Utilisation of Hospital Emergency Departments among Immigrants from Refugee Source-Countries in Queensland

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Abstract   Despite the increasing number of immigrants, there is a limited body of literature describing the use of hospital emergency department (ED) care by immigrants in Australia. This study aims to describe how immigrants from refugee source countries (IRSC) utilise ED care, compared to immigrants from the main English speaking countries (MESC), immigrants from other countries (IOC) and the local population in Queensland. A retrospective analysis of a Queensland state-wide hospital ED dataset (ED Information System) from 1-1-2008 to 31-12-2010 was conducted. Our study showed that immigrants are not a homogenous group. We found that immigrants from IRSC are more likely to use interpreters (8.9%) in the ED compared to IOC. Furthermore, IRSC have a higher rate of ambulance use (odds ratio 1.2, 95% confidence interval (CI) 1.2–1.3), are less likely to be admitted to the hospital from the ED (odds ratio 0.7 (95% CI 0.7–0.8), and have a longer length of stay (LOS; mean differences 33.0, 95% CI 28.8–37.2), in minutes, in the ED compared to the Australian born population. Our findings highlight the need to develop policies and educational interventions to ensure the equitable use of health services among vulnerable immigrant populations.

Keywords   Emergency Department, Immigrants, Refugees, Utilisation

1. Introduction

A number of international studies have shown differences in the use of emergency department (ED) care between immigrants and local populations[1-5]. Currently, a limited body of literature exists describing the use of ED care by immigrants in Australia. This is despite the 2011 Census showing that over 6 million (27%) of Australia's people were born overseas[6]. However, immigrants are not a homogeneous group. Annually, Australia resettles about 13,000 refugees via the Humanitarian Program[7]. People from refugee backgrounds may have experienced the ill effects of the conditions in refugee camps, thus arriving with existing health problems[8-10].

For those people, access to appropriate health care facilities after their arrival in a new country is often limited by cultural, language, or financial barriers[11,12]. Poor and inappropriate access to the health care services for this vulnerable group might have serious implications for their health[13,14]. Several studies have shown that some immigrants from refugee backgrounds tend to use ED care as a primary source of health care[2,5]. This might be influenced by their previous patterns of use in their origin countries[15,16]. Therefore, these immigrants may be disadvantaged by a lack of access to preventive and primary health care facilities and thus place an additional burden on ED care due to inappropriate access.

Immigrant access to healthcare services, such as ED services, and outcomes of such interaction have been widely studied in a number of countries; however, the topics have received little attention in Australia. Therefore, this study aims to describe how immigrants from refugee source countries (IRSC) utilise ED care in terms of their requirement of interpreters, ambulance use, admission to hospital, and length of stay (LOS) in the ED, compared to immigrants from the main English speaking countries (MESC), immigrants from other countries (IOC) and the local population in Queensland. The study may provide original data to fill some of the gaps in this area.

2. Methods

2.1. Study Design and Setting

An analysis of the Queensland public hospitals' ED dataset for the three calendar years, from 1 January 2008 to 31 December 2010, was undertaken. Queensland, located in northeast Australia, is the second-largest in land mass and third-most populous state of Australia.

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2.2. Data Source

The data were sourced from the Emergency Department Information System (EDIS). The EDIS is an electronic information system for public hospital EDs in Queensland. It provides data such as modes of arrival (ambulance, walk-in including via public transport and others), triage category, gender, age, country of birth, and ED departure status (admission to hospital, did not wait, died, or discharge). Ethical approval to use unidentified data was obtained from the Queensland Health Central Ethics Unit (HREC/11/QHC/29).

2.3. Data Analysis

The proportions of interpreter use were calculated using Pearson's chi-square test. Logistic and multiple linear regression analyses were performed to determine the relationships between ambulance use and country of birth, admission status and country of birth, and LOS in the ED and country of birth. The analyses were adjusted for gender, age, interpreter use, and triage categories (resuscitation, emergency, urgent, semi-urgent, and non-urgent), according to the Australasian Triage Scale (ATS)[17]. The results were calculated using Statistical Package for the Social Sciences (SPSS) version 19 (IBM SPSS Statistics 19).

2.4. Immigrants' Countries of Origin

The term main English-speaking country (MESC) is used to describe people migrating from the United Kingdom, the Republic of Ireland, New Zealand, Canada, South Africa, and the United States of America, according to the Australian Bureau of Statistics (ABS)[18]. Information about immigration status and distribution of refugees is not available from the EDIS. Therefore, we used the same approach used by[19] in their study on the Victorian Admitted Episodes Dataset (VAED)[19]. They used country of birth as a proxy indicator of refugee status[19]. Refugee source countries are those countries where significant numbers of people have been forcibly displaced due to persecution, violence, and war[19]. A cut-off was made from 1980 onwards to differentiate recent refugees from former refugees, who entered Australia through the Refugee and Humanitarian Program. The new refugee source countries, as indentified by[19], are Afghanistan, Bosnia-Herzegovina, Burma, Eritrea, Ethiopia, Iraq, Somalia, and Sudan[19]. We excluded from the analysis those people who did not state their country of birth.

3. Results

Of the total of 2,953,731 visits to Queensland public hospital EDs between January 2008 and December 2010, 2,395,382 (81.1%) were born in Australia, 292,138 (9.9%) were born in MESC, 9,935 (0.3%) were born in refugee source countries, 216,074 (7.3 %) were born in other countries, and 40,202 (1.4%) did not state their country of

birth. Overall, people from MESC and IOC had very similar rates of ED care use and LOS in ED, with little difference from people born in Australia.

