes, 2016). This may culminate in health concerns being less readily addressed by primary care providers before they escalate to becoming an ED presentation. It is reasonable then to hypothesise that RACF residents with LEP may have higher likelihoods of ED visits than those without LEP. However, there are limited Australian studies on RACF resident presentations to ED (Finn et al., 2006; Lukin et al., 2016) and little is known about the impact of LEP on the use of ED in older people (Gruneir et al., 2011). While an Australian-based study (Arendts et al., 2010) showed that 7.5% of patients transferred to ED needed an interpreter, no studies have examined reasons why those needing an interpreter present to ED. Improving understanding of ED use by RACF residents with LEP could potentially aid the development of interventions to decrease avoidable visits (Lukin et al., 2016), decrease healthcare costs (Sears et al., 2013) and improve health outcomes.

This study aimed to examine if the proportion of ED presentations that led to admission (indicating an unavoidable presentation) was lower for RACF residents with LEP compared to those without LEP. This study also sought to identify factors related to why this may or may not be the case. We hypothesised that LEP would affect the ability for simpler health issues to be addressed or readily diagnosed in the RACF, leading to a lower proportion of ED presentations that led to an admission.

## 2 | METHODS

### 2.1 | Design

A parallel mixed-methods study was conducted of routinely collected quantitative hospital data and qualitative semi-structured interviews. The quantitative data were analysed in a matched cohort study. The qualitative data were analysed using an exploratory,

descriptive study design to explore factors that may help account for the quantitative results.

### 2.2 | Setting and timeframe

The qualitative and quantitative arms of the study collected data from two different samples. De-identified quantitative data were obtained from two major public local hospital networks (LHNs) in Victoria, Australia – LHN1 (Peninsula Health) and LHN2 (Monash Health). LHN1 has two EDs, one large and one small, catering to a population of around 300,000 with a median age of 42 years. It serves an urban coastal area popular with retirees, with the majority (74%) of residents born in Australia and only speaking English at home (86%) (Australian Bureau of Statistics, 2019b). LHN2 has three large EDs serving a more culturally diverse population of around 1 million, with 52% of people born in Australia, 53% speaking only English at home and a median age of 35 years (Australian Bureau of Statistics, 2019a). Data were collected from ED visits by RACF residents between January 1, 2014 and December 31, 2018.

Qualitative study participants were recruited from two non-language specific RACFs in south-east Melbourne with the help of RACF staff. Qualitative interviews were conducted between August 20, 2019 and November 4, 2019 by KL, SV and MdB.

### 2.3 | Quantitative data

The variables in the ED datasets were demographic, administrative and clinical data detailing ED visits and included a unique identifier for each ED episode of care, patient address and other information such as a 'Type of Usual Accommodation code'. Each LHN provides these variables annually to the Victorian Government for the Victorian Emergency Minimum Dataset (VEMD), with the addition of the RACF name (State of Victoria, 2020). In order to meet national reporting requirements, the VEMD includes the variable, 'Type of Usual Accommodation code', which includes a descriptor called 'residential aged care' (State of Victoria, 2020). Validation processes (using the residential address field) support accurate recording of residential aged care as the usual accommodation of patients included in the sample.

#### 2.3.1 | Case and control definitions

LEP cases were defined as: (a) an ED patient who resided in a RACF, and; (b) required an interpreter in the ED visit. Cases were identified using the VEMD variable 'Interpreter Required' which is defined as 'The patient's need for an interpreter, as perceived by the patient or person consenting for the patient'. This is required to be checked for every ED visit and be collected as soon as possible after arrival using a question such as '[Does (name)] require an interpreter?' (State of Victoria, 2020, p. 80). Potential controls were defined as: (a) an ED patient who resided in a RACF, and; (b) was Australian-born and English-speaking.

### 2.3.2 | Quantitative outcome variable

The primary outcome in the matched cohort study was an ED visit resulting in an admission into hospital, categorised as a dichotomous variable (yes/no). Visits not resulting in an admission were classified as potentially avoidable ED visits. This was chosen as a proxy measure because not being admitted may indicate that the condition could have been managed in a different setting (e.g. either at the RACF or within general practice), as noted by the Canadian Institute for Health Information (2014).

### 2.3.3 | Quantitative data analysis

For the matched cohort study, statistical analyses were performed using STATA version 16 (StataCorp LLC, 2019). We identified up to three controls for each case, based on the same gender and RACF place of residence. This was done by creating STATA code that created a subset of controls for each case having the same matching variables, then randomly selecting three controls from this subset. If less than three controls were available for a particular case, these controls were automatically assigned to that matched set. If a case had no controls, then it was removed from the matched analysis. After matched sets were created, we used descriptive statistics to describe the case and control groups. Differences in the primary outcome between cases and controls were then reported as percentages and examined using Chi square ( $\chi^2$ ) statistics. Further analyses compared cases and controls by triage category, injury cause, and primary diagnoses.

