

The 'price signal' for health care is loud and clear: A cross-sectional study of self-reported access to health care by disadvantaged Australians

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Within Australia, those with lower socioeconomic status report higher prevalence of arthritis, high blood pressure, pulmonary disorders and diabetes, suggesting a greater need for health care services.¹ Such groups also report greater prevalence of health risk behaviours and characteristics including obesity, smoking, inadequate physical activity, poor diet, limited or unhealthy social support networks and increased alcohol consumption.¹⁻³ The disparities exist across a continuous gradient with the highest risk of adverse health outcomes among the "poorest of the poor".⁴ Access to services, particularly primary health care and dental services, is a vital resource to socioeconomically disadvantaged groups.⁵ Access, the ability to obtain required care in a timely manner,⁶ is considered by the World Health Organization as key to improving health in disadvantaged groups.⁷ Within publically funded health care systems, consistent and timely access to primary health care can lower overall health care costs.^{7,8}

In countries such as Australia and New Zealand, universal access to basic health care services is supported through programs such as Medicare and the Pharmaceutical Benefits Scheme. However, difficulties accessing primary health care services have been observed for those experiencing greater deprivation or psychological

Abstract

Objective: To describe self-reported inability to access health care and factors associated with lack of access among a socioeconomically disadvantaged group.

Method: A cross-sectional survey with 906 adult clients of a large community welfare agency in New South Wales. Clients attending the service for emergency assistance completed a touchscreen survey.

Results: Inability to access health care in the prior year was reported by more than one-third of the sample (38%), compared to the 5% found for the general population. Dentists (47%), specialists (43%) or GPs (29%) were the least accessible types of health care. The main reason for inability to access health care was cost, accounting for 60% of responses. Almost half (47%) the sample reported delayed or non-use of medicines due to cost. Increasing financial stress was associated with increased inability to access GP or specialist care, medicines and imaging. Higher anxiety scores were associated with inability to access health care, and with cost-related inability to access medicines and imaging.

Conclusion: For disadvantaged groups, cost-related barriers to accessing care are prominent and are disproportionately high – particularly regarding dentistry, specialist and GP care.

Implications: Improvements in health outcomes for disadvantaged groups are likely to require strategies to reduce cost-related barriers to health care.

Key words: cost of illness, underserved populations, socioeconomically disadvantaged groups, health services accessibility, outpatient care

distress.⁹ Similarly, individuals in remote areas have fewer general practitioner (GP) encounters than those in urban areas.¹⁰ Cost is a prominent impediment to health care access^{1,11} that disproportionately affects low-income groups. In 2009, the Australian Bureau of Statistics (ABS) reported that a small minority of adult Australians reported delaying or not visiting a GP (6%) or

specialist (10%), or delaying or not receiving prescriptions (9%), due to cost.¹²

Australia's income inequality is slightly higher than that of comparable high-income countries, and may be widening.¹³ Access program and policy initiatives such as the Better Access to Psychiatrists, Psychologists and General Practitioners initiative and National Indigenous Health Equality Targets⁴

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may be reaching those of high clinical need, who had previously under-used mental health services.¹⁴ Therefore, measuring affordability barriers is an informative approach to identifying whether access to primary health care services is meeting acceptable standards.

National reporting of Australians' experiences with accessing health services provides a simple summary of disparities based on individuals' resources or location.¹² This does not distinguish those individuals who may have additional demographic, psychosocial or health characteristics resulting in further disadvantage and higher need. These characteristics may include financial stress, low income, being a smoker or a lack of social support. With the concentration of risk behaviours in low-income groups, it is important to understand how those with multiple disadvantages experience barriers to care. An examination of how the cost of care may affect the use of services within highly disadvantaged groups would advance such understanding. This cross-sectional study reports the experiences of a large sample of disadvantaged people regarding their ability to access health services over a 12-month period.

Aims

To describe the following in a sample of socioeconomically disadvantaged individuals:

1. The proportion who reported that they:
 - needed but could not access health care, and the perceived reason for lack of access
 - delayed or did not access health care due to cost.
2. The demographic, psychosocial and health behaviour variables associated with self-reported inability or delay in access to health care.