Table 1. Interpreter use among immigrants in EDs, QLD 2008–2010

Born country	Total no.	Interpreter use (%)
IRSC	9,935	885 (8.9)*
IOC	216,074	5362 (2.5)*

*(Chi-squared 1,459.486, p 0.000)

Table 2. Logistic regression model (ORs and 95%CI) for ambulance use among immigrants, adjusted for sex, age, and triage categories, QLD 2008–2010

Country of birth	OR (95% CI)	P
Reference group: Australia		
IRSC	1.2 (1.2–1.3)	0.000
MESC	0.7 (0.7–0.7)	0.000
IOC	0.7 (0.7–0.7)	0.000

Table 3. Logistic regression model (ORs and 95%CI) for admission status from ED among immigrants, adjusted for sex, age, and triage categories, QLD 2008–2010

Country of birth	OR (95% CI)	P
Reference group: Australia		
IRSC	0.7 (0.7–0.8)	0.000
MESC	0.9 (0.9–0.9)	0.000
IOC	0.8 (0.8–0.9)	0.000

Table 4. Multiple linear regression (Mean differences and 95% CI) for LOS in ED among immigrants, adjusted for sex, age, triage categories, and interpreter use, QLD 2008–2010

Country of birth	Mean differences (95% CI)	P
Reference group: Australia		
IRSC	33.0 (28.8–37.2)	0.000
MESC	6.6 (5.8–7.4)	0.000
IOC	9.4 (8.5–10.4)	0.000

Table 5. Multiple linear regression (Mean differences and 95% CI) for LOS in ED among patients from refugee source countries, adjusted for sex, age, triage categories, and interpreter use, QLD 2008–2010

Country of birth	Mean differences (95% CI)	P
Reference group: Australia		
Afghanistan	23.4 (11.6–35.1)	0.000
Bosnia	28.9 (20.4–37.4)	0.000
Burma	21.0 (5.0–37.0)	0.010
Eretria	52.5 (17.6–87.4)	0.003
Ethiopia	58.2 (40.0–76.4)	0.000
Iraq	8.9 (-3.3–21.1)	0.155
Somalia	35.5 (18.5–52.6)	0.000
Sudan	46.1 (38.6–53.5)	0.000

Table 1 shows the higher use of interpreters by IRSC compared to IOC (Chi-squared = 5,347.1, p < 0.001). Table 2 compares the use of ambulances as a mode of arrival to the ED among different immigrant groups to the local population. IRSC had statistically higher (p < 0.05)

ambulance use compared to the Australian born population and other immigrant groups. IRSC also had lower admission to hospital from the ED (0.7; 95% CI 0.7–0.8) than MESC (0.9; 95% CI 0.9–0.9) and IOC (0.8; 95% CI 0.8–0.9) when compared to the local population (Table 3). Table 4 shows the prolonged LOS in minutes in the ED for IRSC (33.0; 95% CI 28.8–37.2), compared to the Australian born population. Lastly, Table 5 presents the LOS among people from the eight refugee source countries compared to the Australian born population.

4. Discussion

Our study showed heterogeneity in the use of ED care among immigrants in Queensland. The study found that people born in refugee source countries have higher interpreter use, higher ambulance use, lower admission to hospital, and longer LOS in the ED than immigrants from other countries, using the Australian born population as a reference group. Understanding that immigrants are not one group, their patterns of ED care use are vital in terms of policy planning and the development of educational interventions to provide equitable health care to disadvantaged immigrants. People from refugee source countries might use ED care as their the principal provider of their health care instead of primary care due to several barriers[2,5]. General practitioners who do not speak the patients' languages and the unavailability of interpreters in general practice settings might be two of the reasons why patients with limited English proficiency seek care in hospital Eds[20]. Furthermore, a lack of transport might encourage low socio-economic refugees to use ambulance service for transport to hospital EDs for non-critical conditions[14]. However, a study from the Liverpool Hospital ED in Sydney that found that recently resettled refugees were afraid of calling for an ambulance, despite their ability to do so and their conviction that such a call was needed[16]. However, their study was a single site study with a small sample size, which limits its applicability to the Australian refugee population. Unfortunately, Our study was not able to determine whether the high use of ambulances among IRSC is due to the vulnerability of this group to illness, and attending EDs with advanced illness requires an ambulance, or due to a lack of transport. To date, there has been a paucity of empirical studies on how immigrants in Australia use ambulances. Thus, this topic warrants further investigation.

LOS is a marker of ED overcrowding and a key component of ED quality assurance monitoring[21,22]. Our study found a significant prolonged LOS in the ED among people from refugee source countries, particularly those from Sudan, Bosnia, Afghanistan, and Burma, compared to the Australian born population. These findings agree with other studies that showed an association between longer LOS in the ED and differences in language between health care providers and patients[23,24]. Although our regression model controlled for interpreter use and triage priority, it explained only 16.5% of the variability in LOS. This indicates that there are other significant factors influencing LOS in EDs, besides language and the severity of the condition, which were not captured by our study.

Our study has some limitations. It originated from routinely collected state-wide data (EDIS) and provides only limited information on the characteristics of the patients. Therefore, the study dataset did not allow for the inclusion of all important factors of ED care use, such as socio-economic status, immigration status, and LOS in Australia. Another limitation is that the EDIS data were de-identified, which did not allow analyses of individual patients. As such, some patients might have made multiple visits to the ED. There are also limitations when conducting a large secondary data analysis, such as adequacy, accuracy, and completeness[25]. However, every humanly possible effort was made to ensure accuracy and consistency in the data retrieval process.

5. Conclusions

Our findings regarding ED care use may reflect some barriers that IRSC face when accessing primary health care services. We recommend further research using mixed methodologies to investigate why IRSC use ED care differently from others. This could help in developing educational intervention programs for this population and making policies that favour their access to primary care as well as ED care.

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