## 2.4 | Qualitative data

This paper reports on a secondary analysis of data from a parallel qualitative study that aimed to explore the impact of linguistic discordance on the care received by aged care residents with limited English in Australia.

A total of 25 participants were recruited from two non-language specific RACFs located in the LHN2 catchment area, including 5 residents with LEP, their 8 family carers and 12 staff. Convenience sampling was used with the assistance of RACF managers to recruit participants. Written consent was sought using both standard and simplified English participant information and consent forms. Family carers for residents with cognitive impairment co-signed the consent form and verbal consent from the resident was re-confirmed at the beginning and throughout the interview process. Ethics approval was obtained from Monash Health (50963) and Monash University (20327) with site specific approvals from Monash Health and Peninsula Health.

Resident and carer dyads were interviewed using a professional interpreter. Interviews were conducted by SV, a researcher and interpreter from a culturally and linguistically diverse background; KL, a researcher with a general interest in healthcare provision in residential aged care; and MdB, a student with an interest in medical

ethics. Recorded interviews were transcribed using a secure commercial transcribing service and de-identified prior to analysis.

Data were included for secondary analysis if related to experiences of hospitalisation or decisions regarding transfer to hospital, either spontaneously or when prompted. The interview prompt relating to the impact of LEP on hospital ED visits was: 'Tell me about circumstances when communication could or has posed barriers to quality of life and healthcare of LEP residents in particular? Explain how and why. (Prompts: Give examples e.g. carrying out daily activities, likelihood of getting hurt, medication errors, deterioration of health condition to the point of needing to be transferred to an emergency department)'

### 2.4.1 | Qualitative data analysis

Secondary inductive thematic analysis was conducted by SC using Microsoft Word (Braun & Clarke, 2006). Interview transcripts were first read systematically to ensure data familiarity. On the next reading, comments explaining the role of language or communication in hospital experiences were coded with memos describing each code. A list of data-driven codes was generated and compared against the results of the whole-sample thematic analysis conducted by KL. Emerging themes were then described and discussed with KL (an experienced qualitative researcher) and JH (an experienced researcher in healthcare interpreting). Interpretation and disagreements were resolved by consensus, and final changes were made prior to defining and naming each theme.

## 3 | RESULTS

### 3.1 | Quantitative results

In the ED data, there were  $n = 34,042$  visits made to the ED by residents from RACF between January 1, 2014 and December 31, 2018 (see Table 1 for breakdown by LHN). Of these, there were  $n = 2149$  LEP cases, but 10 had no recorded specific residential address other than 'RACF' and were removed from the analysis. Another 116 cases had no controls identified and were also removed from the matched cohort analysis. The remaining  $n = 2023$  LEP cases were matched with: three controls ( $n = 1941$ ); two controls ( $n = 73$ ); or one control ( $n = 9$ ). Overall, there were 8001 ED visits examined in the matched cohort analysis (2023 cases and 5978 controls).

The sociodemographic characteristics of the matched sets are presented in Table 2. The Chi square tests were done for LHN1 and LHN2 separately as there were differences in the overall percentage of potentially avoidable ED visits between LHN1 and LHN2. There were no significant differences in the proportions of ED presentations that led to an admission between LEP cases and controls from both LHNS (Table 3; LHN1: 12.9% LEP cases vs. 14.4% control; LHN2: 24% LEP cases vs. 23.1% control).

For potentially avoidable and non-avoidable ED presentations, both LHNS had more ED visits with triage category 3 (Urgent) compared to ED visits with other triage categories, and

	LHN1 (Peninsula Health)	LHN2 (Monash Health)
No. of ED episodes	17,561	16,481
No. of LEP episodes	219	1930
No. of LEP episodes (with residential address)	210	1929
No. of LEP episodes (with no identifiable controls – and dropped from matched analysis)	0	116
Matched sets	210	1813
No. of cases in matched analysis	210	1813
No. of controls in matched analysis	630 (3 controls for each case)	5348 (1 control for 9 cases; 2 controls for 73 cases; 3 controls for 1731 cases)

TABLE 1 Matched sets ( $n = 2023$ ) in the matched cohort analysis consisted of data from 8001 ED presentations (2023 LEP cases and 5978 controls)

Abbreviations: ED, Emergency Department; LEP, Limited English Proficiency; LHN, Local Hospital Network.