Methods

A cross-sectional survey was conducted from February 2012 to December 2013 at a large metropolitan non-government community welfare agency in New South Wales. The service provides material and financial assistance to clients experiencing high levels of disadvantage. Clients attending the service for assistance such as food vouchers, grocery items or financial aid were invited to complete a touchscreen computer health survey conducted in the centre.

Ethical approval was provided by the University of Newcastle.

Sample

Adult clients of the service who were not presenting with an uncontrolled mental illness and not under the influence of alcohol or other drugs were eligible to participate.

Measures

Participants completed a 15-minute survey, created using Digivey software (Creoso Corp), that included:

Access to health care: Selected items from the 2009 ABS Survey of Patient Experiences in Australia¹² were used, i.e. "Was there any time in the past year that you needed health care but could not get it (like visits to the GP or hospital)?" (select one – Yes / No, did not need health care / No, got all health care I needed); "Which of the following types of health care did you need but could not get in the last year?" (select as many as apply – GP/Medical Specialist/Hospital/Dentist/Allied health (physiotherapist, podiatrist, dietician, etc)/Other type of care); "What was the main reason you were unable to get the care needed most recently?" (select one: No service available in the area at the time I most needed it / Waiting time too long or no appointments / Cost / Decided not to seek care or didn't bother / Personal or family responsibilities or too busy / Transportation problems / Other); "Did you delay or not use the following health services because of the cost in the last 12 months?" (select either Yes/No to each of: GP, Specialist, Medicines, Pathology test, Imaging test).

Socio-demographic characteristics: Age, gender, number of children in household, highest level of education, marital status, income level, income source, type of housing, and Aboriginal or Torres Strait Islander status.

Smoking status: "Do you currently smoke tobacco products?" (select one – Yes daily / Yes at least once a week / Yes but less often than once a week / No, not at all); "Have you smoked at least 100 cigarettes or a similar amount of tobacco in your life?" (select one – Yes/No/Not sure). Current smokers were defined as self-reported daily or occasional smokers who had smoked at least 100 cigarettes in their lifetime.

Alcohol use: The Alcohol Use Disorders Identification Test – Short form (AUDIT-C) (15). Scores of 4 or more for males¹⁵ and 3 or

more for females¹⁶ indicated risky alcohol use (sensitivity: 0.66, specificity 0.94).

Depression and anxiety: The Patient Health Questionnaire-9 item (PHQ9) (17) and the Generalised Anxiety Disorder scale – Short form (GAD-2).¹⁸ Both questionnaires assessed symptoms within the previous 2 weeks. Scores ≥ 10 indicated symptoms of depression and scores ≥ 3 symptoms of an anxiety disorder in the PHQ9 and GAD2, respectively.^{17,18}

Social contact: "How often are you in contact with any members of your family – including visits, phone calls, letters, or emails?" and "How often are you in contact with any friends – including visits, phone calls, letters, or emails?" Response options included: Nearly every day / 3–4 days per week / 1–2 days per week / 1–3 days per month / Less than once a month / Never / No family/friends.¹⁹

Social support: "How many family members can you rely on if you have a serious problem?" and "How many friends can you rely on if you have a serious problem?" Response options: No family or friends; I can rely on 1–2 family members or friends / 3–4 family members or friends / more than 5 family members or friends.¹⁹

Financial Stress: An eight-item scale that measures financial or material deprivation in the past six months, with higher scores indicating higher levels of financial stress.²⁰

Statistical analysis

Descriptive statistics of access to health care, socio-demographic and smoking, alcohol, and mental health variables are presented. Number and proportion of individuals with each outcome of interest is reported with 95% Confidence Intervals (CIs). Comparison analyses of access to health care with demographic, psychosocial and health behaviour characteristics were performed using the Chi Square test for categorical variables and ANOVA or Kruskal-Wallis test (continuous) as appropriate. Where significant on ANOVA/Kruskal-Wallis tests, pairwise comparisons of access to health care were performed using independent t-test, with Bonferroni correction to reduce Type I error or Mann-Whitney U-test.

Binary logistic regression was used to examine factors associated with not having access to health care, and for delay of care due to cost for each health service type. Variables used in modelling were chosen *a priori* based on expected clinical relevance

(i.e. existing published data linking each characteristic to smoking-related behaviour in other populations) and included the following: age, gender, housing, indigenous status, marital status, income amount and source, contact with friends, smoking status, alcohol risk score, number of children in house, and total depression score.

