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Equity of a government subsidised exercise referral scheme: A population study

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ABSTRACT

Background: Health inequities could increase if utilisation of physical activity interventions is lower among socioeconomically disadvantaged groups. We examined associations between area level socioeconomic disadvantage and utilisation of Australian government-subsidised, general practitioner (GP)-referred, accredited exercise physiologist (AEPs) services.

Methods: We conducted a cross-sectional analysis of Australian Medical Benefits Scheme (MBS) data (N = 228,771 AEP services) for the 2015–2016 financial year and aggregated publicly available data from several sources. Spearman's correlations examined associations between utilisation of AEP services and area-level socioeconomic disadvantage, indicated by Index of Relative Socioeconomic Disadvantage (IRSD) decile scores. Lower IRSD scores indicate greater levels of socioeconomic disadvantage.

Results: Significant correlations between IRSD score and study variables were as follows: Out-of-pocket expenses/service (rs = 0.52); number of patients/AEP provider (rs = −0.42); number of patients/1000 population (rs = −0.24); AEP services/1000 population (rs = −0.18); average services/patient (rs = 0.24); and AEP provider/1000 population (rs = 0.14).

Conclusion: Patients living in areas of greater disadvantage utilised government-subsidised, GP-referred AEP services at a higher rate and paid lower out-of-pocket fees than those living in more affluent areas. Thus, AEP services are equitably distributed, from a utilisation perspective, and acceptable to patients living in areas of disadvantage. However, the higher caseloads and lower fees that characterise AEP services in areas of greater disadvantage may result in shorter consultation times. Further research on exercise referral schemes is warranted, particularly whether socioeconomic disadvantage is associated with adherence to exercise sessions and health outcomes.

1. Introduction

Managing chronic disease and preventing further illness is an increasing priority in health care. In 2014–15, 50% of Australians reported having at least one chronic disease (Australian Institute of Health and Welfare, 2016) and chronic disease is the leading cause of illness, disability and death in Australia (Australian Institute of Health and Welfare, 2011). Strong evidence supports the benefits of physical activity for both the prevention and management of several chronic diseases (e.g. cardiovascular disease, diabetes, colon and breast cancer) (Andersen et al., 2010; Hayashino et al., 2012; Hernandez-Hernandez and Diaz-Gonzalez, 2017; Olney et al., 2006; Rogers et al., 2015). In Australia and other developed countries, chronic disease rates and physical activity levels are socially distributed and vary by socioeconomic position; people who experience greater socioeconomic disadvantage are less likely to meet recommended levels of physical activity and more likely to have chronic disease (Australian Institute of Health and Welfare, 2011, 2014a; b; J. A. Bennie et al., 2016a; Shaw et al., 2014). It is important, therefore from a chronic disease prevention and equity perspective, that physical activity interventions are acceptable and reach people from socioeconomically disadvantaged groups. It is likely that health inequalities will increase if physical activity interventions are more successful among those of greater affluence (Shaw et al., 2014; Welch et al., 2013).

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Health care settings are increasingly recognised as important for the promotion of physical activity (Greulich et al., 2014; Morris et al., 2014; Qiu et al., 2012; Short et al., 2015). Internationally, research on exercise referral schemes, largely from the UK, which involve health care professional referrals to exercise specialists, has gained increasing attention (Murphy et al., 2012; Pavey et al., 2011; Britt et al., 2016). Studies have examined the effectiveness of exercise referral schemes and show that they result in a small, but significant, increase in the number of inactive adults who become moderately active (Hamlin et al., 2016). However, few, and none from Australia, have examined whether uptake is equitably distributed, and hence reaches those who are socioeconomically disadvantaged (Hämäläinen et al., 2016). The limited number of studies that have examined whether attendance at exercise sessions following referral from a health care professional is associated with socioeconomic position have reported mixed results. One study showed that people who experienced greater levels of disadvantage were less likely to take up referrals and utilise exercise sessions (Gidlow et al., 2007), while others have shown that socioeconomic disadvantage was not associated with utilisation (Harrison et al., 2005; Sowden et al., 2008).

In 2006, the Australian government introduced Chronic Disease Management Plans (CDMPs), funded through Medicare. Medicare is the Australian Government funded health insurance scheme that provides free or subsidised health care services to Australians and was designed to ensure equity in health care provision. CDMPs enable general practitioners (GPs) to plan and coordinate multidisciplinary health care for patients with chronic conditions such as cancer, cardiovascular disease, diabetes, musculoskeletal conditions and stroke. Under this scheme, GPs can develop team care arrangements, which require the GP to collaborate with at least two other health professionals. Through this team care arrangement GPs can refer patients to allied health professionals, including Accredited Exercise Physiologists (AEPs), and patients can claim a rebate for a maximum of five visits per calendar year. The five visits are the total across all allied health professionals and can be provided by a single allied health professional or shared across different allied health professionals (Department of Health, 2014). AEPs are four-year university degree qualified health professionals specialising in the delivery of exercise for the prevention and management of chronic disease and injuries. Given that 85% of Australians visit a GP at least once in any given year (Britt et al., 2016), GP referral to AEPs has the potential for substantial population reach. However, to the authors' knowledge, no studies have examined the extent to which patients from different socioeconomic groups utilise GP-referred AEP services through CDMPs.