TABLE 2 Sociodemographic characteristics of cases and controls

Characteristic	LHN1 (Peninsula Health)			LHN2 (Monash Health)			Total $n = 8001$
	LEP cases $n = 210$	Control $n = 630$	LHN1 overall $n = 840$	LEP cases $n = 1813$	Control $n = 5348$	LHN2 overall $n = 7161$	
Age in years - Mean (SD)	84.3 (6.1)	83.2 (8.5)	83.9 (8.4)	84.4 (7.2)	82.7 (10.7)	81.7 (10.5)	82.3 (9.7)
Sex - $n$ (%)							
Male	86 (40.9)	258 (40.9)	344 (40.9)	672 (37.1)	1996 (37.3)	2668 (37.3)	3012 (37.6)
Female	124 (59.1)	372 (59.1)	496 (59.1)	1141 (62.9)	3352 (62.7)	4493 (62.7)	4989 (62.4)
Country of birth (by regions) - $n$ (%)							
Australia and Oceania	6 (2.9)	630 (100.0)	411 (48.9)	19 (1.0)	5348 (100.0)	5367 (75.0)	5778 (72.2)
Europe	165 (78.6)		373 (44.4)	1157 (63.8)		1157 (16.2)	1530 (19.1)
Asia	21 (10.0)		31 (3.7)	501 (27.6)		501 (7.0)	532 (6.6)
Africa	2 (1.0)		8 (1.0)	104 (5.7)		104 (1.5)	112 (1.4)
North America			1 (0.1)				1 (0.01)
South America	16 (7.6)		16 (1.9)	32 (1.8)		32 (0.5)	48 (0.6)

Abbreviations: LEP, Limited English Proficiency; LHN, Local Hospital Network.

LEP cases of both LHNS showed higher percentage in ED visits with triage category 3 than controls (Tables 4a and 4b). However, the differences in severity of ED visits between LEP cases and controls were only significant in LHN2 (potentially avoidable:  $\chi^2(4) = 13.498, p = 0.009$ , non-avoidable:  $\chi^2(4) = 9.791, p = 0.044$ ).

Falls were the most prevalent type of injury event (Table 5a), recorded for 73.7% of all injuries (14.6% of ED visits) in LHN1 and 48.5% of injuries (10.8% of ED visits) in LHN2. There was no significant difference in fall events between cases and controls ( $\chi^2$  results are in Table 5a and 5b). In LHN1, the rates of injury event in potentially avoidable ED visits were not significantly different ( $\chi^2$  results are in Table 5c), but they were in LHN2, with 16.7% in LEP cases and 10.8% in controls, reflecting a small effect size,  $\Phi = 0.24$  (Kim, 2017).

Primary diagnosis information was missing for  $n = 1$  in LEP cases from LHN2 and  $n = 29$  in controls ( $n = 4$  from LHN1, and  $n = 25$  from LHN2). There were no significant differences in the types of diagnoses recorded in ED visits between the LEP cases and controls from both LHNS (Tables 6a and 6b).

### 3.2 | Qualitative results

Ten participants discussed experiences of hospitalisation or decisions regarding transfer to hospital from residential aged care; 1 resident with LEP, 6 family carers (labelled in the results as 'Carer') and 3 staff (1 Manager, 1 Personal Care Attendant, 1 General Practitioner).

TABLE 3 Number of cases and controls with and without the primary outcome of being admitted into hospital via the ED

Admission status	n (%)						Total n = 8001
	LHN1 (Peninsula Health)			LHN2 (Monash Health)			
	LEP Cases n = 210	Control n = 630	Overall n = 840	LEP Cases n = 1813	Control n = 5348	Overall n = 7161	
Not admitted into hospital from the ED	27 (12.9)	91 (14.4)	118 (14.1)	436 (24.0)	1235 (23.1)	1671 (23.3)	1789 (22.4)
Admitted into hospital from the ED	183 (87.1)	539 (85.6)	722 (85.9)	1377 (76.0)	4113 (76.9)	5490 (76.7)	6212 (77.6)
	Pearson $\chi^2$ (1) = 0.329, $p$ = 0.566			Pearson $\chi^2$ (1) = 0.691, $p$ = 0.406			

Abbreviations: ED, Emergency Department; LEP, Limited English Proficiency; LHN, Local Hospital Network.

