

Which dimensions of access are most important when rural residents decide to visit a general practitioner for non-emergency care?

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Abstract

Objective. Access to primary healthcare (PHC) services is key to improving health outcomes in rural areas. Unfortunately, little is known about which aspect of access is most important. The objective of this study was to determine the relative importance of different dimensions of access in the decisions of rural Australians to utilise PHC provided by general practitioners (GP).

Methods. Data were collected from residents of five communities located in ‘closely’ settled and ‘sparsely’ settled rural regions. A paired-comparison methodology was used to quantify the relative importance of availability, distance, affordability (cost) and acceptability (preference) in relation to respondents’ decisions to utilise a GP service for non-emergency care.

Results. Consumers reported that preference for a GP and GP availability are far more important than distance to and cost of the service when deciding to visit a GP for non-emergency care. Important differences in rankings emerged by geographic context, gender and age.

Conclusions. Understanding how different dimensions of access influence the utilisation of PHC services is critical in planning the provision of PHC services. This study reports how consumers ‘trade-off’ the different dimensions of access when accessing GP care in rural Australia. The results show that ensuring ‘good’ access requires that policymakers and planners should consider other dimensions of access to services besides geography.

What is known about the topic? Research indicates that poorer ‘access’ to GPs, an impediment to seeking primary care at times of need, is the most important factor distinguishing rural from urban health service utilisation behaviour, which undoubtedly contributes to the poorer health outcomes characterising rural and remote populations. Much of the policy on access to date has focussed on increasing the number of GP located in rural and remote areas that are characterised by acute medical workforce shortages.

What does this paper add? This study provides empirical data to show how different dimensions of access influence rural Australians’ decisions to utilise a GP service. Overall, rural Australians rank preference for a GP as the most important factor in their decision to visit a doctor for a non-emergency consultation. Important differences in rankings emerged by geographic context, gender and age. Distance to a GP service ranks consistently as the third most important access factor and cost is rated the least important aspect of access.

What are the implications for practitioners? Although current rural health policies and incentives should continue to target the need to increase the availability of GP in non-metropolitan areas, this alone may not be sufficient to improve GP service utilisation. Other dimensions of access, particularly consumer preference, which are amenable to interventions both nationally and locally, are equally important.

Received 14 February 2014, accepted 29 October 2014, published online 22 December 2014

Introduction

Overcoming access inequity remains a national health priority in many countries, underpinned by strategies designed to ensure the efficient and effective provision of primary healthcare (PHC) services.^{1,2} Nowhere is the need to overcome access barriers to health services greater than in rural areas, where communities are often small and widely dispersed across vast areas. Most research on access to rural healthcare services has focussed on geographic or cost barriers that exclude people from using services at times of need,³ or on increasing the availability of health professionals.⁴ Despite this research, policymakers still struggle with how best to allocate resources so as to maximise access to PHC services. In Australia, governments and health authorities have implemented numerous programs to overcome geographic barriers to accessing health services. These range from rural classifications to guide the distribution of additional resources and transport schemes to assist isolated patients overcome distance, to mobile services, other visiting and outreach services, and use of telehealth services.⁵⁻⁷

Researchers and policymakers model spatial access patterns in order to better understand the impact of existing maldistributions of health services, especially in countries such as Australia, Canada and the USA.⁸⁻¹⁰ The outcomes from such modelling depend heavily on key considerations such as how far rural consumers are prepared to travel for healthcare, how much price determines utilisation patterns and which access barriers are most significant. Unfortunately, empirical research to guide these key assumptions is lacking. For example, there is a dearth of empirical evidence about geographic variation in patients' patterns of service utilisation, an aspect that is critical in determining the 'distance-decay' parameters underpinning catchment sizes in any access model. Not all dimensions of 'access' are incorporated into the modelling process. Invariably, distance is the main, and often only, measure of access. Little is known about the relative importance of other dimensions of access in determining rural consumers' decisions about whether and where to attend a health service.

This paper reports the findings from one study examining the relative importance of different dimensions of access in the decisions of rural Australians to utilise PHC provided by general practitioners (GP), and shows how their importance varies according to geographic context and across population groups.