Delay of access for GP, pathology and imaging due to cost had insufficient subjects within the outcomes to support all of the variables of interest in modelling, and only the following variables were chosen to remain in the final model based on significance and clinical relevance: age, education, housing, income amount, income source, tobacco use, alcohol use, financial stress, depression and anxiety. SAS 9.3 (SAS Institute Inc., Cary, NC, US) was used for all analyses.

Results

Sample

An estimated 71% of those who were eligible were informed about the survey and a sample of 906 participants completed the questionnaire. On average, participants were 39 years of age (SD=12), and female (54%). The majority of participants resided in government-supported accommodation (46%) and reported earning a weekly income of \$201–\$400 (56%), of which the primary source was a government pension or benefit (92%). High proportions of the sample were smokers (71%) and reported risky alcohol use (52%). The average depression and anxiety scores were 11.6 (SD=7.8) and 3.07 (SD=2.11), respectively.

Complete socio-demographic and smoking, alcohol, and mental health characteristics are provided in the Supplementary Material. The similarities of this sample to those recruited in similar settings with regard to socio-demographic and health characteristics suggest the sample is representative of service attendees.^{21,22}

Proportion unable to access to health care and their main reason

Table 1 describes the types of care unable to be accessed and the main reasons for inability to access health care. An inability to access health care in the prior year was reported by 346 participants (38%, 95%CI: 35–41%), with 379 participants (42%, 95%CI: 35–41%) reporting they received all the health care they needed, and 181 participants (20%,

95%CI: 17–23%) reporting no need for health care in the prior year.

Delay or non-access to health care due to cost

When all participants (N=906) were asked about delaying or not using services as a result of cost, 427 (47%, 95%CI: 44%–50%) reported delayed or non-use of medicines as a result of cost.

Delay or non-use of specialist services was reported by 398 participants (44%, 95%CI: 41%–47%). More than 10% of the sample reported delayed or non-access to a GP (n=153, 17%, 95%CI: 14%–19%), pathology test (n=109, 12%, 95%CI: 10%–14%) or imaging test (n=148, 16%, 95%CI: 14%–19%).

Demographic, psychosocial and health behaviour variables associated with inability to access any health care

On univariate analysis, statistically significant associations were found between access to health care and each of age, depression, anxiety, financial stress, and contacts with family or friends (results not shown). Regression analysis was performed to determine characteristics associated with reported inability to access health care for those who needed it (compared to those who needed health care and did receive it). As shown in Table 2, adjusted modelling indicated that higher anxiety score was associated with inability to access needed

Table 1: For those unable to access care, the number of participants reporting inability to access healthcare by type of care, and number reporting each main reason for being unable to access care (N=346).

Type of care unable to access*	Total (%)	95% CI
Dentist	160 (47)	42-52
Specialist	145 (43)	37-48
GP	98 (29)	24-34
Hospital	57 (17)	13-21
Allied Health	54 (16)	12-20
Other	55 (16)	12-20
Only 1 of the above types	197 (58)	53-63
More than 1 of the above types	143 (42)	37-47
Main reason unable to access healthcare	Total (%)	95% CI
Cost	208 (60)	55-65
Waiting time too long/no appointments	44 (13)	9-16
Personal or family responsibilities/too busy	19 (5.5)	3-8
Transportation problems	17 (4.9)	3-7
No service available	14 (4.0)	2-6
Decided not to seek care/didn't bother	13 (3.8)	2-6
Other	31 (9)	6-12

* Participants could select more than one type of care.

Table 2: Adjusted regression analysis of characteristics significantly associated with inability to get healthcare for those who needed it, compared to those who needed healthcare and did receive it.