TABLE 4 Triage category for LEP cases and controls

(a) Potentially avoidable ED presentations (n = 1789)							
Triage Category	n (%)						
	LHN1 (Peninsula Health)			LHN2 (Monash Health)			Total n = 1788 <sup>a</sup>
	LEP Cases n = 27	Controls n = 90	Total n = 117	LEP Cases n = 436	Controls n = 1235	Total n = 1671	
1 Resuscitation	0	2 (2.2)	2 (1.7)	13 (3.0)	93 (7.5)	106 (6.3)	108 (6.0)
2 Emergency	3 (11.1)	12 (13.3)	15 (12.8)	113 (25.9)	322 (26.1)	435 (26.0)	450 (2.5)
3 Urgent	14 (51.9)	34 (37.8)	48 (41.0)	213 (48.9)	542 (43.9)	755 (45.2)	803 (44.9)
4 Semi urgent	10 (37.0)	37 (41.1)	47 (40.2)	90 (20.6)	247 (20.0)	337 (20.2)	384 (21.5)
5 Non urgent	0	5 (5.6)	5 (4.3)	7 (1.6)	31 (2.5)	38 (2.3)	43 (0.2)
	Pearson $\chi^2$ (4) = 3.269, $p$ = 0.514			Pearson $\chi^2$ (4) = 13.498, $p$ = 0.009**			
(b) Non-avoidable ED presentations (n = 6212)							
Triage Category	n (%)						
	LHN1 (Peninsula Health)			LHN2 (Monash Health)			Total n = 6212
	LEP Cases n = 183	Controls n = 539	Total n = 722	LEP Cases n = 1377	Controls n = 4113	Total n = 5490	
1 Resuscitation	1 (0.6)	2 (0.4)	3 (0.4)	13 (0.9)	61 (1.5)	74 (1.4)	77 (1.2)
2 Emergency	47 (25.7)	149 (27.6)	196 (27.1)	212 (15.4)	593 (14.4)	805 (14.7)	1001 (16.1)
3 Urgent	94 (51.4)	249 (46.2)	343 (47.5)	678 (49.2)	1883 (45.8)	2561 (46.7)	2904 (46.7)
4 Semi urgent	38 (20.8)	135 (25.1)	173 (24.0)	456 (33.1)	1512 (36.8)	1968 (35.9)	2141 (34.5)
5 Non urgent	3 (1.6)	4 (0.7)	7 (1.0)	18 (1.3)	64 (1.6)	82 (14.9)	89 (1.4)
	Pearson $\chi^2$ (4) = 3.243, $p$ = 0.518			Pearson $\chi^2$ (4) = 9.791, $p$ = 0.044*			

Abbreviations: LEP, Limited English Proficiency; LHN, Local Hospital Network.

\* $p$  < 0.05, \*\* $p$  < 0.01.

<sup>a</sup>Missing triage category information for one control in LHN1.

The demographics of these 10 participants are provided in Table 7. A separate publication is planned to report the qualitative findings from the full sample of 25 participants.

All residents in this study had a family carer involved in their care at the RACF. This was likely an artefact of our recruitment and consent procedure, where carers facilitated resident recruitment and provided supporting consent for resident participation.

### 3.2.1 | Discrete instances of LEP resident visits to ED

Seven participants described instances of visits to the ED (see Appendix A1 for complete descriptions of these instances).

Participants had mixed views on the role of residents' LEP in these instances, with only three participants reporting a possible explicit causative contribution of LEP to an ED visit:

TABLE 5 Injury cause for LEP cases and controls

(a) Recorded injury events in ED							
	n (%)						
	LHN1 (Peninsula Health)			LHN2 (Monash Health)			
	LEP Cases n = 39	Control n = 128	Total n = 167	LEP Cases n = 395	Controls n = 1196	Total n = 1591	Total n = 1758
Fall	27 (39.2)	96 (75.0)	123 (73.7)	207 (52.4)	564 (47.2)	771 (48.5)	894 (50.9)
Not a fall <sup>a</sup>	12 (30.8)	32 (25.0)	44 (26.3)	188 (47.6)	632 (52.8)	820 (51.5)	864 (49.1)
	Pearson $\chi^2$ (1) = 0.514, $p$ = 0.474			Pearson $\chi^2$ (1) = 3.274, $p$ = 0.070			
(b) Admission status of cases and controls with "fall" recorded as the injury cause							
Admission status	n (%)						
	LHN1 (Peninsula Health)			LHN2 (Monash Health)			
	LEP Cases n = 27	Control n = 96	Total n = 123	LEP Cases n = 207	Control n = 564	Total n = 771	Total n = 894
Not admitted into hospital from the ED	4 (14.8)	12 (12.5)	16 (13.0)	27 (13.0)	61 (10.8)	88 (11.4)	104 (11.6)
Admitted into hospital from the ED	23 (85.2)	84 (87.5)	107 (87.0)	180 (87.0)	503 (89.2)	683 (88.6)	790 (88.4)
	Fishers exact test, $p$ = 0.751			Pearson $\chi^2$ (1) = 0.743, $p$ = 0.389			
(c) Admission status of cases and controls with any recorded injury cause <sup>b</sup>							
Admission status	n (%)						
	LHN1 (Peninsula Health)			LHN2 (Monash Health)			
	LEP Cases n = 39	Controls n = 128	Total n = 167	LEP Cases n = 395	Controls n = 1196	Total n = 1591	Total n = 1758
Not admitted into hospital from the ED	6 (15.4)	17 (13.3)	23 (13.8)	66 (16.7)	129 (10.8)	195 (12.3)	218 (12.4)
Admitted into hospital from the ED	33 (84.6)	111 (86.7)	144 (86.2)	329 (83.3)	1067 (89.2)	1396 (87.7)	1540 (87.6)
	Pearson $\chi^2$ (1) = 0.111, $p$ = 0.739			Pearson $\chi^2$ (1) = 9.682, $p$ = 0.002**			

Abbreviations: ED, Emergency Department; LEP, Limited English Proficiency; LHN, Local Hospital Network.

\*\* $p$  < 0.01.