Background and rationale

The concept of access is complex and not easily measured. Penchansky and Thomas¹¹ identified five main dimensions to access, namely 'availability', 'accessibility', 'affordability', 'accommodation' and 'acceptability' of health services. Subsequent reviews have identified additional dimensions that operate at various scales to determine access to PHC.^{12,13} Although attempts to describe the roles of different dimensions of access have generated several conceptual frameworks,¹³ little is known about how different dimensions of access influence utilisation of health services for non-emergency consultations in different geographic settings. Indeed, Levesque *et al.*¹³ called specifically for empirical research to test the relevance of each dimension in different contexts – the very focus of this paper.

Disaggregating the different dimensions of access enables policymakers to determine how their policies might influence health behaviour and service utilisation, and ultimately health outcomes. Matching patients' preferences (acceptability) and needs for PHC with the ability of services to meet them must be considered together in order to avoid any unintended consequences. The dimensions of access are not independent constructs. For example, in rural Australia, the use of bulk-billings may alleviate some of the cost barriers for consumers accessing PHC, but could impact inadvertently on the viability (and resultant availability) of rural practices.¹⁴ Reducing geographic barriers to services alone fails to guarantee acceptability for consumers (such as women or Indigenous people). There is a need for empirical evidence to help policymakers understand how consumers 'trade-off' the inter-related dimensions of access and how this subsequently influences health service utilisation. To date, most of the studies on access have focussed on one aspect of access (mainly geographical access to and availability of services).

Study area

In order to reflect the geographic diversity characterising rural Australia, five communities in 'closely' settled and 'sparsely' settled (Australian Standard Geographical Classification Remoteness Areas (ASGC-RA) inner regional and outer regional)¹⁵ areas of Victoria and New South Wales were surveyed. The criteria for selection were that each community: had a population size of less than 2500 residents; had at least one local GP; was located outside metropolitan and large regional centre catchment areas; and had at least three neighbouring communities providing alternative GP services. This latter criterion ensured that there was some choice of services available other than the most local one, albeit at some additional personal cost. For the two communities located in closely settled areas (characterised by population densities less than seven persons per square km), residents need to travel on average 30 km (~20 min by car) to visit an alternative doctor from the local resident GP. This compares with more than 60 km (or more than 40 min) for residents of the three more isolated sparsely settled communities (located in areas with population densities less than one person per square km).

Methods

In 2012, 4153 reply-paid questionnaires were sent to every household in the five communities. The number of questionnaires provided to each community post office was based on the Australia Post database of households in each area.¹⁶ One member of each household aged 18 years or more was invited to participate in the survey. Extensive media publicity was conducted, and a reminder letter was sent to all households. Ethics approval was obtained from the Monash University Human Research Ethics Committee.

The questionnaire sought to ascertain the importance of four of Penchansky and Thomas' key dimensions of access; availability (the existence of the service), accessibility (distance to the service), affordability (cost of the service) and acceptability (preference for the service) in relation to respondents' decisions to utilise a GP service.¹¹ Their fifth dimension (accommodation) was not included here as it relates to issues associated with a

specific health service, such as hours of operation and appointment systems.

Using paired-comparison methodology,¹⁷ respondents were asked: 'Thinking about yourself, which factor in each pair is the most important when you decide to visit a doctor (GP) for a non-emergency consultation?' Paired comparisons require respondents to consider each dimension of access in all possible paired combinations and choose one for every possible pair (see Appendix 1). This method is useful because it provides an ordinal ranking and quantifies an interval score of the relative difference between dimensions that ordinarily can only be judged subjectively. A total of six pairs for the four dimensions of access were created. To minimise bias, each pair of alternatives was alternated from right to left and spaced as far apart as sequencing allowed.¹⁷

To enable comparisons between groups, differences in respondents' preferences were standardised, and results were stratified by geographic location, age group and gender. Kendall's coefficient of agreement was calculated to determine the level of agreement among the respondents.¹⁸

Results

A total of 1080 questionnaires was obtained, yielding an estimated overall response rate of 26%; the response rate from each community was similar. (Note, the denominator used to calculate the response rate was the number of questionnaires provided to Australia Post for distribution using its unaddressed mail service. Unfortunately it is not clear whether they were all delivered to occupied private residences. For this reason, the response rate reported here is likely to be an underestimate because of the possibility that some unoccupied dwellings are included in the denominator.) Some 286 questionnaires were eliminated from analysis because of missing data. Of the 794 remaining, 273 were from residents in closely settled areas and 521 were from sparsely settled areas. Table 1 shows the characteristics of the respondents for each locality by age and gender.