Examination of the key factors that influence health care utilisation and impact, such as out-of-pocket expenses and health care professional caseloads (Johar et al., 2017), are also of interest when assessing issues relating to equity. Evidence from the US (Gruber, 2006) and Australia (Achat et al., 2010) demonstrates that the introduction of any cost or co-payment for health services decreases access for those who experience socioeconomic disadvantage. Examination of the number of health care professionals and their case load, according to the socioeconomic status of areas, is also important because previous studies show that health professionals are concentrated in affluent areas (Bennie et al., 2016b; Kurdyak et al., 2014) which might mean there is less access for people living in socioeconomically disadvantaged areas. Furthermore, higher caseloads may mean that health care professionals have reduced consultation time and this might reduce the quality of care received (Johar et al., 2014).

In this study, we examined the utilisation of Australian government subsidised, GP-referred AEP services. The aims of the study were to examine associations between area level socioeconomic disadvantage and: (i) average out-of-pocket expense per service; (ii) average number of services per patient; (iii) average number of patients per provider; (iv) number of patients per 1000 of population; (v) number of providers per 1000 of population, and (vi) number of services per 1000 of population.

2. Methods

2.1. Study design

We conducted a cross-sectional analysis of Medicare Benefit Schedule (MBS) data for the 2015–2016 financial year and aggregated publicly available data from a number of sources to address our research aims.

2.2. Data collection

Medicare item reports for AEP services (item 10953), were downloaded from the Department of Human Services website (http://medicarestatistics.humanservices.gov.au/statistics/mbs_item.jsp). MBS data on AEP services were downloaded from the Primary Health Network website (http://www.health.gov.au/internet/main/publishing.nsf/Content/PHN-MBS_Data). These data are aggregated at the Statistical Area 3 (SA3) level of the provider address. The data accessed included SA3 code, the number of providers, number of patients, total number of services, and total out-of-pocket expenses. SA3 divides Australia into 333 spatial units with populations typically between 30,000 and 130,000. In aggregate, they cover the whole of Australia without gaps or overlaps, and do not cross state/territory borders (Australian Bureau of Statistics, 2010a). All data are reported in Australian dollars.

MBS data are subject to Australian government data suppression protocols to ensure confidentiality of service users and providers. Data are suppressed if one of the following two conditions are met: (i) the number of services, patients or providers in the underlying data is less than 6, or (ii) if one health care professional provided more than 85% of services or two health care professionals provided more than 90% of services. The latter rule sometimes results in suppression of relatively large service volumes. As such, although listed in the dataset, not all SA3 regions included data on AEP providers and services and we were not able to include these in our analyses. Furthermore, not all SA3s were listed in the dataset, and were therefore assumed to have no services provided/reported for the financial year. For the 2015–2016 financial year, 67.9% (226/333) of SA3s were represented with AEP data. Of the remaining 107 SA3s, 21.9% (73/333) had suppressed data and 10.2% (34/333) were not listed in the dataset with presumably no AEP services for that year.

To assess relative levels of socioeconomic disadvantage, we used the Australian Bureau of Statistics (ABS) Socioeconomic Indexes for Areas (SEIFA) Index of Relative Socioeconomic Disadvantage (IRSD) (Australian Bureau of Statistics, 2011). An IRSD score indicates the collective socioeconomic characteristics (e.g. education, employment status, marital status, vehicle ownership, and income) of the people living in an area with a lower score indicating greater disadvantage [14]. As an IRSD score at the SA3 level is not available from the ABS, a representative score was derived using IRSD data available at the SA1 level (data downloaded from: http://www.abs.gov.au/ausstats/abs@.nsf/DetailsPage/2033.0.55.0012011?OpenDocument). SA1s are smaller geographical areas that fit within and do not cross SA3 boundaries. To obtain an average IRSD score at the SA3 level, a weighted average was calculated based on the decile score distribution of SA1s within an SA3. The weighted average was rounded to the nearest integer to obtain an "average IRSD decile" score between 1 and 10 (i.e. greatest-to-least disadvantaged).

To estimate the number of patients, services and providers per 1000 population in a given SA3, the estimated SA3 resident populations were used. Estimated resident population for 2016 was downloaded from the ABS website (http://stat.abs.gov.au/Index.aspx?DataSetCode=ABS_ERP_ASGS#).

We examined: (i) average out-of-pocket expense per service (fees