<sup>a</sup>i.e. struck by or collision with object, cold conditions, poisoning, scalds, motor vehicle, pedal cyclist, cutting piercing object, other external causes and unspecified external causes.

<sup>b</sup>i.e. fall, struck by or collision with object, cold conditions, poisoning, scalds, motor vehicle, pedal cyclist, cutting piercing object, other external causes and unspecified external causes.

**Carer 221:** Well, the first one [fall that led to an ED visit] was because... the medication may have been too strong or not so right, ... And that comes back to communication. She was using a word when she had that. She said, 'I feel dead. I feel dead'. ...I didn't realise, what she meant was she feels dizzy. So I couldn't understand her [Italian] dialect, what she was trying to say to me. She's a sort of a 19th century lady... different ways of expressing things.

**Carer 225:** ... when she's [mum] had to go to hospital, she gets very upset and aggressive and she doesn't cooperate with the medical staff or with the nurses...that's when they actually call me to get me to calm mum down, 'cause they say to me 'Can you please tell your mum she needs to pack those tablets? Can you please tell your mum..., you know... 'ask your mum what's wrong?'

**Interviewer:** And do you think that... it's the language or is it because your mum and you have a relationship...Or is it a bit of both? That they call up on you?

**Carer 225:** I think it's possibly a bit of both... I mean, mum does understand quite a bit. I think she gets quite upset and at certain things that happen when people don't listen to her and... I think something happens in her head where she just blocks off her English.

**Interviewer:** Do you think communication barriers have something to do with the fact that she was admitted [to hospital]?

**Carer 121:** You know, it might have....They were unable to contact me at the time so I'm not sure. Had I been here, I don't know whether I would have been able to clear up things...

**TABLE 6** Primary diagnosis received in the Emergency Department for those with potentially avoidable Emergency Department presentations (not admitted into hospital via the Emergency Department)

<b>(a) LEP cases</b>			
Diagnosis category	n (%)		
	LHN1 (Peninsula Health) n = 27	LHN2 (Monash Health) n = 435	Total n = 462
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	7 (26.0)	73 (16.8)	80 (17.3)
Injury, poisoning and certain other consequences of external causes	5 (18.5)	66 (15.2)	71 (15.4)
Diseases of the respiratory system	3 (11.1)	115 (26.4)	118 (25.5)
Diseases of the circulatory system	2 (7.4)	55 (12.6)	57 (12.3)
Certain infectious and parasitic diseases	1 (3.7)	35 (8.0)	36 (7.8)
Diseases of the genitourinary system	2 (7.4)	18 (4.2)	20 (4.3)
Diseases of the digestive system	1 (3.7)	12 (2.8)	13 (2.8)
Diseases of the skin and subcutaneous tissue	1 (3.7)	10 (2.3)	11 (2.4)
Transient cerebral ischaemic attack, unspecified Spasm of cerebral artery Transient cerebral ischaemia NOS	2 (7.4)	6 (1.4)	8 (1.7)
Diseases of the musculoskeletal system and connective tissue	2 (7.4)	4 (0.9)	6 (1.3)
Mental and behavioural disorders	—	16 (3.7)	16 (3.5)
Endocrine, nutritional and metabolic diseases	—	12 (2.8)	12 (2.6)
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	—	5 (1.2)	5 (1.1)
Factors influencing health status and contact with health services	—	4 (0.9)	4 (0.9)
Neoplasms	—	3 (0.7)	3 (0.6)
Diseases of the eye and adnexa	—	1 (0.2)	1 (0.2)
<b>(b) Controls</b>			
Diagnosis category	n (%)		
	LHN1 (Peninsula Health) n = 87	LHN2 (Monash Health) n = 1210	Total n = 1297
Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified	33 (37.9)	262 (21.7)	295 (22.7)
Injury, poisoning and certain other consequences of external causes	17 (19.5)	129 (10.7)	146 (11.3)
Diseases of the circulatory system	5 (5.8)	157 (13.0)	162 (12.5)
Diseases of the digestive system	5 (5.8)	49 (4.1)	54 (4.2)
Diseases of the respiratory system	4 (4.6)	304 (25.1)	308 (24.0)
Diseases of the musculoskeletal system and connective tissue	4 (4.6)	22 (1.8)	26 (2.0)
Diseases of the genitourinary system	4 (4.6)	69 (5.7)	73 (5.6)
Mental and behavioural disorders	3 (3.5)	36 (3.0)	39 (3.0)
Diseases of the skin and subcutaneous tissue	3 (3.5)	23 (1.9)	26 (2.0)
Factors influencing health status and contact with health services	3 (3.5)	15 (1.2)	18 (1.4)
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	2 (2.3)	10 (0.8)	12 (0.9)
Diseases of the nervous system	2 (2.3)	15 (1.2)	17 (1.3)

(Continues)



TABLE 6 (Continued)

(b) Controls			
Diagnosis category	n (%)		
	LHN1 (Peninsula Health) n = 87	LHN2 (Monash Health) n = 1210	Total n = 1297
Endocrine, nutritional and metabolic diseases, Diseases of the eye and adnexa	2 (2.3)	24 (2.0)	26 (2.0)
Certain infectious and parasitic diseases	—	82 (6.8)	82 (6.3)
Neoplasms	—	5 (0.4)	5 (0.4)
Diseases of the eye and adnexa	—	2 (0.2)	2 (0.2)

Abbreviations: LEP, Limited English Proficiency; LHN, Local Hospital Network.