Fig. 1 shows both the rank order of importance attributed to each dimension of access and an estimate of the interval separating them. To facilitate comparison of the differing importance attributed to each dimension of access, the scale is transformed by ranking the least important dimension as zero. This does not imply that the lowest ranked dimension is unimportant but rather that it ranks the lowest in importance of all the dimensions. The coefficient of agreement is a measure of the consistency between the respondents in the group.

Fig. 1a highlights the importance attributed to both preference for a GP and GP availability, compared with distance to and cost of the service, when deciding to visit a doctor for a non-emergency consultation. For residents in sparsely settled areas, availability of a GP was marginally more important than preference for a GP. For all analyses, distance to a GP ranks consistently as the third most important dimension, well below the top two. In all instances, cost is rated the least important dimension when deciding to visit a GP for a non-emergency consultation.

Fig. 1b shows that availability of and preference for GP services vary somewhat by gender. Overall, females ranked preference for their GP as most important, whereas males reported that availability was most important. In closely settled areas, both males and females reported that preference for their GP was the

Table 1. Characteristics of respondents according to age and gender (n = 794)

	Closely settled populations		Sparsely settled populations	
	n	% Total	n	% Total
Gender				
Male	70	25.6	172	33.0
Female	203	74.4	349	67.0
Total	273	100.0	521	100.0
Age (years)				
18–44	49	17.9	89	17.1
45–64	122	44.7	237	45.5
65+	102	37.4	195	37.4
Total	273	100.0	521	100.0

most important dimension, followed by availability, whereas in sparsely settled areas these rankings were reversed.

Across age groups, preference for and availability of a GP varied closely as the most important dimension in the decisions to utilise this service. In closely settled areas, respondents of all ages reported preference for their GP service to be most important, followed by GP availability. In contrast, GP availability exceeded preference of a GP in importance for those in sparsely settled areas. Notably, the importance of distance to a GP as a dimension in accessing care at times of need increases with age in all instances.

Discussion

Although the literature is replete with studies on how doctor–patient relationships may influence GP utilisation,¹⁹ this is the first empirical study that demonstrates how consumers trade-off the different dimensions of access when deciding to see a GP for non-emergency care in different rural areas. The results show overwhelmingly that residents of closely settled rural areas are more concerned to use GP services that they prefer than with distance to the service, a finding that may account for some of the catchment leakage and by-pass behaviour in rural areas already noted in the literature.²⁰ This preference for a GP is most important for younger and female persons living in these areas.

In sparsely settled areas, the availability of a GP is ranked slightly above preference for a GP, and well above distance to the service. This difference between closely and sparsely settled communities, combined with the finding showing that distance to services becomes a more important consideration with increasing remoteness, probably reflects the lesser availability of GP with increasing geographic isolation.²¹ The fact that distance is consistently ranked as less important than availability of, or preference for, a GP suggests that most rural residents accept the need to travel some 'reasonable' distance in order access healthcare at times of need.

Exactly what constitutes a reasonable distance, however, varies with geographic location. When asked about the maximum distance residents were prepared to travel to access PHC, the results show that residents in sparsely settled areas are prepared to travel further than those of closely settled areas. For example, the median maximum distance residents of sparsely settled areas

