

Identifying the dispersion of disability services in Queensland priority areas

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Introduction

- Disability support services that provide advocacy, information, and health and social care are integral to the health and wellbeing of people with disability.
- Research indicates that such services are essential in addressing individual comorbidities by linking clients with additional health services [1], improving community participation [2] and education and training outcomes [3], and supporting self-directed decision making [4].
- It is important that disability support services are proximately available. In Australia, the proximate availability of services has been questioned, even for those in metropolitan settings [5].

Purpose

- Recent research has established that areas in South-East Queensland with high proportions of people with disability are underserved in terms of allied health services [6].
- Only a small fraction of research has focused on the use of Geographic Information System (GIS) technologies to clarify the geographic dispersion of disability services in relation to people with disability.
- The current study aimed to:
 - Use spatial analysis to identify priority regions in Queensland with a significantly high number and proportion of people with disability.
 - Use spatial analysis to estimate travel times from localities within these regions to disability services.

Methods

- The numbers, and proportions of people with disability across Queensland SA2 regions was sourced from the 2016 Australian Bureau of Statistics (ABS) census data. Localities within SA2 regions was sourced from the ABS, 2016 Urban Centre & Locality classification. The location of disability services in Queensland was provided by Health Direct.
- A Hot Spot Analysis (Getis-Ord Gi*) within ArcGIS was conducted to ascertain SA2 regions with significantly high numbers and percentages of people with disability in Queensland.
- The travel time between localities and disability service organisations was calculated via the network analysis feature in ArcGIS.

Findings

- Thirty-eight SA2 regions in Queensland were identified as having a high number and proportion of people with disability. These regions are presented in Figure 1. Sixty-two urban centre localities were located within these regions.
- Descriptive statistics relating to the travel time (in minutes) to three types of disability services has been included in the table below.

Service Type	Mean	SD	Min.	Max.
Aids and Equipment	32.47	17.56	1.92	69.67
Information and Referral	22.53	16.76	0.90	70.34
Support and Advocacy	42.24	25.45	4.53	96.49

- On average, the greatest travel time for localities within priority areas was to Support and Advocacy services. The shortest travel time was to Information and Referral services.

Findings Continued...

- Friedman's test (non-parametric equivalent to repeated measures ANOVA) was used to examine the extent of differences in travel time to the three types of disability services.
- The three travel times were significantly different. When the service with the shortest travel time (Information and Referral), was excluded, the travel times to Support and Advocacy services turned out to be significantly greater than travel times to Aids and Equipment services.

Friedman Test	Chi-Square	Df	Asymp. Sig.
Comparing three services	53.79	2	0.00
Comparing Aids and Equipment and Support and Advocacy	6.45	1	0.01

Points for Consideration

- The findings are consistent with travel times to Support and Advocacy disability support services for localities within priority areas being greater than the two other types of disability services, and consequently this type of service has the least proximate accessibility for localities considered.
- While travel time is important, the proximate availability of specific disability services might have less impact on access when telehealth or home/site visits are available as options.
- Furthermore, there are potentially services which have not been listed, and thus not included in the analysis.



Figure 1: Areas with significantly high levels of disability in Queensland

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