TABLE 7 Sociodemographic characteristics of qualitative study participants

Interview participants	Participant description (at time of interview)
Carer 122	Female carer (daughter) of a male resident at RACF1; spoke Greek and English. Her father was in his mid-80s, spoke Greek, and had lived in RACF1 for 10 months.
Carer 225	Female carer (daughter) of a female resident at RACF2; spoke Italian and English. Her mother was in her mid-80s and spoke Italian and English.
Manager 151	Female Care Manager at RACF1. She had a nursing background, worked in the aged care sector and RACF1 since 2004 and spoke English only.
Carer 222/Resident 212	Male carer (son) of a female resident at RACF2; spoke Italian and English. His mother was in her 80s, spoke Italian and English and had lived in RACF2 for 2.5 years.
Carer 221	Male carer (stepson) of a female resident at RACF2; spoke Italian and English. His stepmother was in her 80s, spoke Italian (Calabrese) and had lived in RACF2 for 2.5 years.
PCA 131	Female Personal Care Attendant at RACF1. She had worked in the aged care sector since 2011 and RACF1 since late 2015 and spoke Nuer, Arabic and English.
Carer 121	Female carer (daughter) of a female resident at RACF1; spoke Spanish, Italian and English. Her mother was in her late 80s, spoke Spanish and Italian, and had lived in RACF1 for 10 months.
GP 161	Female General Practitioner who visited RACF1. She spoke Russian and understood 10 Slavic languages.
Carer 123	Female carer (daughter in law) of a female resident at RACF1; spoke Tamil and English. Her mother in law was in her mid-80s, spoke Tamil, and had lived in RACF1 for 5 years.

Abbreviations: PCA, Personal Care Assistant; RACF, Residential Aged Care Facility.

One carer highlighted an aversion to the hospital environment as the primary factor in difficulties transferring his father to ED, rather than LEP:

**Carer 122:** For my father I can tell you no [language was not a factor in ED visits]. The times that he has been admitted have all invariably been where he's fallen over.... He'd fall...about three or four times and each time when people came to help him and they wanted to call an ambulance to move him to hospital, he would refuse to go. He didn't want to go into hospital.... So in his case, it's got nothing to do with language. It's to do [with] the fact that he doesn't like being in a hospital at all.

Despite not explicitly linking residents' LEP to ED visits, some family carers reported being used as mediators or the 'go-between' (Carer 221) to explain the reasons for the resident being transferred and to provide emotional support to residents who may be anxious about being transferred:

**Carer 122:** And then they [RACF] called me, and told me, 'we've had to move your dad' and they explained to me what had happened. And I explained to my dad as well,...but it wasn't that my dad didn't understand the English, he was just panicking about why they were moving him to a hospital. So most of the time the, any issues he has in comprehension is not because of language. It's got more to do with him panicking and not listening. It's the same. I can be talking to him in Greek and he doesn't listen. I have to repeat it and I have to raise my voice. So that focuses on what I'm saying cause he just becomes quite overwhelmed and starts panicking. That's part of his part of his illness is that...he doesn't sort of focus on what you're telling him.

**Manager 151:** ... there was an instance even recently, one man, he refused to go to hospital and we said, 'We're sending you to hospital,' and the doctor said, 'We're sending you to hospital'. And he

just refused, refused, refused. We got the son in, in the middle of the night and we're saying, 'Can you please convince him, that he has to go to hospital?' And the son couldn't even convince him. And then later on in the morning we finally sent him without the son. We finally got him to agree, because the ambulance kept turning up, and he just kept saying, 'No...!'... So I don't know if an interpreter could have helped in that, considering the son couldn't manage it.

**Interviewer:** Okay. So, it's not just about communication.

**Manager 151:** It's more behavioural...We do rely on families and staff, but we manage,...

**Interviewer:** It sounds a very challenging situation...because how can you force someone to get into the ambulance?

**Manager 151:** Yeah...even one of the ambulance people spoke his language... And still couldn't get him in there.

The previous quote shows that a family carer's attempts to assist in easing residents' anxiety regarding transfers to ED were not always successful.

Carers also described their role as linguistic mediator and provider of emotional support extending into the hospital setting:

**Carer 221:** Well, I was there with the Ambo [ambulance] people when she went into the hospital for the emergency, and I stayed with her all night.... And that reassured her, kept her focused... came back the next day...On another occasion she had a fall... Again, we went into the emergency... I stayed most nights with her for about three weeks because...I could see she was in a bit of a traumatic, emotional shock. And I comforted her for those three weeks. I've got a recliner in her room, which is really good.