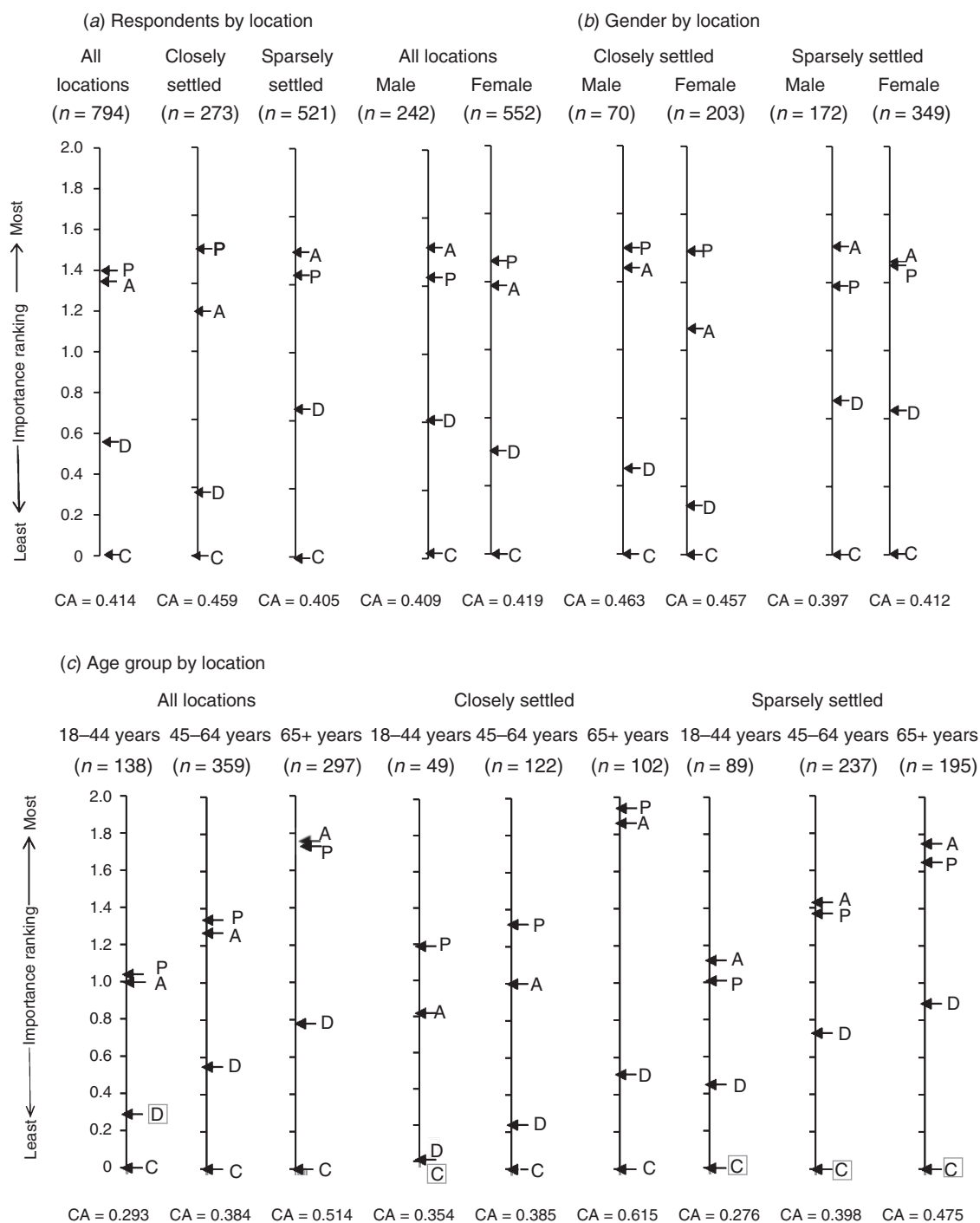


Fig. 1. Relative importance of each of the four access dimensions in respondents' decisions to use a general practitioner (GP). (a) Respondents by location; (b) gender by location; and (c) age group by location. For each group, the coefficient of agreement (CA; a measure of the agreement among the n respondents) was significant at the 99% confidence level. C, cost of seeing a GP; D, distance to a GP; A, availability of a GP; P, preference for a GP.

would travel (45 min) is significantly greater than for closely settled areas (30 min). Moreover, this differential increases such that the top 10% of residents in sparsely settled areas would be prepared to travel 120 min, in contrast to 60 min for residents in closely settled areas. The overall diminished ranking accorded to

cost of a GP service vis-à-vis other dimensions of access probably reflects the increase in bulk-billing rates for older rural Australians.²²

Differences in importance rankings by gender and age are unsurprising. Although females may prefer a doctor of choice,

anecdotal evidence from rural areas suggests that males are happy to 'just see any doctor' at times of need, and only express a particular preference if several doctors are readily available. The importance of availability and distance to a service increases with age, which may reflect both the increasing needs of the elderly for healthcare and their decreasing mobility.