Characteristic Variable*	Able to receive care vs Unable to receive	
	Adjusted OR (95% CI)	p-value
Education completed		0.09
Primary school	reference	
Secondary or less	0.70 (0.45-1.10)	0.13
Tertiary	0.57 (0.35-0.94)	0.02
Contact with family		0.02
Never/no family	reference	
Fewer than 3 days a month	0.90(0.54-1.53)	0.72
1-2 days a week	0.46(0.26-0.80)	0.006
At least 3 days a week	0.69(0.42-1.13)	0.14
Total Financial Stress Score		<0.001
continuous	1.23 (1.11-1.36)	
Total Anxiety Score		0.03
continuous	1.12 (1.01-1.25)	

* Where all p values for a given characteristic were non-significant in the regression model, that characteristic is not listed in the table for the sake of brevity

health care ($p=0.03$), as was higher financial stress ($p<0.001$). On average, for every 1 point increase in financial stress score, the odds of reporting inability to access health care increased by 22.5%. Contact with family was associated with inability to obtain required health care ($p=0.02$); such that those with no family contact or limited family contact (monthly or less than monthly) had greater odds than those with weekly contact to report inability to get health care if needed ($p=0.006$). Additional non-significant variables in the adjusted multivariate model were not reported for brevity but included: age; gender; indigenous status; housing; marital status; number of children; income amount or source; tobacco or alcohol use; contact with friends; and total depression score.

Demographic, psychosocial and health behaviour variables associated with inability to access health care due to cost for each type of health care

As shown in Table 3, regression analysis was performed to identify characteristics associated with reported inability to obtain each type of health care as a result of cost. For brevity, only those variables in the multivariate model that reached significance are reported.

Discussion

The survey data provide a rare insight to the health care experiences of a socioeconomically- disadvantaged sector of the Australian community and suggest there is a need to improve access to health care in order to avoid exacerbating poor health outcomes commonly reported for this group.^{1,6,23} In summarising the cross-sectional data, more than one-third of the study sample experienced difficulties accessing health care with cost-related barriers most frequently reported. Across a range of health services, greater financial stress and higher anxiety scores were significantly associated with problems accessing care. The data accords with other literature in the field indicating that low income is a consistent factor in limiting access to health care across high-income countries and across population groups within such countries.^{21,24-27} Even in Australia's universal health care system, inequity of access has been identified for range of patients such as those with major chronic diseases.²⁸

Table 3: Significant factors associated with inability to access each of the following due to cost: GP care, specialist care, medicines, pathology, and imaging.

Characteristic Variable*	Able to receive care vs Unable to receive	
	Adjusted OR (95% CI)	p-value
Access to general practitioner care		
Education		0.06
Tertiary	reference	
Primary school	1.94 (0.11-3.39)	0.02
Income source		0.001
Other	reference	
Government pension or benefit	0.23 (0.10-0.54)	<0.001
Alcohol use		0.04
Non-drinker	reference	
Non-risky drinker	0.58 (0.33-1.01)	0.05
Risky drinker	0.61 (0.40-0.92)	0.02
Total Financial Stress Score		0.002
continuous	1.20 (1.07-1.35)	
Access to specialist care		
Gender		
Male	reference	
Female	1.44 (1.05-1.96)	0.02
Education		0.009
Primary school	reference	
Secondary or less	1.79(1.18-2.70)	0.006
Tertiary	1.96 (1.25-3.10)	0.004
Housing		0.16
Own house	reference	
Supported accommodation/government housing	0.44(0.21-0.92)	0.03
Number of Children in the House		0.01
continuous	1.19 (1.04-1.36)	
Tobacco use		0.06
Smoker	reference	
Non-smoker	1.59 (1.05-2.39)	0.03
Alcohol use		0.01
Non-drinker	reference	
Risky drinker	0.60 (0.43-0.85)	0.003
Total Financial Stress Score		<.001
continuous	1.26 (1.16-1.38)	
Total Anxiety Score		0.04
continuous	1.10 (1.00-1.22)	
Access to medicines		
Income Amount		0.04
Less than \$200 per week	reference	
Between \$201-\$400 per week	0.61 (0.42-0.88)	0.009
More than \$400 per week	0.54 (0.33-0.90)	0.02
Total Financial Stress Score		<.0001
continuous	1.45 (1.32-1.60)	
Total Anxiety Score		0.002
continuous	1.17 (1.06-1.29)	
Access to pathology services		
Age		0.04
continuous	0.98 (0.96-1.00)	
Access to imaging services		
Housing		0.38
Own house	reference	
With family or friends/Hotel/Motel/No home	0.39(0.15-1.02)	0.05
Total Financial Stress Score		0.03
continuous	1.14 (1.01-1.28)	
Total Anxiety Score		0.01
continuous	1.17 (1.03-1.32)	