In one situation, another resident was utilised by staff as an ad-hoc interpreter to help with the medical assessment of a resident who had a fall.

**Carer 222:** So another lady had a fall in the hallway... And she's one of the ladies that doesn't speak a lot of English. Mum [Resident 212] was on her way to the dining room to get lunch. And the nurses... asked mum on the way through, if she could interpret... Before they tried to move her, they wanted to ask her 'does it hurt here?', or 'does it hurt there'... The normal general things....

**Interviewer 2:** So when you helped that lady who fell, how did you feel doing that?

**Resident 212:** I just talk with her in Italian, and I explain in English.

### 3.2.2 | General perceptions and experiences of LEP resident visits to ED

Factors reported in general perceptions and experiences of participants mirrored those discussed for discrete instances, with LEP seen as a minor or non-existent factor in ED visits and family carers being relied on by staff to mediate transfers to ED, particularly when

residents are distressed (Appendix A2). None of the participants reported professional interpreters being used to assist with communication with residents during transfers to ED, despite one participant identifying interpreters as necessary when accidents occur:

**Interviewer:** Has there been any situation where you feel you must absolutely use an interpreter?

**PCA 131:** Yes, sometimes we need interpreter. If there is an accident or something like this.

**Interviewer:** Is that something that you use or not?

**PCA 131:** We didn't use that.

## 4 | DISCUSSION

This study provides the first direct examination of the possible link between LEP and potentially avoidable ED visits for RACF residents in Australia. Our investigation identified that residents with LEP had a similar likelihood of presenting to an ED and not be admitted compared to those without LEP. There were few qualitative comments that supported our original hypothesis. Of those that did, possible contributing factors identified by family carers and staff were difficulties faced by LEP residents in communicating physical symptoms, difficulties faced by staff in explaining the need for ED transfer to LEP residents, and an inability to contact family to provide language mediation and support. There was also a notable absence of use of professional interpreters in all the instances described by participants.

There are a range of individual and systemic factors that may explain our findings. At an individual level, the high level of family carer involvement identified in our qualitative results and other studies (Runci et al., 2015) may ameliorate the communication impact of LEP (Rosendahl et al., 2016). However, this is still unclear, as for all identified instances of ED transfer, families were not contacted for ad-hoc interpreting in the pre-transfer decision-making process, but primarily to support residents to go to hospital after a decision was made. While the support role of family members is well recognised (Edwards et al., 2005; Kuo & Fagan, 1999), reliance on ad-hoc language mediation provided by family members may lead to problems in which intimate details from residents, or potentially high impact information intended for residents, is not communicated by family members (Hadziabic et al., 2014), resulting in residents' right to privacy about their personal and health-related situation possibly being compromised (Katz, 2014; Rosenberg et al., 2007). This practise of family language mediation is also at odds with sector-specific standards and healthcare provider standards that discourage the use of family carers and strongly recommend the provision of professional interpreting services, which are freely provided by the Australian Government organisation TIS National (Aged Care Quality & Safety Commission, 2019; Australian Commission on Safety & Quality in Health Care, 2020). Family involvement may also lead to residents being pressured to change their preferences or their preferences being disregarded, as implied by the case described by Manager 151 where staff, paramedics and family repeatedly attempted to convince the resident to go to hospital, despite

repeated refusals. This possible coercion would be in breach of the Charter of Aged Care Rights, which requires that consumers be supported to understand their care, have control and make choices about their care and are listened to and understood (Australian Commission on Safety & Quality in Health Care, 2020).

Another individual-level factor may be that residents, regardless of English proficiency, often experience multiple communication impairments that may obscure the impact of LEP. These include subtle declines in hearing, voice, and language-processing abilities, whilst many physical conditions that cause communication difficulties also have their onset in older age including hearing loss, dementia, aphasia (commonly caused by stroke) and the loss of teeth (Yorkston et al., 2010). When multiple communication difficulties are experienced by a single resident, they may reach a threshold of overall communication impairment that has the same or greater impact as LEP. For example, some of the family carers interviewed for this study asked that the resident not be interviewed due to communication difficulties caused by dementia rather than LEP, explaining that their family member would be unable to communicate regardless of the language. The impact of dementia may be particularly significant as approximately 53% of people living in permanent residential aged care in Australia have been diagnosed with dementia (Australian Institute of Health & Welfare, 2020). Dementia not only causes multilingual residents to lose their second and subsequent languages (Yorkston et al., 2010), but also has language and communication difficulties as key symptoms, with severe dementia often leading to complete loss of language (e.g. babbling or mutism) (Banovic et al., 2018).