Several limitations characterise this study. First, the low response rate is typical of generic postal surveys.²³ Second, in each community females and older people were over-represented compared with their population in the 2011 census.²⁴ The findings of this research may not be representative of the populations in these settings but instead may largely reflect the preferences of women and older people who are the largest users of GP services.²⁵ Third, specific local issues may not be captured adequately in a one-size-fits-all questionnaire, even though the communities selected had similar gender and age profiles to many other Australian rural communities of similar size, economic base and geographic location. Fourthly, despite extensive piloting of paired-comparison questions, some respondents still had some difficulty in choosing between alternatives. This reflects the reality of decision-making for people who rate alternatives as equally important. Because they fail to tick either alternative, their response was excluded from analysis due to missing data.

These limitations notwithstanding, this research has generated the best-available empirical evidence to inform modelling access to GP PHC services in rural areas. The findings show that overcoming geographic barriers alone will not guarantee that residents will use a PHC service when it is needed. Preference for a practitioner is very important in the decision to access healthcare and may explain why most Australians are affiliated with an individual GP or GP practice.²⁶ It may also explain why many rural Australians pay more and travel further to utilise a service other than the local one, or sometimes forego or delay seeking care. Inevitably this results in avoidable higher costs of secondary care (which could have been avoided with early intervention) and higher levels of morbidity and mortality.

Health authorities and workforce agencies need to match GP closely with rural communities. Although matching health practitioners with consumer preferences is difficult, it undoubtedly is an important factor in ensuring optimal use of PHC services for non-emergency care. The greatest congruence occurs when rural GP are able to maximise personal and professional satisfaction.²⁷

Although consumers rank some dimensions as more important than others, the different dimensions of access are not mutually exclusive and do interact with each other. Nonetheless, consumer preferences with respect to which aspects of access are most important indicate important pre-dispositions underlying existing patterns of health service utilisation behaviour. Given this, it is important to continue strong consumer involvement in workforce planning for rural health services.

Conclusions

Within the wide range of factors that influence timely PHC service utilisation, and consequent health outcomes, access remains an important determinant. Given that rural Australians must travel some distance to access services, this study of five rural communities shows that ensuring good access requires that health policymakers, as well as planners who model patterns of

access to rural PHC services, incorporate other dimensions of access to services besides their availability. Optimum use of PHC requires the provision of appropriate care in line with the needs and preferences of communities.

Competing interests

The authors have no competing or conflicts of interest to declare.

Acknowledgements

All authors are members of the Centre of Excellence for research in accessible and equitable primary health service provision in rural and remote Australia. The research reported in this paper is a project of the Australian Primary Health Care Research Institute (APHCRI), which is supported by a grant from the Australian Government Department of Health and Ageing. The information and opinions contained in it do not necessarily reflect the views or policy of the APHCRI or the Australian Government Department of Health and Ageing. The authors wish to thank Gursimrat Bhullar, Chahaya Gauci and Ebony Dunne who assisted with data entry.

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Appendix 1. Survey question

Thinking about yourself, which factor in each pair is the most important when you decide to visit a doctor (GP) for a non-emergency consultation?

(For each pair, tick which one of the two alternatives you think is more important).

- | | | | | | |
|----|----------------------------|--------------------------|----|----------------------------|--------------------------|
| a. | Availability of a GP | <input type="checkbox"/> | OR | Cost to visit a GP | <input type="checkbox"/> |
| b. | Seeing a GP you prefer | <input type="checkbox"/> | OR | Availability of a GP | <input type="checkbox"/> |
| c. | Cost to visit a GP | <input type="checkbox"/> | OR | Distance to travel to a GP | <input type="checkbox"/> |
| d. | Availability of a GP | <input type="checkbox"/> | OR | Distance to travel to a GP | <input type="checkbox"/> |
| e. | Seeing a GP you prefer | <input type="checkbox"/> | OR | Cost to visit a GP | <input type="checkbox"/> |
| f. | Distance to travel to a GP | <input type="checkbox"/> | OR | Seeing a GP you prefer | <input type="checkbox"/> |