* Where all p values for a given characteristic were non-significant in the regression model, that characteristic is not listed in the table for the sake of brevity

In contrast to the 5% of the general population who reported being unable to access health care in the prior 12 months,¹² seven times more of this socioeconomically disadvantaged sample reported a problem accessing health care (38%). Furthermore, as compared to the ABS general population,¹² a much higher proportion of the disadvantaged sample reported an inability to access dental care (47%) and specialist care (43%). While the problems of accessing dental care on a low income are known,²⁹ poor access to specialist care has received less attention. If almost one in five disadvantaged people (145/906) who need but cannot access a specialist, many may suffer unnecessarily or rely on inpatient care when the condition becomes unmanageable, creating greater pressure on the hospital system.

Cost was the most common (60%) reason given for being unable to access needed care, in contrast to waiting times or lack of appointments (47%) being most often nominated by the general population.¹² Similarly, almost half of the disadvantaged sample reported not using or delaying use of medicines due to cost, in contrast to 9% of the general population reporting similar behaviour. The strong prominence of cost as a barrier to receiving health care is clearly a cause for concern on both equity and economic grounds.

Increasing financial stress was consistently associated with decreasing ability to obtain health care as needed. Lower income was in itself associated with reporting inability to obtain medicines, as was having an 'other' source of income rather than government benefits. These data suggest the need to develop a greater understanding of the way in which cost is a barrier to health care access among the socioeconomically disadvantaged. It may be that even more than those on government benefits, other groups such as students or those on very low wages particularly struggle to access health care. Other factors such as travel costs or poor understanding of how to avoid out-of-pocket costs may affect access to care. Additional data are required in order to understand how best to ensure disadvantaged people can readily engage with health care. Observational and qualitative studies are needed to provide greater depth and specificity of information in order to identify whether greater access to existing initiatives such as the health care card and bulk billing are required, or whether additional initiatives

are needed, such as transport assistance and greater assistance with navigating lower-cost options for accessing health care. It seems likely that imposing even 'small' additional across-the-board fees for accessing health services such as those proposed in the 2014 federal budget may exacerbate health inequality.

Few studies have explored anxiety and access to health care. Anxiety was associated with reporting an inability to access health care in general, as well as an inability to access medicines and imaging. Perhaps the ongoing out-of-pocket costs associated with obtaining medication is particularly challenging for those with very limited financial means. It is also likely that the challenges of managing such an illness may drain an individual's resources such that there are no available funds to use for other health care needs, such as mental health treatment. Alternatively, it is possible that lack of access to health care may in itself increase anxiety. Given the high prevalence of anxiety in Australia,³⁰ it is important to better understand whether existing models of care such as GP-managed mental health care plans are affordable for disadvantaged groups.

Some unexpected and counterintuitive findings are worth further exploration, i.e. that non-smokers and non-drinkers had higher odds of reporting inability to access some types of health care than their smoking and drinking counterparts; and the way in which contact with one's family or friends play a bi-directional role in access to health care. The findings regarding contact with family and inability to access health care suggests a potentially U-shaped relationship that may indicate that regular contact may be indicative of family support that may assist in obtaining health care; while very frequent contact may indicate a level of family dependence or inter-dependence that hinders access to health care. However, further research is needed to clarify any such interpretation of the data.

The generalisability of the study findings may be limited by lack of precision in the calculation of participation rate due to inconsistent recording in recruitment logs and the use of a single service for data collection. Internal validity may also be affected by the non-random nature of the sample, potentially affecting the associations found within the sample. The use of self-report is also subject to recall and response bias, which may also reduce the accuracy of

the data. Nonetheless, the study provides a new, important and timely insight to the experiences of the less wealthy in the community as they attempt to access health care.

Conclusion

Access to health care among the disadvantaged in the Australian community is poor, with many reporting lack of access. Financial factors are clearly the predominant cause of inability to access a range of types of care, with financial stress rather than just low income being a major determining factor of access to health care. There is a need for consideration of approaches for reducing the inequality in access to health care in Australia.

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Supporting Information

Additional supporting information may be found in the online version of this article:

Supplementary Table 1: Socio-demographic, smoking, alcohol, and mental health characteristics.