Finally, at a systems level, RACFs are highly regulated, with clear quality and safety standards often underpinned by standardised protocols to manage risk (e.g. Aged Care Quality & Safety Commission, 2019; Arendts & Howard, 2010; Australian Commission on Safety & Quality in Health Care, 2020, 2021). Our qualitative field notes record staff mentioning a protocol in one of the RACFs that required the transfer to ED of all residents with an unwitnessed fall. Given 11% of the matched cohort sample experienced a fall as the injury precipitating ED transfer, the presence of falls protocol as recommended by the Australian Commission on Safety and Quality in Health Care (2009) would suggest that ED presentations may not be a true representation of hospitalisation need, but rather reflect the universal application of RACF risk management policies regardless of resident demographics such as LEP status. Similarly, our findings may reflect that medical staff are already experienced and well trained to assess patients in situations where communication is not possible (e.g. unconscious or non-verbal patients), or where interpreters are not available (White et al., 2018).

#### 4.1 | Limitations

A key limitation of the study was our reliance on the hospital's recording of a need for an interpreter to identify LEP residents, rather than a direct measure of language proficiency. Contemporary, best-practice guides to identify interpreter need include not only stated

preference and self-reported limited proficiency (i.e. the definition used in the VEMD), but also demonstrated difficulty in speaking and listening and reliance on others speaking and responding on their behalf. Staff should also state that interpreters are available, provide assurances of free interpreting services, allay concerns about confidentiality, and use strategies to minimise the loss of face for a person embarrassed about their LEP (Centre for Culture, Ethnicity, & Health, 2014). Considering our qualitative findings that interpreting services are not routinely provided in RACFs despite resident LEP, and that family members are heavily relied-upon for interpreting, it is likely that a substantial number of RACF residents with LEP may have been excluded as cases from the matched cohort analysis. However, the rates of potentially avoidable ED visits were essentially the same for both LEP and non-LEP residents, only differing by the location (i.e. approx. 13%–14% in LHN1; 23%–24% in LHN2).

While our qualitative analyses provided some insight into the mechanisms of communication used to manage ED transfers, the qualitative sample was small and at best indicative of the profiles of LEP residents at RACFs located across both LHNs. For example, all LEP residents interviewed had highly involved family carers, meaning the experience of LEP residents without access to ad-hoc family interpreting was not captured in this study. This is important as low family visitation rates are associated with high rates of hospitalisation for infection in RACF residents (Zimmerman et al., 2002). Family members' ability to interpret and the quality of their translations from English into the residents' language and vice versa were also not measured.

Finally, it is also important to note that this study focussed on a narrow outcome, potentially avoidable ED presentations, and a narrow socio-demographic factor, LEP. It did not assess the quality of care in hospital or in RACFs, both of which have been shown to be affected by LEP (Flores, 2005; Murphy & Clark, 1993; Saldov & Chow, 1994; White et al., 2018), and failed to consider how LEP may affect residents' ability to make choices regarding their treatment, part of the first standard of the Australian Aged Care Quality Standards (Aged Care Quality & Safety Commission, 2019). Likewise, other studies have found that the cultural background of the patient and the cultural appropriateness of care play a significant role in health outcomes (Gardam et al., 2009), suggesting these as key areas for future research. We will address some of these limitations using the full qualitative study sample to more deeply explore how LEP may affect residents' overall care (including support for activities of daily living, medication management and social interaction).

## 5 | CONCLUSION

This study provides the first direct examination of the potential link between LEP and potentially avoidable ED visits for RACF residents in Australia. Our finding of no difference in potentially avoidable ED visits between RACF residents with LEP and English proficient residents suggests that communication barriers caused by LEP are not a factor in avoidable ED presentations defined as admission into hospital via ED. While our qualitative results provided some evidence

that LEP contributed to difficulties managing the ED transfer process, they provided no direct evidence that LEP contributed to an ED transfer decision. This suggests that existing RACF policies and procedures, staff training and the involvement of carers in residents' care may ensure care is provided in medical emergencies to residents regardless of their English proficiency. Nevertheless, as the first study of its kind, we suggest that additional research is required using different measures of LEP and a more diverse qualitative sample to explore the role of a broader range of cultural and linguistic factors in both rates of avoidable ED presentations and the decision-making processes underpinning resident transfers to ED.

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## CONFLICT OF INTEREST

None.









## AUTHOR CONTRIBUTION

JE, JH, RM, SS, TH & VS conceived the project and acquired funding. JE, JH and KL administered the project, designed the methodology and supervised project staff with methodological contributions and project governance from SS, TH and VS. TH also supervised project staff. JE and KL collected the data and conducted the data analysis with analytic support from JH, SC and WYL. KL, JE, JH, SC and WYL wrote the initial manuscript with visualisations by SC and WYL. And all authors discussed the results and reviewed the final manuscript.

## DATA AVAILABILITY STATEMENT

The quantitative data that support the findings of this study are available from the corresponding author upon reasonable request. The de-identified qualitative data that support the findings of this study are openly available in Appendix A.

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#### SUPPORTING INFORMATION

Additional supporting information may be found in the online version of the article at the publisher's website.

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